Global Accelerated Action for the Health of Adolescents (AA-HA!)

Guidance to Support Country Implementation

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Global accelerated action for the health of adolescents (AA-HA!): guidance to support country implementation

Foreword

Adolescents are not simply old children or young adults. This deceptively simple observation lies at the heart of Global Accelerated Action for the Health of Adolescents (AA-HA!): Guidance to support country implementation, which reflects the coming of age of adolescent health within global public health.

For years, the unique health issues associated with adolescence have been little understood or, in some cases, ignored. But that has now changed. Adolescent health and development was made an integral part of the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) (The Global Strategy) because, in the words of the United Nations Secretary-General, "[adolescents are] central to everything we want to achieve, and to the overall success of the 2030 Agenda".

Why "central"? Because investments in adolescent health bring a triple dividend of benefits for adolescents now, for their future adult lives, and for the next generation. Their health and well-being are engines of change in the drive to create healthier, more sustainable societies.

In 2014, the WHO report Health for the World's Adolescents showed that considerable gains from investments in maternal and child health programmes are at risk of being lost without corresponding investments in adolescent health. The latest data show that more than 3,000 adolescent die every day from largely preventable causes, and that many key risk factors for future adult disease start or are consolidated in adolescence. Adolescent mental health and well-being are often overlooked.

This Guidance is a milestone for translating the Global Strategy into action. It provides a wealth of information to policy-makers, practitioners, researchers, educators, donors, and civil society organizations – including the most up-to-date data on the major disease and injury burdens that affect adolescents. It supports the implementation of the Global Strategy by providing the comprehensive information that countries need to decide what to do for adolescent health, and how to do it. It builds on on-going efforts to ensure that adolescents can Survive, Thrive and are in a position to Transform the societies in which they live.

But the guidance provides much more than facts and figures. It brings a paradigm shift about how we think about and plan for adolescent health.

First, the AA-HA! Guidance addresses adolescence not only through the conventional public health lenses of risk and protective factors, but also considers adolescents to be powerful societal assets whose contributions can be nurtured and augmented through meaningful engagement and participation. The level and quality of inputs to this document from adolescents and young people, including vulnerable groups, lend considerable weight to its recommendations.

Second, the guidance takes a radically different approach to traditional adolescent health programming. In the past, adolescent health advocates have had to look for "entry points" – such as HIV, or sexual and reproductive health – to access funding to address broader adolescent health issues. We argue that the triple dividend from investing in adolescent health is enough rationale for directing attention and resources to adolescent health in its own right, while making the case for "adolescent health in all policies". In that respect, it recommends key actions that are needed in sectors as diverse as education, social protection, urban planning and the criminal justice system, in order to respect, protect and fulfil adolescents' rights to health.

Third, there is a growing realization that adolescents often face disproportionate risks in humanitarian and fragile settings – including poor physical and mental health, harassment, assault and rape. Adolescent-specific considerations for programming in humanitarian and fragile settings have therefore been explicitly included.

Finally, this guidance not only provides information on what needs to be done – it demonstrates what is already being done. More than 50 case studies from across the globe provide concrete examples of how countries have done what is being promoted.

The partnership that was created while developing this interagency guidance sets the stage for a new era in global adolescent health. Coordinated by WHO, the guidance was developed with the active participation of UN agencies; civil society organizations; academics; governments; and most importantly, young people themselves. This model of engagement puts young people in the driver's seat, consistent with the powerful motto "nothing about us, without us."

At WHO, we believe that this is just the beginning. We look forward to this partnership developing and expanding to support the implementation of the AA-HA! guidance in countries, to ensure that adolescent health and development remains at the centre of national, regional and global health agendas.

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Acknowledgements

Glossary

Adolescent: A person aged 10–19 years. Young adolescents refers to 10–14 year olds, while older adolescents refers to 15–19 year olds. Table A shows how the term adolescent relates to the terms child, youth, young adult and young person.

Table A. Ages covered by terms child, adolescent, youth, young adult and young person

TYPE OF YOUNG PERSON	AGE IN YEARS														
	0-9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	23
Child															
Adolescent															
Youth															
Young adult															
Young person															

Source: (1).

Burden of disease or injury: The impact of a health problem in a population, as measured by rates of mortality and disability-adjusted life years (see below). It is not limited to disease, but also includes other burdens, such as disability caused by injury.

Country income level: This is defined by a 2014 gross national income per capita of US$ 1045 or less (low income countries); US$ 1046–US$ 4125 (lower middle-income countries); US$ 4126–US$ 12 735 (upper middle-income countries); and US$ 12 736 or more (high-income countries) (2).

Disability-adjusted life year (DALY): A measure that combines the estimated years of life lost through premature death and the estimated years of life lived in states of less than optimal health (3). The sum of DALYs across a population is a way to measure the gap between current health status and an ideal health situation in which the entire population lives to an advanced age, free of disease and disability.

Demographic dividend: Accelerated economic growth that may result from a decline in a country's mortality and fertility rates, and a subsequent change in the age structure of the population. With fewer births each year, a country's young dependent population grows smaller in relation to the working-age population. With fewer people to support, a country has a window of opportunity for rapid economic growth (4).

Demographic transition: A shift in population structure; for example, population change that occurs as a country transitions from high birth and death rates to lower birth and death rates, and from a pre-industrial to an industrialized economic system (4).

Determinant: A factor that can affect the health of adolescents and their communities, including personal, social, economic and environmental factors. Determinants occur at different ecological levels. For example: individual characteristics (e.g. age, beliefs, income and social status, education, social support networks, genetics, health services and gender); the immediate environment (e.g. parents, teachers, peers); social values and norms (e.g. gender norms restricting girls' access to education; encouragement of boys to take health-related risks); policies and laws (e.g. related to tobacco and alcohol); macro-social factors (e.g. distribution of money and resources); and the physical and biological environment (e.g. malaria prevalence; access to toilets while menstruating). Some determinants may be inter-related and clustered, and together affect adolescent development and ability to learn and acquire skills (5).

Emergency situation: A single or multiple country event with minimal (Grade 1) to substantial (Grade 3) public health consequences that WHO has identified as requiring a response. In the months immediately after an emergency situation is graded, it is considered acute. When it is likely to continue for more than six months its grade may be removed and it will be recategorized as protracted (6).

Epidemiological transition: An epidemiological shift; for example from mortality primarily due to acute infectious diseases, to that due to chronic, non-infectious, degenerative diseases, occurring as a result of higher standards of living and the introduction of medical and public health practices in high-income nations (7).

Equity: The absence of avoidable, unfair or remediable differences among groups of people, which may be defined socially, economically, demographically or geographically, or by other means of stratification. Health equity implies that ideally everyone should have a fair opportunity to attain their full health potential and no one should be disadvantaged from achieving this potential (8).

Evidence-based intervention: Interventions found to be effective through rigorous evaluation. The particular standards used to evaluate effectiveness vary depending on many factors, including the type of health condition, intervention and available data. For example, a biomedical intervention may be considered to have strong evidence of effectiveness if multiple experimental trials have consistently demonstrated positive impact on desired outcomes (9). However, such research is not always feasible, particularly in non-biomedical fields where there may be a long and complex causal pathway between the implementation of an intervention and any potential impact on population health (5). In such cases, other criteria may be used to identify interventions with the strongest evidence-base.

Health system function: This is a key purpose and activity of health systems. WHO identifies four functions as critical for health systems: service provision; generation of human and physical resources that make service delivery possible; raising and pooling the resources used to pay for health care; and stewardship (i.e. setting and enforcing the rules and providing strategic direction for all actors). These functions are performed in the pursuit of three goals: health, responsiveness and fair financing (10).

Health system strengthening: The process of identifying and implementing changes in policy and practice in a country's health system, so that the country can respond better to health system challenges. Health system strengthening also can be defined as any array of initiatives and strategies that enhance the functioning of a health system and lead to better health through improvements in access, coverage, quality or efficiency (10).

Humanitarian and fragile settings: Settings that face social, economic and environmental shocks and disasters. These include conflict and post-conflict situations, transnational crises, countries that have experienced one or more serious natural disasters, and situations of protracted socioeconomic and political instability. In such settings, health challenges are particularly acute among mobile populations, internally displaced communities and those in refugee or temporary camps (11).

Programme: A coordinated and comprehensive set of planned, sequential health strategies, activities and services designed to achieve well-defined objectives and targets. A national programme usually has national, subnational and local coordinators, and dedicated funding to support planned activities. Within the health sector the term national health programme is often used to indicate national health-care system components that administer specific services (e.g. national programmes for HIV, adolescent health or school health services) (10).

Programming: The stage of a sector's planning cycle in which newly identified priorities are translated into operational plans (10). Programming and programme overlap but are not identical concepts; programming – for adolescent health for example – may happen in the absence of a specific programme, as part of sector-strategic and operational planning cycles.

Protective factor: A factor that encourages and sustains positive behaviours, reduces the risk of negative health behaviours and outcomes and diminishes the effect of, and supports recovery from, negative health outcomes. Examples of protective factors for adolescent health include caring and meaningful relationships, appropriate structure and boundaries, opportunities for participation and contribution, and encouragement of self-expression (12).

Risk factor: An attribute, characteristic or exposure that increases the likelihood of an individual suffering a negative health outcome immediately or in the future. Some conditions can be both a risk factor and a burden of disease. For example, iron-deficiency anaemia is a risk factor for death or disability from postpartum haemorrhage but also causes lassitude and weakness (13).

Executive summary

The Sustainable Development Goals, which seek to achieve global economic, social and environmental sustainable development by 2030, will not be realized without investment in adolescent health and well-being. Critical to this will be programming for adolescent health in health and other sectors, which should include normalizing attention to adolescents' needs in all aspects of their work. The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) that was launched in 2015 to support the Sustainable Development Goals, provides an unprecedented opportunity to improve adolescent health and to respond more effectively to adolescents' needs. The Global Strategy envisions a world in which every woman, child and adolescent realizes their rights to physical and mental health, and identifies adolescents as being central to achieving the Sustainable Development Goals. To support the implementation of the specific Global Strategy goals related to adolescent health and development, and in response to a request from Member States at the Sixty-eighth World Health Assembly in May 2015[1], UN partners, led by the World Health Organization, have developed guidance to support country implementation for accelerated action for the health of adolescents (AA-HA!). The guidance has drawn on inputs received during extensive consultations with Member States, bodies in the United Nations system, adolescents and young people, civil society and other partners.

Using the AA-HA! Guidance to Support Country Implementation

The AA-HA! Guidance aims to assist governments in deciding what they plan to do – and how they plan to do it – as they respond to the health needs of adolescents in their countries. It is intended as a reference document for national-level policy-makers and programme managers to assist them in planning, implementing, monitoring and evaluation of adolescent health programmes. After a brief introduction which summarizes the main arguments for investing in adolescent health, the full reference document details the key steps from understanding the country's epidemiological profile, undertaking a landscape analysis to clarify what is already been done and by whom, conducting a consultative process for setting priorities, to planning, implementing, monitoring and evaluating national adolescent health programmes, and ends with key research priorities (Figure A). It provides case studies to illustrate that what is being recommended can be done, and in some cases has already been done.

Figure A. The systematic approach for the implementation of accelerated action for the health of adolescents (AA-HA!)

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6
Understanding what is special about adolescents and why investing in them results in long-term societal benefits.	Understanding global and regional adolescent health profiles	Understanding what works - the AA-HA! package of evidence-based interventions	Understanding the country's adolescent health profile Undertaking landscape analysis Conducting a consultative process for setting priorities based on explicit criteria	Planning and implementing national programmes	Strengthening accountability for adolescent health: - monitoring and evaluating adolescent health programmes; - priorities for adolescent health research

Leadership and participation of adolescents and young people

Addressing adolescent health needs in humanitarian and fragile settings

Executive summary

APPLY AA-HA! Together: 7 overarching messages

At the start of each of the six sections of the AA-HA! guidance there is a summary of key messages. These can be summarized in 7 overarching messages , which are encapsulated by the acronym: APPLY AA-HA! Together (Figure B).

Figure B. Apply AA-HA! Together: The overarching Messages of the AA-HA!

Approach

The AA-HA! guidance provides a systematic approach for understanding adolescent health needs, prioritizing these in the country context and planning, monitoring and evaluating adolescent health programmes.

Yields from investing in adolescent health span across generations

There is a pressing need for increased investment in adolescent health programmes, to improve adolescent health and survival in the short term, for their future health as adults, and for the next generation. This is a matter of urgency if we want to curb the epidemic of noncommunicable diseases, to sustain and reap the health and social benefits from the recent impressive gains in child health, and ultimately to have THRIVING and peaceful societies.

Prevention

More than 3000 adolescents die every day from largely preventable causes such as unintentional injuries; violence; sexual and reproductive health problems, including HIV; communicable diseases such as acute respiratory infections and diarrhoea; noncommunicable diseases, poor nutrition and lack of physical activity; and mental health, substance use and suicide. Even more suffer from ill health due to these causes. Although much research is still needed, effective interventions are available for countries to ACT NOW.

Priority setting

The nature, scale and impact of adolescent health needs vary between countries, between age groups and between the two sexes. Funds are limited, and governments should prioritize their actions according to the disease and injury risk factor profiles of their adolescent population, as well as the cost-effectiveness of the interventions. Adolescent health needs intensify in humanitarian and fragile settings.

AA-HA!

Together

WITH adolescents, FOR adolescents. Adolescents have particular health needs related to their rapid physical, sexual, social and emotional development and to the specific roles that they play in societies. Treating them as old children or young adults does not work. National development policies, programmes and plans should be informed by adolescents' particular health-related needs, and the best way to achieve this is to develop and implement these programmes with adolescents.

Whole-of-government. To achieve the Sustainable Development Goal targets, the health and other sectors need to normalize attention to adolescents' needs in all aspects of their work. An Adolescent Health in All Policies (AHiAP) approach should be practised in policy formulation, implementation, monitoring and evaluation.

Leadership

Strong leadership at the highest level of government should foster implementation of adolescent-responsive policies and programmes. To accelerate progress for adolescent health, countries should consider institutionalizing national adolescent health programmes. Through the Sustainable Development Goals and the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030), globally agreed targets related to adolescent health exist, along with indicators to monitor progress towards these. Age and sex disaggregation of data will be essential.

Adolescent participation

The meaningful involvement of young people in all aspects of their own, and their communities', development brings multiple benefits. From an operational perspective, adolescent participation contributes to better decisions and policies. It allows decision-makers to tap into adolescents' unique perspectives, knowledge and experiences, which brings a better understanding of their needs and problems and leads to better solutions. Furthermore, respecting adolescents' views regarding their health care ensures that more adolescents will seek services and remain engaged in accessing them.

Countries should ensure that adolescents' expectations and perspectives are included in national programming processes. Adolescent leadership and participation should be institutionalized and actively supported during the design, implementation, monitoring and evaluation of adolescent health programmes.

From a developmental perspective, the engagement of adolescents enhances adolescent-adult relationships, develops adolescent leadership skills, motivation and self-esteem, and enables them to develop the competencies and the confidence they need to play an active, positive and pro-social role in society. All of this has an important positive influence on their social and emotional development.

From an ethical and human rights perspective, the right of adolescents to participate in decision-making is enshrined in the UN Convention on the Rights of the Child and reinforced in the recent General Comment on the implementation of the rights of the child during adolescence, and is a way to promote health equity. The underlying causes of inequities are the unequal distribution of power, money and resources. Therefore, the involvement, empowerment and meaningful participation of all adolescents – including both adolescent boys and girls and the most vulnerable adolescents – constitutes one of the mechanisms to achieve equity.

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Executive summary

Section 1.
A never-before moment for adolescent health

The 2030 Agenda for Sustainable Development and its Global Strategy for Women's, Children's and Adolescents' Health provides a unique opportunity for accelerated action for the health of adolescents. Adolescence is one of the most rapid and formative phases of human development, and the distinctive physical, cognitive, social, emotional and sexual development that takes place during adolescence (Figure C) demands special attention in national development policies, programmes and plans.

Investment in adolescent health will build on and sustain earlier gains in young child health, and will further enable adolescents to become healthy adults who are equipped to contribute positively to society. Such investment brings a triple dividend: benefits for adolescents now, for their future adult lives and for their children.

Although further research is needed, effective, evidence-based interventions are available for countries to act now to protect and promote the health of their adolescents.

Figure C. What is Special about Adolescents?

Rapid physical, cognitive, social, emotional and sexual development	Widening gap between biological maturity and social transition to adulthood	Balance between protection and autonomy
• Hormonal changes and puberty • New and complex sensations and emotions • Sexual awareness and gender identity • Burst of electrical and physiological brain development • Enhanced and evolving cognitive ability • Context-influenced emotional and impulse control	• More years in education and training due to the expansion of primary, secondary and further education • Later onset of employment and family formation • More independent involvement in health services, which may be ill prepared to serve adolescents' special needs	• Emerging autonomy but limited access to resources (e.g. finances, transportation) • Appropriate representation in decision-making bodies • Rights to consent to services, commensurate with evolving capacity • Increased vulnerability to some aspects of globalization (e.g. increased vulnerability to gaming, pornography, online bullying)

Section 2.
Adolescent disease and injury burdens and risk factors

Many adolescent disease and injury burdens are preventable or treatable, but are often neglected. They require a sustained focus and investment. In 2015, more than 1.2 million adolescents died.

Road injury was the leading cause of death in both young and older adolescent males, but for females the leading cause of death changes from lower respiratory infections among younger adolescents to maternal conditions among older adolescents.

Some causes are more common among males (e.g. drowning) or females (e.g. maternal conditions), or among younger (e.g. lower respiratory infections) or older adolescents (e.g. interpersonal violence and self-harm) (see Table 2.1 and Figure 2.1 in Section 2). These results demonstrate that disaggregation of health data is critical to identifying the health needs and intervention priorities for different groups of adolescents.

Adolescent disease burdens vary greatly across the world. Over two thirds of adolescent deaths occur in low- and middle-income countries (LMICs) in Africa (45%) and South-East Asia (26%), regions that have 19% and 30% of the world's adolescent population respectively (Figure D).

Figure D. Estimated adolescent deaths by population size and modified WHO region, 2015.

Adolescents aged 10 to 19 years

Region
- African LMICs
- Americas LMICs
- Eastern Mediterranean LMICs
- European LMICs
- High Income countries LMICs
- South East Asian LMICs
- Western Pacific LMICs

545 079
310 474
134 402
82 702
80 033
27 747
31 267

Deaths (000)

Population (000,000)
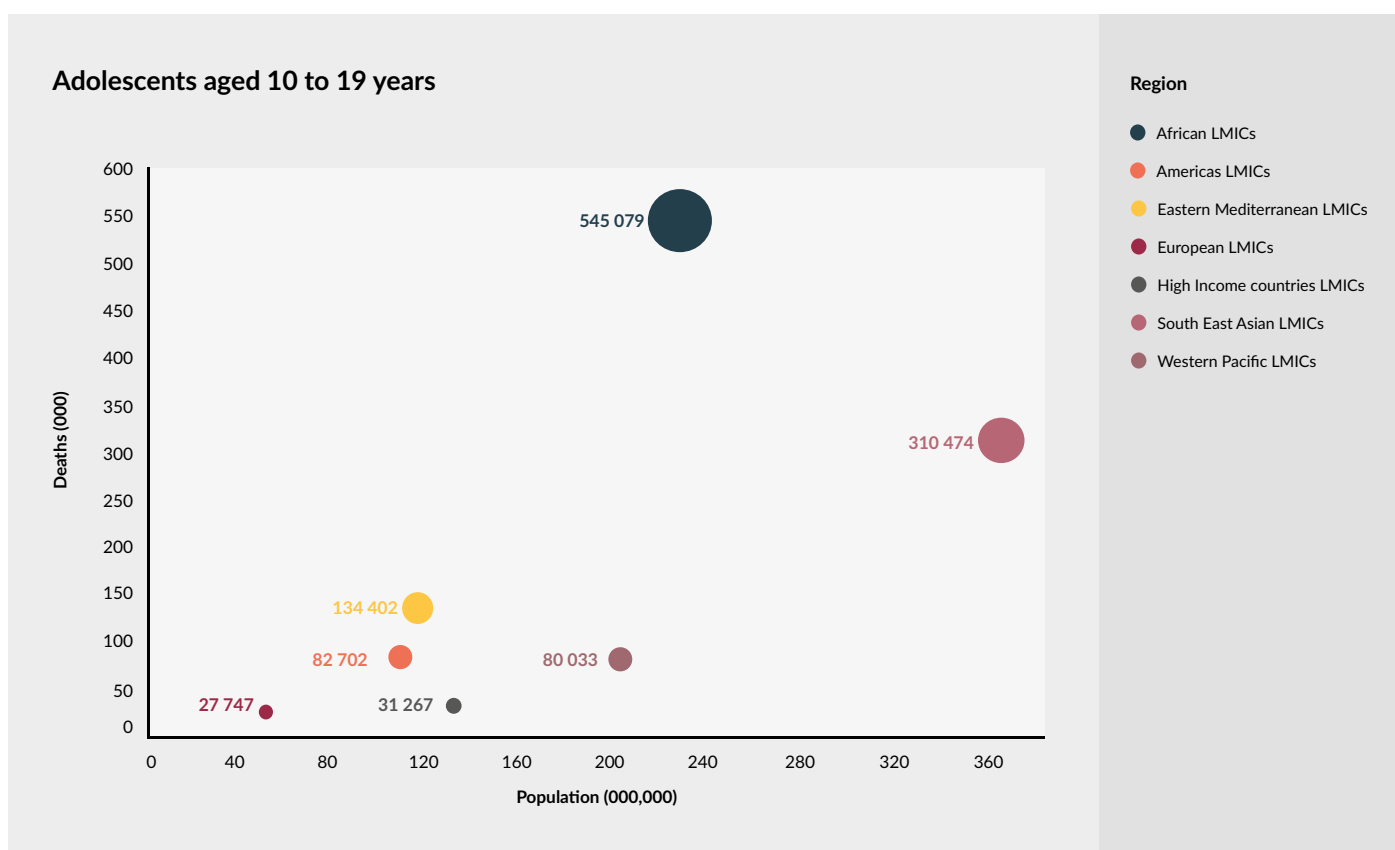
Some conditions are major burdens among most groups of adolescents everywhere. For example, road injury, self-harm and drowning are major causes of death across most or all regions (see Table 2.2 and Figure 2.3 in Section 2). Some adolescent causes of death, such as congenital anomalies, only have a high ranking within certain regions, but are still important causes in high burden regions such as African LMICs or South East Asian LMICs.

Other conditions are only ranked in the top five causes of death in certain regions. Examples include meningitis and AIDS in African LMICs; diarrhoeal diseases and tuberculosis in South-East Asia LMICs; interpersonal violence in high-income countries, Americas LMICs and Eastern Mediterranean LMICs; collective violence and legal intervention in Eastern Mediterranean LMICs; and leukaemia in Western Pacific LMICs.

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The disability-adjusted life years (DALYs) lost, a summary measure combining the burden from mortality and morbidity, are shown by age and sex in Figure E, and by modified WHO region in Figure F.

Figure E. Estimated top five causes of adolescent disability-adjusted life years (DALYs) lost by sex and age, 2015.

Females

| Age | 10-14 years | 15-19 years |

Cause	DALY rate ('000)
Iron-deficiency anaemia	1161
Lower respiratory infections	582
Diarrhoeal diseases	479
Anxiety disorders	430
Meningitis	423
Iron-deficiency anaemia	836
Depressive disorders	831
Maternal conditions	789
Self-harm	718
Anxiety disorders	532

DALY rates ('000)   0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700

Males

| Age | 10-14 years | 15-19 years |

Cause	DALY rate ('000)
Iron-deficiency anaemia	1365
Road injury	558
Childhood behavioural disorders	554
Drowning	542
Lower respiratory infections	489
Road injury	1674
Interpersonal violence	931
Self-harm	684
Depressive disorders	600
Drowning	479

DALY rates ('000)   0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700

Figure F. Estimated top five causes of adolescent disability-adjusted life years (DALYs) lost by modified WHO region, 2015 .

Adolescents aged 10 to 19 years

DALY rates ('000)

Category	High Income Countries	African LMICs	Americas LMICs	Eastern Mediterranean LMICs	European LMICs	South East Asian LMICs	Western Pacific LMICs
	633	1 693	543	487	578	659	377
	478	1 648	538	449	468	437	347
	443	1 462	809	1 024	434	419	498
	645	1 098	1 698	1 981	786	1 179	692
	382	1 421	836	757	445	810	637

Legend:

Mental Health
- Self-harm
- Depressive disorders
- Childhood behavioural disorders
- Anxiety disorders

Non-communicable diseases
- Asthma
- Skin diseases
- Iron-deficiency anaemia

Other communicable diseases
- Lower respiratory infections
- Diarrhoeal diseases
- Meningitis

Sexual & reproductive health, HIV/AIDS
- HIV/AIDS

Violence
- Collective violence and legal intervention
- Interpersonal violence

Unintentional injury
- Road injury

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Selected risk factors for disease burdens have been studied by the 2013 Global Burden of Disease Study. For 10–14 year olds, unsafe water and sanitation and inadequate hand washing are among the leading health risk factors for both mortality and DALYs lost in both males and females. Other environmental factors (e.g. air pollution and lead exposure), iron-deficiency anaemia, high fasting plasma glucose, high blood pressure, alcohol use, childhood sexual abuse and unsafe sex also rank highly in this age group. Most of these conditions are also leading risk factors among 15–19 year olds.

However, the leading risk factors in this older age group also include risk behaviours, such as alcohol use, unsafe sex and, to a lesser extent, drug use. Other risk factors that are only leading risk factors among older adolescents are intimate partner violence and occupational hazards such as exposure to toxins or work-related injuries. It is important to remember that some types of risk or protective factors that may be very important, such as those related to family or school, were not included in the risk factors studied.

Some adolescents are particularly vulnerable, experiencing higher exposure to health risks, lower access to health services, worse health outcomes and greater adverse social consequences as a result of ill health. Adolescent health inequalities are often influenced by factors such as sex, income, education and rural or urban residence.

Particularly vulnerable adolescents include those who are:
• living with disabilities or chronic illnesses;
• living in remote areas or caught up in social disruption from natural disasters or armed conflicts:
• stigmatized and marginalized because of sexual orientation, gender identity or ethnicity;
• institutionalized, or exposed to domestic violence or substance abuse in the family;
• exploited and abused;
• married, or who migrate for work or education without family or social support;
• exposed to racial or ethnic discrimination;
• not in education, employment or training;
• not able to have access to health services or social protection.

Adolescent health needs intensify in humanitarian and fragile settings, where adolescents may simultaneously experience multiple, compounded vulnerabilities.

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Adolescent health needs intensify in humanitarian and fragile settings, including from burdens related to: malnutrition; disability; unintentional injury; violence; sexual and reproductive health needs (e.g. early pregnancy, HIV and other STIs, and unsafe abortion); water, sanitation and related health needs (e.g. menstrual hygiene management); and mental health.

Adolescents who are especially vulnerable in humanitarian and fragile settings include those who are: young (10–14 years); disabled; members of ethnic or religious minorities; child soldiers; other children associated with fighting forces; girl mothers; orphans; heads of households; survivors of sexual violence, trafficked or subjected to other forms of gender-based violence; engaged in transactional sex; in same-sex sexual relationships; or HIV-positive.

Section 3.
Evidence-based adolescent health interventions

Although there are important gaps in the evidence base on interventions to promote and protect adolescent health, many health interventions have substantial evidence of effectiveness in adolescence. The evidence gaps should not therefore be a reason for inaction, as long as evidence-based interventions are selected for implementation. The AA-HA! Guidance summarizes (a) positive development interventions that are universally important for all adolescents; (b) the 27 intervention areas of the Global Strategy for Women's, Children's and Adolescents' Health (GS) that directly relate to adolescent health (GS1–GS27) and (c) adolescent health interventions that have particular importance in humanitarian and fragile settings (Figure.G): Figure G gives examples of interventions within positive development, six specific health areas and those with particularly high priority in humanitarian and fragile settings; the complete list can be found in Section 3.

Figure G. AA-HA! adolescent evidence-based interventions at a glance [a]

Positive development	Unintentional Injury	Violence	Sexual and reproduction health, including HIV
• Adolescent-friendly health services • Health-promoting schools • Improving hygiene and nutrition • Child online protection • e-health and m-health interventions for health education and the involvement of adolescents in their own care • Parenting interventions • Adolescent participation and interventions to promote competence, confidence, connection, character and caring	• Laws on drinking age, blood alcohol concentration, seat-belt and helmet wearing, graduated driver licencing • Traffic calming and safety measures • Pre-hospital and hospital care • Community campaigns and individual interventions to promote behavioural change related to safe driving and good laws to encourage behavioural change • Population, community-based and individual level drowning prevention measures • Assessment and management of adolescents who present with unintentional injury, including alcohol-related injury • Infrastructure design and improvement • Vehicle safety standards	INSPIRE strategies to preventing and responding to all forms of violence against children and adolescents: • Implementation and enforcement of laws: banning violent punishment, criminalizing sexual abuse and exploitation of children, prevent alcohol misuse, limit youth access to firearms and other weapons • Norms and values: changing adherence to restrictive and harmful gender and social norms, community mobilization programmes, bystander interventions • Safe environments: addressing "hotspots", interrupting the spread of violence, improving the built environment • Parent and caregiver support through home visits, community approaches and comprehensive programmes • Income and economic strengthening: cash transfers, group saving and loans, microfinance • Response and support services: screening and interventions, counselling and therapeutic approaches, programmes for juvenile offenders, foster care interventions • Education and life skills: increasing school enrolment, safe and enabling school environment, life and social skills training	• Comprehensive sexuality education • Information, counselling and services for comprehensive sexual and reproductive health, including contraception • Prevention of and response to harmful practices, such as female genital mutilation and early and forced marriage • Pre-pregnancy, pregnancy, birth, post-pregnancy, abortion (where legal) and postabortion care, as relevant to adolescents • Prevention, detection and treatment of sexually transmitted and reproductive tract infections, including HIV and syphilis • Voluntary medical male circumcision (VMMC) in countries with generalized HIV epidemics • Comprehensive care of children (including adolescents) living with, or exposed to, HIV

Communicable diseases	Non-communicable diseases, nutrition and physical activity	Mental health, substance abuse and self-harm	Conditions with particularly high priority in humanitarian and fragile settings
• Prevention, detection and treatment of communicable diseases, including tuberculosis • Routine vaccinations, e.g. human papillomavirus, hepatitis B, diphtheria-tetanus, rubella, measles • Prevention and management of childhood illnesses, including malaria, pneumonia, meningitis and diarrhoea • Case management of meningitis	• Structural, environmental, organizational, community, interpersonal and individual level interventions to promote healthy behaviour (e.g. nutrition; physical activity; no tobacco, alcohol or drugs) • Prevention, detection and treatment of non-communicable diseases • Prevention, detection and management of anaemia, especially for adolescent girls; iron supplementation where appropriate • Treatment and rehabilitation of children with congenital abnormalities and disabilities	• Care for children with developmental delays • Responsive caregiving and stimulation • Psychosocial support and related services for adolescent mental health and well-being • Parent skills training, as appropriate, for managing behavioural disorders in adolescents • Structural, environmental, organizational, community, interpersonal and individual level interventions to prevent substance abuse • Detection and management of hazardous and harmful substance use • Structural, environmental, organizational, community, interpersonal and individual level interventions to prevent adolescent suicide • Management of self-harm and suicide risks	• Assess conditions and ensure adequate nutrition for adolescent population groups according to age, gender, weight, physical activity levels and other key factors • Ensure core health services to support adolescents with disabilities in an emergency • Medical screening of former child soldiers, and clinical management and community-based psychosocial support for survivors of sexual and/or gender-based violence • Implement a minimal initial sexual and reproductive health service package • Ensure safe access to and use and maintenance of toilets; materials and facilities for menstrual hygiene management and other intervention to improve water, sanitation and hygiene • Promote mental health through normal recreational activities for adolescents, re-start of formal or informal education, and involvement in concrete, purposeful common interest activities • Provide psychological first aid and first-line management of adolescent mental, neurological and substance-use conditions

[a] Examples of interventions within each area are provided; the complete list is to be found in Section 3

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Many effective adolescent health interventions are adolescent-specific. These either target entire adolescent populations (e.g. comprehensive sexuality education), or specific subpopulations of adolescents who are particularly vulnerable (e.g. iron-supplementation for postpubertal adolescent girls in areas with a high prevalence of anaemia).

However, to reduce some major adolescent burdens it is necessary to tailor general population interventions to the specific needs of adolescents. Examples include the need for lower blood alcohol limits for adolescent drivers, or the provision of more intensive disclosure and adherence support for adolescents living with HIV.

To reduce other major adolescent burdens and risk factors, it is also important to ensure that interventions that serve all age groups are delivered with quality and universal coverage. These include the enforcement of traffic laws and policies; the provision of adequate water and sanitation infrastructure; and the implementation of policies and legislation that reduce the affordability of tobacco, alcohol and unhealthy foods and beverages.

The main determinants of adolescent health are outside the specific remit of the health sector, so many interventions necessarily involve other sectors. The education sector is particularly important for influencing adolescent behaviour, health and wellbeing through intensive, long-term, large-scale initiatives implemented by professionals, and because education per se is a major determinant of both adolescent and subsequent adult health.

Section 4.
Setting national adolescent health priorities

There is no ideal, one-size-fits-all package of adolescent health interventions that will meet the needs of every country, because the nature, scale and impact of adolescent health needs differ between countries. In addition, all governments face resource constraints and must make difficult choices to ensure their adolescent health resources are used most effectively. Governments should therefore evaluate their country's particular adolescent health needs before developing their adolescent health programme. This involves three key steps: Needs assessment; Landscape analysis; Setting priorities (Figure H).

Figure H. AA-HA! National adolescent health priority setting

Needs assessment 1	**Landscape analysis** 2	**Setting priorities** 3
To identify which conditions, health risks and social determinants have the greatest impact on adolescent health and development, both among adolescents in general and among those most vulnerable	Of existing adolescent health programmes, policies, legislation, capacity and resources within the country, as well as a review of current global and local guidance on evidence-based interventions	Considering the urgency, frequency, scale and consequences of particular burdens, the existence of effective, appropriate and acceptable interventions to reduce them, the needs of vulnerable adolescents, and the availability of resources and capacity to implement or expand priority interventions equitably

Countries should reassess their adolescent health priorities and programming periodically, and at least once every five years, to ensure that they are still relevant to current adolescent needs. Changes in health and health services, economic development, employment, migration, urbanization, conflict, environmental degradation and technological innovation should all be considered.

Section 5.
National adolescent health programming

Specific elements in the design and implementation of national adolescent health programmes will depend on the identified priorities, specific objectives and sector(s) concerned. Common elements can be summarized in a logical framework (Figure I). Government leadership, adolescent participation, adequate financing and national accountability are highlighted as four overarching conditions for national adolescent health programming.

Although not the only sector that needs to be involved, the health sector will play a key role in achieving universal health coverage.

Countries may consider mandating an adolescent health focal point in the Ministry of Health to guarantee explicit, ongoing and dedicated attention to adolescent health issues within the health sector.

This person would have responsibilities for:

• championing adolescent health within the ministry

• coordinating systematic attention to adolescent needs in all health programmes, and

• liaising with other sectors for joint action.

Figure I. A logical framework for national adolescent health programming
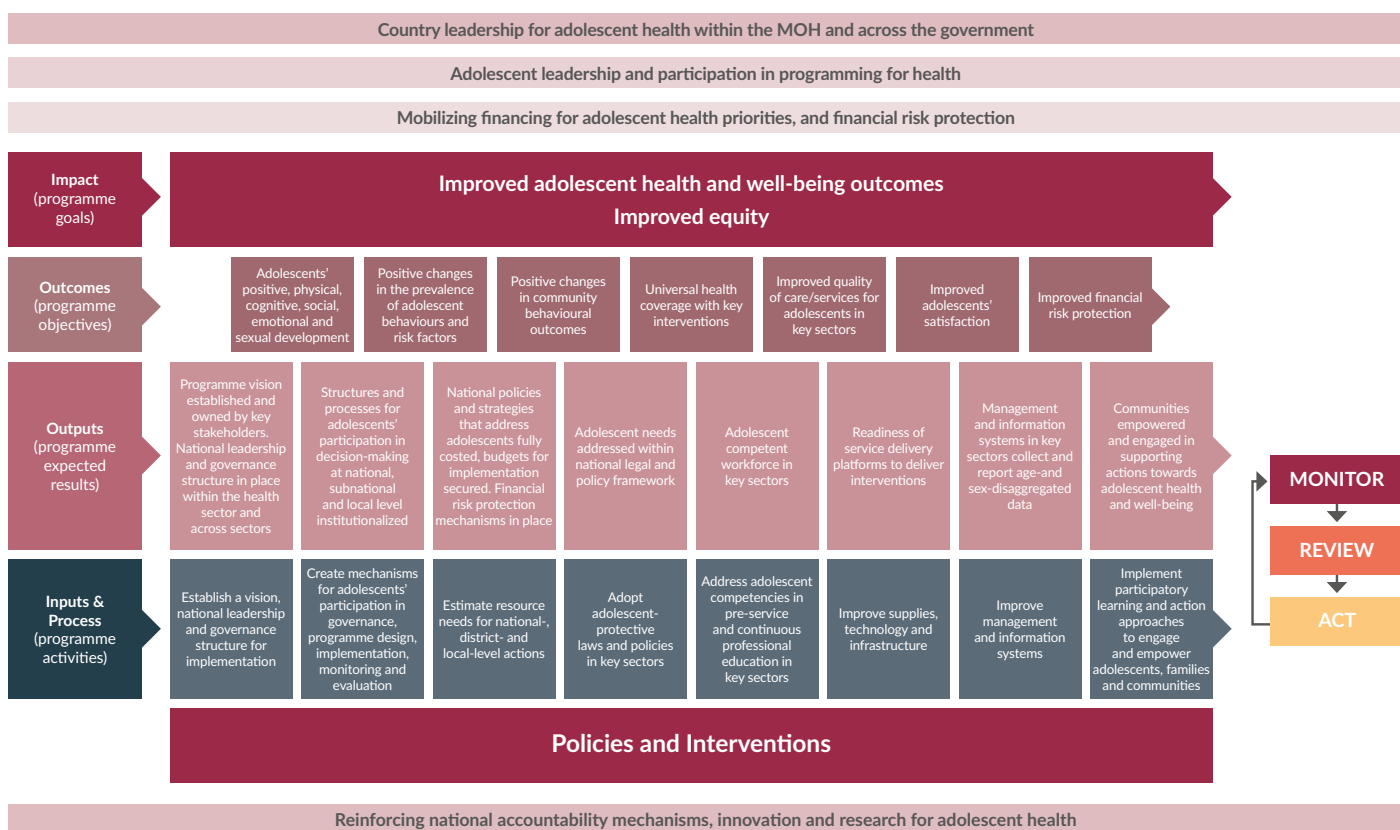
Executive summary

To accelerate progress towards universal health coverage, countries may consider institutionalizing national adolescent health programmes, with a broad scope across health priorities. In such a case, the adolescent health focal point in the Ministry of Health would also be the coordinator of the national adolescent health programme.

To address broader determinants of health, and to achieve other SDG targets beyond universal health coverage, other sectors will play key roles, supported by the health sector. Governments should ensure that there is an adolescent health focus in all policies as part of the routine strategic and operational planning of all relevant sectors. Intersectoral action will be necessary with education, social protection, roads and transport, telecommunications, housing and urban planning, energy, water and sanitation, and environment, as well as the criminal justice system.

Intersectoral programmes are likely to be necessary to make progress in complex areas such as the prevention of non-communicable diseases, suicide, early pregnancy and substance use. Alongside progress in primary and secondary school enrolment, school health programmes that address key priorities in an integrated way are a high priority for intersectoral action on adolescent health.

The health sector should systematically participate in the strategic and operational planning of these sectors to ensure that an Adolescent Health in All Policies (AHiAP) approach is practised in policy formulation, implementation, monitoring and evaluation. AHiAP could be facilitated by establishing a national coordinating group that oversees efforts for adolescent health and well-being across sectors and ministries.

Every school should become a health-promoting school in accordance with WHO guidelines. Countries that do not have an institutionalized national school health programme should consider establishing one. Countries that do have such programmes should continually evaluate and improve them to ensure that they align with the up-to-date evidence base on effective interventions and emerging priorities

Adolescent leadership and participation should be actively supported during the design, implementation, monitoring and evaluation of adolescent health programmes. In addition, an equity lens should inform planning at all stages of programming, from identifying goals, targets and objectives to planning and monitoring interventions, services and activities. Specific strategies for marginalised groups are essential as they carry the highest risks and are usually the hardest to reach - they may live in remote areas, not attend school or work in domestic service or the informal sector.

Section 6.
Adolescent health programme monitoring, evaluation and research

Each step and each important activity within the logical framework for national adolescent health programming (Figure I) needs to be considered separately during monitoring and evaluation. Where possible, adolescent health programmes should monitor the full range of indicators – including inputs and processes, outputs, outcomes and impact – because these answer different questions.

To monitor programmes, and especially their outcomes and impact, the Global Strategy lists 60 indicators, 43 of which are either adolescent-specific (e.g. adolescent mortality rate) or include adolescents (e.g. experience of sexual violence).

Countries should collect and use data on these indicators to monitor their progress towards the SDGs and, within the health sector specifically, to monitor progress towards universal health coverage. At a very minimum, they should monitor the 16 key indicators, twelve of which are relevant to adolescents. In the national context, selected indicators for monitoring inputs, processes and the outputs unique to a country's context also need to be measured. This will drive improvements in programme effectiveness, efficiency and sustainability. Where resources are limited, the most important indicators will be those that will drive local decisions and action.

Section 6 provides examples of indicators of all of these types to measure the extent to which a programme is supporting an adolescent-responsive national health system. In addition, examples of three specific intersectoral programmes (to reduce adolescent pregnancies, a school health programme and an adolescent mental health programme) are outlined to illustrate how countries can measure each of their inputs and processes, outputs, outcomes and impacts.

Possible data sources for adolescent health-related indicators at the national level are also outlined in Section 6, including those that address adolescent health outcomes; service availability, provision and readiness; policies, legislation and regulation; programme funding and resources; and processes available to support an adolescent health programme. The Health Data Collaborative is working with countries to improve the availability, quality and use of data for local decision-making and tracking of progress toward the health-related SDGs. Periodic evaluations of adolescent health programmes are essential and should build on routinely collected monitoring data.

Adolescent programmes face special challenges related to the rapid physical, emotional and social changes that take place during adolescence, making it essential to disaggregate data by age (i.e. five-year age groups) and sex. Monitoring of equity and adolescent rights is also critically important. In addition, adolescents themselves should participate in programme monitoring, evaluation and research. Special attention should be given to ensuring that they are meaningfully involved in such efforts, taking into account their evolving capacities and needs for appropriate protection. Countries should also consider establishing youth-led data collection mechanisms to ensure youth engagement with the implementation and accountability of the SDGs.

Three recent global exercises to set adolescent health-related research priorities show that priorities have shifted away from basic questions about adolescent health status towards how best to scale-up existing evidence-based interventions and test the effectiveness of new ones.

Section 7.
Conclusion

This is an exciting time for adolescent health. In many countries, adolescent health services and programmes are no longer simply subsumed under those for children or adults. Instead, numerous governments have developed adolescent-specific national health programmes. These efforts vary greatly within and between countries and regions, but many countries have succeeded in scaling up basic sexual and reproductive health (SRH) education in schools and providing SRH services and commodities to adolescents through health facilities. Encouragingly, some countries are also working to expand adolescent health programmes to include other priorities, such as injuries and violence, communicable and noncommunicable diseases, nutrition and physical activity and mental health and substance use.

Much remains to be done, however. Many adolescent health concerns are major contributors to adolescent and adult mortality and ill health, such as mental health, nutrition, violence and injuries. However, they have often been neglected and warrant specific country-level programming. Strategies for participatory learning and action with adolescents need urgent evaluation as they could be highly cost-effective in improving adolescent health and also in reducing the future adult burden of disease.

Today, while much research still needs to be done to strengthen the evidence base and to discover and test new interventions and approaches, evidence-based interventions and tools already exist to address these challenges effectively. Governments also have strong economic, public health and human rights arguments to do so. And by doing this they will harness the triple dividend of benefits for adolescents now, for their future adult lives and for the next generation.

It is important that governments and their partners learn as they implement adolescent health programmes based on the AA-HA! Guidance and the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) as a whole. Learning platforms will assist with sharing experiences, so that the AA-HA! Guidance becomes a living document.

1. AA-HA! – A never-before moment for adolescent health

Key messages

- The 2030 Agenda for Sustainable Development cannot be achieved without investment in adolescent health and well-being, including fulfilment of its goals related to poverty, hunger, education, gender equality, water and sanitation, economic growth, human settlement, climate change and peaceful and inclusive societies.

- Such investment brings a triple dividend: benefits for adolescents now, for their future adult lives and for their children.

- Adolescence, as one of the most rapid and formative phases of human development, has important implications for national policies and programmes. The distinctive physical, cognitive, social, emotional and sexual development that takes place during adolescence demands special attention in national development policies, programmes and plans.

- Adolescence is also the period when many risk or protective behaviours begin or are consolidated. These will have major effects on future adult health.

- Representing one sixth of the world's population, adolescents bear a substantial proportion of its disease and injury burden. Each country's particular adolescent risk factors and burdens require targeted attention within national programming.

- Investment in adolescent health will build on earlier gains in young child health, and will further enable adolescents to become healthy adults who are equipped to contribute positively to society.

- National governments can act now to protect and promote the health of their adolescents, by:

  - identifying the greatest needs related to adolescent well-being, injury and disease burdens and risk factors for future adult illness;

  - determining which interventions are most effective, appropriate and acceptable; and

  - implementing a tailored package of interventions, a set of mechanisms to deliver them and a monitoring and evaluation plan.

1.1.
A call for accelerated action for the health of adolescents

Today there is an unprecedented opportunity for adolescent health. Globally, there is an increasing sense of urgency that something different must be done to respond more effectively to the needs of adolescents. The rapid physical, cognitive and psychosocial growth and development that takes place between the ages of 10 and 19 years influences an individual for the rest of his or her life. In addition, adolescents experience a substantial proportion of the global population's disease and injury burden. Many of these conditions are preventable or treatable, but to date they have been neglected and need more sustained focus and investment. Recognizing the critical importance of adolescent development – and investing sufficiently to fully promote and protect adolescent health and well-being – is key to sustainable development.

The global community is responding to this call for action. In September 2015, the United Nations Secretary-General launched the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) (the Global Strategy) in support of the 2030 Agenda for Sustainable Development (51). The Global Strategy envisions a world in which every woman, child and adolescent realizes their rights to physical and mental health and well-being, has social and economic opportunities, and is able to participate

fully in shaping prosperous and sustainable societies. See Section A1.1 in Annex 1 for more information about the Global Strategy (11). This new strategy identifies adolescents as central to achieving the Sustainable Development Goals (SDGs) of the 2030 Agenda, including those related to poverty, hunger, education, gender equality, water and sanitation, economic growth, human settlement, climate change and peaceful and inclusive societies (52).

Building on the momentum created by the 2030 Agenda and the Global Strategy, the 68th World Health Assembly requested the Secretariat of the World Health Organization (WHO) to develop global guidance on how to take accelerated action for the health of adolescents (AA-HA!) (389) . The AA-HA! Implementation Guidance will assist national-level policy-makers and programme managers to respond to the health needs of adolescents in their countries, through setting clear priorities and tailored planning, implementation and monitoring within national plans. Led by WHO, this guidance document was developed in consultation with adolescents and young people, Member States, United Nations agencies, civil society organizations and other partners. Those consultations and the process of development and review of the guidance are described in Sections A1.2 and A1.3 in Annex 1.

1. AA-HA! – A never-before moment for adolescent health

1.2.
Why invest in adolescent health?

A critical, overarching reason to invest in the health of adolescents is that adolescents, like all people, have fundamental rights to life, development, the highest achievable standards of health and access to health services (see Section A1.4 in Annex 1 for more information on adolescent rights). These are supported by global human rights instruments, to which almost all countries are signatories (14); (15); (53).

More specifically, it is becoming increasingly clear that promoting and protecting adolescent health will lead to great public health, economic and demographic benefits (4); (54); (55); (56); (57); (58); (59); (60); (61). Investments in adolescent health bring a triple dividend of health benefits (55):

- **For adolescents now** – promotion of positive behaviours (e.g. good sleep habits and constructive forms of risk-taking, such as sport or drama) and prevention, early detection and treatment of problems (e.g. substance use disorders, mental disorders, injuries and sexually transmitted infections) can immediately benefit adolescents.

- **For adolescents' future lives** – support for establishing healthy behaviours in adolescence (e.g. diet, physical activity and, if sexually active, condom use) and reduction of harmful exposures, conditions and behaviours (e.g. air pollution, obesity and alcohol and tobacco use) will help set a pattern of healthy lifestyles and reduce morbidity, disability and premature mortality later in adulthood.

- **For the next generation** – promotion of emotional well-being and healthy practices in adolescence (e.g. managing and resolving conflicts, appropriate vaccinations and good nutrition) and prevention of risk factors and burdens (e.g. lead or mercury exposure, interpersonal violence, female genital mutilation, substance use, early pregnancy and pregnancies in close succession) can help protect the health of future offspring.

Investing in adolescent health maintains and reinforces successful health interventions that children benefited from in early childhood, and rectifies earlier health deficits. Conversely, gains made through substantial investment in maternal and child health programmes over recent decades are at risk of being lost if there is insufficient investment in adolescent health programming today (62).

In addition, improved adolescent health brings economic and larger societal benefits. This occurs through greater productivity, reduced health costs and enhanced social capital (59). In low- and middle-income countries (LMICs), investment in adolescent health is likely to result in declines in mortality and fertility rates, which can contribute to accelerated economic growth. With fewer births each year, a country's young dependent population grows smaller in relation to the working-age population (aged 15–64 years), creating a window of opportunity for rapid economic growth (4); (58). In high-income countries (HICs) as well, investment in the health and well-being of low-income adolescents, including those who have high birth rates and are more exposed to risk factors for ill-health, can help to break the transmission of poverty and disadvantage across generations (63); (64).

Investment in adolescent health is also essential to achieve the 17 SDGs and their 169 targets, each of which relates to adolescent development, health or well-being directly or indirectly. Some SDGs, such as those addressing health and food security, broadly encompass the health and well-being of adolescents within their targets for broader populations. Others specifically address adolescents, as summarized in Box 1.1.

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Box 1.1. Sustainable Development Goal targets that specifically address adolescents

- Reduce at least by half the proportion of children living in poverty in all its dimensions according to national definitions (Target 1.2).

- Address the nutritional needs of adolescent girls (Target 2.2).

- Ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes (Target 4.1).

- Substantially increase the number of youth who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship (Target 4.4).

- Eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for children in vulnerable situations (Target 4.5).

- Ensure that all youth achieve literacy and numeracy (Target 4.6).

- Build and upgrade education facilities that are child sensitive and provide safe, non-violent, inclusive and effective learning environments for all (Target 4.a).

- End all forms of discrimination against all girls every-where (Target 5.1).

- Eliminate all forms of violence against all girls in the public and private spheres, including trafficking and sexual and other types of exploitation (Target 5.2).

- Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation (Target 5.3).

- Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of girls at all levels (Target 5.c).

- Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of girls (Target 6.2).

- Achieve full and productive employment and decent work for all young people, and equal pay for work of equal value (Target 8.5).

- By 2020, substantially reduce the proportion of youth not in employment, education or training (Target 8.6).

- Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms (Target 8.7).

- By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization (Target 8.b)

- Provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of children (Target 11.2).

- Provide universal access to safe, inclusive and accessible green and public spaces, in particular for children (Target 11.7).

- Promote mechanisms for raising capacity for effective climate change-related planning and management in least-developed countries and small island developing states, including focusing on youth (Target 13.b).

- End abuse, exploitation, trafficking and all forms of violence against and torture of children (Target 16.2).

Finally, investing in adolescent health is vitally important because it is a unique phase of human development and also because of the particular disease and injury burdens that are borne by adolescent populations. The remainder of this section will focus on those two topics before discussing the need for tailored approaches to adolescent health interventions and priority setting within national adolescent health programming.

1. AA-HA! – A never-before moment for adolescent health

1.3.
Adolescence – a unique, formative stage of human development

The 1.2 billion adolescents in the world today represent more than one sixth (18%) of the global population (65). They are extremely diverse, differing in culture, nationality, wealth, education, family and many other ways, which can have a great impact on their health and well-being. Nonetheless, across all societies and settings, adolescents share key developmental experiences as they transition from childhood to adulthood. These include rapid physical growth, hormonal changes, sexual development, new and complex emotions, an increase in cognitive and intellectual capacities, moral development and evolving relationships with peers and families (19).

Adolescent well-being is based on positive physical, sexual, neurological and psychosocial health and development (65); (66); (67); (68). Positive physical health in adolescence includes experiencing puberty (i.e. the biological onset of adolescence), having adequate sleep, drinking clean water, breathing clean air, being injury-free, having a nutritious diet, being fit and being free of substance use and addiction. During adolescence, young people also develop their sexual identities. Some start to have sexual relationships and enter into unions and form families, in some cases unwillingly (69). Positive sexual health has physical, emotional, mental and social components. It includes preventing infection with the human immunodeficiency virus (HIV) and other sexually transmitted infections, and not having early or unwanted

pregnancies or unsafe abortions, but it is not merely the absence of disease, dysfunction or infirmity. Sexual well-being involves an informed and respectful approach to sexual relationships and, if an individual is sexually active, having safe and mutually consenting sexual experiences (70).

Positive neurological development in adolescence is facilitated by constructive forms of risk-taking and learning and experiences to stimulate positive brain connections. Positive psychosocial health in adolescence includes having a positive sense of identity and self-worth; sound family and peer relationships; freedom from violence and discrimination; an opportunity to learn and be productive; a capacity to use cultural resources to maximize development; and opportunities to make decisions, develop values and cultivate social skills and concern for justice through group activities. For those adolescents already living with chronic physical or psychological conditions or disabilities, health implies that they have positive coping strategies, are as active as possible, adhere to treatment and remain connected to care and support services.

"We sometimes do homework until late at night. Some classmates live far away and have to get up very early, at about 6:00 am, to go to school every day. Their sleeping time is less than the classmates who live closer to school, so they fall asleep during lessons. They are unable to concentrate on the lessons."

**Adolescent girl in Hong Kong
(Special Administrative Region of China)**
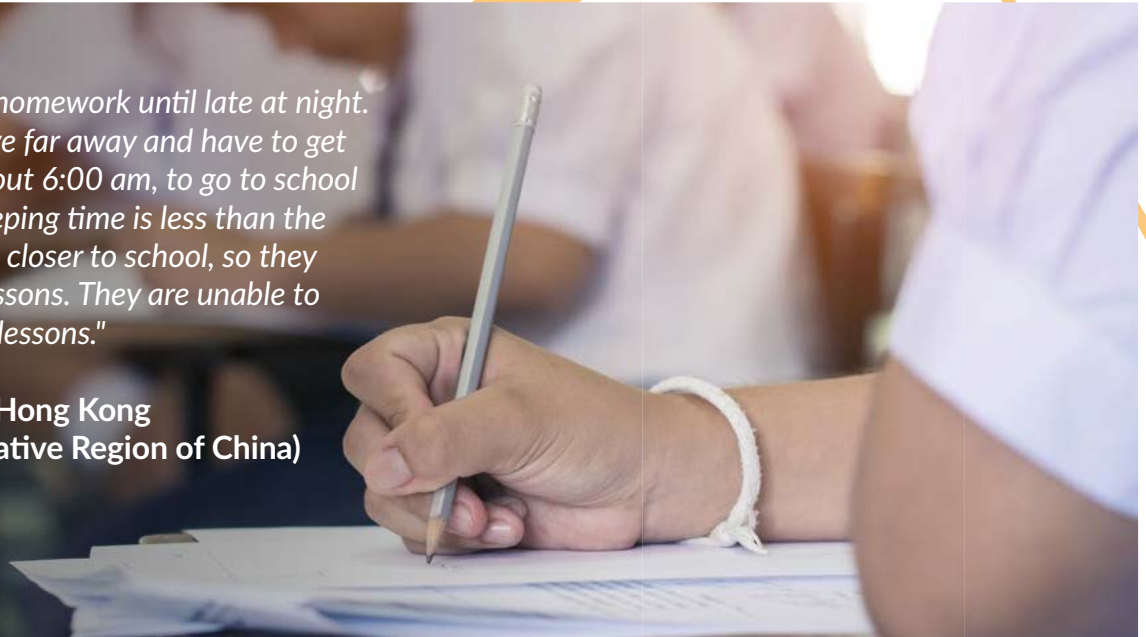
Critically, adolescents are not simply old children or young adults. The range of determinants that influence human health take particular forms and have unique impacts in adolescence (71).

Figure 1.1 illustrates how such determinants can influence adolescent health at the individual, interpersonal, community, organizational, environmental, structural and macro levels of an ecological model.

Figure 1.1. Examples of factors at different ecological levels that have unique impacts in adolescence

Individual	Rapid, physical, neurocognitive and psychosocial changes, e.g. hormonal changes and puberty; new and complex sensations and emotions; sexual awareness and gender identity; burst of electrical and physiological brain development; enhanced and evolving cognitive ability; context- influenced emotional and impulse control
Interpersonal	Evolving social competence; increased engagement beyond the family; questioning of authority, increasingly autonomous decision-making, heightened significance of peer relationships, formation of romantic relationships
Community	Increasing interest in fairness and justice; influence of community values and norms, e.g. related to gender and age
Organizational	More years in education and training due to the expansion of primary and secondary education; later onset of employment and family formation; more independent involvement in health services, which may be ill prepared to serve adolescents' special needs
Environmental	Water and sanitation facilities (e.g. menstruating girls); road infrastructure (e.g. as pedestrians without adult accompaniment); air quality and fire safety (e.g. girls cooking using unsafe stoves)
Structural	Limited access to practical resources (e.g. finances, transportation) Limited representation in decision-making bodies and few opportunities for lobbying; policies to protect health and rights, e.g. sexual and reproductive health
Macro	Increased vulnerability in humanitarian and fragile settings; increased vulnerability to some aspects of globalization (e.g. increased vulnerability to gaming, online bullying due to internet and social media exposure)

1. AA-HA! – A never-before moment for adolescent health

1.3.1.
Determinants at the individual level

At the individual level, physical changes in adolescence begin with a growth spurt that is soon followed by further development of the sex organs and secondary sexual characteristics. This can be both a source of anxiety and excitement or pride for the individual whose body is undergoing the transformation (65). Hormonal changes lead girls to experience their first menstruation (menarche), while boys will have their first ejaculation (semenarche) (19). The physical growth of puberty is accompanied by new and complex sensations and emotions, including concerns about body image, sexual desire and gender identity (19). All of these changes mean that young adolescent girls and boys should have timely advice, support and protection, and be enabled to make safe, healthy and informed choices as they transition through puberty.

Early adolescence is also a period when the brain undergoes atremendous burst of neuro-physiological development (65).

Total cerebral volume peaks during early adolescence, and neural networks are radically reorganized in ways that have impacts on emotional, physical and mental ability (65), (72). Changes occur more rapidly in certain regions of the brain, such as the limbic system, which are responsible for pleasure seeking, reward processing, emotional response and sleep regulation (73). Changes take place at a somewhat slower rate in the pre-frontal cortex, the area responsible for decision-making, organization, impulse control and planning for the future (73); (75). These developments start later and take longer in boys than girls, so boys' tendencies to act impulsively and to be uncritical in their thinking generally lasts longer than in girls (65). This is not to suggest that young adolescents are incapable of decision-making or planning for their futures (73). In fact, some of the changes in social and emotional processing that take place during adolescence increase adolescents' ability to adjust to changing social contexts (74).

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Neurological developments in adolescence have implications for the propensity to exploration, experimentation and risk-taking that often occurs during this stage of life. Importantly, biological maturity precedes psychosocial maturity and, to some extent, this contributes to a different balance between adolescents' physical capacities, their sensation seeking and their capacity for self-control compared to adults (73). Nonetheless, most adolescents are able to explore and experiment in ways that contribute to their positive development and do not adopt behaviours that undermine their health. By late adolescence, young people are more capable of abstract thinking, analysis, reflection and rational judgement (65).

"I think getting older is kind of fun, because you get to do new things, and you get to learn new things."

Young adolescent boy in the USA

The evolving nature of children's physical, emotional and cognitive capacities means that adolescents' potential to be autonomous increases as they grow older, and this has important implications for national policies and legislation. Such guiding documents should be informed by an understanding of adolescents' developmental stages to ensure that adolescents' right to protection does not come into conflict with their emerging right to autonomy (15); (73).

1.3.2.
Determinants at interpersonal and community levels

At interpersonal and community levels, new social skills and competencies develop during adolescence and family and peer relationships are transformed. Early adolescents begin defining their own values and morals, have an interest in fairness and justice and may test limits (65); (73). They seek greater independence and responsibility and wish to disengage from parental control while asserting more autonomy over their decisions, emotions and actions. As they increasingly move outside of the confines of their families and start taking independent decisions – ranging from whom they spend time with to what food they eat – it is important to give them information about the changes they are experiencing, and how they can protect themselves from risks. Awareness and concern about peer opinions tend to be particularly important in early adolescence.

"My friend is important to me, because she helps me settle down with everything that I go through, like stress. We made a pact that, even with what we are going through in school – like me and her get bullied – we have to try to bring home only As and Bs on our report cards, because we both want to get into a good high school."

Young adolescent girl in the USA

In older adolescence, the importance of peer group influence starts to diminish as individuals gain more clarity and confidence in their identity and (65); (76). They also begin to value intimate relationships more. Older adolescents often develop more complex and philosophical understandings of ethics, social issues and human rights. Youth may be involved in political movements in the later teen years, consistent with a growing development of values and concern for their communities. Late adolescence can be a time of opportunity, idealism and promise as young people settle into their particular identities and world views and start to engage actively in shaping their communities and societies (73).

With the rapid expansion of digital media in many countries, interpersonal and social interactions in adolescence have undergone – and continue to undergo – profound changes. This has raised questions about how use of the internet, social media, mobile phones and other new communication technologies may be influencing adolescent development, both positively and negatively (22); (77); (78); (79); (80). For example, adolescents can gain many benefits from regular and reliable access to digital media, including socializing with friends, finding like-minded peers and accessing supportive and diverse information and networks in an empowering way, independent of parents and other adults (80); (81).

"A lot of people say playing video games is just a home sport. But actually you are improving your motor skills when you play with the controller, learning how to manage a situation that is changing gradually and becomes more and more difficult, and trying to solve this problem calmly and without stressing yourself."

Adolescent boy in Hong Kong (China SAR)

However, several important risks also exist, including the electronic equivalent of traditional offline problems such as bullying and access to violent, degrading images or antisocial information (82); (83); (84); (85); (86); (87); (88); (89); (90); (91). Social pressures can be magnified online, with less visibility or moderation by adults.

"Some things like pornography, I don't go into those websites at all, but there are kids next door to us who do watch them."

Young adolescent boy in Egypt

Section A1.5 in Annex 1 describes current research on the impact that digital media exposure has on adolescent health and well-being, and Section A3.1.3 outlines digital media interventions.

1. AA-HA! – A never-before moment for adolescent health

1.3.3.
Determinants from organizational to macro levels

At the organizational level, schools – including primary, secondary, tertiary and vocational institutions – play a vitally important role in promoting and protecting adolescent health. Better education is associated with greater health and well-being across the life course and across very different socioeconomic, cultural and political contexts (92). In particular, the health benefits associated with secondary education (e.g. reduced adolescent fertility, mortality and HIV prevalence) may be even greater than those associated with primary education, especially for females and for residents of LMICs (93). In this way, the global expansion of primary and secondary education in recent decades has been important, as it has led to adolescents spending more years in education and training than ever before. This has contributed to a longer gap between biological maturity (e.g. as measured by menarche) and the assumption of adult roles and responsibilities (e.g. family formation and adulthood) (73).

Health systems also have a crucial influence on adolescent well-being. Adolescents have different health-care needs than younger children and adults, due to their unique and rapidly evolving physical, sexual, cognitive and emotional development (73). Nonetheless, historically most health systems have been focused on services for mothers, younger children and the elderly, and have not provided specific programmes to meet adolescent needs.

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Determinants functioning at the environmental level can also profoundly affect adolescent health and development. The biological environment (e.g. prevalence of malaria or HIV), the chemical environment (e.g. pollutants such as lead, mercury or other endocrine disruptors) and the physical environment (e.g. roads or water and sanitation infrastructure) can have profound effects on adolescent girls and boys (94); (95); (96); (97). For instance, the most sensitive window of exposure to endocrine disruptors is during critical periods of human development, such as puberty. These developmental exposures can cause changes that, while not as evident as birth defects, can induce permanent changes that lead to increased incidence of diseases throughout adult life (96); (98); (99).

At the structural level, policies and laws can affect adolescent well-being in many ways, e.g. by using taxation, health warnings and restrictions on access to prohibit harmful exposure to marketing by the tobacco, alcohol, food and beverage and fashion industries (100); (101); (102); (103). At the macro level, global economic policies and trade agreements can have impacts on adolescent (73). For example, they can incentivize adolescents to stay in school, and influence whether there are fulfilling jobs for them to strive for after they leave school.

Notably, some determinants affect adolescent health and well-being across multiple ecological levels. For example, gender norms affect adolescents' expectations and their sense of what is acceptable and appropriate at the individual level. At the interpersonal level, they may also influence family decisions about allocation of resources and the relative importance of education for boys and girls. At organizational and structural levels, these norms are reflected in inequalities and restrictions in jobs and education (73).

1.4.
Adolescent disease and injury burdens

In addition to health and development needs that are particular to adolescence, as described above, adolescents experience a substantial proportion of the global population's disease and injury burden. In 2012, more than 3500 adolescents died every day (73). In each WHO region, adolescent populations experience a range of major health problems, including unintentional injury, interpersonal violence, sexual and reproductive health (SRH) issues, communicable diseases, noncommunicable diseases (NCDs), and mental health issues.

Section 2 summarizes the main causes of adolescent mortality and morbidity globally, and by region, country income status, gender and age group. Importantly, the overall impact of adolescent health burdens differs greatly between regions. In 2015, for example, more than two thirds of all adolescent deaths and over a half of the DALYs lost occurred in LMICs in Africa (43%) and South-East Asia (27%) (16). In addition, while some causes of adolescent mortality or morbidity have a great impact in all regions (e.g. road injury, lower respiratory infections, drowning and depressive disorders), the nature and relative impact of these and other adolescent burdens differ greatly within and between regions. For example, the leading causes of adolescent mortality in African LMICs are lower respiratory infections and diarrhoeal diseases, but interpersonal violence in Americas LMICs, and collective violence and legal interventions in Eastern Mediterranean LMICs (16). Adolescence is also a period when many risk or protective behaviours start or are consolidated. Examples include diet and physical activity, substance use and sexual behaviour. These will have major effects on future adult health.

Within countries, it is important to consider which subpopulations experience higher exposure and vulnerability to health risks, lower access to health services, worse health outcomes and greater social consequences as a result of ill health. Inequities are often seen among groups that differ by sex, income, education and rural or urban residence (59); (104); (105); (106). Particularly vulnerable adolescents include those living with disabilities or chronic illnesses (e.g. sickle-cell anaemia or HIV), those living in remote areas or caught up in social disruption from natural disasters or armed conflicts (e.g. refugees) and those who are stigmatized and marginalized because of sexual orientation, gender identity or ethnicity. Other vulnerable adolescents are those who are institutionalized or exposed to domestic violence or substance abuse in the family; those who are exploited and abused (e.g. girls working as domestic servants); those who are married or who migrate for work or education without family or social support; those who experience racial or ethnic discrimination; those not in education, employment or training; and those who do not have access to health services or social protection (e.g. poor urban and rural residents or homeless adolescents).

> *"In the past, my dad physically abused my mom a lot. As time went by, my mom left him, but she was indecisive, and he would show up again about once a month. You grow up and mature with this problem. It's a problem that your mom has, but if she's living it, you're also living it.*
>
> *I mean, you grow up absorbing how he acts towards your mom, and you note it so that you don't repeat it."*
>
> **Young adolescent boy in Colombia**

1. AA-HA! – A never-before moment for adolescent health

1.5.
Conceptualizing adolescent health interventions

Today we are fortunate to have a substantial number of evidence-based interventions that have been shown to address major adolescent health conditions effectively. These are included in Section 3, which describes the 27 Global Strategy evidence-based interventions relating to adolescent health, illustrated by detailed intervention examples from WHO and other partners. Many gaps remain in the evidence base for adolescent health interventions (see Section 6), but nonetheless countries can act now with confidence to promote and protect adolescent health and well-being effectively.

Evidence-based adolescent health interventions take many forms, depending on the determinants or conditions of interest, the target population, the particular circumstances and context and the ecological levels and sectors within which an intervention functions best. Some interventions primarily focus on preventing or treating particular adolescent disease or injury burdens, or their risk factors. The latter include the attributes, characteristics or exposures that increase the likelihood of an individual suffering a negative health outcome immediately or in the future (107). Other initiatives can be categorized as positive development interventions, because they primarily promote healthy adolescent physical, sexual, cognitive and psychosocial development. Positive development interventions primarily target protective factors. These are factors that encourage and sustain positive behaviours, reduce the risk of negative health behaviours and outcomes and diminish the effect of, and support recovery from, negative health outcomes (108). See Section A1.6 in Annex 1 for definitions of other key terms used in this document. The positive development approach to adolescent health interventions is described more in Box 1.2. In practice, many adolescent health intervention programmes mix these two broad approaches.

Box 1.2. A positive development approach to adolescent health interventions and programming

A positive development approach focuses on supporting healthy transitions and growth in adolescence, as described in Section 1.3. A broad set of skills, behaviours and personal qualities are promoted to enable adolescents to navigate their environment effectively, relate well with others, perform well and achieve their goals (109). This approach aims to increase adolescents' resilience and protective factors (e.g. a positive school environment and parents who provide structure and boundaries), rather than focusing primarily on reduction of risk factors (e.g. tobacco and alcohol use). It represents an important shift away from interventions that mainly address adolescence as a problematic period of enhanced risk due to unhealthy or maladaptive behaviours (e.g. drug or alcohol use, unsafe sex, crime or violence) (20); (66); (110).

Some authors have specifically focused positive adolescent development interventions on social and emotional well-being, e.g. programmes that seek to bolster the five Cs of adolescent competence, confidence, connection, character and compassion (20); (111). In the AA-HA! Implementation Guidance document, however, positive development interventions are defined more broadly to encompass promotion of positive physical, sexual and neurocognitive health and development in adolescents.

Examples include parenting psychoeducation; adolescent-friendly health services (including promoting health literacy and adolescent engagement in their own care and the design of services); and health-promoting schools (including health, nutrition and hygiene services, such as facilities for safe menstrual hygiene management).

Importantly, a positive development approach recognizes adolescents as assets within their societies rather than problems (112). It seeks to empower them to participate in an active way within their families and communities. Indeed, participation is one of the key principles of a human rights-based approach to health, including the participation of adolescents in ways that are appropriate to their age and maturity (14); (106). Research suggests there are important protective benefits from adolescents engaging in pro-social, nurturing relationships in meaningful, structured activities with peers and adults (113). Moreover, adolescents' sense of ownership and commitment to a health programme can be strength-ened – and the appropriateness and effectiveness of the programme increased – if adolescents are involved in programme conceptualization, needs assessment, design, implementation and evaluation.

Many effective interventions to address major adolescent conditions are adolescent-specific, i.e. they are directed exclusively, or mostly, to adolescents. Examples include human papillomavirus (HPV) immunization, menstrual hygiene management, provision of school health services and comprehensive sexuality education.

It is important to also recognize that adolescents will benefit substantially from many interventions that are targeted to wider age groups or the population as a whole. For example, reducing urban air pollution contributes significantly to healthier urban environments for children and adolescents. One concrete example is improvements in urban public transport systems linked to safer walking and cycling networks, which will be beneficial for all, but especially for children and adolescents (114). However, if these interventions ignore the specific needs of adolescents, adolescents will often not benefit from them as much as they should. For example, enforcing blood alcohol limits for drivers

is an intervention that should take into account the fact that the impairment of driving skills happens at lower blood alcohol concentration levels in adolescents than in adults. Laws, therefore, should set lower maximum alcohol concentration levels for adolescent drivers. And it is not only structural interventions that need adaptations for the specific needs of adolescents. Many individual-level interventions also need age-appropriate adaptation (e.g. providing additional, adolescent-friendly adherence and disclosure support to adolescents living with HIV).

Section 3 summarizes both types of interventions, but aims to make clear the adolescent-specific aspect of the interventions to highlight the importance of addressing the special needs of adolescents in the design and implementation of interventions at any level of the ecological framework – from structural or environmental to individual.

1.6.
Prioritizing, implementing and evaluating national programming

The examples of varying burdens and intervention approaches above illustrate the need for each country to conduct a careful analysis of its unique circumstances before developing – or improving upon – a national adolescent health plan. Such an undertaking is all the more important than ever before, given changing national and global trends in health and health services, economic development, employment, migration, urbanization, conflict, environmental degradation and technological innovation (55). It is critical for national governments to assess their countries' particular adolescent health needs, determine the most appropriate, evidence-based interventions to address them and then decide what to prioritize within their national adolescent health programming (69). Section 4 provides detailed guidance on how to carry out such a process.

Carefully establishing adolescent health priorities and selecting evidence-based interventions to address them will be insufficient unless effective and efficient national programmes are put in place to deliver them. Section 5 focuses on how to plan and implement such national adolescent health programming, addressing key issues such as multisectoral leadership, resources, financial protection systems, workforce, quality of service, management information systems, policies, adolescent participation, confidentiality and equity.

Finally, well planned and implemented monitoring and evaluation systems are essential to ensure that national programmes achieve their objectives. Research is also essential to drive the effectiveness of adolescent health programmes forward. Section 6 provides guidance on these issues, including particular considerations for adolescents such as the ethical and legal need for permissions, and the involvement and participation of adolescents commensurate with their evolving capacities.

2. Disease and injury burdens, and risk factors

Key messages:

- In 2015, over two thirds of adolescent deaths occurred in low- and middle-income countries (LMICs) in the African (45%) and South-East Asia (26%) Regions. These two areas have large adolescent populations and high rates of adolescent mortality.

- Adolescents worldwide share some common disease and injury burdens. Road injury, drowning, self-harm, lower respiratory infections, iron deficiency anaemia and depressive disorders are highly ranked burdens in most regions.

- Some causes of death or DALYs lost are more common in one sex or in a particular age group. Among males, these include road injury, drowning, interpersonal violence and childhood behavioural disorders; among females, maternal conditions and anxiety disorders; among younger adolescents, lower respiratory infections and iron-deficiency anaemia; and among older adolescents, road injury, self-harm, interpersonal violence and depressive disorders.

- Disease and injury burdens vary in their impact on adolescent populations across the modified WHO regions. Examples where death and/or DALY rates are ranked high in specific regions include:[2]

  – African LMICs – lower respiratory infections, diarrhoeal diseases, meningitis, and HIV/AIDS;

  – Americas LMICs – interpersonal violence and asthma;

  – Eastern Mediterranean LMICs – collective violence and legal intervention;

  – European LMICs – self-harm and depressive disorders;

  – South-East Asian LMICs ¬– diarrhoeal diseases and tuberculosis;

  – Western Pacific LMICs – leukaemia and skin diseases; and

  – High-income countries – congenital anomalies and depressive, anxiety and childhood behavioural disorders.

- For 10–14 year olds, unsafe water, unsafe sanitation and inadequate hand washing are the leading three health risk factors for both boys and girls.

- For 15–19 year olds, health risk factors such as alcohol and tobacco use, unsafe sex and drug use also become very important, along with intimate partner violence and occupational hazards.

- Adolescent health needs intensify in humanitarian and fragile settings, including from burdens related to: malnutrition; disability; unintentional injury; violence; sexual and reproductive health needs (e.g. early pregnancy, HIV and other STIs, and unsafe abortion); water, sanitation and related health needs (e.g. menstrual hygiene management); and mental health.

This section describes major disease and injury burdens[3] that affect adolescent well-being. Section 2.1 begins with an overview of adolescent burdens, globally and by WHO Region, country income status, sex and age. Sections 2.2 to 2.7 then give more details about each of the main burdens under six broad health areas. Finally, Section 2.8 details the particular nature of adolescent burdens in humanitarian and fragile settings.

The data displayed here are from the WHO Global Health Estimates (GHE) 2015[4] for mortality and burden of disease (16a); (16b). The changes between the GHE 2012 estimates and the GHE 2015 estimates may either reflect an underlying change in the actual cause-specific mortality rate or DALYs lost, or a change in the methods and assumptions used in its estimation. In some cases the changes due to differences in the assumptions or models used make a large difference to the relative rank of a cause of death and DALYs lost. A notable example is death from

AIDS, which was estimated to be the leading global cause of death among 10–19 year olds in GHE 2012, but was ranked eighth in the GHE 2015 estimates. This result is largely due to changes in the methods used to estimate the age and sex-specific HIV burden. AIDS remains the fourth leading cause of death among 10–19 year olds in African LMICs, despite improvements in detection, treatment and care.

The relative rankings of cause of death and burden of disease reflect the best of our knowledge at this time given the availability and quality of data on cause of death, and the prevalence and incidence of disease worldwide. As data quality improves, the estimates will become more robust and the picture may change for certain regions. Nonetheless, there are important steps that can be taken now to improve survival, health and well-being for all adolescents.

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[2]Note this does not preclude a rate being higher in another region even if it is not in the top five for the region. A ranking reflects the impact of a cause of death or DALY lost relative to other causes in the regional population. [3]All absolute numbers, rates and rankings cited in this section are from the 2015 Global Health Estimates. Annex 1 Section 1.2.2 describes the Global Health Estimates methodology and analysis, while Table 3.1 lists the 27 Global Strategy adolescent health interventions. [4]These differ substantially from the 2012 estimates that were reported in the Health for the World's Adolescents Report (2014) and are not directly comparable to earlier estimates produced by WHO.

2.1.
Global burdens and risk factors

An estimated 1 213 067 million adolescents aged 10–19 years died in 2015. Table 2.1 lists the five leading causes of adolescent death globally by sex and age group, and these are displayed graphically in Figure 2.1. Road injury is the leading cause of death in males of both age groups, but for females the leading cause of death changes from lower respiratory diseases in younger

adolescents to maternal conditions for older adolescents. Some causes have a particularly high ranking only among males (e.g. drowning) or females (e.g. maternal conditions), or among younger (e.g. lower respiratory infections) or older adolescents (e.g. interpersonal violence and self-harm).

Table 2.1. Leading causes of adolescent deaths globally by sex and age group

Global Causes of Death (death rate per 100,000 population)								
Rank	10–14 year olds			15–19 year olds			10–19 year olds		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Road injury (6.8)	Lower respiratory infections (7.3)	Lower respiratory infections (6.7)	Road injury (22.0)	Maternal conditions (10.1)	Road injury (14.4)	Road injury (14.3)	Lower respiratory infections (6.3)	Road injury (9.6)
2	Drowning (6.8)	Diarrhoeal diseases (5.2)	Drowning (5.2)	Interpersonal violence (12.4)	Self-harm (9.6)	Self-harm (9.4)	Interpersonal violence (6.8)	Self-harm (5.6)	Lower respiratory infections (6.1)
3	Lower respiratory infections (6.1)	Meningitis (5.0)	Road injury (5.1)	Self-harm (9.1)	Road injury (6.1)	Interpersonal violence (7.6)	Drowning (6.6)	Diarrhoeal diseases (5.6)	Self-harm (5.6)
4	Diarrhoeal diseases (4.8)	AIDS[a] (3.9)	Diarrhoeal diseases (5.0)	Drowning (6.4)	Diarrhoeal diseases (5.9)	Diarrhoeal disease (5.6)	Lower respiratory infections (5.8)	Maternal conditions (5.0)	Diarrhoeal diseases (5.3)
5	Meningitis (4.1)	Congenital anomalies (3.6)	Meningitis (4.5)	Lower respiratory infections (5.5)	Lower respiratory infections (5.4)	Lower respiratory infections (5.5)	Self-harm (5.6)	Road injury (4.6)	Drowning (4.8)

[a]2015 estimates rank AIDS lower than previous estimates because of a reassessment by UNAIDS of inputs into the Spectrum model used to produce the estimates. Re-analysis of 2012 estimates suggested that the high ranking of AIDS as second cause of adolescent deaths globally was overestimated. Nevertheless, AIDS remains one of the leading causes of adolescent death, particularly in African LMICs.
Source: (16a); (16c)

2. Disease and injury burdens, and risk factors

Figure 2.1. Estimated top five causes of adolescent death by sex and age, 2015
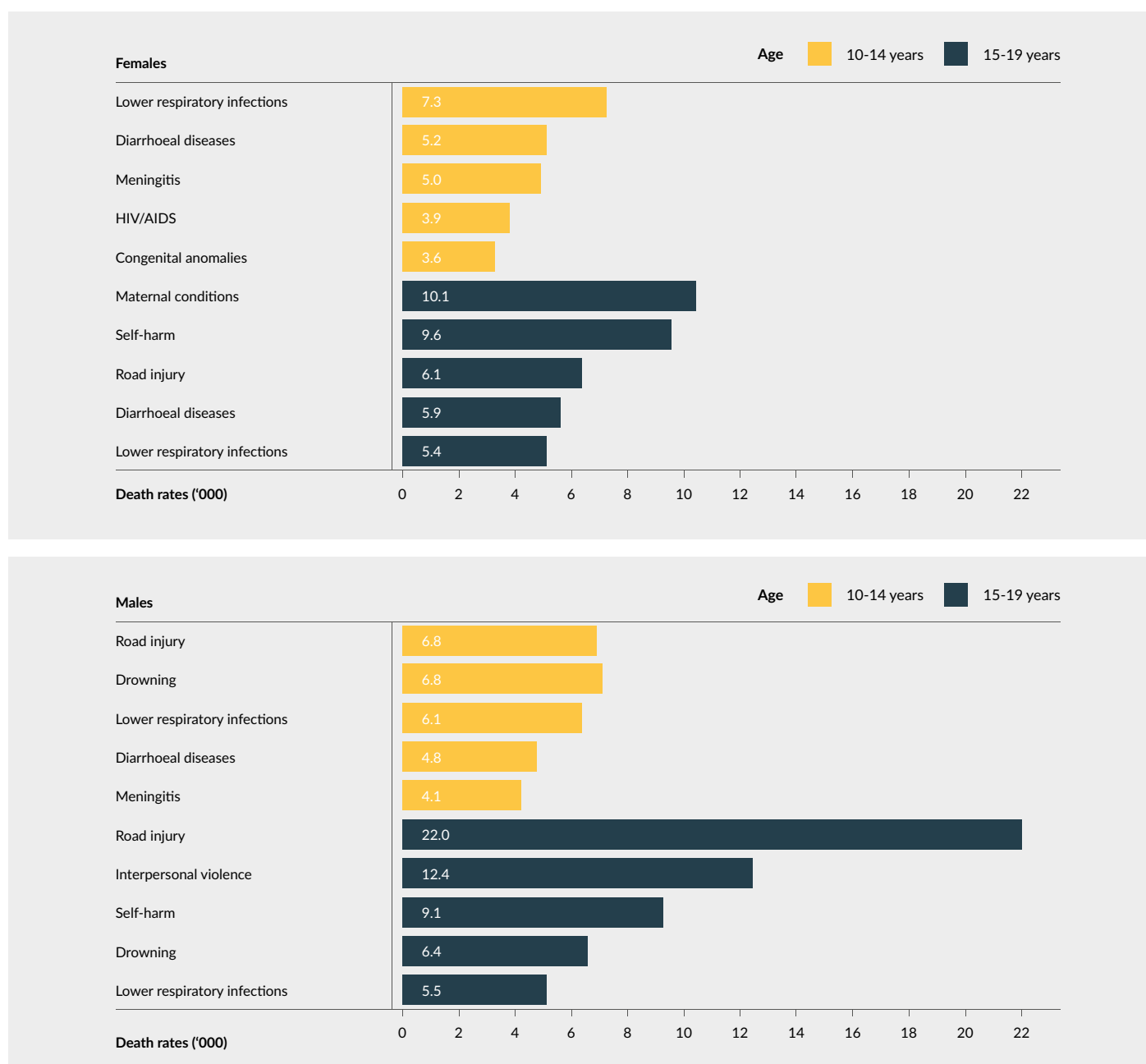
Females

Age ■ 10-14 years ■ 15-19 years

Cause	Death rate
Lower respiratory infections	7.3
Diarrhoeal diseases	5.2
Meningitis	5.0
HIV/AIDS	3.9
Congenital anomalies	3.6
Maternal conditions	10.1
Self-harm	9.6
Road injury	6.1
Diarrhoeal diseases	5.9
Lower respiratory infections	5.4

Death rates ('000)

Males

Age ■ 10-14 years ■ 15-19 years

Cause	Death rate
Road injury	6.8
Drowning	6.8
Lower respiratory infections	6.1
Diarrhoeal diseases	4.8
Meningitis	4.1
Road injury	22.0
Interpersonal violence	12.4
Self-harm	9.1
Drowning	6.4
Lower respiratory infections	5.5

Death rates ('000)

[a]2015 estimates rank AIDS lower than previous estimates because of a reassessment by UNAIDS of inputs into the Spectrum model used to produce the estimates. Re-analysis of 2012 estimates suggested that the high ranking of AIDS as second cause of adolescent deaths globally was overestimated. Nevertheless, AIDS remains one of the leading causes of adolescent death, particularly in African LMICs. Source: (16a); (16c)

Table 2.2 shows adolescent population sizes and overall rates of mortality and DALYs[5] lost, globally and for the seven modified WHO regions.[6] This is shown graphically for adolescent deaths in Figure 2.2. Nearly two thirds of global adolescent deaths and DALYs lost occurred in African LMICs and South-East Asian LMICs – regions that have 19% and 30% of the world's adolescent population respectively.

The highest regional rate of adolescent mortality was in African LMICs (243 deaths per 100 000), followed by Eastern Mediterranean LMICs (115 deaths per 100 000). The lowest rates were one sixth to one tenth of those in African LMICs, i.e. 40 per 100 000 in Western Pacific LMICs and 24 per 100 000 in HICs.

Table 2.2. Adolescent population sizes and overall rates of mortality and DALYs lost, globally and by modified WHO region

Adolescents (10–19 years)	Global	African LMICs	Americas LMICs	Eastern Mediterranean LMICs	European LMICs	South-East Asian LMICs	Western Pacific LMICs	High-income countries
Population in millions (%)	1 197 (100)	225 (19)	108 (9)	117 (10)	50 (4)	362 (30)	201 (17)	130 (11)
Deaths in thousands (%)	1 213 (100)	545 (45)	83 (7)	134 (11)	28 (2)	310 (26)	80 (7)	31 (3)
Mortality rate (deaths per 100,000 adolescents)	101	243	77	115	55	86	40	24
DALYS lost in millions (%)	168 (100)	58 (35)	13 (8)	18 (11)	5 (3)	47 (28)	17 (10)	10 (6)
DALY rate (DALYS lost per 100,000 adolescents)	14 078	25 936	11 784	15 713	9 770	13 112	8 276	7 545

[5]The disability-adjusted life year (DALY) measure combines an individual's estimated years of life lost through premature death and estimated years of life lived in states of less than optimal health (WHO 2013b). The sum of DALYs across a population is a way to measure the gap between current health status and an ideal health situation in which the entire population lives to an advanced age, free of disease and disability. [6]To construct the seven modified WHO regions, all high-income countries were extracted from each of the six WHO regions into a separate group of high-income countries (HICs). Data from the 2015 Global Health Estimates were then analysed for that group, as well as for the remaining low- and middle-income countries (LMICs) grouped in each of the six WHO regions. See Annex 1, Section A1.2.2 for more information.

Figure 2.2. Estimated adolescent deaths by population size and modified WHO region, 2015.
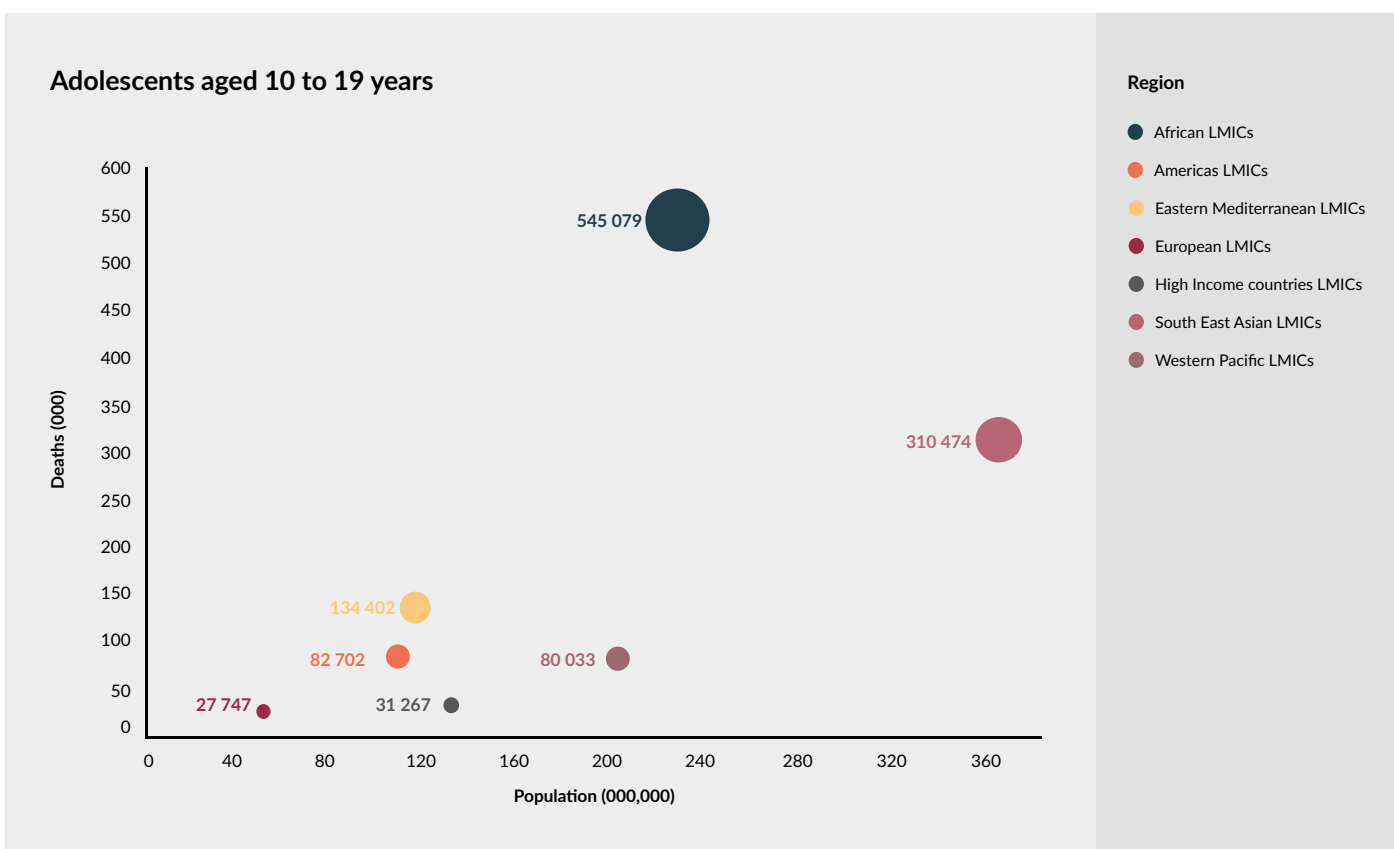
2. Disease and injury burdens, and risk factors

Global adolescent death rates are estimated to have fallen by approximately 17% since 2000 (16a). The decline in death rates has been mirrored in most of the modified WHO regions with South-East Asian LMICs, HICs, European LMICs and Western Pacific LMICs showing the largest relative declines (30–37%) followed by African LMICs (25%). Americas LMIC and Eastern Mediterranean LMICs have not seen the same magnitude of mortality reductions with deaths rates falling by 5% and 2% respectively.

Some of the major conditions contributing to the large regional differences in adolescent disease burden are shown in Table 2.3 and Figure 2.3, which give the top five causes of adolescent deaths in each of the seven modified WHO regions.

Table 2.3 illustrates that some conditions are major causes of death across most or all regions, e.g. road injury, self-harm and drowning. The table also shows conditions that are only high-ranking burdens in specific modified WHO regions, i.e. meningitis and AIDS in African LMICs; diarrhoeal diseases and tuberculosis in South-East Asian LMICs; interpersonal violence in HICs, Americas LMICs and Eastern Mediterranean LMICs; collective violence and legal intervention in Eastern Mediterranean LMICs; congenital anomalies in European LMICs, HICs and Western Pacific LMICs; and leukaemia in Western Pacific LMICs.

Table 2.3. Leading causes of adolescent death by modified WHO region, 10–19 year olds (death rate per 100,000 population)

Rank	African LMICs	Americas LMICS	Eastern Mediterranean LMICs	European LMICs	South-East Asian LMICs	Western Pacific LMICS	High-income countries
1	Lower respiratory infections (21.8)	Interpersonal violence (22.6)	Collective iolence and legal intervention (23.2)	Self-harm (7.6)	Road injury (10.5)	Road injury (8.0)	Road injury (4.6)
2	Diarrhoeal diseases (19.8)	Road injury (10.9)	Road injury (9.8)	Road injury (5.6)	Self-harm (8.7)	Drowning (4.3)	Self-harm (4.1)
3	Meningitis (18.3)	Self-harm (4.8)	Drowning (5.4)	Drowning (4.0)	Drowning (4.8)	Leukaemia (2.4)	Inter-personal violence (1.8)
4	AIDS[a] (17.2)	Drowning (3.3)	Lower respiratory infections (4.4)	Lower respiratory infections (3.0)	Diarrhoeal diseases (3.8)	Self-harm (2.2)	Congenital anomalies (1.2)
5	Road injury (12.9)	Lower respiratory infections (2.5)	Interpersonal violence (4.0)	Congenital anomalies (2.1)	Tuberculosis (3.5)	Congenital anomalies (1.6)	Leukaemia (0.8)

[a]2015 estimates rank AIDS lower than previous estimates because of a reassessment by UNAIDS of inputs into the Spectrum model used to produce the estimates. Re-analysis of 2012 estimates suggested that the high ranking of AIDS as second cause of adolescent deaths globally was overestimated. Nevertheless, AIDS remains one of the leading causes of adolescent death, particularly in African LMICs. Source: (16a); (16c)

Figure 2.3. Estimated top five causes of adolescent deaths by modified WHO region, 2015.

Adolescents aged 10 to 19 years
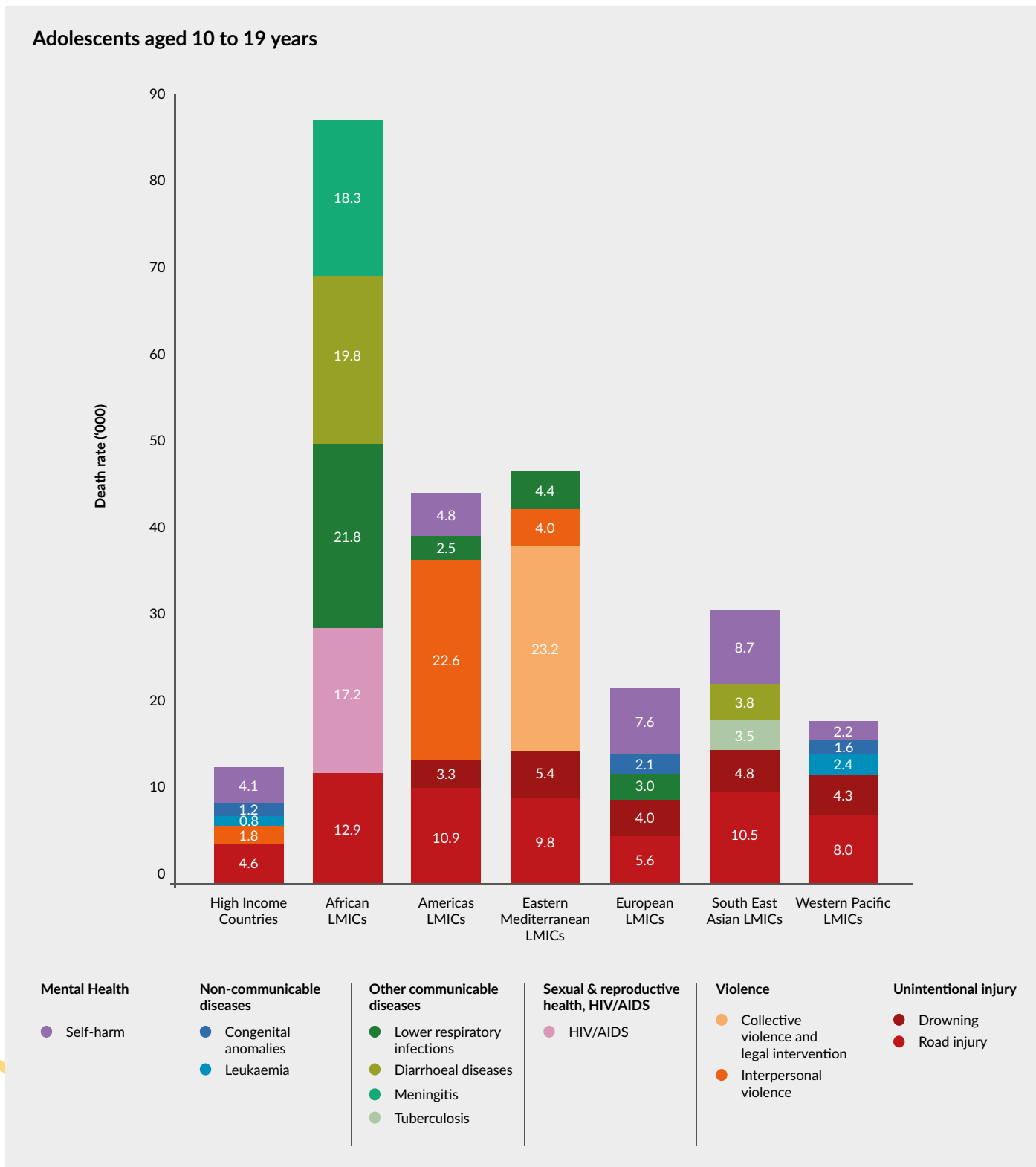
2. Disease and injury burdens, and risk factors

Table 2.4 and Figure 2.4 show the leading five causes of global adolescent DALYs lost, by sex and age group. Iron-deficiency anaemia is notable as the leading cause of DALYs lost for 10- to 14-year-old girls and boys, as well as for 15- to 19-year-old girls.

Some causes of DALYs lost only have a particularly high ranking among males (e.g. road injury and drowning) or females (e.g. anxiety and maternal conditions), or among younger (e.g. lower respiratory infections) or older adolescents (self-harm and depressive disorders).

Table 2.4. Leading causes of adolescent DALYs lost globally and by sex and age group

Global causes of DALYs lost (DALY rates per 100 000 population)									
Rank	10–14 year olds			15–19 year olds			10–19 year olds		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Iron-deficiency anaemia (1 365)	Iron-deficiency anaemia (1 161)	Iron-deficiency anaemia (1 267)	Road injury (1 674)	Iron-deficiency anaemia (836)	Road injury (1 094)	Road injury (1 108)	Iron-deficiency anaemia (1 001)	Iron-deficiency anaemia (958)
2	Road injury (558)	Lower respiratory infections (582)	Lower respiratory infections (534)	Interpersonal violence (931)	Depressive disorders (831)	Depressive disorders (712)	Iron-deficiency anaemia (917)	Depressive disorders (572)	Road injury (749)
3	Childhood behavioural disorders (554)	Diarrhoeal diseases (479)	Diarrhoeal diseases (457)	Self-harm (684)	Maternal conditions (789)	Self-harm (701)	Interpersonal violence (518)	Lower respiratory infections (495)	Depressive disorders (491)
4	Drowning (542)	Anxiety disorders (430)	Childhood behavioural disorders (451)	Depressive disorders (600)	Self-harm (718)	Iron-deficiency anaemia (640)	Drowning (511)	Diarrhoeal diseases (489)	Lower respiratory infections (473)
5	Lower respiratory infections (489)	Meningitis (423)	Road injury (415)	Drowning (479)	Anxiety disorders (532)	Interpersonal violence (568)	Childhood behavioural disorders (494)	Anxiety disorders (480)	Diarrhoeal diseases (467)

Source: (16b).

Figure 2.4. Estimated top five causes of adolescent disability-adjusted life years (DALYs) lost by sex and age, 2015.

Age █ 10-14 years █ 15-19 years

Females

Cause	DALY rate ('000)
Iron-deficiency anaemia	1 161
Lower respiratory infections	582
Diarrhoeal diseases	479
Anxiety disorders	430
Meningitis	423
Iron-deficiency anaemia	836
Depressive disorders	831
Maternal conditions	789
Self-harm	718
Anxiety disorders	532

DALY rates ('000)   0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700

Age █ 10-14 years █ 15-19 years

Males

Cause	DALY rate ('000)
Iron-deficiency anaemia	1 365
Road injury	558
Childhood behavioural disorders	554
Drowning	542
Lower respiratory infections	489
Road injury	1 674
Interpersonal violence	931
Self-harm	684
Depressive disorders	600
Drowning	479

DALY rates ('000)   0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700

2. Disease and injury burdens, and risk factors

Table 2.5 and Figure 2.5 show the leading five causes of adolescent DALYs lost for the seven modified WHO regions. Again, this table highlights that some causes of DALYs lost rank in the top five causes in most or all modified regions (i.e. iron-deficiency anaemia, depressive disorders and road injury). In addition, several conditions that were high-ranking causes of adolescent death in particular regions (Table 2.3) were also high-ranking causes of DALYs lost in those regions (Table 2.5) (e.g. infectious diseases collectively in African LMICs; interpersonal violence in Americas LMICs; collective violence and legal intervention in Eastern Mediterranean LMICs; and self-harm in European and South-East Asian LMICs). Other causes of adolescent DALYs lost that were highly ranked within specific modified WHO regions include asthma in Americas LMICs; childhood behavioural disorders in HICs and Eastern Mediterranean, European and Western Pacific LMICs; and anxiety disorders in HICs and Western Pacific LMICs.

Table 2.5. Leading causes of adolescent DALYS lost by modified WHO region, 10–19 year olds (DALY rates per 100,000 population)

Rank	African LMIC	Americas LMICs	Eastern Mediterranean LMICs	European LMICs	South-East Asian LMICs	Western Pacific LMICS	High-income countries
1	Lower respiratory infections (1 693)	Interpersonal violence (1 698)	Collective violence and legal intervention (1 981)	Iron-deficiency anaemia (786)	Iron-deficiency anaemia (1 179)	Iron-deficiency anaemia (692)	Iron-deficiency anaemia (645)
2	Diarrhoeal diseases (1 648)	Road injury (836)	Iron-deficiency anaemia (1 024)	Self-harm (578)	Road injury (810)	Road injury (637)	Depressive disorders (633)
3	Meningitis (1 462)	Iron-deficiency anaemia (809)	Road injury (757)	Depressive disorders (468)	Self-harm (659)	Skin diseases (498)	Anxiety disorders (478)
4	HIV/AIDS (1 421)	Depressive disorders (543)	Depressive disorders (487)	Road injury (445)	Depressive disorders (437)	Anxiety disorders (377)	Childhood behavioural disorders (443)
5	Iron-deficiency anaemia (1 098)	Asthma (538)	Childhood behavioural disorders (449)	Childhood behavioural disorders (434)	Skin diseases (419)	Childhood behavioural disorders (347)	Road injury (382)

Source: (16b).

Figure 2.5. Estimated top five causes of adolescent disability-adjusted life years (DALYs) lost by modified WHO region, 2015.

Adolescents aged 10 to 19 years

Legend:

Mental Health
- Self-harm
- Depressive disorders
- Childhood behavioural disorders
- Anxiety disorders

Non-communicable diseases
- Asthma
- Skin diseases
- Iron-deficiency anaemia

Other communicable diseases
- Lower respiratory infections
- Diarrhoeal diseases
- Meningitis

Sexual & reproductive health, HIV/AIDS
- HIV/AIDS

Violence
- Collective violence and legal intervention
- Interpersonal violence

Unintentional injury
- Road injury
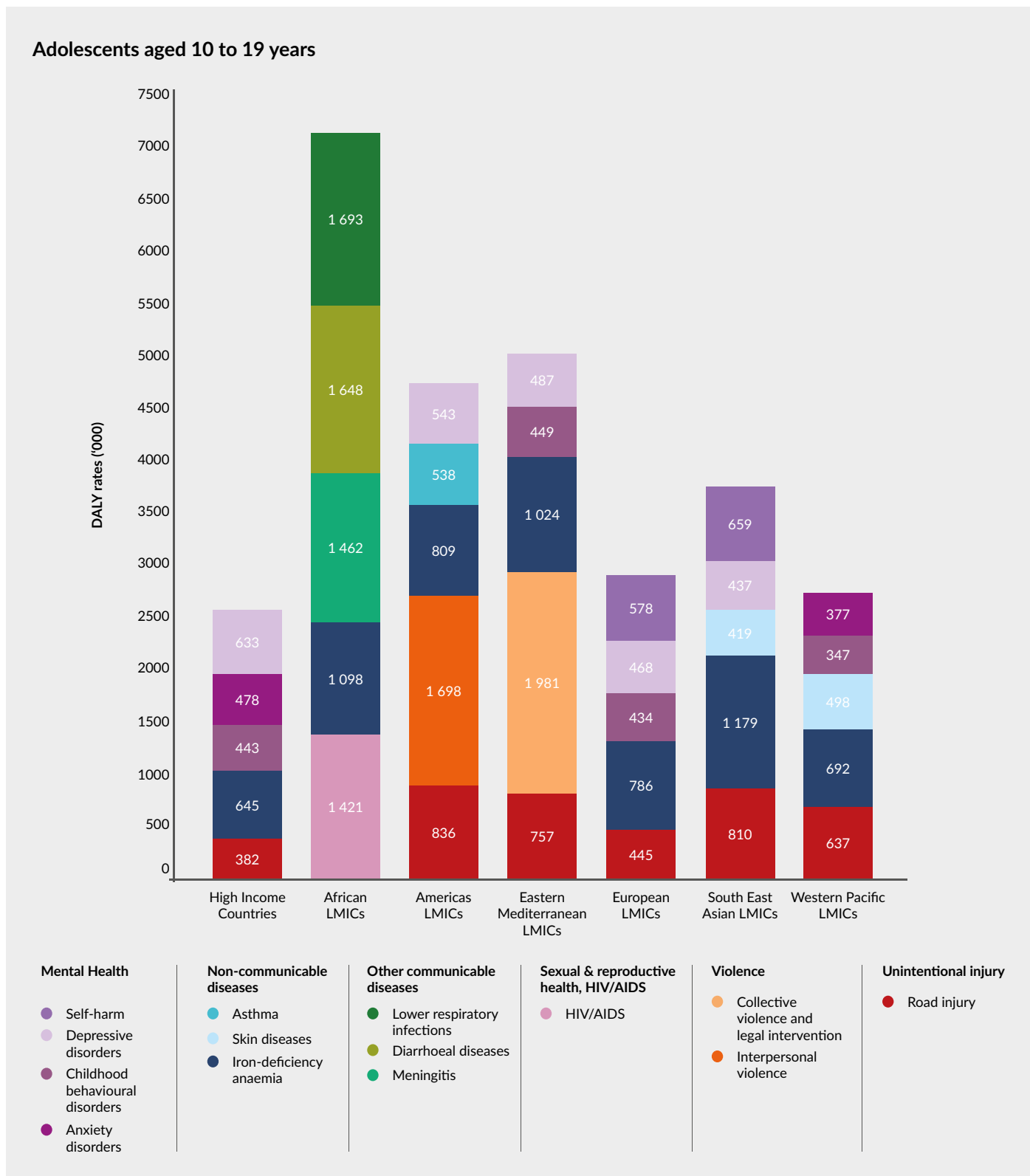
2. Disease and injury burdens, and risk factors

Tables 2.6 and 2.7 provide estimated rankings of global risk factors for adolescent mortality and DALYs lost, based on the 2013 Global Burden of Disease Study (17). This study found that water, hygiene and sanitation-related concerns (i.e. unsafe water and sanitation and inadequate hand washing) were among the top risk factors for disease burdens among 10- to 14-year-old adolescents globally. Other environmental risk factors – i.e. household air pollution, ambient particulate matter and lead exposure – were also major risk factors for younger adolescents. In addition, iron-deficiency anaemia was the top risk factor for DALYs lost among young adolescents.

All of these issues were also estimated to be global risk factors for 15- to 19-year-old adolescents in the 2013 Global Burden of Disease Study. However, the leading risk factors in the older age group were risk behaviours (i.e. alcohol use, unsafe sex and, to a lesser extent, drug use); these had relatively low rankings among younger adolescents. Other key risk factors estimated to be among the top 15 for older adolescents, and not younger ones, relate to occupational hazards, i.e. ergonomics, noise and injury. It is important to remember that some types of risk or protective factors – such as parental regulation or connection to school, family or peers – may be significant, but were not included in the models.

Two final important patterns seen in the adolescent risk factor estimates of the 2013 Global Burden of Disease Study relate to noncommunicable diseases and violence. Specifically, all four age/sex groups of adolescents were estimated to have a high prevalence of risk factors related to poor diet and low physical activity (i.e. high fasting plasma glucose and high blood pressure); these had particularly high rankings among younger adolescent girls and boys. In addition, childhood sexual abuse was estimated to be a major risk factor for all adolescents, while intimate partner violence was a prominent risk factor for older adolescent girls and young women.

Table 2.6. Leading risk factors associated with adolescent death, by sex and age group

	Global risk factors associated with adolescent mortality					
Rank	10–14 year olds			15–19 year olds		
	Male	Female	Total	Male	Female	Total
1	Unsafe water	Unsafe water	**Unsafe water**	Alcohol use	Unsafe sex	**Alcohol use**
2	Unsafe sanitation	Unsafe sanitation	**Unsafe sanitation**	Unsafe sex	Unsafe water	**Unsafe sex**
3	Inadequate hand washing	Inadequate hand washing	**Inadequate hand washing**	Unsafe water	Intimate partner violence	**Unsafe water**
4	Alcohol use	Household air pollution	**Household air pollution**	Unsafe sanitation	Alcohol use	**Unsafe sanitation**
5	Household air pollution	Low glomerular filtration	**Alcohol use**	Occupational injury	Unsafe sanitation	**Inadequate hand washing**
6	Low glomerular filtration	Iron deficiency	**Low glomerular filtration**	Inadequate hand washing	Inadequate hand washing	**Occupational injury**
7	Ambient particulate matter	Alcohol use	**Iron deficiency**	Drug use	Iron deficiency	**Intimate partner violence**
8	Iron deficiency	Ambient particulate matter	**Ambient particulate matter**	Low glomerular filtration	Drug use	**Drug use**
9	High fasting plasma glucose	High fasting plasma glucose	**High fasting plasma glucose**	Childhood sexual abuse	Childhood sexual abuse	**Low glomerular filtration**
10	Child sexual abuse	High blood pressure	**Child sexual abuse**	Household air pollution	Low glomerular filtration	**Childhood sexual abuse**
11	High blood pressure	Child sexual abuse	**High blood pressure**	High blood pressure	Occupational injury	**Iron deficiency**
12	Unsafe sex	Unsafe sex	**Unsafe sex**	Iron deficiency	Household air pollution	**Household air pollution**
13	n.a.	n.a.	**n.a.**	Ambient particulate matter	High fasting plasma glucose	**High fasting plasma glucose**
14	n.a.	n.a.	**n.a.**	High fasting plasma glucose	High blood pressure	**High blood pressure**
15	n.a.	n.a.	**n.a.**	Occupational particulates	Ambient particulate matter	**Ambient particulate matter**

Source: (17). n.a = data not available

Table 2.7. Leading risk factors associated with adolescent DALYs lost, by sex and age group

Rank	10–14 year olds			15–19 year olds		
	Male	Female	Total	Male	Female	Total
1	Iron deficiency	Iron deficiency	**Iron deficiency**	Alcohol use	Iron deficiency	**Alcohol use**
2	Unsafe water	Unsafe water	**Unsafe water**	Unsafe sex	Unsafe sex	**Unsafe sex**
3	Unsafe sanitation	Unsafe sanitation	**Unsafe sanitation**	Unsafe water	Unsafe water	**Iron deficiency**
4	Inadequate hand washing	Inadequate hand washing	**Inadequate hand washing**	Drug use	Intimate partner violence	**Unsafe water**
5	Low glomerular filtration	Low glomerular filtration	**Low glomerular filtration**	Iron deficiency	Alcohol use	**Drug use**
6	Alcohol use	High fasting plasma glucose	**High fasting plasma glucose**	Unsafe sanitation	Unsafe sanitation	**Unsafe sanitation**
7	High fasting plasma glucose	Household air pollution	**Alcohol use**	Occupational injury	Drug use	**Inadequate hand washing**
8	Household air pollution	Childhood sexual abuse	**Household air pollution**	Low glomerular filtration	Inadequate hand washing	**Intimate partner violence**
9	Childhood sexual abuse	Alcohol use	**Childhood sexual abuse**	Inadequate hand washing	Childhood sexual abuse	**Low glomerular filtration**
10	Ambient particulate matter	Ambient particulate matter	**Ambient particulate matter**	Childhood sexual abuse	Low glomerular filtration	**Childhood sexual abuse**
11	Lead	High blood pressure	**Lead**	Occupational ergonomic	High fasting plasma glucose	**Occupational injury**
12	High blood pressure	Lead	**High blood pressure**	High fasting plasma glucose	Occupational ergonomic	**High fasting plasma glucose**
13	Unsafe sex	Unsafe sex	**Unsafe sex**	Occupational noise	Occupational injury	**Occupational ergonomic**
14	Drug use	Drug use	**Drug use**	High blood pressure	High blood pressure	**High blood pressure**
15	Vitamin A deficiency	Vitamin A deficiency	**Vitamin A deficiency**	Household air pollution	Household air pollution	**Household air pollution**

Source: (17).

Annex 2 Section A2.3 describes risk factors for specific adolescent disease and injury burdens.

2. Disease and injury burdens, and risk factors

2.2.
Unintentional injury

Road injuries were the leading cause of adolescent death for 10–19 year olds (Table 2.1), resulting in approximately 115 000 adolescent deaths in 2015. All sex, age and regional adolescent subgroups were affected, but older adolescent boys and young men experienced the greatest burden. Road injury was also the leading or second leading cause of adolescent death in six of the seven modified WHO regions. The only exception was African LMICs, where other disease burdens (i.e. AIDS, lower respiratory infections, meningitis and diarrhoeal diseases) were so great that road injury ranked as only the fifth leading cause of adolescent death, even though the African LMICs rate of road injury mortality (13/100 000) was higher than in any of the other modified WHO regions. The next highest adolescent road injury mortality rates were in the Americas LMICs (11/100 000), South East Asian LMICs (10/100 000) and Eastern Mediterranean LMICs (10/100 000) respectively (Table 2.3). Most young people killed in road crashes are vulnerable road users, i.e. pedestrians, cyclists, motorcyclists and passengers (118).

Road injuries also ranked highly as a cause of DALYs lost among adolescents, following a similar pattern to that described for mortality. Traumatic brain injuries are the leading cause of traffic-related deaths and injuries, although other head and limb injuries are also common among youth injured in traffic crashes (118).

Drowning was in the top five causes of adolescent death in almost all of the modified WHO regions in 2015 (Table 2.3). The exceptions were HICs and African LMICs. African LMICs had the highest rate of drowning mortality (8) among all modified WHO regions, but drowning did not rank among the leading causes because other disease burdens had even greater impacts. Drowning was the second leading cause of adolescent death in the Western Pacific LMICs, where the rate of 4.3 deaths per 100 000 population resulted in nearly 9 000 deaths.

Burns also make a substantial contribution to the global adolescent disease burden (119); (120). In 2015, African, South-East Asian and Eastern Mediterranean LMICs had the highest rates of adolescent mortality due to fire, heat and hot substances, experiencing 3, 2, and 1 such deaths per 100 000 adolescents respectively. Among females aged 15–29 years, the highest rates of fire-related deaths have been recorded in South-East Asia, where rates were estimated to be as high as 16.9 deaths per 100 000 15- to 29-year-old females in 2008 (119).

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2.3.
Violence

Interpersonal violence is the intentional use of physical force or power against another person with a high likelihood of its resulting in injury, death, psychological harm, maldevelopment or deprivation. It includes child maltreatment, youth violence and gender-based violence (67). Youth violence is a term commonly used to describe interpersonal violence involving 10–29 year olds that peaks in late adolescence and early adulthood. It includes homicide, assault, fighting, bullying, dating violence and emotional abuse (121). According to official statistics, most of the adolescent victims and most of the perpetrators of interpersonal violence are male (12). However, some forms of violence are more readily reported or documented than others. For example, homicides, gang violence and outdoor fights – which disproportionately affect adolescent boys and young men – may be more visible than some other forms of violence, such as sexual assault or violence by intimate partners. In the latter, most of the victims are adolescent girls and young women (67).

In addition to general forms of violence (e.g. child abuse), many adolescent girls experience gender-based violence, i.e. violence by an intimate partner or family member; sexual violence; trafficking; acid throwing; female genital mutilation; child, early and forced marriage; and sexual harassment in schools, workplaces, public places and, increasingly, online through the internet or social media (121). The consequences of gender-based violence can last a lifetime. Sexual violence can occur at any age, but is believed to have highest prevalence soon after the onset of puberty (12). The Global Strategy estimates that around one in 10 girls (120 million) under age 20 has been a victim of sexual violence (11). As noted above, both sexual violence and intimate partner violence are mainly perpetrated by men and boys against girls and women, but boys and men may, much less commonly, be victims (73). Globally, the lifetime prevalence of sexual abuse of girls in childhood is estimated to be 18%, while for boys it is estimated to be 8% (67).

Interpersonal violence was ranked as the second leading cause of death in adolescent males aged 15–19 years in 2015. Regionally, interpersonal violence was the top cause of death and DALYs lost in Americas LMICs, causing 23 deaths per 100 000 adolescents and a striking 73 deaths per 100 000 older male adolescents, representing 43% of all deaths in this sub-group. It was also a prominent cause of death in Eastern Mediterranean LMICs (4 overall and 10 for older males)), and was the third leading cause of adolescent death in HICs (2 overall and 5 for older males) (Table 2.3).

Collective violence refers to the instrumental use of violence by members of a group against another group, in order to achieve political, economic or social objectives. It includes coups, rebellions, revolutions, terrorism and war.

Legal intervention refers to injuries inflicted by law-enforcing agents while arresting lawbreakers, suppressing disturbances, maintaining order and taking other legal action. Collective violence and legal intervention are major concerns in specific regions and in localized humanitarian and fragile settings. In 2015, collective violence and legal intervention combined were the leading cause of adolescent death (approximately 27 000 deaths) in Eastern Mediterranean LMICs (Table 2.3), and also the leading cause of adolescent DALYs lost (Table 2.5). The mortality rate for 15- to 19-year-old boys in that region was very high, followed by 10- to 14-year-old boys and all adolescent girls (33, 22, and 18.5 deaths per 100 000 respectively). The overall death rate in Eastern Mediterranean LMICs in 23 per 100 000 adolescents compared with a rate of 3 per 100,000 adolescents globally.

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"Last night I was supposed to fill water. I get very tired filling water, but my mother says, "It's your work, so you should finish it and not do useless things". Still, I went to the circus and did not complete any of my work. When I came back, I was badly beaten by my mother."

Young adolescent girl in India

2. Disease and injury burdens, and risk factors

2.4.
Sexual and reproductive health, including HIV

AIDS was the eighth leading cause of death among adolescents globally in 2015, resulting in approximately 44 000 deaths (16a). It was also the fourth cause of adolescent deaths and DALYs lost in African LMICs (Table 2.4). These figures include AIDS-related tuberculosis, which will be described in the next section. Global adolescent AIDS-related mortality and morbidity are largely influenced by the major impact that the disease continues to have in sub-Saharan Africa. The rate of adolescent mortality due to AIDS in African LMICs is estimated to be 17 deaths per 100 000 adolescents (Table 2.3). Globally, and in Africa, adolescent AIDS-related mortality among older adolescents has been increasing, while mortality in all other age groups has been declining (123).

About two thirds of adolescents living with HIV in 2015 acquired HIV during their mothers' pregnancies or deliveries or in the first months of life (123). The remaining one third of adolescents living with HIV were infected as adolescents. More than 250 000 15–19 year olds are estimated to have been newly living with HIV in 2015 ((123) or aidsinfo.unaids.org). In that age group, girls account for two out of three new HIV infections globally. In sub-Saharan Africa, that number is nearly eight out of 10. Adolescents are less likely than adults to be tested for HIV and less likely to be linked to services, whether they test positive or negative (124).

Other sexually transmitted infections (STIs) an facilitate the sexual transmission of HIV, cause cellular changes that precede some cancers, reduce male and female fertility, and have adverse effects on the overall well-being of individuals. However, data on STIs are limited and inconsistent between and within regions and countries, particularly data disaggregated by age and sex. This makes it difficult to obtain a clear picture of who is most affected and where they are located for an appropriate global response.

There are an estimated 357 million new cases of four curable STIs among people aged 15–49 years each year, specifically: Chlamydia trachomatis (131 million), Neisseria gonorrhoeae (78 million), syphilis (6 million) and Trichomonas vaginalis (142 million) (128). The prevalence of some incurable viral STIs is similarly high, with an estimated 417 million people living with herpes simplex type 2 (HSV-2) and approximately 291 million women living with the human papillomavirus (HPV). Globally, there are large regional differences in STI prevalences. For example, in 2012 genital HSV-2 prevalence in 15- to 49-year-old women was highest in Africa (31%), whereas it was estimated to be 8% in South-East Asia (126); (127).

For multiple reasons, sexually active adolescents have a particularly high risk of acquiring an STI compared to other age groups. These include increased exposure, biological susceptibility to infection and relatively poor access to and/or use of health services (128) . For example, the peak time for acquiring infection with either HPV or HSV-2 for both males and females is shortly after a person first becomes sexually active, which generally happens in adolescence (127); (129).

Maternal conditions include haemorrhage, sepsis, hypertensive disorders, obstructed labour, complications of abortion, indirect maternal deaths, late maternal deaths, and maternal deaths aggravated by AIDS, tuberculosis and other infections or non-communicable diseases. Adolescents have high rates of unintended pregnancy, which can lead to a range of adverse physical, social and economic outcomes. Globally, 11% of all births are to 15- to 19-year-old girls (130). Maternal conditions were the leading cause of death in this group in 2015, causing 10.1 deaths per 100 000 (Table 2.1). The rate of maternal mortality among 15- to 19-year-old girls was very high among African LMICs (35.7per 100 000), followed by the Eastern Mediterranean, South-East Asian and Americas LMICs (9, 7, and 3 deaths per 100,000 population respectively) (Table 2.3).

Generally, three kinds of delay in receiving care contribute to maternal death: delay in deciding to seek care on the part of the individual, family or both; delay in reaching an adequate health-care facility; and delay in receiving adequate care at an existing facility (123). In addition, pregnant adolescents face maternal health challenges that are specific to their physical and psychological immaturity and limited autonomy. They are more likely to have a repeat pregnancy within a year of giving birth, which can place them and their children at risk (131); (132).

Adolescents also suffer a significant and disproportionate share of deaths and disability from unsafe abortion practices, when compared to adult women (132); (133). In developing countries, the number of abortions among adolescents is estimated to be between 2.2 million and 4 million annually. Because of legal and social restrictions on access to safe abortion in many parts of the world, adolescents often resort to unsafe procedures administered by unskilled providers and/or in unsafe conditions. Estimates suggest that 14% of all unsafe abortions in developing countries involve adolescent girls aged 15–19 years (133), while globally 11% of all births take place in this age group (134). Of these unsafe abortions in developing countries, Africa accounts for 26%, while Latin America and the Caribbean account for a further 15%.

Female genital mutilation (FGM) comprises procedures to remove external genitalia partially or totally, or otherwise to injure the female genital organs for nonmedical reasons (135). No form of FGM has health benefits. On the contrary, the removal of or damage to healthy genital tissue interferes with the natural functioning of the body and may cause several immediate and long-term health consequences (136). FGM is mostly carried out on girls between the ages of 0 and 15 years. The practice is prevalent in 30 countries in Africa and in several countries in Asia and the Middle East, but now is also present across the globe due to international migration. In Africa, it is estimated that 12 million girls between the ages of 10 and 14 years have experienced health complications related to FGM, most notably in Ethiopia, Kenya, Nigeria and Uganda (136).

Other important SRH issues with major impacts on adolescent health include early and/or forced marriage and inadequate access to contraception (18); (125); (138). These will be described in Section 2.8 and Section 3.

2. Disease and injury burdens, and risk factors

Communicable diseases

Lower respiratory infections, such as influenza, pneumococcal pneumonia and Haemophilus influenzae type B, were a major cause of adolescent death both globally and in most of the modified WHO regions in 2015 (Table 2.3). Lower respiratory infections were estimated to a particularly high cause of death in young adolescents, responsible for over 40 000 deaths globally in those aged 10–14 years in 2015 (Table 2.1). This was the leading cause of death in younger adolescents in African LMICs, causing over 27 000 deaths – well over half of the deaths from this cause in younger adolescents globally.

Diarrhoeal diseases[7] are mainly caused by infections which have a faecal-oral transmission route – the disease organisms are commonly ingested through contaminated food or water. Globally, diarrhoeal diseases ranked fourth and second in 2015 as a cause of death among young adolescent boys and girls respectively (Table 2.1). They are a particularly important cause of death in young adolescents (Table 2.1). The definition of diarrhoeal diseases used here includes typhoid fever. In 2008, WHO conservatively estimated the annual global incidence of typhoid fever at 21 million cases, of which 1–4% ended fatally (139). An estimated 90% of these deaths occurred in Asia, and school-aged children (aged 5–15 years) were disproportionately affected, compared to children under 5 years of age.

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In 2015, diarrhoeal diseases had the greatest impact on adolescent health in African and South-East Asian LMICs, where they were the second and fourth leading causes of adolescent death, resulting in over 44 000 and 13 000 adolescent deaths respectively (Table 2.3). Diarrhoeal diseases were also the second and ninth leading causes of adolescent DALYs lost in those same modified WHO regions in 2015 (Table 2.5). In South-East Asian LMICs, female adolescents had a higher burden from diarrhoeal diseases than males – although within each sex younger adolescents remained disproportionately affected.

Meningitis was the third leading cause of global adolescent death among young adolescent girls in 2015 (Table 2.1). Meningitis also ranked third as an overall cause of death among all adolescents in African LMICs (resulting in over 41 000 deaths) and was the third leading cause of DALYs lost in that modified WHO region (Tables 2.3 and 2.5). Meningococcal meningitis cases occur throughout the world. However, large recurring epidemics constitute an enormous public health burden in the 26 African countries within the so-called Meningitis Belt that spans Africa from Mauritania, Senegal, Gambia and Guinea-Bissau in the west to Sudan, Eritrea, Ethiopia, Kenya and the United Republic of Tanzania in the east (140).

Malaria is largely experienced in the WHO African Region, where 394 000 or 92% of all global malaria deaths occurred in 2015 (141); (142). Almost all the remaining malaria cases occurred in the South-East Asia Region (26 200 or 7%) and the Eastern Mediterranean Region (7 300 or 2%). In areas of very high transmission, malaria mortality rates begin to fall by around 2 years of age, with the incidence of acute febrile malaria falling later in childhood or adolescence with the acquisition of partial immunity resulting from repeated exposure to malaria infection (143). Recent success in lowering malaria transmission in areas that were previously highly endemic is expected to result in fewer children – including adolescents – acquiring immunity to malaria than in the past. Those adolescents will thus be more vulnerable to malaria infection (144).

Tuberculosis including AIDS-related tuberculosis, is primarily experienced in Africa, South-East Asia and the Western Pacific with 275, 246 and 86 incidence per 100 000 in the general population respectively (145). Adolescence is a period when the risk of developing tuberculosis increases, especially adult-type disease (i.e. sputum smear-positive, highly infectious) (146). Tuberculosis in adolescents is believed to be inadequately recognized and underreported in child and adolescent health programmes, especially those that serve patients at high risk (e.g. malnourished adolescents or those living with HIV).

[7] Diarrhoeal diseases, as defined here are caused by pathogenic bacteria, viruses, and protozoa, including cholera, shigellosis, E coli infections, campylobacter enteritis, cryptosporidiosis, rotaviral enteritis, aeromonas, Clostridium difficile, norovirus, typhoid, paratyphoid fever, and other foodborne bacteria.

2.6.
Noncommunicable diseases and malnutrition

Iron-deficiency anaemia was ranked as the leading cause of adolescent DALYs lost in 2015. Except in older male adolescents, it was the leading cause of DALYS lost in both sexes and age groups. In 2015, the highest rates of adolescent DALYs lost due to iron-deficiency anaemia was experienced in South-East Asian LMICs (1 179/100 000) followed by African LMICs (1 097/100 000) (Table 2.5).

Congenital anomalies such as neural tube defects (e.g. spina bifida), heart anomalies, Down's syndrome and sickle-cell anaemia generally have their largest effects in infants and younger children but they also have a major impact on adolescent health (147). In 2015, congenital anomalies caused 1–2 deaths per 100 000 adolescents in most of the modified WHO regions, but higher rates in African (7/100 000) and Eastern Mediterranean LMICs (4/100 000). This was the fourth leading cause of death in HICs and the fifth leading cause of deaths in European LMICs and Western Pacific LMICs (Table 2.3). Many African countries have a sickle-cell disease prevalence of 2%, and adolescents are one of the groups most vulnerable to complications, morbidity and mortality (148). Approximately 11% of sickle-cell disease patients have clinically apparent strokes before the age of 21 years (149).

Leukaemia also caused 1–2 deaths per 100 000 adolescents in each of the modified WHO regions in 2015; this represented the third leading cause of death among adolescents in the Western Pacific LMICs. Adolescent boys, and especially those in the older adolescent years, experienced the most deaths due to leukaemia.

Stroke death rates were highest among adolescents in African and Eastern Mediterranean LMICs in 2015, with rates of around 4 per 100 000 population in both regions. As noted above, sickle-cell disease is an important cause of stroke in adolescents; immune disorders, previous arterial damage and cerebrovascular disease are other likely causes.

Asthma is a chronic respiratory disease that ranked fifth for DALYs lost among all adolescents in the Americas LMICs (Table 2.5). In HICs, asthma is often better controlled than other chronic respiratory diseases (150). However, asthma is still believed to be under-diagnosed in HICs, particularly among children and adolescents, and many patients' asthma is not well controlled (150). In LMICs, asthma is mostly underdiagnosed and undertreated, causing high morbidity and significant mortality.

Skin diseases, including dermatitis, psoriasis, scabies, fungal and viral skin diseases and acne vulgaris, were estimated to be the third and fifth causes of DALYs lost by adolescents in Western Pacific and South-East Asian LMICs in 2015 respectively. Acne is the most prevalent skin disease in adolescent populations and is nearly universal; it can range from mild to severe forms and can result in emotional distress and physical scarring (151); (152).

Other important non-communicable diseases that affect adolescents include diabetes, ischaemic heart disease, skin and subcutaneous diseases, migraine and sense organ diseases, such as those that cause vision and hearing loss (143).

"I think that those who are older than me do not like to move. They keep sitting all the time. They eat, drink and stay where they are. They do not move. They do not play. If they play, they will be able to digest what they eat. They choose to keep sitting down."

Young adolescent girl in the West Bank and Gaza Strip

2. Disease and injury burdens, and risk factors

2.7.
Mental health, substance use and self-harm

Self-harm was the third-ranked cause of adolescent death in 2015, resulting in an estimated 67 000 adolescent deaths (Table 2.1). This figure encompasses both suicide and accidental death resulting from self-harm without suicidal intent. Almost half of adolescent deaths due to self-harm took place in South-East Asian LMICs, where the large adolescent population and high cause-specific mortality rate (9 per 100 000) resulted in nearly 32 000 deaths. Self-harm was also a high-ranking cause of DALYs lost in European and South-East Asian LMICs (Table 2.5). Recent national surveys of 13–15 year olds in South-East Asia found rates of sui-cide planning and attempt as high as 19% and 13% in the Maldives and 15% and 14% in Thailand respectively; the rates were similar in boys and girls (153). Self-harm also ranked highly as a cause of death in HICs and European, Western Pacific and Americas LMICs.

Self-harm largely occurred among older adolescents. In older adolescent girls was the second leading cause of death. Although both suicide attempts and non-suicidal self-injury are grouped under "self-harm" above, their motivations and forms often differ, as shown in Table 2.6. Adolescents are the age group at greatest risk of deliberate self-harm without suicidal intent (154). Although international variation exists, many community-based studies have found that approximately 10% of adolescents have intentionally harmed themselves (155). Methods of self-harm vary. For example, European research has found self-cutting is the most common method of self-harm in adolescents in the community, whereas self-poisoning is by far the most common method used by adolescents presenting at hospital (143).

Table 2.8. Differences between suicide attempt and non-suicidal self-injury

Suicide attempt	Non-suicidal self-injury
Intending to end one's life.	No suicidal intent.
May be impulsive, but in most cases there is a chronic feeling of hopelessness or loneliness.	Emotional state is acute anger, despair or intolerable distress.
More severe and life-threatening forms of self-destructive behaviours are typical (e.g. self-poisoning, hanging, jumping, use of firearms).	Less severe and mostly forms of self-destructive behaviours that are not life-threatening are typical (e.g. skin lesions by biting, cutting, burning or freezing). Typically, the person is aware that the behaviour may cause serious injury, but is not life-threatening.
There is a clear risk that suicide attempts are repeated, but to a lesser frequency than non-suicidal self-injuries.	Recurrent self-injury is common.

Source: (156)

Depressive disorders are the third cause of adolescent DALYs lost globally, while **anxiety disorders** are the fifth cause of DALYs lost among adolescent girls (Table 2.4). Depressive disorders are in the top five causes of DALYs lost in each modified WHO region, with the exception of Western Pacific and African LMICs. In the latter case, the rate of DALYs lost from depressive disorders is higher than that of most other regions. Anxiety disorders, including gen-eralized anxiety disorders, social phobia and post-traumatic stress disorder, rank third among the causes of adolescent DALYs lost in the HICs, and fourth in Western Pacific LMICs (Table 2.5).

Autism spectrum disorders consist of a range of conditions characterized by some degree of impaired social behaviour, communication and language, and a narrow range of interests and activities that are both unique to the individual and carried out repetitively (107). Regional estimates of the prevalence of autism

spectrum disorders are only available for the WHO regions of Europe and the Americas where they are similar at 62 and 65 per 10 000 children respectively (157). Only a few studies of autism spectrum disorders have been conducted in LMICs. However, based on the existing epidemiological studies, the reported preva-lence of these disorders is thought to be increasing globally (107).

Childhood behavioural disorders is an umbrella term that includes conduct disorders, which are characterized by repeated aggres-sive, disobedient or defiant behaviour that is persistent, severe and inappropriate for the adolescent's developmental level (37). Childhood behavioural disorders are estimated to be an impor-tant cause of adolescent DALYs lost in all modified WHO regions particularly amongst 10-14 year old males where in 2015 it ranked in the top five causes of DALYs lost in all modified WHO regions except African LMICs.

2.8.
Burdens in humanitarian and fragile settings

Humanitarian and fragile settings include those experiencing armed conflict or postconflict situations, natural disasters, epidemics, famines and protracted socioeconomic and political instability (11). Health challenges in such settings are particularly acute among mobile populations, internally displaced communities and those in refugee or temporary camps (11). Table A2.3 in Annex 2 summarizes the main ways that large-scale conflicts or natural disasters impact on the health of general populations.

Globally, the worst rates of preventable mortality and morbidity among women, adolescents and children occur in humanitarian and fragile settings (50). Many health burdens increase in such contexts because governance and health infrastructures break down, and protective social and health services become much less accessible (50). While often still children themselves, adolescents take on adult responsibilities in emergencies, including caring for siblings or generating revenue to support their families (158). Those who are separated from their families during an emergency lack the livelihood, security and protection afforded by family structures. They may be compelled to drop out of school, marry early or engage in transactional sex in order to meet their basic survival needs. Adolescents who are especially vulnerable in humanitarian and fragile settings include those who are: young (10–14 years); disabled; members of ethnic or religious minorities; child soldiers; other children associated with fighting forces; girl mothers; orphans; heads of households; survivors of sexual violence, trafficking and other forms of gender-based violence; engaged in transactional sex; in same-sex sexual relationships; or HIV-positive (47).

In such crises, key health concerns for adolescents include:
- malnutrition, e.g. wasting, underweight or micronutrient deficiencies;
- inadequate assistance, treatment and care of adolescents with disability or injury;
- violence, e.g. as experienced by child soldiers who are primarily boys, and survivors of sexual exploitation and abuse (including early or forced marriage, and FGM), who are primarily girls and women;
- HIV and other STIs, early pregnancy, maternal conditions, unsafe abortion and general SRH needs, e.g. access to condoms and other forms of contraception;
- water, sanitation and hygiene (WASH) needs, e.g. materials and facilities for menstrual hygiene management; and
- mental health problems, e.g. anxiety or trauma

    (12); (39); (41); (47); (48); (50); (158); (159); (160); (161).

Some of these conditions are closely interrelated. For example, sexual violence may result in multiple burdens, including physical injury, STIs, unintended pregnancy, non-pathological distress (e.g. fear, anger, self-blame, shame, sadness or guilt), anxiety disorders (e.g. posttraumatic stress disorder), depression, medically unexplained somatic complaints, alcohol and other substance-use disorders, and suicidal ideation and self-harm. Social trauma can include stigma, which can lead to social exclusion, discrimination and rejection by family and community (161).

Adolescent girls have a particularly heightened risk of abuse and exploitation during humanitarian crises, increasing their vulnerability to early sexual initiation, unwanted pregnancy and STIs, including HIV (158). They are readily targeted for abuse because they have limited life experience, options and skills to negotiate their rights. In many conflict-affected contexts, sexual and gender-based violence, including forced marriage, is a weapon of war used against girls (162).

Even within a relatively protected family setting, resource scarcity, limited employment opportunities for caregivers and a lack of protection mechanisms during humanitarian crises may contribute to families arranging marriages for their daughters, in order to ease the household burden and secure dowry payments. Families may perceive having their daughters marry as a way to protect the girls and to preserve their honour in the face of external violations and vulnerabilities, such as sexual violence and harassment. In Jordan, for example, the proportion of registered marriages among the Syrian refugee community where the bride was under 18 rose from 12% in 2011 (roughly the same as the figure in pre-war Syria) to 18% in 2012, and as high as 25% by 2013 (163); (164). The number of Syrian boys registered as married in 2011 and 2012 in Jordan was 1%, suggesting that girls are being married to older males (164). Child marriage among Syrian refugees has also reportedly increased in Iraq and Lebanon (162).

An important way that adolescent boys may be affected by violence in conflict settings is as child soldiers who may experience combat-related injuries, such as the loss of hearing, sight or limbs (12). These injuries partly reflect the greater sensitivity of children's bodies and partly the ways in which they may be involved in conflicts – such as being forced to undertake particularly dangerous tasks (e.g. laying and detecting landmines). Child recruits are also prone to health hazards not directly related to combat, including injuries caused by carrying weapons and other heavy loads, malnutrition, skin and respiratory infections and infectious diseases, such as malaria. Girl recruits and, less commonly, young boys are often forced to have sex as well as to fight. In addition, child recruits are sometimes given drugs or alcohol to encourage them to fight, creating problems of substance dependency. Adolescents recruited into regular government armies are usually subjected to the same military discipline as adult soldiers, including initiation rites, harsh exercises, punishments and denigration designed to break their will. The impact of such discipline on adolescents can be highly damaging mentally, emotionally and physically.

3. Evidence-based interventions

Key messages:

- Although there are important gaps in the evidence base of interventions to promote and protect adolescent health, many interventions have a substantial evidence base. Countries can take effective action now to promote and protect adolescent health.

- The education sector can be particularly important for influencing adolescent behaviour, health and well-being through intensive, long-term, large-scale initiatives implemented by professionals.

- Many effective adolescent health interventions are adolescent-specific. These either target entire adolescent populations (e.g. comprehensive sexuality education or adolescent-friendly health services), or specific subpopulations who are particularly vulnerable (e.g. iron-supplementation, voluntary medical male circumcision, meningococcal vaccination, suicide prevention or prevention of female genital mutilation).

- To reduce some major adolescent burdens, it is necessary to tailor general population interventions to the specific needs of adolescents. This includes the need for lower blood alcohol limits for adolescent drivers, or providing more intensive disclosure and adherence support for adolescents living with HIV.

- To reduce other major adolescent burdens and risk factors, it is important to ensure that interventions that serve all age groups are delivered with quality and universal coverage, such as the enforcement of road legislation and policies; the provision of adequate water and sanitation infrastructure; and implementations of policies and legislation that reduce the affordability of tobacco, alcohol, and unhealthy foods and beverages.

There are important gaps in the evidence base of interventions[1] to promote and protect adolescent development, health and well-being. Nonetheless, many interventions have been implemented, evaluated and found to be effective. This section describes evidence-based adolescent health interventions.

Specifically:

- Section 3.1 provides an overview of positive adolescent health and development interventions;
- Sections 3.2 to 3.7 describe each of the 27 Global Strategy adolescent health interventions, organized under six broad health categories; and
- Section 3.8 addresses adolescent health interventions in humanitarian and fragile settings.

Each of the 27 Global Strategy adolescent health interventions (Table 3.1, column 1) described in this section is illustrated by examples that target the key areas of adolescent health and development identified in Sections 1 and 2 (Table 3.1, columns 2 and 3). The intervention examples were primarily selected from a review of recent, relevant guidelines from all WHO departments. However, when those sources proved insufficient, the review was expanded to other UN publications related to the topic, and then

if needed to other major international agency publications and/or review articles in academic journals. Importantly, the intervention examples provided here are not exhaustive. The methodology used to select the specific examples of interventions is described in more detail in Section A1.2.2 in Annex 1.

In Annex 3, to further illustrate the range of possible resources and approaches that national governments can employ, evidence-based interventions are described in greater detail for select major adolescent conditions – or major protective factors or risk factors – within each of the eight main categories, as follows:

- A3.1. Positive development;
- A3.2. Unintentional injury: road injury;
- A3.3. Violence: youth violence;
- A3.4. Sexual and reproductive health, including HIV: early and/or unintended pregnancy; HIV and AIDS;
- A3.5. Communicable diseases: WASH-related conditions;
- A3.6. Noncommunicable diseases, nutrition and physical activity: noncommunicable diseases related to undernutrition, overweight, physical inactivity and tobacco use;
- A3.7. Mental health, substance use and self-harm: suicide;
- A3.8. Conditions in humanitarian settings.

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[1] The Global Strategy lists many evidence-based interventions separately for women, children and adolescents. As an age group, however, adolescents (10–19 years) overlap with both children (0–17 years) and women (18–19 years). Indeed, many of the Global Strategy interventions identified specifically for children (e.g. related to diarrhoea) or women (e.g. related to maternal health) also address major adolescent health conditions. The 27 Global Strategy interventions described here synthesize: (a) 26 interventions for children and adolescents that are directly relevant to adolescent health; and (b) one additional, composite intervention that represents the 48 Global Strategy maternal health interventions.

Table 3.1. Evidence-based adolescent health interventions and the conditions they target (including the intervention areas recommended in the Global Strategy for Women's, Children's and Adolescents' Health)

EVIDENCE-BASED INTERVENTION AREA[a]	EXAMPLE OF MAJOR CONDITION TARGETED
3.1. Positive development	
Adolescent-friendly health services; school health, hygiene and nutrition interventions; and multisectoral initiatives.	Physical, cognitive and psychosocial development (also see Annex A3.1)
3.2. Unintentional injury	
GS 1. Prevention of injuries.	(a) Road injury (also see Annex A3.2)
	(b) Drowning
GS 2. Assessment and management of adolescents who present with unintentional injury, including alcohol-related injury.	Burns
3.3. Violence	
GS 3. Prevention of violence.	Youth violence (also see Annex A3.3)
GS 4. Prevention and response to child maltreatment.	Abuse of adolescents
GS 5. Prevention of and response to sexual and other forms of gender-based violence.	Sexual and/or gender-based violence
3.4 Sexual and reproductive health, including HIV	
GS 6. Comprehensive sexuality education.	Unsafe sex
GS 7. Information, counselling and services for comprehensive sexual and reproductive health including contraception.	Early and/or unintended pregnancy (also see Annex A3.4.1)
GS 8. Prevention of and response to harmful practices, such as female genital mutilation (FGM) and early and forced marriage.	(a) Female genital mutilation
	(b) Early and/or forced marriage
GS 9. Pre-pregnancy, pregnancy, birth, post pregnancy, abortion (where legal), and post abortion care [all 48 evidence-based interventions], as relevant to adolescents.[b]	Maternal conditions
GS 10. Prevention, detection and treatment of sexually transmitted and reproductive tract infections, including HIV and syphilis.	HIV and other sexually transmitted infections (STIs)
GS 11. Voluntary medical male circumcision in countries with generalized HIV epidemics.	HIV and other STIs
GS 12. Comprehensive care of children living with, or exposed to, HIV.	HIV and AIDS (also see Annex A3.4.2)
3.5. Communicable diseases	
GS 13. Prevention, detection and treatment of communicable diseases, including tuberculosis.	Tuberculosis
GS 14. Routine vaccinations, e.g. human papillomavirus, hepatitis B, diphtheria-tetanus, rubella, measles.	Diarrhoeal diseases, STIs
GS 15. Prevention and management of childhood illnesses, including malaria, pneumonia, meningitis and diarrhoea.	(a) Malaria
	(b) Lower respiratory infections
	(c) Diarrhoeal diseases (also see Annex A3.5)
GS 16. Case management of meningitis.	
3.6. Non-communicable diseases, nutrition and physical activity	
GS 17. Promotion of healthy behaviour (e.g. nutrition, physical activity, no tobacco, alcohol or drugs).	Unhealthy diet, physical inactivity, tobacco use and stroke (also see Annex A3.6.1)
GS 18. Prevention, detection and treatment of noncommunicable diseases.	(a) Leukaemia
	(b) Asthma
	(c) Skin conditions
GS 19. Prevention, detection and management of anaemia, especially for adolescent girls. Iron supplementation where appropriate.	Iron-deficiency anaemia (also see Annex A3.6.2)
GS 20. Treatment and rehabilitation of children with congenital anomalies and disabilities.	Congenital anomalies and disabilities
3.7. Mental health, substance abuse and self-harm (see also Annex A3.7.1)	
GS 21. Care for children with developmental delays.	Autism spectrum disorders
GS 22. Responsive care-giving and stimulation.	Parenting risk factors (e.g. low supervision, neglect, rejection, harshness)
GS 23. Psychosocial support and related services for adolescent mental health and well-being.	(a) Depressive disorders
	(b) Anxiety disorders
GS 24. Parent skills training, as appropriate, for managing behavioural disorders in adolescents.	
GS 25. Prevention of substance abuse.	Alcohol and drug use disorders
GS 26. Detection and management of hazardous and harmful substance use.	
GS 27. Prevention of suicide and management of self-harm/suicide risks. (38)	Suicide (also see Annex A3.7.2)
3.8. Conditions with particularly high priority in humanitarian and fragile settings	
Nutrition; disability and injury; violence; sexual and reproductive health; water, sanitation and hygiene; and mental health interventions.	The highest rates of preventable mortality and morbidity occur in humanitarian and fragile settings (50) (also see Annex A3.8)

(12); (18); (19); (20); (21); (22); (23); (24); (25); (26); (27); (28); (29); (30); (31); (32); (33); (34); (35); (36); (37); (39); (40); (41); (43); (44); (45); (46); (47); (48); (49); (267); (268).

Key: AIDS = acquired immunodeficiency syndrome; FGM = female genital mutilation; GS = Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) (11); HIV = human immunodeficiency virus; STI = sexually transmitted infection.
a. Main source is the Global Strategy for Women's, Children's and Adolescents' Health.
b. The Global Strategy identifies 48 evidence-based interventions that relate to maternal health and thus may be relevant to adolescent girls and women. These are consolidated in Global Strategy adolescent health intervention no. 9 above.

3. Evidence-based interventions

3.1.
Positive health and development interventions

Interventions to promote and ensure positive adolescent development span many sectors and target different physical and psychosocial aspects of adolescent development. The main determinants of adolescent health are largely outside of the health system, e.g. family and community norms, education, labour markets, economic policies, legislative and political systems, food systems and the built environment (132).

Working with parents, families and communities is especially important because of their great potential to positively influence adolescent behaviour and health. The education sector also provides a critically important opportunity for intensive, long-term and large-scale initiatives implemented by professionals.

"Good facilities in the school can improve your health and happiness. If you have all the instruments and equipment in your laboratory, that makes you happy to perform many experiments every day. And if we have a library where we can go any day to take any book we like to read, we learn more than we knew before, and that can make us happy and improve our health."

Young adolescent boy in Nigeria

Table 3.2 provides examples of key positive development interventions within health services, the education sector and the broader community (more detailed description is provided in Section A3.1 in Annex 3). Importantly, Tables 3.2–3.8 summarize interventions by the main ecological levels at which they function. However, some interventions function across multiple ecological levels (e.g. adolescent participation).

Table 3.2. Interventions to promote positive adolescent development

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural and organizational	Adolescent-friendly health services	Health care should be accessible and acceptable, promote health literacy and provide an appropriate package of services, including routine, age-appropriate appointments (e.g. vaccinations) (18). Adolescent-friendly sexual and reproductive health (SRH) services are especially important, as stigma and discrimination prohibit adolescents from accessing them in many settings. Also see Annex A3.1.1.
	Health-promoting schools, including health education	Make every school a health-promoting school in line with WHO guidance. Skills-based health education, including comprehensive sexuality education (CSE), focuses on the development of knowledge, attitudes, values and life skills needed to make, and act on, the most appropriate and positive decisions concerning health. Also see Annex A3.1.2.
	Comprehensive school nutrition services	Establish and implement standards for meals provided in schools, or food and beverages sold in schools, which meet healthy nutrition guidelines. Implement school feeding programmes as needed. Also see Annex A3.1.2.
	School hygiene interventions	Of the many changes during puberty, the United Nations Education, Scientific and Cultural Organization (UNESCO) considers menstruation to have the most pronounced effect on the school attendance, quality and enjoyment of education (19). Ensure girls have the materials they need for menstrual hygiene management. Safe water and sanitation facilities include lockable, single-sex, private toilets with water and soap for washing, as well as a suitable private space where girls can dry wet menstrual cloths and/or a closed bin or incinerator for used menstrual pads (e.g. Case study 1). Also see Annex A3.1.2.
	Child online protection	Develop and implement a national strategy for child online protection, including a legal framework, law enforcement resources and reporting mechanisms, and education and awareness resources. Also see Annex A3.1.3.
	e-health and m-health interventions for health education and adolescent involvement in their own care	Explore the potential of adolescent e-health and m-health interventions focused on particular issues (e.g. chronic illness management; SRH education, such as STI prevention), and employing a variety of approaches (e.g. web-based learning, active video games, text messaging and mobile phone or tablet software programme apps). Also see Annex A3.1.3.
	Adolescent participation initiatives	Facilitation of adolescent participation includes involving them in programme design, implementation, governance and monitoring and evaluation. Also see Annex A3.1.3.
Community and interpersonal	Interventions to promote the 5 Cs	Interventions to promote adolescent competence, confidence, connection, character and caring involve diverse approaches, including those focused on (a) increasing adolescent resilience (e.g. mentoring); and (b) building knowledge, skills and resources (e.g. educational programmes for at-risk youth; vocational training). Also see Annex A3.1.3.
	Parenting or caregiver interventions	Work with parents to promote positive, stable emotional connections with their adolescent children, promoting connection, regulation, psychological autonomy, modelling and provision/protection. See guidance to health workers in non-specialized health settings on psychoeducation for parents to promote adolescent well-being (Section A3.7.1.1 in Annex 3). Parents can also be supported to communicate with their children about SRH, as a complement to school-based CSE. Also see Section 3.7.
Individual	HEADSSS assessment	A HEADSSS assessment in primary care evaluates an adolescent's home, education, employment, eating, activity, drugs, sexuality, safety, suicidal thinking and depression status to prevent and respond to related concerns. Also see Annex A3.1.1.
	Brief, sexuality-related communication	Trained health workers should provide a brief, sexuality-related communication to promote adolescent sexual well-being, help them establish clear personal goals and address gaps between intention and behaviour. Also see Annex A3.1.1.

Sources: (18); (19); (20); (21); (22); (23); (24); (25); (26); (27); (29); (30); (31); (32); (33); (34); (35); (36); (37); (70); (223).

"I was in a UNICEF workshop for youth where they taught us to help the younger ones. And that made me very happy because I could help a lot of the little children from the neighbourhood, like telling them to stay out of trouble. And afterwards they met me and they thanked me. That made me super happy, and it was very satisfying."

Older adolescent girl in Colombia

An overarching theme in positive development interventions is addressing gender norms, roles and relationships that may be harmful (59); (165). For example, the equitable promotion of adolescent girls' schooling, livelihood skills, social assets, freedom from violence, positive health-seeking behaviours and access to SRH education can contribute to their marrying later, having better maternal and child health outcomes and being more inclined to invest in the health and education of their children. Positive development interventions should also address how gender norms negatively affect adolescent boys. For example, while there is some evidence for a biological or temperamental link to aggressive and risk-taking behaviour, the majority of violent behaviour by boys is attributed to social and environmental factors during childhood and adolescence (165).

Programmes that involve positive male role models (e.g. adult men who are caring, flexible and involved in child rearing), and which expose adolescent boys to non-violent ways of expressing frustration and anger, can help them in resolving conflicts peacefully and constructively and expressing their emotions.

Case Study 1

India's national menstrual hygiene management programme for rural adolescent girls

In 2012, in response to concerns that rural Indian girls had very limited access to sanitary products and safe sanitary facilities, the Government of India introduced a national programme with objectives to:

- increase awareness among adolescent girls about menstrual hygiene, build their self-esteem and empower them;
- increase access to and use of high-quality sanitary napkins by adolescent girls in rural areas; and
- ensure safe disposal of sanitary napkins in an environment-friendly manner.

To generate demand for quality sanitary napkins, educational outreach has been conducted by community health workers, through other community mechanisms and in school life-skills courses. For example, community health workers are supposed to hold monthly meetings for adolescent girls within the communities, and to follow up with home visits to girls who are not able to attend those meetings.

To ensure the regular availability of reasonably priced, high-quality sanitary napkins for girls and women, the Government of India also developed a distribution framework. Responsibilities have been identified for state, district, block, subcentre and village levels. In addition, special distribution of sanitary products for adolescent girls takes place within the monthly community meetings mentioned above and school-based services.

Sources: (21); (166).

Case Studies A3.1-A3.5 in Annex 3 provide additional country examples of positive development interventions, i.e. Egypt's youth-friendly health services and health education in schools; Zimbabwe's youth-friendly health services to reduce unintended pregnancies; Iran's school mental health promotion project; weden's national programme to provide school meals to all students; and Brazil's experience with curriculum-based sex education in schools.

3. Evidence-based interventions

3.2.
Unintentional injury interventions

Global Strategy adolescent health intervention

No. 1: Prevention of injuries

Examples: road injury and drowning

Road injury: Even though road injury is the leading or second leading cause of adolescent death in almost every WHO region, the interventions most likely to reduce it effectively may differ greatly depending on the setting. For example, in countries where the main adolescent victims of road accidents are adolescent drivers and their passengers, adolescent-specific interventions (e.g. low blood alcohol limits and other restrictions on young drivers) may be the most effective interventions to reduce the adolescent burden. However, in countries where few adolescents are drivers – but the rates of road injury among adolescent pedestrians, cyclists and public transport passengers are very high – better implementation of population-level interventions (e.g. legal disincentives to drive unsafely, speed limits and

traffic-calming measures) may be the most effective interventions to reduce road injuries among adolescents. Such conditions are most likely to occur in middle-income countries (MICs) and especially low-income countries (LICs), where 51% and 57% of road injury deaths respectively involve vulnerable road users, i.e. motorcyclists, pedestrians and cyclists. In practice, a mix of multiple interventions of both types, tailored to the specific setting, is likely to maximize positive impact.

Interventions to reduce adolescent road injury are summarized by broad ecological level in Table 3.3; additional information about these interventions is provided in Section A3.2 in Annex 3.
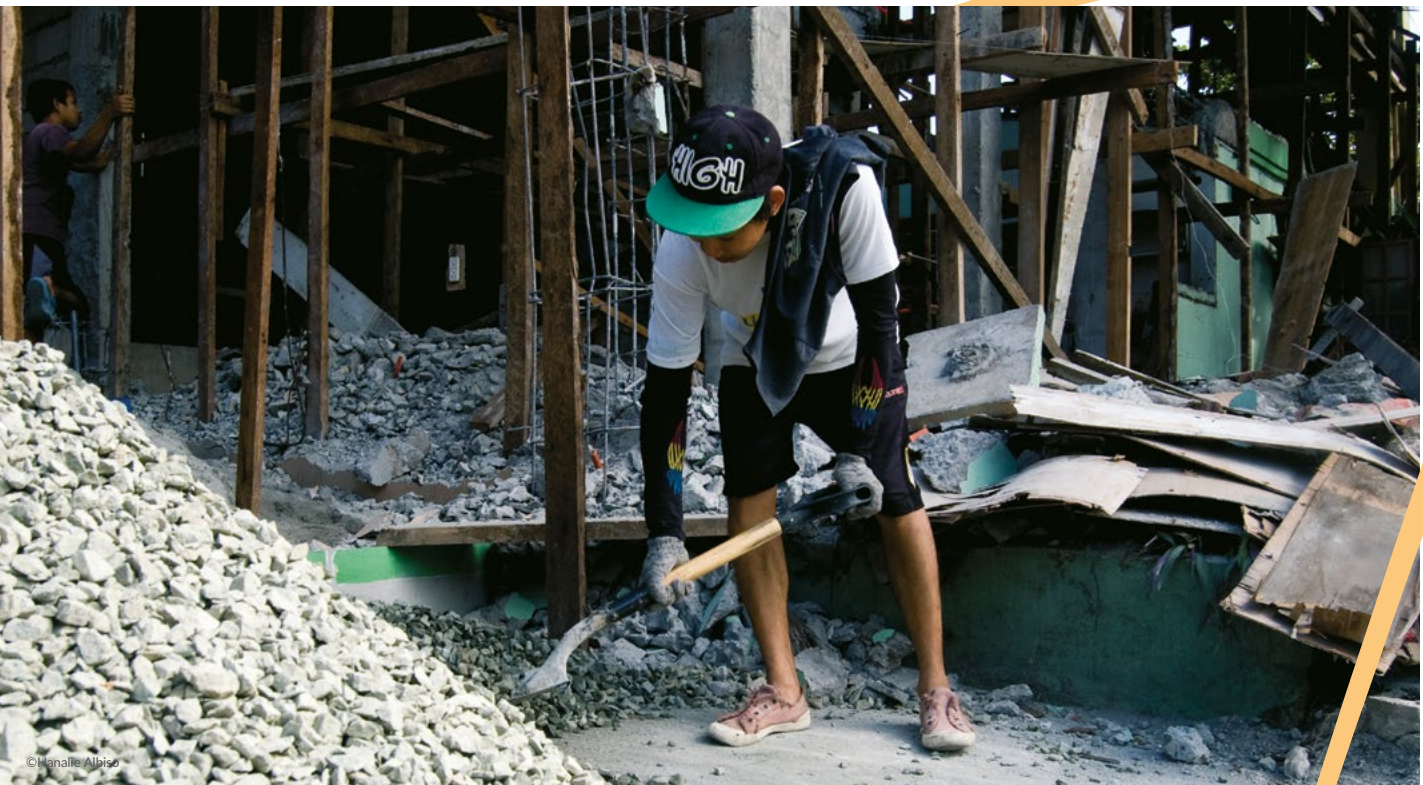
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Table 3.3. Interventions to prevent and mitigate road traffic injuries among adolescents

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural	Drinking age laws	Raising the legal drinking age to 21 years reduces drinking, driving after drinking and alcohol-related crashes and injuries among youth.
	Blood alcohol concentration laws	Set a lower permitted blood alcohol concentration limit (0.02 g/dl) for young drivers than recommended for older drivers (0.05 g/dl). Enforce blood alcohol concentration limits, e.g. random breath testing of all drivers at a certain point, or only those who appear to be alcohol-impaired.
	Seat-belt laws	When laws requiring seat-belt use are enforced, rates of use increase, and fatality rates decrease. Although most countries now have such laws, half or more of all vehicles in LICs lack properly functioning seat-belts.
	Helmet laws	Create mandatory helmet laws for two-wheeled vehicles and enforce them. Establish a required safety standard for helmets that are effective in reducing head injuries.
	Mobile phone laws	There is little information on the effectiveness of these relatively new driving interventions. However, 142 countries prohibit the use of hand-held phones, 34 prohibit hands-free phones and 42 prohibit text messaging.
	Speed limits	Roads with high pedestrian, child or cyclist activity should allow speeds no higher than 30 km/h. Limits should be enforced in such a way that drivers believe there is a high chance of being caught if they speed.
	Restriction of young or inexperienced drivers	A graduated licensing system phases in young driver privileges over time, such as first an extended learner period involving training and low-risk, supervised driving; then a licence with temporary restrictions; and finally a full licence (e.g. Case study 2).
	Restriction of availability of alcohol to young drivers	Reducing hours, days or locations where alcohol can be sold, and reducing demand through appropriate taxation and pricing mechanisms, are a cost-effective way to reduce drink driving among young people.
	Legal disincentives to drive unsafely	Make unsafe behaviour less attractive, e.g. give penalty points or take away licences if people drive while impaired.
Environmental	Traffic calming and safety measures	Examples include infrastructural engineering measures (e.g. speed humps, mini-roundabouts or designated pedestrian crossings); visual changes (e.g. road lighting or surface treatment); redistribution of traffic (e.g. one-way streets); and promotion of safe public transport.
Organizational	Pre-hospital care	Standardize formal emergency medical services, including equipping vehicles with supplies and devices for children as well as adults. Where no pre-hospital trauma care system exists: teach interested community members basic first aid techniques; build on existing, informal systems of pre-hospital care and transport; and initiate emergency services on busy roads with high-frequency crash sites.
	Hospital care	Improve the organization and planning of trauma care services in an affordable and sustainable way to raise the quality and outcome of care
	Rehabilitation	Improve services in health-care facilities and community-based rehabilitation to minimize the extent of disability after injury, and help adolescents with persistent disability to achieve their highest potential.
Community	Alcohol campaigns	Make drinking and driving less publicly acceptable; alert people to risk of detection, arrest and its consequences; and raise public support for enforcement.
	Designated driver campaigns	Designated drivers choose not to drink alcohol so they may safely drive others who have drunk alcohol. Such initiatives should only be targeted at young people over the minimum drinking age, so as not to promote underage drinking.
	Seat-belt campaigns	Public campaigns about seat-belt laws can target adolescents to increase awareness and change risk-taking social norms.
	Helmet campaigns	Educate adolescents about the benefits of wearing helmets on two-wheeled vehicles, using peer pressure to change youth norms regarding helmet acceptability and to reinforce helmet-wearing laws.
	Community-based projects	Community projects can employ parents and peers to encourage adolescents to wear seat-belts.
Individual	Helmet distribution	Programmes that provide helmets at reduced or no cost enable adolescents with little disposable income to use them. Distribution can be taken to scale through the school system.
	Motorized two-wheeler interventions	Promote use of daytime running lights; reflective or fluorescent clothing; light-coloured clothing and helmets; and reflectors on the back of vehicles to reduce injury.
	Cyclist interventions	Promote front, rear and wheel reflectors; bicycle lamps; reflective jackets or vests; and helmets to reduce injury.
	Pedestrian interventions	Promote white or light-coloured clothing for visibility; reflective strips on clothing or articles like backpacks; walking in good lighting; and walking facing oncoming traffic to reduce injury.

Sources: (118); (167); (168).

Evidence-based interventions

3

3. Evidence-based interventions

Thailand's driving education and training programmes for young novice motorcycle drivers

In Thailand, motorcycles are the most widely used mode of transportation and the main source of road traffic injury risk. Surveillance data from 26 Thai trauma centre hospitals in 2004 showed that 66% of traffic-related morbidity and 68% of traffic-related mortality among individuals younger than 15 years were related to motorcycles. Forty-eight per cent of those fatal cases were drivers, while 52% were passengers.

Thailand has implemented laws prohibiting children younger than 15 years from operating a motorcycle, and adolescents 15–18 years are only permitted to drive motorcycles with an engine smaller than 110 cc.

The country is also implementing a 15-hour training programme for all eligible ages to teach drivers to operate motorcycles safely. It includes five hours of in-class instruction on laws and regulations, motorcycle checks, basic riding structure, a hazard perception test (a riding simulator) and principles of riding techniques. It also involves 10 hours of riding skills development.

Source: (169).

Case studies A3.6-A3.8 in Annex 3 provide additional country examples of road injury interventions, i.e. Brazil's improvement of road safety legislation, Iraq's post-conflict innovative emergency medical services and Vietnam's promotion of child motorcycle helmet use.

Drowning: Adolescent drowning can be prevented through strategies targeting the general population, including improved community infrastructure (e.g. barriers to water supply, bridges and levees), public awareness-raising and appropriate policies and legislation (170). Effective policies and legislation that are achievable in low-income settings include: setting and enforcing safe boating, shipping and ferry regulations; building resilience and managing flood risks locally and nationally; coordinating drowning-prevention efforts with those of other sectors and agendas; and developing a national water safety plan.

Some community-based drowning prevention measures are also readily achievable in low-income settings, including installing barriers controlling access to water; teaching school-aged children basic swimming, water safety and safe rescue skills; training community members in safe rescue and resuscitation; and strengthening public awareness of adolescent vulnerability to drowning (because they tend to be less supervised than small children and are more likely to consume alcohol and engage in other risky behaviour around water). For example, in Bangladesh the Centre for Injury Prevention and Research established multiple interventions to reduce drowning among children of all ages, including street theatre and video shows on water safety themes; booklets and posters distributed at schools; collaboration with relevant agencies to implement a survival swimming curriculum; and village meetings after any drowning fatality to identify the cause and prevent it in the future (171).

Global Strategy adolescent health intervention

No. 1: Assessment and management of adolescents who present with unintentional injury, including alcohol-related injury

Examples: burns

Assessment and management of adolescents who report unintentional injury is necessary not only to provide appropriate medical care, but also to identify accurately the cause of the injury to ensure it does not occur again. For example, burns are one of the few forms of injury that have a higher burden in adolescent females than males, because worldwide approximately 2 billion people in LMICs – the vast majority female – cook on unsafe open fires or very basic traditional stoves (172); (173). In many LMICs, adolescent girls cook either for their own families or as domestic workers in other people's homes. Due to their youth, they are on average less skilful and more prone to burns than adult women (119). Most burn prevention interventions have been developed in HICs and are specific to those settings (e.g. smoke alarms and residential sprinklers). Relatively few have been designed and implemented to address common burn risk factors in LMICs, and fewer still evaluated for evidence of effectiveness. Some promising approaches include the promotion of an improved wood stove with a chimney in Guatemala and a safer paraffin stove in South Africa (175).

Careful assessment of the cause of adolescent injury is also important because some adolescents or their guardians may falsely state that an injury was due to an accident when in fact it was due to self-harm or interpersonal violence. In some countries, for example, so-called honour killings and death by fire account for a significant number of reported cases of familial or intimate partner violence against adolescent girls, and survivors of such assaults may be compelled by the perpetrators to claim the injuries were accidental (67); (172). Similarly, alcohol use is a major risk factor for many forms of injury, both when an adolescent is the drinker and when the drinker (e.g. a parent or an intimate partner) causes harm to an adolescent (102); (388). In these instances, additional interventions related to mental health and alcohol use disorder, and/or legal interventions, may be warranted; some examples are discussed later in this section.

Evidence-based interventions

3

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3. Evidence-based interventions

3.3.
Violence interventions

| Global Strategy adolescent health intervention |
| No. 3: Prevention of violence |
| Examples: youth violence |

Interventions to prevent youth violence are summarized by broad ecological level in Table 3.4; additional information about these interventions is provided in Section A3.3 in Annex 3.

Table 3.4. Interventions to prevent youth violence

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural	Reduce access to and misuse of firearms	Programmes may require new legislation, additional police to supervise implementation, public awareness campaigns and more elaborate monitoring systems.
	Reduce access to and the harmful use of alcohol	Regulate the marketing of alcohol to adolescents; restrict alcohol availability; reduce demand through taxation and pricing; raise awareness and support for policies; and implement interventions for the harmful use of alcohol.
	Financial incentives to attend school	Money is granted on a per-student or per-family basis, and is tied to 80% or higher school attendance. Grants may cover direct costs (e.g. school fees and supplies) and opportunity costs (e.g. when families lose income from child labour).
Environmental	Spatial modifications and urban upgrading	For areas with high levels of violence, situational crime prevention includes a security assessment, a stakeholder analysis, and a planning process involving communities, local government, and housing, transport and other sectors.
	Poverty de-concentration	These strategies offer vouchers or other incentives for residents of economically impoverished public housing complexes to move to less impoverished neighbourhoods.
	Hotspot policing	Police resources are deployed in areas where crime is prevalent. Mapping technology and geographic analysis help identify hotspots based on combined crime statistics, hospital emergency records, vandalism and shoplifting data and other sources.
Organizational	Demand- and supply-side interventions for drug control	Drug control may focus on reducing drug demand, drug supply or both. Most interventions require substantial technical capacity within health services and the police force.
	School-based bullying prevention	Teachers are trained to recognize and explain bullying to students, what to do when it occurs, effective relationship skills and skills for bystanders. Specialists work with students involved in bullying. School policies and procedures also may be established and parents may be trained.
Community	Gang and street violence prevention interventions	This may focus on reducing gang enrolment, helping members leave gangs and/or suppressing gang activities. Community leaders are engaged to convey a strong message that gang violence is unacceptable. Police involvement, vocational training, and personal development activities may also be included.
	Community- and problem-orientated policing	The systematic use of police-community partnerships and problem-solving techniques identifies and targets underlying problems to alleviate violence (e.g. Case study 3). Necessary preconditions are a legitimate, accountable, non-repressive, non-corrupt and professional policing system, and good relations between police, local government and the public.
Interpersonal	Parenting programmes	Goals are to promote parental understanding of adolescent development and to strengthen parents' ability to assist their adolescents in regulating their behaviour.
	Home visits	Home visiting programmes monitor and support families where there is a high risk of maltreatment (e.g. families living in highly deprived settings).
	Peer mediation	Peer mediators may be nominated by a class and receive 20–25 hours of training on how to mitigate peer conflicts and seek help if needed. Other students may also be trained in conflict resolution skills.
	Dating violence prevention	School-based or after-school participatory activities address the characteristics of caring and abusive relationships; how to develop a support structure of friends; communication skills; and where and how to seek help in case of sexual assault.
Individual	Life-skills development and social and emotional learning	These age-specific programmes help adolescents to understand and manage anger and other emotions, show empathy for others and establish relationships. They involve 20–150 classroom sessions over several years.
	After-school and other structured leisure time activities	Structured leisure time activities can include cognitive and academic skills development; arts, crafts, cooking, sport, music, dance and theatre; activities related to health and nutrition; and community and parental engagement.
	Academic enrichment	Adolescents are targeted through mass media, after-school lessons or private tutoring to help them keep up with school requirements and prevent them from dropping out of school.
	Vocational training	Vocational training for at-risk youth can have a meaningful impact on violence prevention if integrated with economic development and job creation. Ensure the capacity of training institutions, available technical equipment, existing cooperation with businesses and sustainable financing models.
	Mentoring	Volunteer mentors receive training on adolescent development, relationship-building, problem-solving, communicating and specific concerns (e.g. alcohol and drug use). A mentor shares knowledge, skills and perspective to promote an at-risk adolescent's positive development.
	Therapeutic approaches	Qualified mental health specialists or social workers work with individual adolescents on social skills and behavioural training, anger- and self-control techniques and cognitive elements (e.g. moral reasoning and perspective-taking to appreciate the negative impacts of violence on victims). Families and social networks of at-risk adolescents may also be targeted.

Sources: (45); (176).

These and other interventions to prevent and respond to youth violence are detailed in Section A3.3 in Annex 3.

Case Study 3

Brazil's programme to reduce alcohol-related violence among high-risk youth

A community-wide strategy to reduce alcohol-related violence was implemented in Diadema, Brazil. Vocational training and work placements for high-risk youths were provided, alongside a vacation club that organized activities during school holidays (a peak period for youth crime) and a life-skills training programme aimed at reducing illicit drug use. In addition, the city introduced a new law requiring bars to close by 23:00 and started the Integrated Operation Project, which made the Diadema municipal guard and state police force responsible for the surveillance of vehicles, bars, deserted areas and other at-risk spaces. Security cameras were installed to monitor specific areas with high crime rates. The combination of these initiatives was found to decrease homicides from 389 cases in 1999 to 167 in 2003, and robberies from 5192 cases in 1999 to 4368 in 2003.

Source: (176).

Case Studies A3.9-A3.11 in Annex 3 provide additional country examples of youth violence interventions, i.e. Colombia's upgrading of low-income urban neighbourhoods, the Russian Federation's Big Brothers, Big Sisters mentoring programme and the former USSR's strict alcohol regulation.
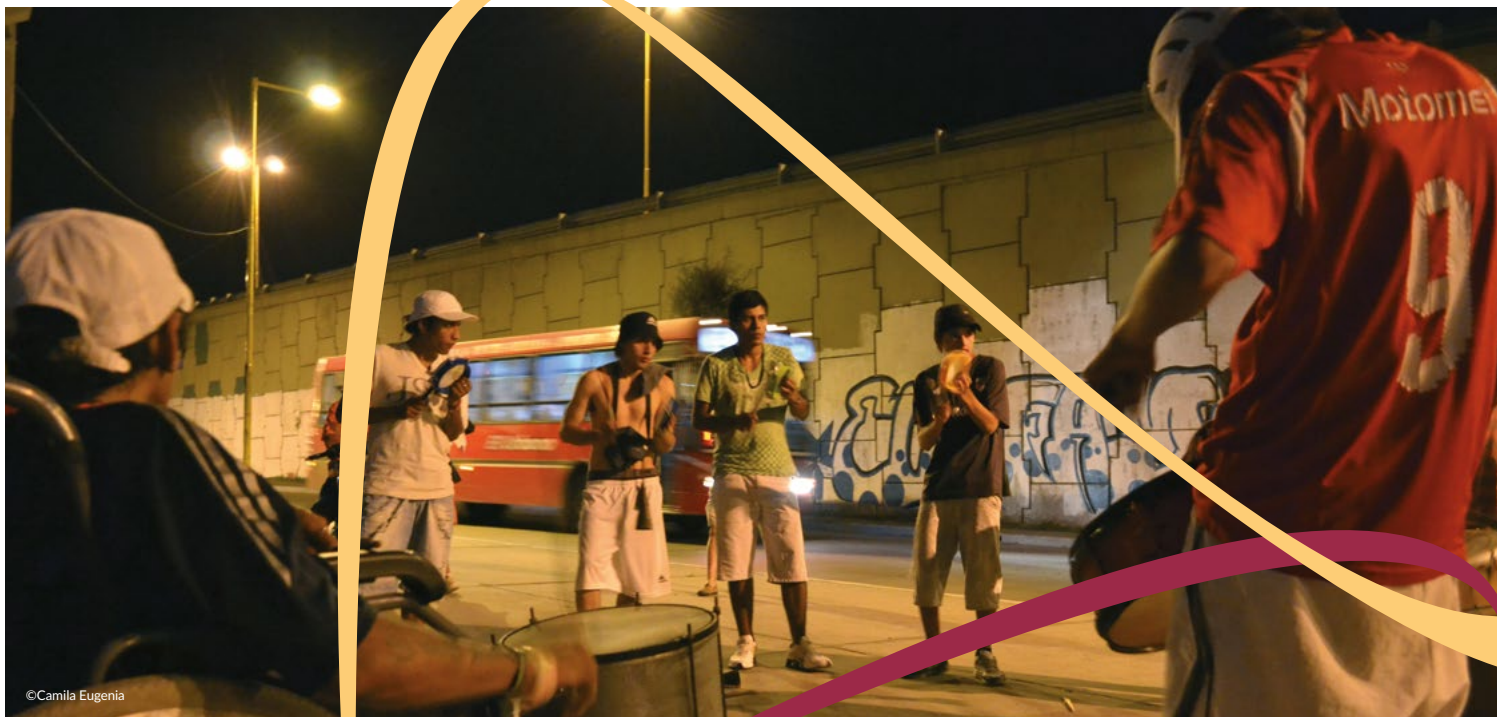
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3. Evidence-based interventions

Adolescents are at greater risk of maltreatment by a parent or caregiver than children aged 5–9 years (177), yet most child maltreatment interventions target pre-adolescent children in their design and implementation (178). WHO recommends that child abuse interventions should be multifaceted to address the specific needs of adolescents more effectively, including enhancement of professional training and education about the nature and impact of adolescent maltreatment; development and extension of prevention and treatment services for adolescent victims and their families; and systems that better assess and intervene with maltreated adolescents (178). Section A3.7.1.2 in Annex 3 lists signs of adolescent maltreatment to which clinicians in non-specialized health settings should be alert and responsive.

Home visit programmes for at-risk families and training programmes for parents may be effective in reducing both physical and emotional abuse of adolescents in several ways, including increasing parental knowledge about adolescent development; changing undesirable parental attitudes; positively modifying the interaction between parents and adolescents; and increasing professional surveillance of the family, leading either to the earlier detection of a problem or preventing such a problem from taking place (180). However, the human and other resources for such programmes are often not present in many LMICs, and almost all of the evidence on the effectiveness of such programmes comes from HICs.

Countries should also develop standards of health care and protection services for maltreated adolescents, e.g. standards for documentation of injuries; forensic assessment; psychosocial support; coordinated case management; court proceedings with adolescent witnesses; social service interventions with families; and alternative placements for adolescents (180).

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"I have a friend who is overweight. Other kids bully her; there is a lot of bullying. But the thing is that her mom is the same. Looking at her is like looking at her mom. And her mom hits her. And the dad, the dad hits them both and he wants to leave them. So my friend cries a lot, and she says that she doesn't love her family."

Older adolescent girl in Colombia

Global Strategy adolescent health intervention

No. 5: Prevention of and response to sexual and other forms of gender-based violence

Examples: sexual and/or gender-based violence

Primary prevention strategies for intimate partner violence and/or sexual violence for adolescents include:

Early adolescents (10–14 years)

- interventions specifically for children exposed to such violence, such as psychological treatment to improve cognitive, emotional, and behavioural outcomes;
- school-based training to help children recognize and potentially avoid sexually abusive situations;
- school-based social and emotional skills development initiatives;
- identifying and treating conduct and emotional disorders;

Older adolescents (15–19 years)

- school-based programmes to prevent dating violence;
- multicomponent violence-prevention programmes;

All adolescents

- strategies to reduce access to and harmful use of alcohol;
- interventions based on social norms theory and focused on changing social and cultural gender norms;
- media-awareness campaigns;
- targeted work with men and boys.

(45); (181); (182); (183).

Effective interventions to prevent primary or secondary perpetration of intimate partner violence among adolescents, and victimization, are based in multiple settings (i.e. school and community); focused on key adults in the adolescents' environment (e.g. teachers and parents); address relationship skills; and measure more than one type of violence (e.g. physical and sexual) (184). Interventions that have been found not to be effective are those of relatively short duration (i.e. 1–3 hours compared to 8–28 hours) and those with only a curriculum component, not also a community component.

Box 3.1 summarizes health services that should be provided to adolescent survivors of sexual and/or intimate partner violence.

Box 3.1. Health services for adolescent survivors of sexual and/or intimate partner violence

Health workers who come into contact with adolescent survivors of sexual violence are pivotal to the recognition of, and response to, individual cases of sexual assault. Generally, the services that are needed after sexual assault include provision of comprehensive post-rape care that includes:

- first-line support;
- pregnancy testing and prevention (i.e. emergency contraception);
- abortion services (to the full extent of the law), HIV prophylaxis, other STI prophylaxis and treatment of injuries;
- mental health care in accordance with WHO guidelines; and
- referral for other legal, psychosocial and shelter needs. (185)

The 2013 WHO clinical and policy guidelines Responding to Intimate Partner Violence and Sexual Violence against Women provides more detailed recommendations (185). In addition, the particular needs of adolescent survivors should be taken into consideration.

For example, adolescents are frequently shy or embarrassed when asked to talk about sexual matters, and may talk more freely if parents are not present. They should be asked – ideally in the absence of the parent – if they want a parent present during history-taking. Adolescent age will also determine the nature of clinical examination (e.g. cervical specimens) and treatment (e.g. STI medication dosage), so age-appropriate guidelines should be consulted (186).

Sources: (185); (186).

3. Evidence-based interventions

3.4.
Sexual and reproductive health interventions, including HIV interventions

According to UNESCO, comprehensive sexuality education (CSE) is, "an age-appropriate, culturally relevant approach to teaching about sex and relationships by providing scientifically accurate, realistic, and non-judgmental information" (187); (376). The characteristics of an effective CSE curriculum relate to development, content and implementation; these characteristics are summarized in Section A3.1.2 in Annex 3. The most recent scientific evidence demonstrates that CSE, including education on safer sex and condom use, can help to delay the initiation and frequency of sexual activity, reduce the number of sexual partners, increase the use of condoms and reduce sexual risk-taking (188); (189). School-based CSE programmes also have great potential to be scaled-up because most adolescents attend school and these programmes are able to use existing infrastructure and capacity.

In all countries – regardless of HIV prevalence – CSE should be integrated into school curricula and should include the promotion of gender equality and respect for human rights (123). Appropriate health sector representatives should be informed about effective CSE, and should actively support its implementation at multiple ecological levels.

- At the policy level – the health and education sectors should promote CSE in schools by advocating for clear, consistent and evidence-based policies for safe and enabling environments, and for the inclusion of age-appropriate, skills-based SRH education in school curricula.

- At the community level – the health sector's collective expertise and strong credibility make it a valuable ally for mobilizing partners, dispelling misperceptions, providing evidence-based arguments and encouraging the development of sound policies and practices for the promotion of SRH with students in schools and out-of-school youth in community settings.

- At the school level – in collaboration with the education sector, the health sector can promote CSE by:
  - facilitating teacher training and retraining through professional organizations;
  - jointly reviewing the accuracy of information and the appropriateness of skills-based training in primary and secondary school curricula;
  - providing inputs for the development of evidence-based, age-appropriate and skills-based SRH education in primary and secondary school curricula;
  - encouraging the development, adaptation and use of standards for SRH education curricula for adolescents; and
  - generally supporting CSE through school-based or school-linked health services and referrals.

Global Strategy adolescent health intervention

No. 7: Information, counselling and services for comprehensive sexual and reproductive health, including contraception

Examples: early and/or unintended pregnancy

In 2011, a WHO review assessed the effectiveness of intervention impact upon critical outcomes for adolescent maternal health (190). Based on that review, WHO made the following recommendations in order to reduce pregnancy before age 20:

- offer interventions that combine curriculum-based sexuality education with contraceptive promotion to adolescents in order to reduce pregnancy rates; and

- offer and promote postpartum and postabortion contraception to adolescents through multiple home visits and/or clinic visits to reduce the chances of second pregnancies among adolescents (190).

The 2011 WHO review further recommended that, in order to increase the use of contraception by adolescents, stakeholders should:

- implement interventions to improve health-service delivery to adolescents, including increasing provider competency and addressing provider bias, as a means of facilitating their access to and use of contraceptive information and services;

- implement interventions at scale that provide accurate information and education about contraceptives, in particular curriculum-based sexuality education, to increase contraceptive use among adolescents; and

- implement interventions to reduce the financial cost of contraceptives to adolescents (e.g. Case study 4) (190).

Section A3.4.1 in Annex 3 provides an in-depth description of interventions to prevent and respond to early and/or unintended adolescent pregnancy, including Case study A3.12, which details home visits in the USA to promote contraceptive uptake and to prevent rapid, repeat adolescent pregnancies.

Case Study 4

Nicaragua's voucher programme to increase access to sexual and reproductive health care among underserved adolescents

In disadvantaged areas of Managua, Nicaragua, the nongovernmental organization (NGO) Central American Health Institute partnered with several other NGOs to finance and distribute vouchers aimed at reducing barriers to sexual and reproductive health (SRH) care among underserved adolescents.

These vouchers offered free access to such care at 20 selected health centres. The vouchers were distributed in a range of venues in 221 poor neighbourhoods, focusing on those outside of school – since attendance at secondary school among adolescent girls is relatively low in Managua and pregnancy may be a reason for dropping out. The vouchers entitled each adolescent to one consultation and one follow-up visit for counselling, family planning, pregnancy testing, antenatal care, treatment of sexually transmitted infections, or a combination of these services. In addition, clinic staff received training sessions on counselling, adolescence and sexuality, and sexual abuse.

Adolescent girls who received a voucher were found to be more likely to utilise SRH care services, to use modern contraception, and to have used condoms at their most recent sexual encounter.

Sources: (190); (191).

[First girl] *"If something is happening to me emotionally, and I don't feel loved, I search for a boyfriend. And maybe he isn't great for me, but he will keep me company. And in that way I get a form of attention that I was looking for, but not getting from my parents."*

Older adolescent girls in Colombia

[Second girl] *"Yeah, that happens in many cases. For example, girls like me are in relationships because of that, not because they really want to be. And other girls are with someone because they actually want to be in a relationship with that boy."*

3. Evidence-based interventions

Female genital mutilation (FGM): At a national level, introduction of anti-FGM laws and enforcement of such laws have reduced the practice of FGM (138); (192). Mass-media initiatives through radio, music, storytelling and poems have also contributed to positive behaviour change related to FGM (390). At the community level, other behavioural change interventions are also proving to be successful, including communication-for-change projects and alternative rite-of-passage rituals (138).

Adolescent girls and women living with FGM have experienced a harmful practice and should be provided quality health care (193). The 2016 WHO Guidelines on the Management of Health Complications from Female Genital Mutilation include recommendations related to deinfibulation, mental health and female sexual health. For example, for girls and women living with type 3 FGM, deinfibulation is recommended for: preventing and treating obstetric complications; facilitating childbirth; and preventing and treating urologic complications (e.g. recurrent urinary tract infections and urinary retention). For girls and women living with any form of FGM, cognitive behavioural therapy should be considered if they are experiencing symptoms consistent with anxiety disorders, depression or post-traumatic stress disorder, and sexual counselling is recommended for preventing or treating female sexual dysfunction (193).

Early and/or forced marriage: Actions to prevent and reduce marriage before age 18 include: encouraging political leaders, planners and community leaders to formulate and enforce laws and policies to prohibit it; implementing interventions to inform and empower girls, and interventions to influence family practices and community norms; and increasing educational opportunities for girls through formal and non-formal channels (194). A multisectoral, multipronged approach is likely to be more effective in ending child marriage than changing laws and policies alone, e.g. a combination of child-sensitive social protection; improved schooling; legal change; gender equality awareness-raising campaigns and capacity building; and providing girls with financial and vocational skills (162). Social protection potentially includes transfers, insurance and services to improve resilience and prevent negative household coping strategies, such as child marriage. These should address the specific patterns of children's poverty and vulnerability, and recognize the long-term developmental benefits of investing in girls' education and vocational skills.

Married adolescents often face barriers accessing contraception due to social and gender norms that support immediate childbearing after marriage, limited agency and power in their marital relationships and, in some cases, little mobility. Often, for example, a married girl is confined to her husband's family home and household, and the loss of her social network and family support can be extremely isolating (195). Adult responsibilities, forced sexual relations, denial of freedom and loss of educational and personal development can have profound physical, intellectual, psychological and emotional impacts. Psychological support for married adolescents is thus important, as is emergency assistance for those who are in extreme marital stress.

Married adolescents may also be put at particular risk when a country has a legal age of marriage that is lower than the legal age at which contraception and family planning services can be provided. In addition, maternal and child health services often do not focus on young first-time mothers. Married adolescents do not require special maternal health services, but they do need youth-friendly services and positive action to achieve equality of access. Some countries with high rates of adolescent marriage have developed special outreach services to address this. For example, in Rajasthan, India, the Action Research and Training for Health Programme developed an outreach programme involving village women volunteers. They get to know all first-time pregnant mothers, most of whom are adolescents, and then accompany them on their first visit to a clinic. The service also provides a 24-hour delivery service at home and at the health centre, including an obstetric squad comprising a nurse midwife and a male field worker on a motorbike (138); (164); (196).

Global Strategy adolescent health intervention

No. 9: Pre-pregnancy, pregnancy, birth, post pregnancy, abortion (where legal) and post abortion care [all 48 Global Strategy evidence-based interventions], as relevant to adolescents

Examples: maternal conditions

Broad maternal health interventions that address delays in seeking and receiving appropriate health care can reduce adolescent maternal disorders, including those detailed in the 2015 WHO Recommendations on Health Promotion Interventions for Maternal and Newborn Health and the 2013 Guidelines on Maternal, Newborn, Child and Adolescent Health: Recommendations on Maternal and Perinatal Health (392); (395).

Actions can be taken to improve the use of antenatal, childbirth and postnatal care by adolescents through: expanding availability of such services and emergency obstetric care; informing adolescents and community members about their

importance; and following up to ensure that adolescents, their families and communities are well prepared for birth and related emergencies (194). Care for a pregnant adolescent should include: counselling about the option to abort during the first visit (where this is legal); social support (including home visits); nutritional support (including counselling and supplementation); advice to avoid household air pollution; systematic assessment of violence; a plan for birth; management of anaemia and malaria where it is endemic; and counselling for breastfeeding and postpartum contraception (133); (173). Postpartum contraceptive services are especially important to support healthy child spacing and to prevent rapid, repeat pregnancies (131); (393).

Global Strategy adolescent health intervention

No. 10: Prevention, detection and treatment of sexually transmitted and reproductive tract infections, including HIV and syphilis

Examples: HIV and other sexually transmitted infections

Components of effective HIV prevention programmes for adolescents and young adults include: condom promotion and distribution; intensive social and behaviour change communication programmes; school-based HIV prevention (including CSE); pre-exposure prophylaxis; and accelerated uptake of HIV testing services, antiretroviral therapy (ART) , harm reduction services and voluntary medical male circumcision (VMMC). For each of these prevention interventions, the UNAIDS 2016 guidance document HIV Prevention among Adolescent Girls and Young Women outlines issues to consider and frameworks for implementation (123).

Given large proportions of adolescent populations are at high risk of STIs, effective STI prevention services for general populations are equally or even more urgent for adolescent populations, including scale-up of STI case management and counselling; syphilis testing and treatment of all pregnant girls and women; and delivery of HPV vaccinations (199). The Global Health Sector Strategy on Sexually Transmitted Infections (2016-2021) focuses on three STIs that require immediate action for control, and for which there are cost-effective interventions, i.e. Neisseria gonorrhoeae, because of the rising risk of untreatable gonorrhoea and the risk of co-infection with other STIs that may also be on the rise (e.g. Chlamydia trachomatis); Treponema pallidum, specifically the elimination of mother-to-child (congenital) syphilis; and HPV, with an emphasis on vaccination towards the elimination of cervical cancer and genital warts (137).

Strategies to enhance the impact of STI prevention include integration of STI services into existing health systems, advocacy to fight the stigma of STIs, and measurement of STI burdens. Development of new technologies to prevent and treat STIs include STI rapid diagnostic tests, additional drugs for gonorrhoea and STI vaccines and other biomedical interventions. The global STI strategy identifies numerous priority actions for adolescents, e.g. combination (behavioural, biomedical and structural) prevention interventions targeting adolescents; providing them with comprehensive information and male and female condoms for dual protection against STIs and early pregnancy; ensuring the HPV vaccine is a pillar of adolescent health programmes; and implementing strategies for detecting and managing asymptomatic infections, such as regular case testing or screening, with interventions for reaching sexual partners (137).

3. Evidence-based interventions

VMMC offers boys and men lifelong partial protection against heterosexual acquisition of HIV, and is a highly cost-effective intervention for preventing acquisition of HIV and other STIs (e.g. HSV-2 and HPV) in settings with a high HIV burden. The 2016 WHO and UNAIDS Framework for Voluntary Medical Male Circumcision aims to accelerate efforts to reach and sustain 90% coverage among males aged 10–29 years by promoting VMMC as part of an essential package of health services, particularly in eastern and southern Africa (200). The services should be tailored for age groups (10–14, 15–19 and 20–29 years). The framework suggests several activities, including:

- building on the demand for VMMC among adolescents;
- adjusting policies and services to improve access of adolescent males to VMMC and other health services to meet their needs;
- targeting adolescents at higher risk based on location and behaviour;
- integrating or linking service delivery to other relevant interventions or sectors (e.g. youth and education) to address broader health needs of adolescent males;

- employing service delivery approaches and demand creation that maintains uptake among adolescent boys to undergo VMMC;
- innovating policies, services and delivery, including for those adolescent males who are not in school or other formal institutions; and
- accounting for results and quality.

Because VMMC only offers partial protection, counselling on risk reduction and safer sex is a critical part of any programme. Delivery approaches and linkages may take place at the facility or community levels, such as school-based interventions that involve school leadership, education, and information for boys, girls, parents and communities. Partnerships with relevant sectors (e.g. youth and sport) are valuable to address the particular needs of adolescent boys. Ensuring quality and safety are essential; this can be facilitated through collaboration with national programmes, such as adolescent SRH services or essential surgical services.

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WHO recommendations for adolescent HIV testing in different types of epidemics can be summarized as:

1. HIV testing and counselling, with linkages to prevention, treatment and care are recommended for adolescents from key populations in all settings (generalized, low and concentrated HIV epidemics).

2. In generalized epidemics, HIV testing and counselling with linkage to prevention, treatment and care are recommended for all adolescents.

3. In low and concentrated epidemics, access to HIV testing and counselling with linkage to prevention, treatment and care are recommended for all adolescents. In concentrated epidemics, physician-initiated testing and counselling should be offered in clinical settings to adolescent clients who present with symptoms or medical conditions that could indicate HIV infection, including presumed and confirmed cases of tuberculosis.

4. Adolescents with HIV should be counselled about the potential benefits and risks of disclosure of their HIV status to others and empowered and supported to determine if, when, how and to whom to disclose their status.

5. Community-based approaches can improve treatment adherence and retention in care of adolescents living with HIV.

6. Training of health-care workers can contribute to treatment adherence and improved retention in care among adolescents living with HIV. (124)

"As you might know, there are a lot of 15-year-old adolescents who are sexually active, and are already facing symptoms of HIV/STIs, but they are unable to take the tests for them due to their too-young age. They also cannot ask for parental consent because it will become a big problem for them."

Older adolescent boy in Indonesia

Currently, ART should be initiated in and provided lifelong to all adolescents living with HIV, regardless of WHO clinical stage and CD4 cell count (201). As a priority, ART should be initiated in all adolescents with severe or advanced HIV clinical disease (WHO clinical stage 3 or 4) and adolescents with CD4 count ≤350 cells/mm3 (201). Also, all pregnant and breastfeeding adolescents living with HIV should initiate ART, and this should be maintained at least for the duration of mother-to-child transmission risk (124).

Given tuberculosis is a main cause of morbidity and mortality for people living with HIV, tuberculosis prevention, diagnosis and treatment should be included within these activities (202). To maximize the coverage and quality of adolescent HIV care, linkages and referral pathways should be established to ensure a comprehensive continuum of care, including for the transition from paediatric to adult HIV services.

Service providers, adolescents and key stakeholders should also be involved to identify acceptable and feasible activities to promote adolescent HIV care and treatment, e.g. community-based service delivery, training for health workers and interventions to support onward disclosure and to improve adolescent treatment literacy and mental health (e.g. Case study 5) (124); (394). For out-of-school adolescents, the workplace also provides an opportunity to extend access to HIV prevention; treatment; care and support services through education and training programmes; health and safety policies; support for treatment adherence; skills development and income support; and occupational health services (Inter-Agency Task Team on HIV and Young People 2008). It is also critical to address the needs and vulnerabilities of adolescents from key populations, including people who use drugs and/or sell sex; males who have sex with males; and transgender individuals. Programmes should take account of legal and policy constraints, service coverage, barriers to access and approaches and considerations for services (203); (204); (205); (206). Section A3.4.2 in Annex 3 describes these and other adolescent HIV testing, counselling, care and treatment interventions in depth.

3. Evidence-based interventions

Case Study 5

Mozambique's peer support groups to promote treatment adherence among adolescents living with HIV

The Mozambique Ministry of Health and NGO partners provide clinical care in all districts in Maputo and Cabo Delgado provinces. In order to improve adolescent ART adherence and to improve retention of this group in care and treatment services, these stakeholders conducted special training on paediatric and adolescent psychosocial support for lay counsellors, psychologists and psychiatry medical officers, including an explicit focus on adherence reinforcement and HIV disclosure to adolescents.

At the same time, staff received training and improved skills in creating and supporting adolescent support groups. Support groups have been fully active in seven out of eight districts, with each group consisting of about 20 adolescents. Groups were provided with a range of materials, including job aids, an adherence flip chart and a manual on support groups. The support groups seem not only to influence adolescent adherence positively but also self-esteem and coping with HIV more generally.
Source: (124)

Case studies A3.13-A3.15 in Annex 3 provide additional country examples of HIV and AIDS interventions, i.e. South Africa's reduced age of consent for HIV testing, Namibia's strengthened linkage of HIV testing and counselling with post-test support services for adolescents living with HIV, and the United Republic of Tanzania's drop-in centre for young people who sell sex or inject drugs.

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3.5.
Communicable disease interventions

Global Strategy adolescent health intervention

No. 13: Prevention, detection and treatment of communicable diseases, including tuberculosis

Examples: tuberculosis (TB)

For TB prevention, recent modelling indicates that targeting adolescents with TB vaccines will reduce morbidity and mortality not only in adolescents but also in infants and young children. This suggests that vaccinating adolescents would be a more effective strategy to protect small children from TB than direct vaccination of infants with a similar vaccine (145). The focus of TB vaccine development has thus shifted to a diverse pipeline of new TB vaccine candidates for adolescents.

One broad approach to reducing the adolescent burden for TB and some other communicable diseases (e.g. pneumonia) is prevention of environmental risk factors, such as exposure to tobacco smoke or household air pollution, which will be described more below (173). In addition, the 2013 WHO Roadmap for Childhood Tuberculosis outlines 10 steps to reduce TB among children and adolescents, including developing specific policy guidance, training and reference materials for health-care workers, and not missing critical opportunities for intervention, such as the transition of adolescents from paediatric to adult TB services (146). In Kazakhstan, for example, the government developed an extensive infrastructure of paediatric TB services that focus on active case finding among children and screening those who are contacts of someone with TB. Afterward, TB notification rates decreased among adolescents, from 161/100 000 in 2002 to 98/100 000 in 2011 (146).

The 2014 WHO Guidance for National Tuberculosis Programmes on the Management of Tuberculosis in Children provides detailed clinical recommendations related to TB treatment in adolescents. TB and TB/HIV in adolescents and adults are largely similar in clinical presentation, anti-TB drug dosages and disease management, so currently the treatment of TB in adolescents follows the same guidelines as for adults.

However, adolescents with TB often face additional psychosocial challenges related to autonomy, adherence and/or stigma, whether or not they are also living with HIV, so they should receive special focus in guidelines and services for TB (146). For instance, it may be difficult for adolescents to maintain their confidentiality and avoid stigma if they miss school for TB treatment. In some countries with a relatively high prevalence of TB in school-going populations, governments have developed publications to address these issues with educators (e.g. Republic of South Africa (207). In another example, individualized and family counselling and brainstorming on adherence strategies could be used to empower adolescents and motivate them to adhere to treatment (208). In many countries, initiatives within the government's HIV and sexual health responses provide targeted, adolescent-friendly services that can also be used to mainstream the prevention, diagnosis and treatment of HIV-associated TB in adolescents.

3. Evidence-based interventions

Country-specific vaccination schedules should be based on local epidemiologic, programmatic, resource and policy considerations. However, WHO recommends several vaccinations as routine for adolescents and/or adults in all immunization programmes, including those for:

- tetanus (booster);
- HPV (for 9- to 13-year-old girls); rubella (for adolescent girls and child-bearing aged women if not previously vaccinated); and
- hepatitis B (for high-risk groups, if not previously immunized). (122)

In addition, for high-risk children, adolescents or adults, WHO recommends vaccination against typhoid, cholera, meningococcal disease, hepatitis A, rabies and dengue, as well as some other vaccines in specific regions (tick-borne encephalitis) or in programmes with certain characteristics (seasonal influenza for pregnant girls and women; varicella in countries where the average age of acquisition is 15 years or older).

WHO encourages national immunization programmes to use school visits for assessment of adolescent vaccination status, administration of previously missed doses (e.g. meningococcal vaccine) and provision of boosters where there is waning immunity from infant doses (e.g. tetanus) (122); (145); (397). In areas where large numbers of adolescents (e.g. female, rural or older adolescents) are missed in school-based vaccination campaigns, special campaigns or primary care health services may need to administer such vaccines at scale (122).

Introducing new vaccines (e.g. HPV) may create opportunities to reach underserved populations or age groups with other immunizations and health interventions that they would not otherwise receive. The 2014 WHO Principles and Considerations for Adding a Vaccine to a National Immunization Programme outlines practical considerations for deciding on the introduction of a vaccine, planning and managing its introduction and monitoring and evaluating its progress (210). In addition, the WHO Cervical Cancer Prevention and Control Costing (C4P) Tool is a user-friendly computerized tool that estimates the incremental resources required to add HPV vaccine to an existing immunization programme (211). As well as recommending HPV vaccination for early adolescent girls, some countries now recommend it for early adolescent boys to prevent possible cancers of the mouth, throat, penis and anus (212); (213).

Global Strategy adolescent health intervention

No. 15: Prevention and management of childhood illnesses, including malaria, pneumonia, meningitis and diarrhoea

Examples: malaria, lower respiratory infections and diarrhoeal diseases

Malaria: Within the WHO Information Series on School Health, the Malaria Prevention and Control document outlines how individuals and groups can implement malaria prevention interventions, including:

- argue for increased local, district and national support for malaria prevention interventions in schools;
- develop supportive environments through vector control, house spraying and the use of long-lasting insecticidal bed nets;
- modify and expand current health services to create more effective school health promotion programmes;
- identify skills that young people need to develop and maintain behaviours that reduce their risk of infection; and
- mobilize community action to implement and strengthen school programmes.
(214)

Several studies have shown that school-age children use long-lasting insecticidal nets less frequently than other population groups (144). Schools in malaria endemic areas provide an opportunity to teach adolescents simple but effective malaria prevention techniques, including:

- always sleep under insecticide-treated nets;
- control environmental factors conducive to mosquito breeding;
- receive intermittent preventive treatment during pregnancy;
- recognize symptoms of malaria and seek early treatment (141), especially if a member of a risk group;
- request effective antimalarial drugs and complete the treatment cycle;
- learn at an early age the seriousness of malaria and the danger that the disease poses to health and individual well-being; and
- use mosquito repellents, if available, and other locally recommended and available methods of personal protection.
(213)

Antimalarial drugs are being used in different ways to control malaria in school-age children, including screening and treatment, and intermittent preventive treatment (144). Some studies of chemoprevention in school-age children have shown reductions in anaemia and improved school performance.

Lower respiratory infections: An important intervention for the primary prevention of lower respiratory infections, and NCDs such as asthma, is reducing the level of exposure to environmental risk factors, particularly tobacco smoke and air pollution (215). The 2005 WHO Air Quality Guidelines offer global guidance on thresholds and limits for key air pollutants that pose health risks (216). At a structural level, national policies and investments supporting cleaner and more energy-efficient transport, housing, power generation and industry, as well as better municipal waste management, would reduce key sources of urban outdoor air pollution (217).

WHO has produced several publications focused on reducing household air pollution, particularly in LMICs where it is most common (95); (173). Many low-cost or no-cost approaches can reduce adolescent and general population exposure to indoor air pollution while meeting household energy needs and decreasing the amount of fuel needed. These include:

- switching from wood, dung or charcoal to more efficient, modern and less polluting fuels;
- locating a stove outside of a home or in a well-ventilated area;
- ventilating cooking areas through the use of eaves and smoke hoods; and
- changing behaviours, such as keeping children away from the smoking hearths, drying fuel wood before use, using lids on pots to shorten cooking time and improving ventilation by opening windows and doors.
(95); (173).

3. Evidence-based interventions

Diarrhoeal diseases: In many LMICs, the implementation of key structural and environmental WASH interventions is weak. This contributes to diarrhoeal diseases being the fourth leading cause of death among young adolescents globally, and the fifth leading cause of their DALYs lost. In such settings, one of the most effective ways to reduce the adolescent disease burden may be to collaborate with the WASH sector on intensive initiatives to raise awareness, advocate and ensure the improvement of WASH systems.

This includes:

- implementation of water safety plans and guidelines for drinking-water quality at a national level;
- implementation of sanitation safety plans and guidelines for safe use and disposal of wastewater, greywater and excreta;
- policies and programmes to promote the widespread adoption of appropriate hand washing practices;
- effective and consistent application of household water treatment;
- safe storage of household water;

- increased access to basic sanitation at the household level (e.g. Case study 6); and
- improved sanitation in households (e.g. flushing to a pit or septic tank; dry pit latrine with slab; or composting toilet (218); (219); (220); (221); (222).

In addition, targeted adolescent-specific WASH interventions may be critical, including:

- safe water and sanitation facilities in schools;
- health and hygiene education in schools, including food safety; and
- immunization of adolescents against specific diarrhoeal diseases (e.g. typhoid and cholera) in select conditions, e.g. in affected urban slum or emergency settings. (223); (224); (225); (226); (227); (139).

These and other WASH interventions to prevent and respond to adolescent diarrhoeal diseases are detailed in Section A3.5 in Annex 3.

Case Study 6

Mozambique's peer Bangladesh's community initiatives to stop open defecation

At the turn of the millennium, access to latrines in rural areas of Bangladesh was less than 15%. Many international agencies and NGOs had been working for three decades to improve environmental sanitation by constructing subsidized latrines and toilets. However, among nearly 85,000 villages it was difficult to find even 100 that were totally sanitized and free from open defecation (i.e. defecation outside without a toilet or latrine).

A new approach concentrated on empowering local people to analyse the extent and risk of environmental pollution caused by open defecation, and to construct toilets without any external subsidies. This community-led effort had a major impact. Open defecation was completely stopped by the community in more than 400 villages in Bangladesh, and the methodology has since been adopted in parts of India and elsewhere in Asia and Africa.

Sources: (228).

Case studies A3.16-A3.18 in Annex 3 provide additional country examples of WASH development interventions, i.e. Nepal's approach to improved food hygiene, Mauritania's improvement of water quality, sanitation and hygiene in vulnerable schools and Papua New Guinea's school WASH facilities designed by adolescent girls.

"The most important thing to me is water... If there is no water, we cannot live. The government can help us with that, or the village head or chief in our neighbourhood. If they do that for us, we will have clean water to drink so that we will not be going far places to fetch water, and this will make us happy."

Young adolescent boy in Nigeria

3. Evidence-based interventions

Endemic meningitis occurs primarily in children and adolescents, with the highest incidence in infants, and rates rising again in adolescence (229). The strategy to combat meningitis in affected settings includes epidemic preparedness, prevention and response. Preparedness focuses on surveillance, from case detection to investigation and laboratory confirmation (229). Prevention consists of vaccinating all 1- to 29-year-olds in the African meningitis belt with the meningococcal A conjugate vaccine.

Epidemic response consists of prompt and appropriate case management with reactive mass vaccination of populations not already protected through vaccination (140). The 2015 WHO Managing Meningitis Epidemics in Africa for health authorities and health-care workers provides guidance on planning and coordination at the district level, surveillance, treatment and care, vaccination and post-epidemic follow-up (230).

3.6.
Noncommunicable disease, nutrition and physical activity interventions

Globally, four major noncommunicable diseases (cardiovascular diseases, cancer, chronic respiratory diseases and diabetes) are responsible for 82% of NCD deaths across all age groups (235). As shown in Section 2, some of the major causes of adolescent death and DALYs lost in 2015 are examples of these major NCDs, namely stroke, leukaemia and asthma. WHO identifies four major risk factors that contribute to the four major NCDs, specifically: unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol. Metabolic or biological risk factors arising from these include overweight and obesity, raised blood glucose/diabetes, raised blood pressure and raised blood lipids (235). These and an additional major risk factor – air pollution – are among the leading global risk factors for adolescent death and DALYs identified in the 2013 Global Burden of Disease Study (Tables 2.6 and 2.7) (17); (150).

In addition to the four major NCDs described above, there are other NCDs and conditions that are major adolescent disease burdens, e.g. congenital anomalies and iron-deficiency anaemia. Importantly, many adolescent NCD risk factors do not result in NCDs until adulthood. For example, tobacco use during the adolescent years may not have an obvious consequence at that time, but may be a strong contributing factor to developing cancer during adulthood. Indeed, many of the NCD risk factors and burdens seen in adults first begin as risk behaviours in adolescence, underscoring the importance of intervening with adolescents to protect their health in both the short-term and the long-term. This section thus differs from some earlier sections in that it will not only focus on leading causes of NCDs in adolescence, but also on adolescent risk factors for NCDs later in life.

Global Strategy adolescent health intervention
No. 17: Promotion of healthy behaviour (e.g. nutrition; physical activity; no tobacco, alcohol or drugs)
Examples: unhealthy diet, physical inactivity, tobacco use and stroke

Tables 3.5, 3.6 and 3.7 summarize interventions to promote healthy diets and physical activity, and reduce adolescent exposure to tobacco. These interventions help to prevent stroke and numerous other NCDs.

Table 3.5. Interventions to promote adolescents having healthy diets

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural and environmental	Nutrient profiles	Develop and use nutrient profiles to identify unhealthy foods and beverages.
	Nutrient labelling system	Implement a standardized global nutrient labelling system; control the use of misleading health and nutrition claims; and implement mandatory front-of-pack labelling.
	Reduce affordability of unhealthy foods and beverages	Tax and increase the pricing of energy-dense, nutrient-poor foods and sugar-sweetened beverages.
	Reduce the impact of marketing of unhealthy foods and beverages	Reduce the impact of marketing of foods and beverages high in sugar, salt and fat. Establish cooperation between Member States related to cross-border marketing. Implement the Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children (231).
Organizational and community	Nutrition literacy campaigns	Ensure that appropriate and context-specific nutrition information and guidelines are developed and disseminated in a simple, understandable and accessible manner to all.
	Healthy food environments in schools and other public institutions	Require settings frequented by adolescents (e.g. schools, childcare settings, children's sports facilities and events and youth workplaces) to create healthy food environments (e.g. Case study 7).
	Improved access to healthy food	Improve the availability and affordability of healthy foods in public institutions and settings, particularly in disadvantaged communities.
	Campaigns to raise awareness of adolescent obesity	Campaigns should target policy-makers, medical staff and adults, adolescents and children in general, promoting capacity building related to adolescent obesity and its risk factors.
Interpersonal and individual	Guidance on a healthy diet	Drug control may focus on reducing drug demand, drug supply or both. Most interventions require substantial technical capacity within For example, clinical dietary guidance for older adolescents (18–19 years) includes: • Restrict salt to less than 5 g (one teaspoon) per day, reduce it when cooking, and limit processed and fast foods. • Restrict free sugars to less than 10% of total energy intake. A further reduction to below 5% or roughly 25 g (six teaspoons) per day would provide additional health benefits. • Have five servings (400–500 g) of fruit and vegetables per day. One serving is equivalent to one orange, apple, mango or banana or three tablespoons of cooked vegetables. • Limit fatty meat, dairy fat and cooking oil (less than two tablespoons per day); replace palm and coconut oil with olive, soya, corn, rapeseed or safflower oil; replace other meat with chicken (without skin).
	Weight management interventions for obese adolescents	Develop and support family-based, multicomponent, lifestyle weight management services for adolescents who are overweight (including nutrition, physical activity and psychosocial support). These should be delivered by multiprofessional teams as part of universal health coverage.

Sources: (36); (232); (233); (234); (235); (236).

3. Evidence-based interventions

Case Study 7

The Republic of Korea's promotion of healthy diets through schools

The Republic of Korea has taken a systematic and comprehensive approach to improving the diets of children and adolescents nationally. Starting in 2002, the government developed a series of strategies that addressed student health, including the National Obesity Prevention Programme and the Five-Year Policy for Children and Adolescents (2008–2012). In 2006, the School Meals Act was amended to incorporate nutrition education into school curricula. Since 2007, sugary drinks have been banned in schools, and in 2008 nutrition labelling was mandated for school meals. In 2009, the Special Act on the Safety Management of Children's Dietary Life was implemented, establishing Green Food Zones within 200 metres of schools, where the sale of high-calorie foods with low nutritional value is prohibited. These zones are currently operational at over 10 000 schools nationwide. From 2005 to 2009, students reported an overall decline in weekly consumption of fast food, instant noodles, confectionaries and carbonated drinks.

Source: (237).

Table 3.6. Interventions to promote adolescent physical activity

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural and environmental	Urban planning policies	Governments should partner with communities, the private sector and NGOs to develop safe spaces for physical activity and facilities for sports, recreation and leisure. Active transport policies should ensure that walking, cycling and other non-motorized transport are accessible and safe for all.
	School and public facilities	Adequate facilities should be available on school premises, youth workplaces and in public spaces for physical activity during recreational time for all adolescents (including those with disabilities), with the provision of gender-friendly spaces where appropriate.
Organizational and community	Public awareness programmes on physical activity	Provide guidance to children and adolescents, their parents, caregivers, teachers and health professionals on healthy body size, physical activity, sleep behaviours and appropriate use of screen-based entertainment.
	Physical education curricula in schools	A good physical education curriculum develops abilities and conditioning; provides activity for specific needs and to all children; encourages continued sports and physical activity into later life; and provides recreation and relaxation.
	Regular, structured sports activities	Regular, structured sports activities among adolescents strengthens the link between physical activity, sports and health, and reduces sedentary behaviours.
Interpersonal and individual	Guidance on physical activity for younger adolescents	Clinical guidance for adolescents aged 10–17 years recommends: • At least 60 minutes of moderate- to vigorous-intensity physical activity daily. • Amounts of physical activity greater than 60 minutes provide additional health benefits. • Most of the daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least three times per week.
	Guidance on physical activity for older adolescents	Clinical guidance for adolescents aged 18–19 years recommends: • At least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week (or an equivalent combination of moderate- and vigorous-intensity activity). • Aerobic activity should be performed in bouts of at least 10 minutes duration. • For additional health benefits, increase moderate-intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. • Muscle-strengthening activities should be done involving major muscle groups on two or more days a week.

Sources: (36); (233); (234); (235); (238).

"I think the time of school recess should be lengthened for five to 10 minutes. Sometimes the teacher finishes the lessons late, and we may have only five minutes left in recess. It is only enough for us to go to the toilet. In fact, it would allow us to have more time to eat snacks and play ball games in the playground. There will be no rush then."

Young adolescent girl in Hong Kong (China SAR)

Table 3.7. Interventions to reduce adolescent tobacco use and exposure

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural and environmental	Reduce the affordability of tobacco	Reduce affordability of tobacco products by increasing tobacco excise taxes.
	Ban tobacco advertising	Enforce comprehensive bans on tobacco advertising, promotion and sponsorship, including cross-border advertising, internet and social media. Also actively promote the entertainment media, cinema and drama as smoke-free.
	Smoke-free environments	Create bylaws ensuring completely smoke-free environments in all schools, recreational areas, indoor workplaces, public places and public transport.
Organizational and community	Campaigns to raise awareness of the dangers of tobacco	Conduct regular and effective mass-media campaigns to raise awareness of the dangers of tobacco.
	Tobacco prevention within school programmes	Integrate tobacco prevention within school policies, skills-based health education and health services. See Tobacco Use: An Important Entry Point for the Development of Health-Promoting Schools (239) for age-appropriate knowledge, attitude and skills-building targets. In no circumstances should these programmes be implemented in collaboration with or funded by the tobacco industry.
Interpersonal and individual	Guidance on stopping tobacco use	Clinicians should encourage all non-smokers not to start smoking; strongly advise all smokers to stop smoking, and support them in their efforts; and advise individuals who use other forms of tobacco to quit. See Toolkit for Delivering the 5A's and 5R's Brief Tobacco Interventions in Primary Care for more specific guidance (240).

Sources: (36); (234); (235); (239).

Nutrition, physical activity and tobacco use interventions are described in more detail in Section A3.6.1 in Annex 3. Case studies A3.19-A3.21 in Annex 3 provide additional country examples of NCD interventions, i.e. Pakistan's promotion of physical activity for girls, Costa Rica's Life-Skills programme to prevent adolescent alcohol and tobacco use, and Samoa's family-based initiative to improve health and combat NCDs. Interventions to prevent and respond to harmful use of alcohol are described in more detail in Section 3.7, and also in Sections A3.2, A3.3, A3.6 and A3.7 in Annex 3. Although stroke is an important cause of adolescent death in some countries, interventions to specifically screen for, diagnose and treat adolescent stroke are very limited. Current approaches are also briefly described in Section A3.6.1 in Annex 3.

3. Evidence-based interventions

WHO has developed a training package for health-care providers to improve their capacity to diagnose, prevent and manage leukaemia, asthma and other childhood diseases that are causally linked to the environment (398). Thirty modules on specific risk factors and health burdens are available, including those related to paediatric environmental history; the developmental and environmental origins of adult disease; indoor air pollution; outdoor air pollution; occupational risks; chemical exposure; global climate change; radiation; pesticides; persistent organic pollutants; second-hand smoke; electronic waste; respiratory diseases; and cancer.

> *"Some fishermen release harmful substances in the water to kill fish, but in some villages people are using that water. They are drinking it, and the harmful substances in the water will affect their bodies."*
>
> **Young adolescent boy in Nigeria**

Leukaemia: WHO also provides detailed guidance on leukaemia and other cancers in the Cancer Control series, which consists of six publications on planning, prevention, early detection, diagnosis and treatment, palliative care and policy and advocacy (241); (242); (243); (244); (245); (246). Each of these documents provides examples of priority interventions, and categorizes them according to the available level of resources, i.e. core (with existing resources), expanded (with a projected increase in, or reallocation of, resources) and desirable (when more resources become available).

Taking the example of a low-resource country in which less than 20% of children with acute lymphocytic leukaemia have access to full treatment and over 80% die within five years, these guides recommend to:

- include palliative care medication, chemotherapy drugs and antibiotics used for treating paediatric acute lymphatic leukaemia in the national essential medicines list (core);

- improve quality and coverage of diagnostic, treatment and palliative care services for acute lymphatic leukaemia in children, and mobilize further social support for patients and their families (expanded); and

- develop special strategies for increasing the adherence of children to treatment for acute lymphatic leukaemia (desirable). (244).

Asthma: In HICs, many patients' asthma is not well controlled, while in LMICs asthma management typically emphasizes the treatment of acute episodes instead of care for the disease and prevention of acute episodes (150). Interventions to improve clinical care of adolescents with asthma prioritize increasing access to medicines and other cost-effective interventions, and upgrading standards and accessibility of care at different levels of the health-care system (215). In addition to improvement of clinical management, educational programmes for the self-management of asthma in adolescents have been found to reduce absenteeism from school and the number of days with restricted activity.

Skin diseases: WHO regional offices have addressed acne within their adolescent-friendly health services and health education materials (247); (248); (249). For example, a series of publications on adolescent health education by the WHO Regional Office for the Eastern Mediterranean outline the basic self care steps that can be taken to treat and manage acne, including cleanliness, safe treatments and avoidance of unsafe treatments or foods that might exacerbate acne (247).

In general populations, patient education has been found to be effective in improving quality of life and decreasing the severity of skin diseases, even in the long-term management of chronic skin diseases (251). Detailed guidance to clinicians on how to diagnose, treat and manage acne, different kinds of eczema and other skin conditions – including key clinical features and treatment for severe, moderate and mild forms of these conditions – can be found in the WHO 2011 IMAI District Clinician Manual (167).

Global Strategy adolescent health intervention

No. 19: Prevention, detection and management of anaemia, for adolescent girls; iron supplementation where appropriate

Examples: iron-deficiency anaemia

Adolescent anaemia can result from many causes, including nutritional factors, specific diseases (e.g. sickle-cell anaemia) and avoidable environmental exposures (e.g. through electronic waste scavenging in LMICs) (98). Nutritional deficiency is the focus here. A key aspect of iron-deficiency anaemia prevention and control is promotion of diets containing adequate amounts of bioavailable iron. Poor nutrition associated with deficiencies in folic acid, vitamin A or vitamin B12 is often a contributing factor in populations living in LMICs (308). Another common nutritional factor is a diet that is monotonous but rich in substances (phytates) that inhibit iron absorption (e.g. nuts, edible seeds, beans, legumes and grains), so that dietary iron cannot be utilized by the body.

Section A3.6.2 in Annex 3 describes interventions to prevent and treat adolescent undernutrition in general, including iron-deficiency anaemia. Specific actions to prevent and treat iron-deficiency anaemia often begin with identifying and intervening to correct underlying disease causes and processes.

Depending on the context and circumstances, iron-deficiency anaemia prevention and control programmes may also include:

- malaria control in endemic areas (e.g. chemoprophylaxis/ intermittent preventative treatment, insecticide-treated nets and vector elimination);
- early prevention interventions targeting adolescent girls, especially in areas with high adolescent birth rates and early marriages;
- WASH interventions in order to reduce nutritional losses incurred by infection, and also to reduce inflammation; and
- a baseline epidemiologic evaluation of both haemoglobin and iron indices in areas where haemoglobinopathies and other inherited red-cell disorders are likely to be prevalent, to establish the relative contributions of iron deficiency and non-iron deficiency to the overall burden of anaemia
    (252).

WHO recommends daily iron supplementation as a public health intervention for menstruating adult women and adolescent girls living in settings where iron-deficiency anaemia is highly prevalent (≥40% anaemia prevalence) (236). If the prevalence of anaemia is 20–40%, intermittent regimens of iron supplementation can be considered (253). These are preventive strategies for implementation at the population level, but if a menstruating woman or adolescent girl is diagnosed with anaemia, national guidelines for the treatment of anaemia should also be followed.

Global Strategy adolescent health intervention

No. 20: Treatment and rehabilitation of children with congenital abnormalities and disabilities

Examples: sickle-cell disease

There are many different kinds of congenital anomalies. Broadly, they can be categorized by: eye, ear, face and neck; nervous, circulatory, respiratory, digestive, urinary or musculoskeletal system; genital organs; integument; chromosomal anomalies; and other conditions (147). Taking the example of sickle-cell disease, most national policies and plans are inadequate to address the disease in Africa, where it is most prevalent. In addition, appropriate facilities and trained personnel are scarce, and adequate diagnostic tools and treatment are insufficient (399).

In 2010, the WHO Regional Office for Africa published a strategy for a set of public health interventions to reduce the sickle-cell disease burden (254). The strategy identifies supportive activities for adolescents as a priority, including:

- financial packages for case management
- early diagnosis and treatment of complications
- special transfusion regimens
- surgery as needed
- immunization
- prophylactic antibiotics, folic acid and anti-malarials
- special programmes for prenatal care, psychosocial and professional support
- adaptive educational interventions.
    (254).

Adolescents with long-term physical or sensory impairments or disabilities – such as spinal cord injury, cerebral palsy, blindness and deafness – face some of the greatest policy, social and legal barriers to health and well-being of any adolescents (11); (255). The WHO Global Disability Action Plan 2014–2021 outlines actions to remove barriers and improve access to health services, and to strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation for all people with disabilities, including adolescents (255).

Adolescents with disabilities are more likely than other adolescents to experience abuse, including sexual abuse, so clinicians should be aware of the signs and symptoms and screen for this possibility (256); (400). They are also more likely than other adolescents to be excluded from sex education programmes, so they may need support and advocacy to ensure equitable access (256). In a clinical setting, premenarchal anticipatory guidance and assistance with the pubertal transition may be helpful, as well as sex education for adolescents and their families and/or caregivers (257).

3. Evidence-based interventions

3.7.
Mental health, substance use and self-harm interventions

Global Strategy adolescent health intervention

No. 21: Care for children with developmental delays

Examples: developmental disorders, including autism spectrum disorders

Developmental disorder is an umbrella term covering disorders such as intellectual disability and autism spectrum disorders. These conditions usually have a childhood onset, present as impairment or delay in functions related to central nervous system maturation, and have a steady course rather than the remissions and relapses that tend to characterize many other mental disorders (37). Both genetic and environmental factors may contribute to developmental disorders, e.g. exposure of a mother or her child to lead, mercury or other endocrine disruptors in household products, waste sites or other sources(96); (98); (99).

The positive role of parents, other family members or guardians who are raising a developmentally disabled adolescent is critical in ensuring optimal developmental outcomes (258). However, this role can be challenging and caregivers frequently report experiencing feelings of inadequacy. Section A3.7.1.3 in Annex 3 lists points that a health-care provider should address while engaging in psychoeducation with caregivers of an adolescent with a developmental disorder.

"Happiness and health have a lot to do with each other. Because if you are happy, you probably are also psychologically well. And if you are psychologically well, your body works properly. And then you reflect what you feel towards others, which helps others to feel well, because of the same happiness that you feel."

Young adolescent boy in Colombia

Institutionalization of adolescents with autism spectrum disorder or other psychosocial disabilities – i.e. having them live involuntarily in a group setting away from their community, family and home environments – causes them harm and denies them their basic human rights (259). This practice is most common in LMICs, where parents may not have the resources to provide for their children and may become desperate, or may be advised to institutionalize their children with psychosocial disabilities. Importantly, community services and support offer these adolescents and their families better outcomes and have been shown to be more cost-effective than institutionalization.For adolescents with autism spectrum disorders, evidence-based psychosocial interventions such as behavioural treatment can reduce difficulties in communication and social behaviour (107).

Global Strategy adolescent health intervention

No. 22: Responsive caregiving and stimulation

Examples: parenting risk factors (e.g. low supervision, neglect, rejection or harshness)

Interventions to improve parenting of adolescents vary in the extent to which they focus on improving outcomes for parents themselves (and thus indirectly for adolescents), and working with parents primarily as a vehicle for improving outcomes for adolescents (e.g. Case study 8). Many interventions focus on parenting skills and seek to:

- promote positive, stable emotional connections between parents and adolescents (e.g. to enhance adolescent self-esteem and social competence);
- assist parents to establish rules, communicate expectations and learn to exercise consistent and effective monitoring of

adolescent behaviours (e.g. to reduce adolescent risk-related sexual behaviour, substance use and delinquency);

- assist parents to respect the individuality of adolescents and to avoid intrusive, manipulative and unduly controlling behaviours (e.g. to reduce adolescent antisocial behaviours); and
- encourage parents to adopt attitudes and behaviours that are supportive of health (e.g. not smoking) while also reflecting supportive prevailing social norms (e.g. positively to influence adolescent behaviour).

(33).

Case Study 8

Bhutan's project to enhance skills and capacities of parents of adolescents

In 1999, the Government of Bhutan introduced an educational project to enhance the skills and capacities of parents of adolescents – recognizing that parents are the primary gatekeepers and a key source of information and support for adolescents. Objectives of the project included raising parents' awareness of issues facing today's adolescents; educating them about adolescents' special needs; enhancing their capacity to communicate comfortably with their children in general, and specifically on sensitive topics; and strengthening their capacity to address issues confronting their adolescent children at home.

The Bhutanese parenting project functions through secondary school teachers who help coordinate meetings with the parents and provide other logistical and programmatic support. In total, 320 local teachers underwent specialized training, and subsequently led sessions withapproximately 40 000 parents of a dolescents in their schools. The parent intervention focused on understanding the physical and psychosocial changes of adolescence, and on parenting skills, drug use and factors affecting adolescent sexual and reproductive health. Afterward, parents were expected to take more active roles in the lives of their adolescents, and to be able to communicate with their children concerning important issues such as substance use and reproductive health. In addition, parents were encouraged to establish parent support groups as a means of providing advice and assistance to one another. These groups became self-functioning after the initial phase, but the Ministry of Education continued to provide them with new information and support, e.g. to organize broader talks for parents and adolescents.

A qualitative evaluation of the project suggested that parent participants developed better attitudes toward their children, improved their parenting skills and reported increased communication with their children, including communication on sensitive topics such as reproductive health.

Source: (260).

Interventions for parents of adolescents almost always engage local communities and are one component within a larger, multipronged set of interventions to support adolescent health. The activities and structure of these interventions can take many forms, including workshops or classes; events (e.g. musical performances, street theatre and educational entertainment); facilitated or peer-led support groups; home visits; parent-adolescent clubs; and mass-media campaigns.

WHO also provides guidance for health-care providers in how to give adolescents and their parents psychosocial advice to promote adolescents' well-being (37).

"I have good communication with my stepfather. There is a space to laugh, joke around, and be happy. ... A father isn't someone who makes the child, a father is a person that helps you out. My stepfather helps me a lot, thank God. I'd say that in order for a stepfather to get to be called "dad", it's because he earned it."

Young adolescent boy in Colombia

3. Evidence-based interventions

Psychological interventions such as cognitive behavioural therapy, interpersonal psychotherapy and caregiver skills training may be offered for the treatment of emotional disorders such as depression and anxiety (261). Face-to-face psychological treatment or guided self-help psychological treatment are likely to have better outcomes than unguided self-help, but the latter may be suitable for adolescents who either do not have access to face-to-face psychological treatment or guided self-help psychological treatment, or are unwilling to access such treatments. The adolescent's family should be involved in the intervention whenever appropriate.

Another strategy that has proven to be effective in preventing and treating anxiety disorders focuses on strengthening adolescents' emotional resilience and cognitive skills to avoid or to manage anxiety disorders. An example of an effective programme for children aged 7–16 years is the Australian FRIENDS programme, which has been widely used in schools, health centres and hospitals (262). FRIENDS is a cognitive-behavioural programme of 10 sessions that teaches children skills to cope with anxiety more effectively and builds emotional resilience, problem-solving abilities and self-confidence. Other promising interventions include cognitive-behavioural therapy as an early intervention method to prevent post-traumatic stress disorder, and short-term cognitive workshops for those who have experienced a first panic attack (262).

Anxiety disorders can also be a risk factor for depression. Universal interventions to prevent depression among adolescents include school-based programmes focused on cognitive, problem-solving and social skills, and community-based interventions to reduce child abuse, neglect and bullying (262).

Selective interventions with adolescents who are at relatively high risk of depression include those focused on coping with major life events (e.g. parental death or divorce), or those seeking to block the transgenerational transfer of depression and related problems (e.g. adolescents with depressed parents). Indicated interventions for adolescents with elevated levels of depressive symptoms, but no depressive disorder, include group work with at-risk adolescents to promote positive thinking, challenge negative thinking styles and improve problem-solving skills, as well as anxiety prevention programmes (262).

Section A3.7.1.4 in Annex 3 lists psychoeducation content for adolescent depression and other emotional disorders that should be provided in a non-specialized health setting (258). For adolescents younger than 12 years with mild to severe depression, their parents should be provided with psychoeducation, psychosocial stressors should be addressed, and regular follow-up should be offered. Cognitive behavioural therapy, interpersonal psychotherapy and caregiver skills training are also recommended. However, the adolescent should not be prescribed antidepressant medication (37). If the adolescent is 12 years or older, the same interventions should be provided and, if available, interpersonal psychotherapy, cognitive behavioural therapy or behavioural activation should be considered. Medication for adolescents should only be prescribed when clinically indicated, and generally as part of a more comprehensive management plan (37). The intervention should only be offered under supervision of a specialist who is trained in prescribing antidepressants, including side-effects monitoring.

Depressive disorders may have comorbidity with other mental health problems, such as anxiety and eating disorders. In that event, additional types of preventive interventions may be appropriate as part of a comprehensive programme. Anxiety disorder interventions have already been described; see Section A3.6.2 in Annex 3 for information about eating disorder interventions.

Global Strategy adolescent health intervention

No. 24: Parent skills training, as appropriate, for managing behavioural disorders in adolescents

Examples: conduct disorder

Some challenging or disruptive behaviour is common and appropriate in adolescence. For young adolescents (aged 10–12 years), this includes avoidance of or delay in following instructions, complaining or arguing with adults or other children and occasionally losing their temper (37).

For adolescents aged 13 and older, it includes testing rules and limits, saying the rules and limits are unfair or unnecessary, and occasionally being rude, dismissive, argumentative or defiant with adults. Section A3.7.1.5 in Annex 3 outlines guidance for improving adolescent behaviour that health-care workers in non-specialized health settings can provide to parents.

This guidance can be provided to all carers who are having difficulty with an adolescent's behaviour, even if a behavioural disorder is not suspected.

In addition to parenting skills training, behavioural interventions for adolescents and skills training for caregivers may be offered for the treatment of behavioural disorders across a range of contexts, including the clinic, home or school (261). Such behavioural and cognitive behavioural interventions can be effective in improving school performance (263). There is value in intervening early to reduce adverse outcomes associated with behavioural disorders.

Global Strategy adolescent health intervention

No. 25: Prevention of substance abuse

Examples: alcohol and drug use disorders

WHO's 2010 Global Strategy to Reduce the Harmful Use of Alcohol outlines 10 areas for policy action and interventions, all of which are directly or indirectly relevant to adolescents (102). Some areas with particular relevance for adolescents are:

- Mobilize communities to prevent the selling of alcohol to, and consumption of alcohol by, underage drinkers.
- Develop and support alcohol-free environments, especially for youth and other at-risk groups.
- Establish an appropriate minimum age for purchase or consumption of alcoholic beverages and other policies to prevent sales to, and consumption of, alcoholic beverages by those below the legal age, and introduce mechanisms for placing liability on sellers and servers.
- Implement an effective and efficient system for taxation matched by adequate tax collection and enforcement, because young people are sensitive to changes in the price of drinks.
- Protect young people from the content of alcohol marketing, particularly in LMICs where adolescents have currently a low prevalence of alcohol consumption and are being targeted as new markets.
- Reduce the density of alcohol outlets and the hours or days when alcoholic beverages can be sold, because for young people such interventions are associated with decreased levels of alcohol consumption, assault and other harm such as homicide, self-inflicted injury and road traffic injuries.

In the absence of structural and environmental initiatives, educational interventions have been found to have little to no influence over adolescent use of alcohol or other psychoactive drugs, although they may be effective at increasing adolescent knowledge of related risks (110); (262); (264). Other possibly effective educational programmes include mass-media drink-driving campaigns (with no enforcement); placement of warning labels and signs, including on bottles; social marketing; and online education through social media and websites (110). There is also significant prevention potential in evidence-based programmes focused on family skills and community mobilization and awareness-raising, and intervention programmes for out-of-school adolescents who live or work on the streets (265).

Detailed guidance on the prevention of psychoactive drug use with both young and older adolescents is provided in the International Standards on Drug Use Prevention (355).

> *"Like it or not, if younger adolescents are hanging out with the older ones, they will imitate what the older adolescents do, like smoking or drinking alcohol."*
>
> **Older adolescent boy in Indonesia**

3. Evidence-based interventions

The 2016 WHO Mental Health Gap Action Programme (mhGAP) intervention guide provides both emergency and general guidance on assessment and management of different patterns of alcohol and drug use (37). This guide outlines brief psychosocial intervention techniques for use in non-specialized health settings; the points that should be addressed for adolescents are summarized in Section A3.7.1.6 in Annex 3.

Other WHO resources provide more in-depth guidance on this approach (266); (401). The 2016 WHO mhGAP intervention guide also describes long-term alcohol and drug use interventions, e.g. self-help groups and harm-reduction strategies.

Pharmacotherapy interventions are detailed, e.g. for management of withdrawal, continued treatment and relapse prevention (37).

In 2000, WHO published a training package for people working with street children focused on substance use and SRH. Module 3, Understanding Substance Use Among Street Children, describes the types of substances street children use (e.g. alcohol, nicotine, opioids, hallucinogens, cannabis, hypnosedatives, stimulants and inhalants); the ways in which street children take them; and the short-term and long-term effects and consequences of their use (402).

Interventions to prevent suicide among adolescents and the general population are summarized by ecological level in Table 3.8.

"Some girls consume psychoactive drugs, and others cut themselves, and others end up killing themselves, because they believe that no one loves them, no one. They think, "They reject me at home, they reject me at school", and they come up with this idea that no one loves them."

Older adolescent girl from an urban settlement in Colombia

©Hauranitai Shulika

Table 3.8. Interventions to prevent adolescent suicide

ECOLOGICAL LEVEL	INTERVENTION	FURTHER EXPLANATION
Structural and environmental	Adoption of national mental health policies	Related to suicide, these should focus on: strengthening effective leadership and governance; providing comprehensive, integrated and responsive services in community-based settings; implementing strategies for prevention; and strengthening information systems, evidence and research.
	Policies to reduce harmful use of alcohol	Policy options outlined in the 2010 WHO Global Strategy to Reduce the Harmful Use of Alcohol also support suicide prevention, including policies related to drink-driving and the marketing and availability of alcohol.
	Surveillance of suicide & suicide attempts	Sustainable and long-term surveillance of suicide cases, and hospital presentations due to suicide attempts and self-harm, provide critical information for prevention, intervention and treatment.
	Improved access to health care	Adequate, prompt and accessible treatment for mental and substance use disorders can reduce the risk of suicidal behaviour. Implementing health-literacy policies and practices throughout health systems and institutions is also key.
	Restriction of access to means	Restriction includes legislation to limit access to pesticides, firearms and medications commonly used in suicide, and safer storage and disposal of each, as well as environmental interventions to prevent suicide by jumping.
	Responsible media reporting	Media guidelines should stress: avoidance of detailed descriptions of suicidal acts; sensationalism; glamorization and oversimplification; use of responsible language; minimizing the prominence of suicide reports; and educating the public about suicide and available treatments.
	Electronic media strategies for service delivery	Online suicide prevention strategies include self-help programmes and professionals engaging in chats or therapy with suicidal individuals. Text messaging is an alternative, particularly when the internet is not accessible.
	Raising awareness about mental health, substance use disorders and suicide	Awareness-raising campaigns aim to reduce stigma and promote help-seeking and access to care. Different types of exposure (e.g. television, print media, the internet, social media and posters) can reinforce key messages. At the local level, awareness raising can target specific vulnerable populations.
Community and interpersonal	Interventions for vulnerable groups with a higher risk of suicide	These interventions should be tailored and targeted toward groups that are most at risk of suicide in particular settings. For example, interventions targeting lesbian, gay, bisexual, transgender and intersex (LGBTI) adolescents should focus on addressing risk factors such as mental disorders, substance abuse, stigma, prejudice and individual and institutional discrimination.
	Gatekeeper training	For people in a position to identify whether someone may be contemplating suicide (e.g. clinicians or teachers), gatekeeper training develops knowledge, attitudes and skills for identifying adolescents at risk, determining the level of risk and referring at-risk adolescents for treatment.
	Crisis helplines	Crisis helplines are public call centres that people can turn to when other social support or professional care is unavailable or not preferred. Helplines can be in place for the wider population or may target certain vulnerable groups, e.g. with peer assistance.
Individual	Assessment and management of suicidal behaviours	The 2016 WHO mhGAP intervention guide recommends assessing comprehensively everyone presenting with thoughts, plans or acts of self-harm. The guide recommends asking any person over 10 years of age who is experiencing a priority mental, neurological or substance-use disorder – or chronic pain or acute emotional distress – about his or her thoughts, plans or acts related to self-harm and suicide.
	Assessment and management of mental & substance use disorders	This involves training primary-health-care workers to recognize depression and other mental and substance use disorders, and to perform detailed evaluations of suicide risk. Training should take place repeatedly over years and should involve the majority of health workers in a country.
	Follow-up and community support	Repeated follow-up by health workers for patients discharged after suicide attempts, and community support, are low-cost, effective interventions that are easy to implement. Follow-up can include postcards, telephone calls or brief in-person visits.

Sources: (38).

These and other interventions to prevent adolescent suicide are described in more detail in Section A3.7.2 in Annex 3. Case studies A3.22–A3.24 in Annex 3 provide additional country examples of suicide interventions, i.e. Sri Lanka's targeted pesticide bans, New Zealand's multisectoral programmes to reduce youth suicide rates among Māori youth, and governmental and NGO initiatives in Hong Kong (Special Administrative Region of China) to prevent suicide among youth and adults.

Strategies to prevent and respond to non-suicidal self-injury among adolescents may involve interventions similar to those described above for the prevention and management of suicidal behaviour, but should be tailored to the specific circumstances. Individual treatment for non-suicidal self-injury should be based on a functional analysis of the self-harming behaviour that takes into account antecedents; type of self-harming behaviour and associated cognitions, emotions and sensations; and the consequences of self-harm (156).

3.8.
Interventions in humanitarian and fragile settings

The Global Strategy broadly defines two evidence-based health interventions for women's, children's and adolescents' health that focus on humanitarian and fragile settings.

These are:

- Develop and use a health and humanitarian risk assessments approach to identify priority needs and focus interventions.
- In the event of humanitarian emergency, ensure deployment of essential health interventions. Adapt, implement and coordinate use of the minimum initial service package.

  (11).

Table 3.9 summarizes key adolescent health interventions in humanitarian and fragile settings. These interventions are described in more detail in Section A3.8 in Annex 3.

3. Evidence-based interventions

Table 3.9. Key adolescent health interventions in humanitarian and fragile settings

AREA OF INTERVENTION	FURTHER EXPLANATION
Nutrition	Assess conditions and ensure adequate rations for adolescent population groups according to age, gender, weight, physical activity levels and other key factors, considering both energy and micronutrient requirements (39); (40). Also see Section A3.8.1 in Annex 3.
Disability and injury	Ensure core health services to support adolescents with disabilities in an emergency, including essential medicines in the appropriate dosages and formulations (41). Also see Section A3.8.2 in Annex 3.
Violence	Provide medical screening of former child soldiers, and clinical management and community-based psychosocial support for survivors of sexual and/or gender-based violence (43); (44); (45); (181). Also see Section A3.8.3 in Annex 3.
Sexual and reproductive health	Implement a minimal initial SRH service package and build a more comprehensive response, including psychosocial support, a protection system that addresses sexual violence and child marriage, and family planning and STI programmes for adolescents (46); (47). Also see Section A3.8.4 in Annex 3.
Water, sanitation and hygiene	Ensure safe access to and use and maintenance of toilets; materials and facilities for menstrual hygiene management; water and soap or ash for hand washing; the hygienic collection and storage of water for consumption and use; hygienic food storage and preparation; and efficient waste management (21); (48). Also see Section A3.8.5 in Annex 3.
Mental health	Promote normal recreational activities for adolescents, re-start of formal or informal education, and involvement in concrete, purposeful common interest activities (e.g. Case study 9) (267). Employ Psychological First Aid techniques to provide general support for adolescents and their parents (268). For first-line management of adolescent mental, neurological and substance-use conditions by non-specialist health-care providers, follow mhGAP Humanitarian Intervention Guide (49). Also see Section A3.8.6 in Annex 3.

Case Study 9

Youth mentoring and counselling during a protracted crisis in the West Bank and Gaza Strip

The West Bank and Gaza Strip area has experienced a protracted crisis for decades, which contributed to 1.9 million of its 4.5 million population being in need of humanitarian assistance in 2015 (269). Violence, closures, restrictions and economic hardship are part of Palestinian adolescents' daily lives (270). For some adolescents this has resulted in acute psychological problems, such as apathy, self-doubt, withdrawal and a sense of hopelessness. Palestinian youth have very few opportunities for recreation or constructive participation in community development, which might help improve their mental health (270).

In response to this situation, the United Nations Children's Fund (UNICEF) and the Palestinian Youth Association for Leadership and Rights Activation developed a youth mentoring and counselling programme. University student volunteers were trained to provide psychosocial support, mentoring and recreational activities for adolescents in schools and community centres. Following the eight-day training course, the volunteers conducted a series of school-based psychosocial support sessions, working most closely with adolescents in violence-affected areas. The school-based sessions provided a peaceful and reassuring outlet for participants to express their views, opinions, hopes and fears, and to find ways to deal with their stress.

After the sessions were concluded, adolescents were given the opportunity to express themselves in constructive and creative ways. For example, adolescents planned their own small-scale projects to improve their schools and neighbourhoods with the support of the volunteers. A telephone hotline operated by university students was also established to provide one-on-one psychosocial support to adolescents, especially during times of restricted mobility and curfews. The adolescents and university students also produced a Youth Times newspaper with a circulation of 100 000, and a weekly youth TV programme. Qualitative evaluation of the first years of the programme suggested it had a positive impact on both the volunteers and the participants.

Source: (270).

Case Studies A3.25–A3.27 in Annex 3 provide additional country examples of interventions in humanitarian and fragile settings, i.e. Nigeria's safe spaces for girls and women displaced by the militant group Boko Haram, Malawi's temporary youth clubs for adolescent girls and boys displaced by floods, and Ethiopia's refugee camp distribution of menstrual hygiene kits to promote girls' school attendance.

Although adolescents can be particularly affected in humanitarian and fragile settings, they can also be an important resource for health programmes in such settings, as exemplified in Case study 9 (270).

4. Setting national priorities

Key messages:

- National governments need to identify and address their priority adolescent health priorities, because:
  - the nature, scale and impact of adolescent health-needs are unique in each country;
  - all governments face resource constraints, so they must make difficult choices to ensure their adolescent health resources are used most effectively.
- Governments must evaluate their country's particular adolescent health needs before developing – or improving upon – adolescent health programming.

  This includes:
  - a needs assessment to identify which conditions have the greatest impact on adolescent health and development, both among adolescents as a whole, by age, sex and part of the country, and among those most vulnerable;

  - a landscape analysis of existing adolescent health programmes, policies, legislation, capacity and resources within the country, as well as a review of current global and local guidance on evidence-based interventions; and
  - priority setting that considers the most vulnerable adolescents; the urgency, frequency, scale and consequences of particular burdens; the existence of effective, appropriate and acceptable interventions to reduce them; and the availability of resources and capacity to implement or expand priority interventions equitably.

- Over time, countries should reassess their adolescent health priorities and programming to ensure that they still meet changing adolescent needs. New trends in health and health services, economic development, employment, migration, urbanization, conflict, environmental degradation and technological innovation should all be considered.

Until recent decades, most health services and programmes for adolescents were subsumed under those for children or adults, including adolescent health promotion, risk reduction and clinical services (271); (272). By the 1980s, however, countries had developed and implemented adolescent-specific national health programmes, partly due to growing awareness of the substantial sexual and reproductive health (SRH) problems faced by adolescents. Sensitivities related to puberty and adolescent sexuality meant that adolescent health issues were often inadequately addressed in existing child and adult services.
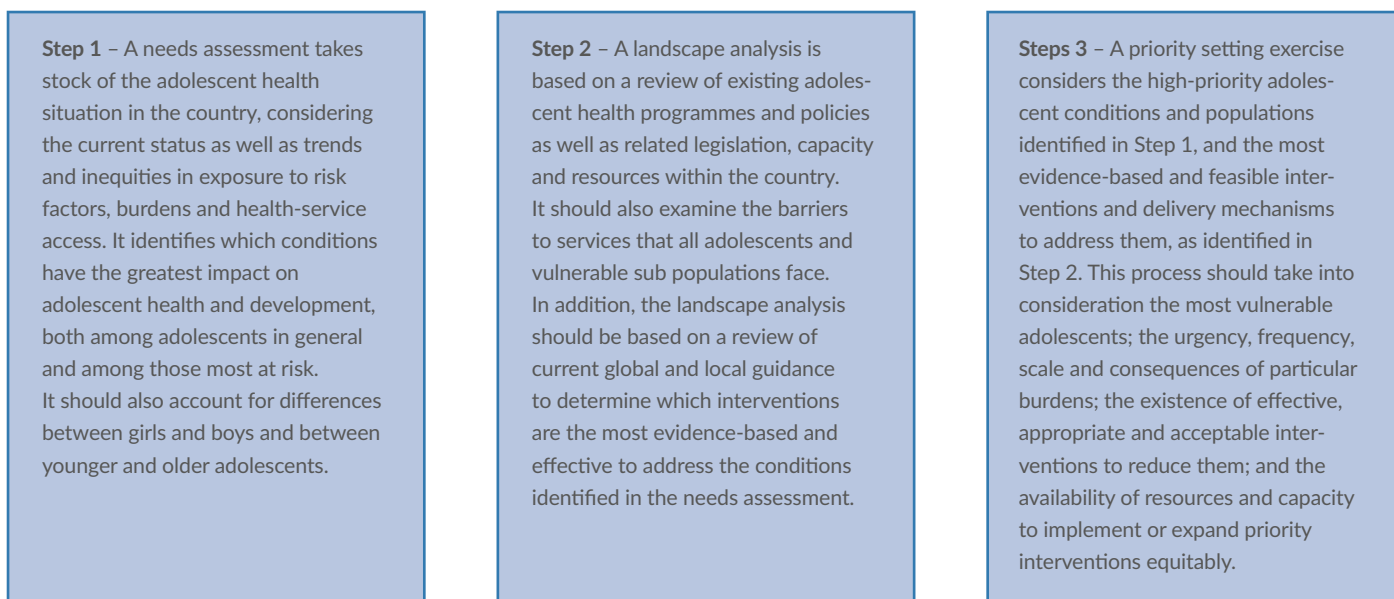
Efforts varied greatly within and between countries and regions, but over the years many countries have succeeded in developing and implementing at least basic SRH education in schools at scale, and providing SRH services and commodities to adolescents, mostly through health facilities.

Adolescent SRH programming remains critically important in all countries, and will continue to be so to meet the needs of each new cohort of adolescents. However, in recent decades it has become increasingly evident that other adolescent health concerns have also been neglected and warrant specific country-level programming (273). These include the causes of disease and injury outlined in Section 2, as well as the broader social, educational and economic issues related to adolescent health, development and well-being that were discussed in Section 1.

These issues may:
- be specific to adolescents (e.g. pubertal development);
- affect adolescents less than small children, but more than adults (e.g. malnutrition, diarrhoeal disease, lower respiratory infections and malaria);
- affect adolescents disproportionately (e.g. self-harm);
- be a major burden for adolescents, as well as for the rest of the population (e.g. road injury); and/or
- have major implications for adolescents' future health (e.g. tobacco use, physical inactivity and poor diet).
  (272).

Governments have increasingly recognized that diverse and complex adolescent health needs require coordinated, multisectoral, country-level programming (e.g. Case study 10). Some have undertaken situation analyses to identify the most urgent adolescent health concerns and determinants, as well as to identify the most at-risk adolescent populations within their countries, in order to prioritize the allocation of resources better to meet their needs (274). To assist national governments in this process, EWEC has published Technical Guidance for Prioritizing Adolescent Health Interventions (69), which outlines three steps for strategic decision-making on national adolescent health programming:

Step 1 – A needs assessment takes stock of the adolescent health situation in the country, considering the current status as well as trends and inequities in exposure to risk factors, burdens and health-service access. It identifies which conditions have the greatest impact on adolescent health and development, both among adolescents in general and among those most at risk. It should also account for differences between girls and boys and between younger and older adolescents.

Step 2 – A landscape analysis is based on a review of existing adolescent health programmes and policies as well as related legislation, capacity and resources within the country. It should also examine the barriers to services that all adolescents and vulnerable sub populations face. In addition, the landscape analysis should be based on a review of current global and local guidance to determine which interventions are the most evidence-based and effective to address the conditions identified in the needs assessment.

Steps 3 – A priority setting exercise considers the high-priority adolescent conditions and populations identified in Step 1, and the most evidence-based and feasible interventions and delivery mechanisms to address them, as identified in Step 2. This process should take into consideration the most vulnerable adolescents; the urgency, frequency, scale and consequences of particular burdens; the existence of effective, appropriate and acceptable interventions to reduce them; and the availability of resources and capacity to implement or expand priority interventions equitably.

Mechanisms should be put in place to ensure that adolescents participate and are able to contribute meaningfully to each step outlined above. Time, human resource capacity and funding will often dictate the level and depth that these steps encompass.

Case Study 10

Zambia's adolescent health situation analysis and strategic plan

In 2009, Zambia's Ministry of Health and its partners conducted an adolescent health situation analysis to support appropriate national policy, planning and response. The needs assessment identified the main adolescent health determinants, risk factors and disease burdens as general health problems (e.g. malaria, tuberculosis and other non-pneumonia respiratory infections, diarrhoea and under-nutrition); HIV, syphilis and other STIs; early and unprotected sex; sexual abuse; early marriage and pregnancy; drug and alcohol abuse; accidents and violence; unsafe cultural practices; and mental health problems. The landscape analysis also detailed existing government efforts to provide adolescent health services, such as development of a national youth policy; establishment of a youth ministry; introduction of legislation addressing sexual, drug and alcohol abuse; establishment of

adolescent-friendly health services in pilot districts; and strengthening of the adolescent health institutional framework within the ministry's organizational structure.

The adolescent health situation analysis report that summarized these findings became the basis for the ministry's Adolescent Health Strategic Plan (2011–2015), which outlined strategies related to service delivery, health workforce, medical products, health information, health-care financing, and leadership and governance. For example, the plan called for improved linkages between the ministries of health and education – especially related to health promotion in schools – as well as scale-up of the existing adolescent-friendly health-service programme, including improved health worker training and supervision.

Sources: (275); (276).

4. Setting national priorities

4.1.
Needs assessment

A national adolescent health needs assessment involves a systematic review of the health status and well-being of adolescents in that country (69). When possible, this assessment should include a review of available data disaggregated by sex; age subgroups; education level; school status; literacy level; marital status; location (e.g. urban versus rural); living arrangements; socioeconomic status; and other variables that may be important within the local context, such as ethnicity. It is critical that the reviewers attempt to find and consider all possible data, keeping an open mind about what the best evidence suggests even if it goes against their preconceived ideas, or those that are widely reported. For example, limiting the process to certain health conditions (e.g. SRH, nutrition and unintentional injury), may exclude other conditions that have equal or greater impact on adolescent mortality and morbidity (e.g. abuse or mental health problems).

Based on the most recent, accurate and representative research, the needs assessment should identify the main causes of adolescent mortality, morbidity and disease prevalence, and contributing risk and protective factors. It should also consider relevant issues that may not be captured well in those measures and existing research, such as levels of FGM or STIs other than HIV. Specifically, the needs assessment should examine the:

- main health issues and challenges affecting adolescents;
- adolescent behaviours most proximately linked to these health challenges;
- adolescent behaviours that could lead to health problems in the future (e.g. risk factors including tobacco consumption, physical inactivity and poor nutrition);
- harmful practices affecting adolescents (e.g. levels of child marriage and FGM);
- sociocultural context of adolescents' lives, including the protective and risk factors at various ecological levels (e.g. environmental exposures) and in different institutions (e.g. schools, health services and employment) that can influence the above issues; and
- influence of gender norms, roles and relations on the health of both girls and boys during adolescence.
  (69)

One important objective of the needs assessment is to identify subgroups of adolescents who may be in greatest need of services and programmes. Section 2 of this document provides an example of an adolescent health needs assessment at a global level. Ideally, something similar would be done at country level, and ideally at subnational level.

> *"The authorities should provide safe places, like public libraries. I do not know why I always feel the authorities takes more care of boys than girls. It should carry out activities that are good for us also."*
>
> **Young adolescent girl in the West Bank and Gaza Strip**

A country's adolescent health needs assessment can include desk review of available national and subnational studies, peer-reviewed articles and other country assessments; analysis of existing national and subnational disaggregated data; and focus-group discussions and/or interviews with key stakeholders. Key stakeholders include adolescents and young adults; parents and families; community members; religious leaders; government representatives (e.g. from health, education and social protection sectors); national human rights institutions; NGO and civil society representatives; UN technical organizations; and bilateral and donor organizations.

Ideally, a national needs assessment will include a review of data on mortality and morbidity disaggregated by cause, geographic region, sex and age group. In many settings, however, such data are not readily available, particularly in countries where civil registration and vital statistics systems are weak. In such cases, needs assessments must rely on the available quantitative and qualitative national data. Country sources include Demographic and Health Surveys (DHS) and school-based health surveys, such as the Health Behaviour in School-aged Children (HBSC) survey or the Global School-based Student Health Survey (GSHS). International sources include the Global Health Estimates (e.g. (16) or the Global Burden of Disease study (e.g. (17); (143)). The needs assessment should establish a fair understanding of the most important health concerns and trends, even when it is not possible to compare and rank the rates of different conditions directly (e.g. road injury mortality and morbidity rates compared to HIV prevalence and teenage fertility rates).

Apart from primary data from surveys and vertical programmes, national and regional estimates of the causes of mortality and morbidity are potentially very helpful in quantifying health risks. Published estimates include the Global Burden of Disease study (http://www.healthdata.org/gbd) and the WHO Global Health Estimates (GHE) for 2015 (16).Such modelled estimates are, however, only as reliable as the data that goes into them. In countries with weak civil registration and vital statistics systems, estimates rely on other data sources such as surveys, individual studies, extrapolation and triangulation from regional data.

4.2.
Landscape analysis

A national adolescent health landscape analysis has several objectives (69):

- identify and map existing interventions, programmes, legislation, policies and projects that address adolescent health and development, as well as the results and outcomes of these initiatives. For example, this review should assess laws, regulations and policies about the age of marriage, or access to health care (including specifically SRH services) by both married and unmarried minors. It should also try to ascertain the extent to which such national guiding documents are followed in practice.

- identify the stakeholders and organizations involved in planning, managing, implementing and monitoring and evaluating these activities at the national and sub-national level. It should identify the systems that are in place to support capacity development, supportive supervision, coordination and other planning and management functions. Crucially, it should examine how adolescents and youth participate in and contribute to these efforts, and the systems or platforms in place for them to do so.

- identify existing and potential sources of financing (both domestic and international) and current budgetary allocations, especially considering how they meet the required needs.

- include a review of current global adolescent health intervention recommendations, and particularly those that have a strong evidence base, so national governments can assess which existing programmes should be maintained or strengthened based on evidence of effectiveness, and which possibly should not be (69).

- assess what is being done by the government, NGOs and civil society organizations to improve adolescent health and to respond to social, economic and other determinants of adolescents' health problems. It should include coverage studies of the reach and quality of existing programmes and services.

Like the needs assessment, the landscape analysis can involve a desk review, field visits and interviews and focus group discussions with young people and other key informants. Key informants can explain existing programme challenges and achievements, perceptions of needs and services, and the capacity and interest for expanded work on adolescent health.

Important questions to address in such a landscape analysis include:

- the extent to which the national health plan integrates adolescents in its goals and programming;

- specific laws or policies that may impede adolescents' access to health services;

- gaps in the delivery of programmes and services (e.g. Case study 11);

- scale, scope, coverage and evidence of impact of existing adolescent health programmes in the country;

- how interventions in relevant sectors are targeted to reach particular groups of adolescents by age, sex, location, education level and other socio-demographic variables;

- the level of funding to existing programmes and how available funds are allocated;

- whether currently funded activities are aligned with evidence-based practices;

- the extent to which youth are involved in the design, implementation and monitoring of the specified programmes; and

- the supply and demand barriers experienced by adolescents to access quality services and financial protection. (69)

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4. Setting national priorities

Scotland's action framework and policy landscape analysis to improve young people's health

In 2004, the Scottish Government began developing an action framework to capture the key actions required to meet multi-sectoral challenges for Scottish children and young people. That process led to the publication in 2006 of Delivering a Healthy Future: An Action Framework for Children and Young People's Health. It identified health-care issues with particular implications for young people, grouped under the categories of: promoting health and well-being (e.g. increasing overweight and obesity); balancing access, quality and sustainability (e.g. loss of specialized paediatric care at the district level); developing the workforce (e.g. insufficient mental health specialists); reflecting patient focus (e.g. shifting the transition from paediatric to adult services from 13–14 years to 16 years or older); ensuring performance management and quality assurance (e.g. increasing services to address youth equality and diversity issues); and information technology (e.g. tele-medicine to support the needs of remote and rural settings). The framework also outlined major policy areas in need of further action, including child protection, health improvement and social justice and inclusion. Following publication of the framework, a mapping exercise was conducted to summarize existing policies related to youth health. It identified a number of gaps, e.g. the need for an implementation strategy following the passing of a Health Promoting Schools Bill, or for re-consideration of the voluntary code on alcohol advertising.

Sources: (277); (278); (279).

4.3.
Setting priorities

Step 3 of a country's adolescent health review and planning process involves setting priorities for which conditions to target, and which set of interventions to employ in targeting them (e.g. Case study 12) (69). This process of strategically narrowing the focus of adolescent health interventions is necessary because young people aged 10–19 years represent such a large and diverse population with many needs. All governments face important resource constraints, so will need to make difficult choices to be able to address the top priorities effectively.

The prioritization process requires a systematic approach and a transparent set of criteria, and should include meaningful participation and contributions by adolescents. All relevant stakeholders should be consulted in a structured manner. Governments should consider the following criteria and any others they deem important in identifying priority adolescent vulnerabilities and health issues:

- **Magnitude of the issue** – Resources should be directed at the main causes of death and illness or injury, but should also go beyond them to address risk behaviours and exposures that could affect adolescents' health now and in the future, using a life-course approach.

- **Groups of adolescents most affected** – All adolescents have health-related needs and can experience difficulties, but not all are equally vulnerable to health and social problems. Some adolescents have overlapping vulnerabilities that make them particularly at risk of the poorest health outcomes (e.g. prior existing disease or injury burdens, low education, poverty and living in communities with high rates of child marriage). Special consideration should be given to those adolescents who are most vulnerable and/or in need.

- **Availability of effective interventions** – It is important that scarce resources are used to deliver interventions that have the highest chance of effectiveness for the subpopulations of adolescents that need them the most. The choice of interventions should be guided by the strongest-available evidence on their effectiveness.

- **Feasibility of delivering interventions** – Social, economic and cultural constraints, including lack of recognition of adolescents' rights, may make it difficult to deliver certain interventions. Priority setting should be based on a careful and pragmatic analysis of the feasibility of delivering interventions in the particular country with fidelity, and at scale.

- **Potential to go to scale** – An assessment of current and needed capacity to deliver the interventions is necessary. Strong government and community ownership and political will help drive scale-up. Costing exercises can inform overall resource needs, and how plans can be implemented in a phased approach.

Case Study 12

Mongolia's adolescent health situation analysis and programme priority setting

In 2005, Mongolia's Health Sector Strategic Master Plan (2006–2015) noted several health issues as being of special concern for adolescents, namely unintentional injuries; micro-nutrient deficiencies; sexual and reproductive health (SRH); and drug, alcohol and tobacco use. Adolescents were recognized as a vulnerable group, so the plan set targets to increase their access to health services – and particularly to youth-friendly services in both schools and health facilities. In 2011, the Ministry of Health decided to undertake a more comprehensive review of the existing adolescent health needs and services by supporting a team to collect and analyse relevant data from policies, plans and reports on SRH, mental health, nutrition and tobacco and alcohol programmes. The team also made visits to health facilities and consulted provincial and national programme managers and service providers from the health and education sectors, as well as adolescents and representatives of international NGOs and UN agencies.

The recommendations of that situation analysis prioritized two adolescent health issues: mental health and SRH. For mental health, intervention recommendations included identifying appropriate indicators and disaggregating data more effectively; building the capacity of primary-level health workers to diagnose, manage and refer adolescents with mental health problems; and building the capacities of teachers and parents to promote adolescent psychosocial skills, and to make referrals when necessary. For SRH, the intervention recommendations included: strengthening epidemiological research on sexually transmitted infections in young people; scaling up small-scale youth-friendly health services within the health system; and building the capacities of teachers to carry out effective SRH and life-skills education programmes. More broadly, the situation analysis recommended strengthening coordination and collaboration within and between sectors (e.g. by appointing a task force and a designated adolescent health official or unit) and using available assets more effectively and efficiently, e.g. using a training opportunity for one health area to build capacity in others as well.

Sources: (69); (280).

National priority setting needs to take place even when it is not possible directly to compare and rank the rates of different conditions, and even when evidence of local programme effectiveness is limited. In many cases, this prioritization process will need to depend heavily on expert opinion, guided by relevant global evidence.

The prioritization process should include development of a logic model that links planned interventions to the determinants, behaviours and health outcomes they intend to affect within the particular country context (281). It should result in a strategy that includes and identifies a package of priority interventions, a set of mechanisms to deliver them, the means available to deliver them and a monitoring and evaluation plan (69).

The health sector alone cannot be responsible for all of the policies and programmes that will need to be implemented, but it can play a lead role in the multisectoral response, facilitating and mobilizing the essential actions of other sectors, strengthening technical support and coherence and disseminating epidemiological information and the evidence base for action.

4. Setting national priorities

4.4.
Additional considerations

Critically, over time it is important for countries to re-visit this three-step process of needs analysis, landscape analysis and prioritization, to ensure that they meet changing adolescent health needs (e.g. Case study 13). New trends in health and health services, economic development, employment, migration, urbanization, conflict, environmental degradation and technological innovations should all be considered. For example, an updated landscape analysis might identify new resources that are not being harnessed to their maximum potential – such as growth in rural telecommunications infrastructure – which could be exploited for telemedicine or rollout of e-health and m-health interventions.

Case Study 13

Bhutan's comprehensive national adolescent health programming

The Government of Bhutan's prioritization of adolescent health services has evolved over time. Bhutan first developed and implemented a basic, general school health programme in the 1980s. In 2000, in recognition that many adolescents were at risk of HIV, other STIs and unintended pregnancies, that programme was expanded to provide adolescent SRH education, while in 2002 it was extended further to include adolescent life-skills education. In the ensuing years, the Ministry of Health continued to focus on improving youth SRH by prioritizing it in the National Strategic Plan for HIV/AIDS (2011–2015) and developing the 2011 National Standards for Youth-Friendly Services.

While adolescent SRH has remained a strong concern for the government, it has also increasingly recognized the importance of other adolescent health and development needs, and of improving national coordination of multi-sectoral efforts to address them. Both the 2011 National Youth Policy and the National Adolescent Health Strategic Plan (2013–2018) identify multiple issues as critical to adolescent health and well-being, including tobacco, alcohol and other substance abuse; road injuries and other unintentional injuries; SRH (especially among the most at-risk youth); poor diet (including malnutrition, obesity and related NCDs); hygiene and sanitation (including oral health); environmental and occupational health; all forms of violence; mental health issues; and the needs of young people with disabilities. Both documents prioritize the needs of disadvantaged adolescents, who are defined as adolescents who are out of school; under-employed or unemployed; engaged in risky behaviours; orphans; monks or nuns; marginalized; rural; or hard to reach. Both the policy and the strategic plan stress a holistic approach to adolescent health and development. For example, the strategic plan states, "Traditional health-care delivery, which focuses on treatment of acute illnesses and chronic diseases, has often overlooked behavioural and social issues, issues related to safety, social relationships, self-esteem, education and skill development. ... The overall objective of the strategic plan is to facilitate the holistic health care and development of the Bhutanese adolescents and youths, who would be continuously sensitized on their health and development concerns and empowered with the necessary and relevant life-skills".

Sources: (169); (282); (283); (284); (285); (286).

In addition, there may be times when a country or region needs to implement rapid and focused adolescent health priority setting exercises, such as in the event of a humanitarian crisis.

Box 4.1 provides an example of how an adolescent SRH situation analysis might be conducted in humanitarian and fragile settings.

Box 4.1. Adolescent sexual and reproductive health situation analysis in humanitarian and fragile settings

In a humanitarian and fragile setting, it is important to conduct a needs assessment and landscape analysis to understand the SRH situation of both male and female adolescents and in order to develop a plan that responds to their priority needs. The 2009 Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings provides tools for initial rapid assessment, situation analysis and comprehensive SRH surveys of adolescents in emergency situations.

Specifically:

- **An initial rapid assessment** should be conducted during the first 72 hours of an acute emergency and be used to collect demographic information and identify life-saving issues that must be addressed urgently to ensure the well-being of the beneficiary population.

- **A situation analysis** conducted after an emergency situation has stabilized will provide information about the baseline status of SRH needs and services, and will help in the prioritization of interventions when comprehensive SRH services are introduced. Situation analyses may use several methods of data collection, including secondary data, in-depth interviews, focus-group discussions (sex-separated, if culturally required), community mapping and facility assessments.

- **Comprehensive SRH assessments** are not often conducted in emergency situations because they are time consuming and can place additional burdens on precious human and logistic resources. After stabilization of an acute emergency, however, a comprehensive assessment of SRH knowledge, beliefs and behaviours can provide valuable information that will help a programme to design an SRH programme that responds to the specific gendered needs of local adolescents.

Although the assessments and analyses above are valuable in a humanitarian crisis, it is important to remember that the minimum initial service package should be the first SRH intervention to be introduced, and should never be delayed.

Source: (287).

Annex 4 provides additional information for consideration when setting national priorities for adolescent health programming, specifically:

- **Section A4.1** in Annex 4 describes supplementary resources to support national priority setting, including a manual for health planners and researchers conducting a rapid assessment of adolescent health needs (288) and a regional guide on conducting an adolescent health situation analysis (289).

- **Section A4.2** in Annex 4 draws on country-specific adolescent mortality data to illustrate how individual countries – even neighbouring countries within the same region – may have very different priorities based on the available data; and

- **Section A4.3** in Annex 4 provides an example of the sources used and data compiled during Ethiopia's recent adolescent health needs assessment.

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5. National programming

Key messages:

1. To achieve the Sustainable Development Goal targets, the health and other sectors need to normalize attention to adolescents' needs in all aspects of their work. An "Adolescent Health in All Policies (AHiAP)" approach should be practised in policy formulation, implementation, monitoring, and evaluation. AHiAP could be facilitated by establishing a national coordination group that would oversee efforts for adolescent health and wellbeing across sectors and government ministries.

2. Countries should ensure that adolescents' expectations and perspectives are included in national programming processes. Adolescent leadership and participation should be institutionalized and actively supported during the design, implementation, monitoring and evaluation of adolescent health programmes.

3. "Leave no one behind" should be a key principle in programming for adolescent health. An equity lens, with due attention to age, sex and – in particular – vulnerable groups of adolescents, should inform all stages of programming, from identifying goals, targets and objectives, through to defining indicators to monitor achievements and plan interventions, services and activities.

4. Adolescent-responsive health systems are key to achieving universal health coverage. To guarantee explicit ongoing, dedicated attention to adolescent health issues within the health sector, countries may consider mandating an adolescent health focal point in the Ministry of Health, with responsibilities for championing adolescent health within the ministry, coordinating systematic attention to adolescent needs in all health programmes, and serving as a liaison person for intersectoral action.

5. To accelerate progress towards universal health coverage, countries should consider how they will institutionalize national adolescent health programmes, with a broad scope across health priorities. In such a case, the adolescent health focal point in the Ministry of Health will also be the coordinator of the national adolescent health programme.

6. A case for investment in adolescent health will be much stronger if it is fully costed. National policies and strategies that address adolescent health should therefore be accompanied by fully costed plans that include estimates of the resources needed to implement the interventions that have been prioritized, and the associated programme costs.

7. Progress in primary and secondary school enrolment calls for renewed attention to school health programmes. Investing in school health programmes is a priority for intersectoral action on adolescent health. Every school should become a health-promoting school. Countries that do not have an institutionalized national school health programme should consider establishing one, and countries that do have such programmes should continuously improve them to ensure that they align with the evidence base on effective interventions and emerging priorities.

Section 4 provides guidance on how to identify priorities for programming, and Section 3 summarizes evidence-based policies and interventions for each of the priorities that might be selected. This section describes national programming – the stage of a sector's planning cycle in which identified priorities are translated into plans (see Glossary).

This section describes key areas for programming to achieve the overarching goals of improving adolescent health and well-being and equity in health outcomes. The section identifies the common elements of programming for adolescent health that are summarized in the logical framework, and gives an overview of the roles of health and other sectors in programming for adolescent health (section 5.1). It then proposes key areas for programming within each of the elements of the logical framework, and provides practical examples on how programming has been applied in various countries (sections 5.2-5.6). Specific aspects of programming for adolescent health in humanitarian and fragile settings are described in section 5.7, and positive development and gender-transformative approaches (section 5.8).

There is some overlap between the key areas for programming described in this section and some of the organizational, structural and macro-level interventions described in Section 3. This is because the complexity of interventions tends to increase the higher they are in the hierarchy of the ecological framework.

For example, Table 3.4 indicates that school-based bullying prevention is an organizational intervention recommended to prevent youth violence. It is a complex intervention with many components, such as teacher and parent training; specialists working with students who are both perpetrators and victims of bullying; and the establishment of school policies and procedures. On the other hand, school-based bullying prevention is a programming area for health-promoting schools. In another example, adolescent-friendly health services is a recommended intervention within HIV services to ensure engagement and improved outcomes. It is also a programming area – in the sense that a programme concerned with, for example, improving adolescents' access to guidance and counselling will have to address the adolescent-friendliness of the health services. For the convenience of the reader, when there is such overlap we list the programming area along with other priorities for programming, even if it has also been mentioned as an intervention area in Section 3.

5. National programming

5.1.
A logical framework for translating priorities into plans and programmes

As described in Sections 2 and 3, the scope for adolescent health programming is large. It encompasses mental health, NCDs, SRH, road traffic injuries and violence, among others. It is difficult therefore to have a blueprint for the specific elements in the design and implementation of adolescent health programmes. However, a unifying approach is possible. Known as a logical framework, this tool provides a formalized approach to the planning, programming and evaluation of programmes (290). A logical framework defines a programme's objectives and indicators for monitoring and evaluation (290). It also makes explicit the links between the programmes goals, objectives, key interventions, implementation strategies and activities.

Recognizing that different health priorities will have specific implications for selected interventions and key activities, programming for adolescent health has common elements (Fig. 5.1), including four overarching conditions for successful programming (i.e. leadership, adolescent participation, adequate financing and accountability). As a planning tool, the logical framework provides a checklist of programme elements that need to be considered in planning a systemic response to adolescent health. Notably, this logical framework is applicable not only to programmes led or implemented mainly by the health sector but also to programmes led or implemented mainly by other sectors.

One important consideration in national programming is to apply the core SDG principle, "leave no one behind". An equity lens should inform the planning at all stages of programming, from identifying goals, objectives and the target population, through defining indicators to verify achievements, to planning interventions, services and activities. The WHO guide, The Innov8 Approach for Reviewing National Health Programmes to Leave No One Behind (2016) (106), provides detailed guidance on how to promote and ensure human rights and equity at all stages of the programming process.

As shown in the logical framework, improving adolescent health and well-being and equity in health outcomes are important goals of adolescent health programmes. Health and other sectors play variable role in achieving these goals (Figure 5.2).
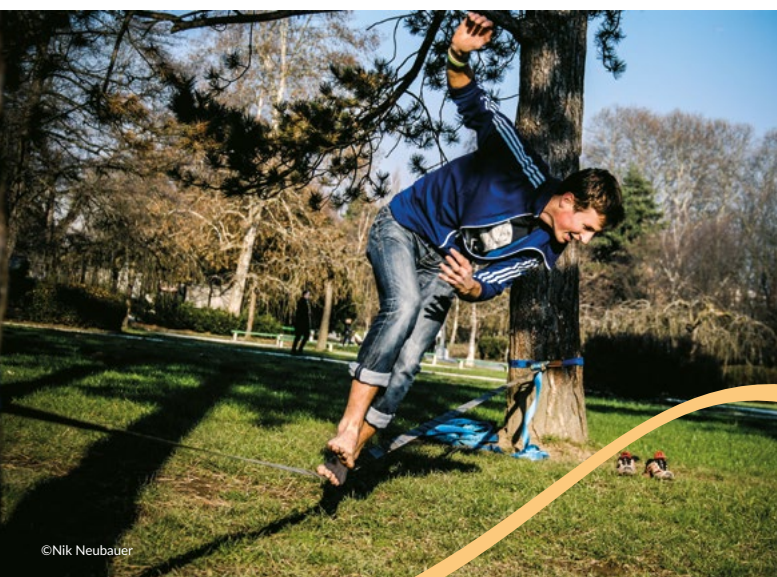

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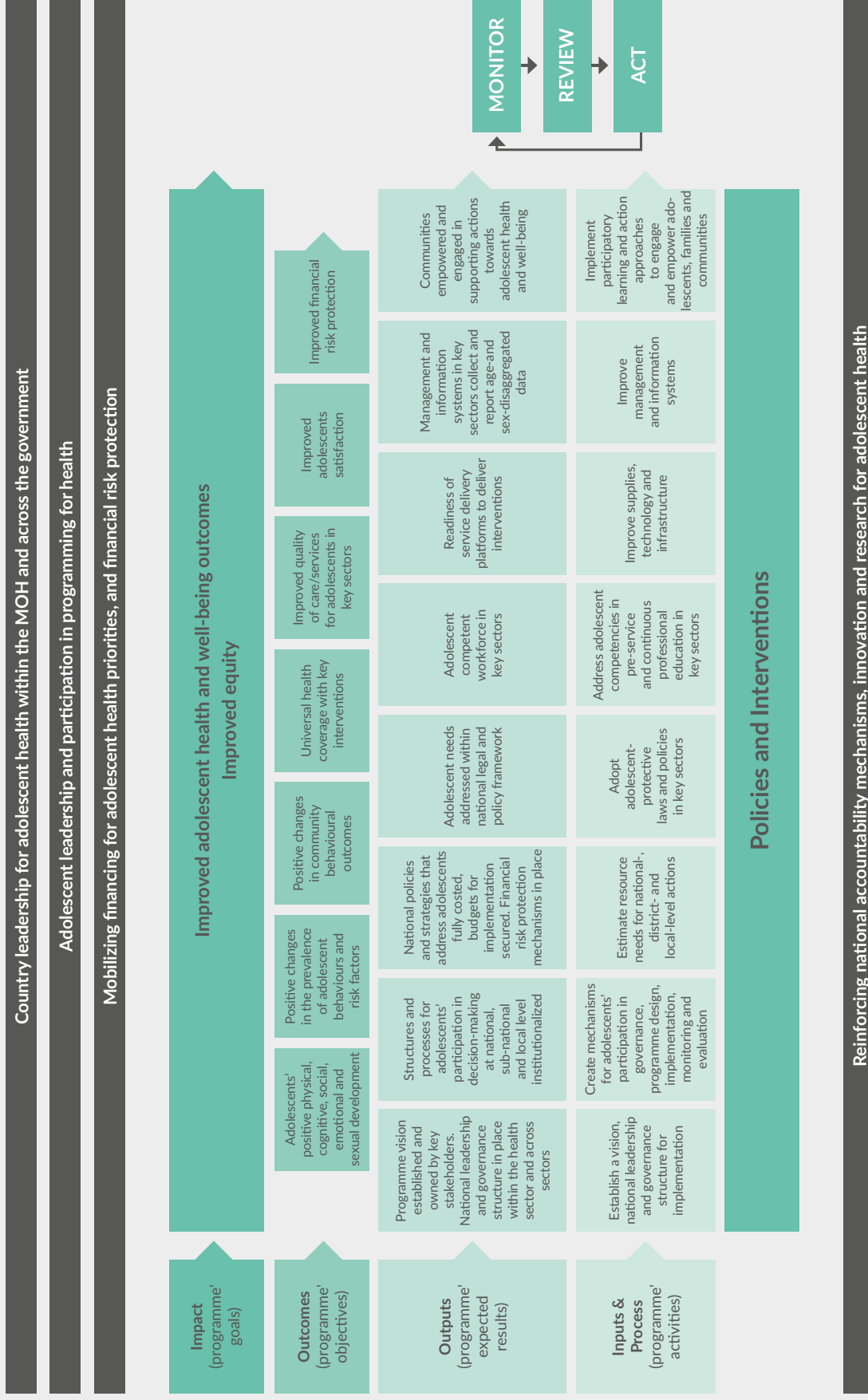**Figure 5.1.** A logical framework for national adolescent health programming

Country leadership for adolescent health within the MOH and across the government

Adolescent leadership and participation in programming for health

Mobilizing financing for adolescent health priorities, and financial risk protection

Impact (programme' goals)

Outcomes (programme' objectives)

Outputs (programme' expected results)

Inputs & Process (programme' activities)

Improved adolescent health and well-being outcomes
Improved equity

Adolescents' positive physical, cognitive, social, emotional and sexual development

Positive changes in the prevalence of adolescent behaviours and risk factors

Positive changes in community behavioural outcomes

Universal health coverage with key interventions

Improved quality of care/services for adolescents in key sectors

Improved adolescents satisfaction

Improved financial risk protection

Programme vision established and owned by key stakeholders. National leadership and governance structure in place within the health sector and across sectors

Structures and processes for adolescents' participation in decision-making at national, sub-national and local level institutionalized

National policies and strategies that address adolescents fully costed, budgets for implementation secured. Financial risk protection mechanisms in place

Adolescent needs addressed within national legal and policy framework

Adolescent competent workforce in key sectors

Readiness of service delivery platforms to deliver interventions

Management and information systems in key sectors collect and report age-and sex-disaggregated data

Communities empowered and engaged in supporting actions towards adolescent health and well-being

Establish a vision, national leadership and governance structure for implementation

Create mechanisms for adolescents' participation in governance, programme design, implementation, monitoring and evaluation

Estimate resource needs for national-, district- and local-level actions

Adopt adolescent-protective laws and policies in key sectors

Address adolescent competencies in pre-service and continuous professional education in key sectors

Improve supplies, technology and infrastructure

Improve management and information systems

Implement participatory learning and action approaches to engage and empower adolescents, families and communities

Policies and Interventions

MONITOR

REVIEW

ACT

Reinforcing national accountability mechanisms, innovation and research for adolescent health

Figure 5.2. An overview of health and other sectors roles in programming for adolescent health

PROGRAMMING WITHIN THE HEALTH SECTOR FOR UNIVERSAL HEALTH COVERAGE			PROGRAMMING WITH OTHER SECTORS TO ADDRESS BROADER DETERMINANTS OF HEALTH	
Programming for adolescent responsive health systems	Adolescent specific programmes within the health sector	Programming for adolescent health in humanitarian and fragile settings	Programming for Adolescent Health in All Policies (AHiAP)	Intersectoral programmes
Programming for adolescent-responsive health systems addresses health determinants for which the health sector has the primary responsibility (e.g. availability, accessibility and acceptability of health-care services). The health sector leads, but mobilizes and supports other sectors in contributing to health-sector objectives.		The health sector leads on health-sector interventions, but shares responsibility with other sectors within a well-defined multi-stakeholder coordination.	Other sectors have the primary responsibility to ensure that adolescents and adolescent health are given adequate attention. The health sector raises awareness, mobilizes and provides technical support to other sectors.	The health sector shares responsibility with other sectors through joint definition of objectives, planning and funding. Any sector may be given the primary coordination and monitoring role.

Notably, in achieving universal health coverage as well as in influencing broader determinants of health the health sector cannot successfully act alone. Some degree of intersectoral action – defined as "a recognized relationship between part or parts of the health sector and part or parts of another sector, that has been formed to take action on an issue or to achieve health outcomes in a way that is more effective, efficient, or sustainable than could be achieved by the health sector working alone" – is necessary (291). The levels of intersectoral action will range from information (information exchange), cooperation (incidental, casual or reactive cooperation led by the health sector) and coordination (a joint effort working towards the adjustment of the policies and programmes of each sector for the purpose of greater efficiency and effectiveness) to integration (defining together a new policy or programme) (106); (292).

The remainder of this section discusses the practical application of the national adolescent health programming framework, within the health sector and with other sectors. Key areas for programming are outlined in boxes.

5. National programming

5.2.
Leadership within the Ministry of Health and across the government

Leadership for adolescent health within the Ministry of Health, in each of the key sectors and across the government, is an essential condition for successful programming. The complexity of the adolescent period, and the large number of professional disciplines and agencies across sectors that need to be involved, call for strong coordination. Within the Ministry of Health, strong leadership for adolescent health is needed to mandate collaboration between different departments and to ensure an adolescent health focus in key policies, including those related to financial risk protection; training and education of providers; quality improvement; health management and information systems; and infrastructure. To address broader determinants of health, strong leadership for adolescents is required at the highest level of the both national and local government to mandate collaboration between different arms of government working closely with communities, civil society, young people and the private sector (Case study 14; and Case study A5.4 in Annex 5).

Case Study 14

England's teenage pregnancy strategy

The 10-year Teenage Pregnancy Strategy for England is an example of a successful nationally led, locally implemented programme. It received resources over a long period and resulted in a reduction of 51% in the conception rate among girls under 18 years of age. Based on international evidence of intervention effectiveness, the strategy established a 30-point action plan within four themes: joint action at national and local levels; better prevention (i.e. improving comprehensive sexual and relationships education and access to contraception); a national communication campaign to reach young people and parents; and coordinated support for young parents.

A teenage pregnancy unit was established to oversee implementation of the strategy, with support from a cross-departmental board and an independent advisory group of external experts. Teenage pregnancy coordinators were appointed in all government regions, and every local government area also appointed a teenage pregnancy coordinator and a board with representation from health, education, social services, youth services, housing and relevant NGOs. In addition, a national group of NGOs was established to provide expert advice.

The aims and target of the strategy were embedded in a wide range of government programmes to maintain priority and strengthen joint working between agencies. Providing and maintaining leadership throughout the strategy was an important factor of its success. Government leadership was key in putting teenage pregnancy high on the national agenda, reflected by the launch of the strategy by the Prime Minister. It was also critical for sustaining the priority over the 10-year period, even though early progress was slow and some media commentators claimed the strategy had failed. Evidence that change in complex social phenomena takes time was provided to policy-makers, so that they would not expect quick results. After the mid-course review, visible ministerial presence and direct engagement with local areas contributed to renewed commitment. Local leadership from elected councillors and senior officials was also important to maintain motivation and to challenge deeply held views that high rates of adolescent pregnancy were inevitable. In addition, national and local leaders were supported by the independent advisory group, which provided expert challenges to media criticism and offered constructive advice to ministers and local areas.

Sources: (293); (294).

Leadership can be demonstrated by individuals or through an organization's structures and governance processes. In practice, both are important (Public Health Agency of Canada 2014 (295)). Many initiatives on establishing adolescent-friendly services in LMICs (e.g. in Colombia, Estonia, the Republic of Moldova, and Mozambique) that grew to become national programmes owe their success to coalitions of local champions that lobbied decision-makers over an extended period to ensure that initial interest did not fade over time (294). Due to their persistent, effective advocacy, institutional mechanisms were created in governance, service delivery and financing to ensure the sustainability of the initial investments.

Key areas for programming:
Leadership within the Ministry of Health and across the government

1. Establish a national-level mechanism, or use existing platforms, to oversee and coordinate efforts for adolescent health and well-being across sectors and government ministries. Such a mechanism would facilitate engagement of relevant agencies and civil society organizations, including adolescents themselves. It would also identify and periodically review priorities for intersectoral collaboration, create incentives to expedite the work, coordinate action across government ministries, and promote related accountability at all levels.

2. Mandate an adolescent health focal person in the Ministry of Health with the responsibility to:

    a. work across departments within the Ministry of Health – i.e. financing, workforce, primary care and hospital care – to ensure that all health programmes have an appropriate focus on adolescent health;

    b. coordinate adolescent-specific programmes within the health sector or across sectors, depending on the mandate;

    c. work with other sectors during their routine strategic and operational planning cycles to ensure AHiAP (see Section 5.6.1).

    d. liaise with other sectors through an intersectoral platform and ensure that there is strong leadership for adolescent health across government to mandate collaboration towards jointly owned health targets; and

    e. plan and manage intersectoral action (see Box 5.4 in Section 5.6.2).

3. Build national and subnational (e.g. district-level) political and administrative capacity and leadership for adolescent health, through:

    a. development of adolescent-centred competencies in using data for decision-making;

    b. essential skills in advocacy, negotiation, budgeting, building consensus, planning and programme management;

    c. collaborating across sectors;

    d. coordinating multistakeholder action;

    e. mobilizing resources; and

    f. ensuring accountability.

Sources: (11); (55).

National programming

5

5. National programming

5.3.
Adolescent leadership and participation in health programming

The United Nations defines youth participation as, "the active and meaningful involvement of young people in all aspects of their own and their communities' development, including their empowerment to contribute to decisions about their personal, family, social, economic and political development" (297).

Adolescent participation in policy decisions brings multiple benefits (see also Box A1.1). From a pragmatic perspective, adolescent participation ensures better decisions and policies. It allows decision-makers to tap into adolescents' unique perspectives, knowledge and experience, which brings a better understanding of their needs and problems and leads to better-suited solutions. Having adolescent and youth perspectives in national policy has been linked to more coordinated responses from government, civil society organizations and donors. In some circumstances, active involvement of youth in programming has been shown to foster (298). In addition, programmes can benefit from adolescents and youth playing an important role in tracking progress through giving their feedback on how the policy application is progressing. At an individual level, respecting adolescent views regarding their own health care ensures that more adolescents will seek and remain engaged in care. From a developmental perspective, meaningful engagement has an essential positive influence on social and emotional development (55). It enhances adolescent-adult relationships, develops adolescents' leadership skills, motivation and self-esteem, and allows them to develop the competencies and confidence they need to play an active role in society (298). From an ethical and human rights perspective, children's right to participate in deci-sion-making is enshrined in the United Nations Convention on the Rights of the Child, and is a way to promote health equity. The underlying basis of inequities is the unequal distribution of power, money and resources, so empowering and involving vulnerable and excluded groups of adolescents through mean-ingful participation constitutes one of the mechanisms for the redistribution of power (106). Despite these forceful reasons for ensuring meaningful participation of adolescents and youth in adolescent health programming, this is not often done by governments and is evaluated even less frequently.

In public health, adolescent participation can take a number of different forms including (299):

- **Informing** adolescents with balanced, objective information (e.g. Case study A3.1).
- **Consulting**, whereby an adult-initiated, adult-led and adult-managed process seeks adolescents' expertise and perspectives in order to inform adult decision-making. See the case study from South Africa (A3.13) on how inputs from children informed the revision of the age of consent for HIV testing.
- **Involving**, or working directly with, adolescents in the communities. See Case studies 5 and A3.14 from Mozambique and Namibia on involving adolescent facilitators and peer support groups in service provision, or Case study A5.5 from Sierra Leone on involvement of children in the Truth and Reconciliation Commission.
- **Collaborating** by partnering with affected adolescents in communities in each aspect of a decision, including the development of alternatives and identification of solutions. Case study A5.6 in Annex 5 provides an example of how a municipal government in Argentina has collaborated with youth so that they have a say in the design of city youth services, and in the allocation of resources to support them.
- **Empowering**, by ensuring that adolescents in communities retain ultimate control over the key decisions that affect their well-being. This translates into adolescent-led participation where adolescents are afforded, or claim, the space and opportunity to initiate activities and advocate for themselves (see Case study A3.2).

Youth leaders are active in many countries, through community associations, school-based activities and national or subnational youth advisory groups. These youth can be valuable assets for planning adolescent-responsive health systems, as well as for influencing policies in other sectors. Health ministries or governments have the responsibility not only to respect the right to participation but also to protect and fulfil it. It entails building adolescents' capacity and providing them with meaningful opportunities for participation in leadership and financing decisions and in all phases of the programming cycle, including assessment, analysis, planning, implementation, monitoring and evaluation.

Key areas for programming (continued): Adolescent leadership and participation

4. Ensure that national policy frameworks recognize the importance of the meaningful engagement of adolescents and youth, and establish mechanisms to guarantee it.

5. Create forums for meaningful youth participation as leaders and key stakeholders at the national level (e.g. independent youth commissioners and a national youth council) with resources for independent oversight of government actions to promote adolescent health and well-being.

6. Establish structures and processes to institutionalize adolescent participation in dialogues about relevant areas of public policy, financing and programme implementation (e.g. youth participation in the Civil Society Coordinating Group for the Global Financing Facility in Support of Every Woman Every Child (the Global Financing Facility); and systematic inclusion of young people through civil-society involvement in country platforms for reproductive, maternal, newborn, child and adolescent health).

7. With the participation of adolescent and youth constituencies, adopt minimum standards for improved participation, inclusiveness and transparency, and for the accountability of such country platforms. Ensure that policies for adolescent representation ensure equitable representation of key vulnerable groups to achieve greater parity, through adequate mechanisms for formal and informal youth representation, tailored capacity building and financial support.

8. Build mechanisms for youth participation at the local level, including taking advantage of technological platforms (e.g. mobile phones and social media) to facilitate youth engagement in problem identification, prioritization and solutions. Provide the resources to

support these actions, and ensure that the mechanisms allow the most vulnerable adolescents to participate.

9. Train and mentor youth leaders to build their competencies to play an effective role in governance and accountability processes around their health and well-being. Ensure that youth-friendly and accessible information, resources and financial and technical support are available to support training and mentoring activities, and enable adolescents to share their experiences, good practices and models of successful adolescent-led interventions.

10. Build legal awareness and literacy among adolescents about their rights under the Convention on the Rights of the Child, as well as about their legal entitlements (and limitations) under national laws and regulations. Ensure the existence of, and adolescents' ability to use, functioning and accessible mechanisms for remedy and redress when violations occur. Ensure their easy access for young people to present cases before regional and international judicial and human rights bodies.

11. Put in place mechanisms and procedures to ensure adolescent participation in health services, including in their own care, in line with Standard 8 of the Global Standards for quality health-care services for adolescents (WHO and UNAIDS 2015a).

12. Identify clearly the objectives of adolescent participation, and institutionalize the monitoring and evaluation of youth engagement with specific indicators. See Case study A5.26 from the Adolescent and Youth Constituency of the Partnership for Maternal, Newborn & Child Health on how establishing an 18-month workplan with clear objectives and expected results helped to demonstrate impact.

Sources: (106); (300).

In collaboration with partners, the adolescent and youth constituency of the Partnership for Maternal, Newborn & Child Health has developed a practical toolkit for youth organizations. It is designed to help them champion and advocate for adolescent health and well-being in their countries, and highlight the issue at regional and global levels.

The toolkit empowers youth organizations to develop national advocacy roadmaps, and to engage in national and subnational dialogues and processes (42). Other global resources that provide practical guidance on facilitating youth engagement in multisectoral development and health programming are listed in Annex box A1.1.

5. National programming

5.4.
Financing adolescent health priorities in national health plans, and ensuring financial risk protection of adolescents

The way that health services are financed is central to progress towards universal health coverage. For adolescents, three aspects of financing are crucial (301):

- maximizing the number of adolescents covered by an effective prepaid pooling arrangement, which can take the form, for example, of an explicit insurance programme or access to facilities that are financed by prepaid pooled funds;
- reducing or removing out-of-pocket payments at the point of use; and
- expanding the range of services covered by the effective prepaid pooling arrangement to include the services in the country's package for adolescents.

In each of these aspects, adolescents face specific vulnerabilities for a number of reasons (302):

- First, adolescents are less likely than many other age groups to be covered by an effective prepaid pooling arrangement (e.g. a health insurance scheme), particularly if they are not in school, are older than 18 years, are not employed or live in low-income households.
- Second, adolescents are disproportionally deterred from seeking care by out-of-pocket payments. This is because of their limited access to money – either their own or their family's.

- Third, adolescents have limited capacity to access services independent of their parents, although they have a greater need for confidentiality than younger children (303); (304); (305). For example, in the United States of America, even when adolescents are legally allowed to receive some services without parental consent, itemized bills sent to their parents can breach confidentiality (306).
- Fourth, not all services needed by adolescents are adequately covered by prepaid pooled funding arrangements. For instance, contraceptives for adolescents or HPV vaccine might not be covered in the benefit package.
- Fifth, mechanisms for paying providers are not always aligned with service requirements for adolescents. In fee-for-service schemes, providers might be discouraged from spending sufficient time consulting an adolescent client – who may need more time than an average adult or child, especially in a first consultation. It is therefore important that mechanisms for paying providers are aligned with the needs of adolescents.

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5.4.1.
How to expand resource allocation for adolescent health priorities in national health plans

To meet the needs of adolescents, resources need to be allocated and purchasing decisions made within and outside of the health sector (302). National strategic health plans provide a platform through which stakeholders agree on strategic directions and priorities for the health plan for the short and medium term. The Ministry of Health is expected to translate government policy goals into suggested budget allocations for the health sector. Adolescent health is an important cross-cutting issue to address throughout the plan, the associated cost projections and the budget proposal. When the Ministry of Health engages in negotiations with the Ministry of Finance over resource allocations, there are multiple arguments that can be brought to the table to present a strategic and compelling plan for investments in adolescents (307). National investment plans should make a strong case for investment in adolescent health based on the triple dividend argument of benefits now, into future adult life and for the next generation of children (55); (73). These are harnessed through investment in the evidence-based, high-impact interventions described in Section 3. The generation of further evidence on the effectiveness and cost-effectiveness of adolescent health interventions should be a priority for future research (see Section 6).

A case for investment will be stronger if costing models are applied to establish the cost of implementation of planned activities. For example, South Africa recently developed a new adolescent and youth health policy (2016–2020) that has projections of costs for its implementation plan. A discussion around financing arrangements, such as exemptions from user fees for adolescents, requires data and supporting arguments for how much a change in financing policy would require in terms of resources, and what it would bring in terms of benefits.

While domestically raised funding is the main financing source to be leveraged for investing in young people's health, external funds can also play an important role in low-income countries. The Global Financing Facility is an important financing platform for the Global Strategy that is intended to support investment plans in selected countries that aim at smart, scaled and sustainable action for women's, children's, and adolescents' health (11). The Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund) encourages countries to focus on adolescents in their applications. An Adolescent Information Note supports strategic Global Fund investments to improve the health and well-being of all adolescents (403). See Case study A5.25 on securing funding for selected interventions to address adolescent health priorities in Liberia's Investment Case.

For most countries, the key vehicle through which to expand resource allocation towards activities that benefit adolescent health is the budgeting process at national and sub-national level, which may not always follow the structure of the initial plan. In many countries, a lack of understanding of the budgeting and financial management cycle results in policy-making and planning that is de-linked from actual budgeting processes. This can lead to a misalignment between the agreed priorities and the funds that are ultimately allocated and spent. Participation in the financing cycle therefore requires engagement from the planning stage and throughout the budget preparation, the release of funds and the monitoring of expenditures (309).

Financial barriers are one of the main things that deter adolescents from using services. However, according to a recent WHO policy survey, adolescents in many countries do not have access to services that are free at point of use (Figure A5.2 in Annex 5) (301); (302).

National programming

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5. National programming

Key areas for programming (continued):
Financial resources for adolescent health programming

13. Make the national package of adolescent health interventions an instrument to guide purchasing decisions and benefit packages, giving particular attention to p reventive services and to adolescents' rights to confidentiality. Estimate resource needs for the implementation of the priority package of interventions and associated programme costs, using tools such as the OneHealth Tool. An adolescent health costing module has been developed for this software tool that allows countries to project costs for adolescent-specific programmes, as well as the cost of delivering adolescent health interventions within other national programmes or national health plans.

14. Prepare a strategic and compelling plan for investments in adolescents, making a strong case for investment in adolescent health based on the triple dividend argument, and engage in negotiations with the Ministry of Finance over resource allocations.

Use costing data to advocate for, and secure resources for, adolescent health in national and sub-national plans and budgets. Ensure that resources are distributed between geographical areas in proportion to their relative needs.

15. Build the capacity of national and district project managers to leverage external funds for adolescent health priorities using opportunities provided by the Global Financing Facility and strategic investments by the Global Fund and GAVI the Vaccine Alliance, among others.

16. Build the agency and capacity of district and community managers to address adolescent health priorities when making local adjustments to central budgets.

17. Ensure adolescent health is considered as part of national and sub-national training courses on planning, budgeting and financing approaches, including at decentralized level.

Financial risk protection for adolescent health

18. Ensure that adolescents and youth are covered by mandatory, prepaid and pooled funding to access the services they need.

19. Assess the impact of out-of-pocket payments at the point of use for adolescents accessing key services. Use data to advocate for reduction or elimination of adolescents' out-of-pocket payments at the point of use.

20. Design and implement measures for adolescent financial risk protection (e.g. waivers, vouchers and exemptions or reduced co-payments) so that health services and commodities, including contraceptives, are free or more affordable to adolescents at the point of use. See Case study 4 on Nicaragua's voucher programme to increase access to SRH care among under-served adolescents.

21. Identify subgroups of adolescents that are not covered by mandatory, prepaid and pooled funding arrangements, and design mechanisms to maximize their coverage. This can take different forms, e.g. an explicit insurance programme; access to facilities that are financed by prepaid pooled funds; or adequate subsidization for vulnerable adolescents and their families. Consider cash transfer schemes to increase adolescents' access to critical services, and advise welfare and social protection sectors on this issue. See Case study A5.8 in Annex 5 from Malawi on cash transfer schemes as a vehicle to achieve public health objectives.

22. Monitor facilities to ensure that payment exemption policies are observed.

23. Provide incentives that motivate health workers to implement quality interventions that are essential for adolescent health and development, e.g. through pay-for-performance mechanisms.

Sources: (106); (300); (301); (310); (311); (405).

5.5.
Programming within the health sector for universal health coverage

For adolescents, universal health coverage means that all adolescents can use the promotive, preventive, curative, rehabilitative and palliative health services they need – of sufficient quality to be effective – while also ensuring that the use of these services does not expose them to financial hardship (313).

This definition of universal health coverage embodies three programmatic objectives (313):

1. equity in access to health services – every adolescent who needs services should get them, not only those who can pay for them;

2. the quality of health services should respond to adolescents' specific needs, to improve the health of those receiving services; and

3. adolescents should be protected against financial risk, ensuring that the cost of using services does not prevent t hem from using services and put them at risk of financial harm.

Programming for universal health coverage could be done either as part of a sector's strategic and operational planning aligned with its budget cycle (e.g. periodic mandated revisions of pre-service education may result in improved adolescent content in the curriculum) or as part of an adolescent-specific programme(290).

5.5.1.
Programming for adolescent-responsive health systems

In order to respond to the changing environment and societal expectations, health systems need continuously to adjust themselves through the process of strategic and operational planning.

These adjustments pertain to:

- the planning of the health workforce (e.g. a projected increase in the proportion of the total population who will be adolescents will require more health providers with a specific training in adolescent health);

- the ways health care is financed (e.g. fiscal austerity increases the pressure to prioritize cost-effective interventions);

- the organization of health services (an increase in urbanization will raise demand for health care in cities, and may potentially increase risks of road injuries, while health services in rural areas need to remain functional and accessible);

- how services are delivered (e.g. wider use of the internet opens new opportunities for health education and user engagement); and

- the ways services are monitored and assessed (e.g. integration of user satisfaction indicators into the health management and information system).

It is important, therefore, to ensure that adolescent health needs are given adequate consideration when short-, medium- and long-term plans are being developed during the cycles of strategic and operational planning (314), and to ensure that adolescents have the opportunity to express their needs.

To achieve universal health coverage, health systems need to normalize the attention to adolescent-specific needs in all aspects of their work. In addition to the adequate financing and financial risk protection that were described in Section 5.5, programming for adolescent-responsive health systems entails actions towards:

- adolescent-protective laws and policies;

- building an adolescent-competent workforce at all levels of care;

- ensuring that the quality of health services responds to adolescents' specific needs and that service platforms that maximize coverage (e.g. primary care, school-based and school- linked health services and e-health) are given adequate attention; and

- ensuring that adolescents are fully visible in health management and information systems that collect data disaggregated by age and sex.

5. National programming

5.5.1.1
Adolescent-protective laws and policies

Laws and policies should protect, promote and fulfil adolescents' right to health. Legal and regulatory frameworks should be based on internationally recognized and accepted human rights principles and standards.

Key areas for programming (continued):
Compliance of legal and regulatory frameworks with internationally recognized and accepted human rights principles and standards

24. Assess the legal and regulatory frameworks that mediate adolescents' access to services for compliance with internationally recognized and accepted human rights principles and standards using the WHO toolbox for examining laws, regulations and policies related to reproductive, maternal, newborn and child health and human rights. Such an assessment should aim to highlight where current legislative measures are sufficient, where amendments or repeal may be needed and where legislative gaps exist that need to be filled. The specific aspect of the legislation to be assessed in relation to adolescent health, and the results of such assessments in selected countries, are described in Box A5.1.

Sources (406).

Adolescent-protective laws and policies means, among other things, ensuring that the services that adolescents need are available and accessible to them, without discrimination.

Key areas for programming (continued):
Equity

25. Define the required package of health information, counselling, diagnostic, treatment and care services to be provided to all adolescents.

26. Review laws and policies, and modify them as necessary to ensure gender-responsive programming that accounts for gender norms, roles and relations and their interplay with other factors (e.g., income and rural living) that influence health and access to health services.

27. Enforce policies to redress inequalities and discriminatory practices (both real and perceived) in adolescents' access to services. Ensure that adolescents with disabilities, LGBTI adolescents and other vulnerable groups of adolescents do not face barriers in accessing the services they need.

Sources: (301); (323).

Adolescents are in need of protective policies, as described in Section 3. Parents or legal guardians, health and social workers, teachers and other adults have a role to play in ensuring a safety net for them. However, this should not mean that adolescents are seen as incompetent and incapable of making decisions about their lives (Figure A5.1 in Annex 5). Protection and autonomy may seem to be conflicting principles – because protective measures tend to restrict adolescents' autonomy – but in fact they can be balanced and are mutually reinforcing. Fostering autonomy, for example by empowering adolescents to access health services, is a protective measure, since timely access to services could protect them from potential harm. Laws and policies should therefore ensure that all the various rights of every adolescent are afforded equal priority.

In seeking to provide an appropriate balance between respect for the emerging autonomy of adolescents and sufficient levels of protection in national policies, consideration needs to be given to: the level of risk involved; the potential for exploitation; an understanding of adolescent development; how competence and understanding do not develop equally across all fields at the same pace; and individual experience and capacity (15). The section below presents key areas that need to be considered in designing laws and policies that treat the rights to health, protection and autonomy as universal, indivisible and interrelated.

Key areas for programming (continued): Confidentiality

28. Establish procedures to be followed in health facilities to ensure that:
    - information about clients is not disclosed to third parties;
    - personal information, including client records, are held securely; and
    - there are clear requirements for the organization of the physical space of the facility, and actions to ensure visual and auditory privacy during registration and consultations with a service provider.

29. Specify in health-care guidelines that consultations with adolescent clients accompanied by parents or guardians should routinely include time alone with the adolescent.

30. Review national laws and policies to indicate situations, clearly and unambiguously, when confidentiality may be breached, with whom and for what reasons (e.g. disclosure of sexual abuse of a minor, significant suicidal thoughts or self-harm or homicidal intent).

31. Establish standard operating procedures for situations in which confidentiality might be breached due to legal requirements.

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32. Determine appropriate and acceptable age limits when adolescents may give consent or refuse health treatment or services without parental or guardian involvement. Age limits should be informed by an adolescent's developmental stage and evolving capacity, as well as careful evaluation of risks, security and other issues in the local context. Consider lowering existing age limits, if appropriate (see Case studies 15 and A5.9). As a guide, informed consent should be sought from the child when the child is deemed mature enough to make an informed decision. Usually adolescents aged 15 years and above are able to give oral or written informed consent. For younger adolescents, decisions should be made on a case-by-case basis. Where evidence suggests that a person lacks the capacity to consent, a determination should be made in the best interest of the adolescent.

33. Adopt flexible policies to allow specific groups of adolescents to be considered "mature minors". For example, locally established procedures should not impede unaccompanied adolescents or those who do not have parents or carers from accessing services.

34. Remove the need for parental or guardian consent when an adolescent is seeking counselling and advice services. The right to counselling and advice is distinct from the right to give medical consent and should not be subject to any age limit.

35. Remove the need for mandatory third-party (e.g. parental, guardian or spousal) authorization or notification in the provision of SRH services, including contraceptive information and services. Adopt a legal presumption of competence that an adolescent seeking preventive or time-sensitive sexual SRH goods and services (e.g. contraception or safe abortion) has the requisite capacity to access such goods and services.

36. Establish standard operating procedures for obtaining informed consent. Consent forms and other information tools (e.g. posters) should be developed in consultation with trusted community members and designed specifically for the age groups to be included in the activity. If there are mandatory reporting requirements in the setting, this information must be disclosed to the parent or guardian and to the adolescent during the consent or assent process.

37. Enforce a policy that in all cases – whether or not the consent of the parent or carer is required – an adolescent's voluntary, adequately informed, non-forced and non-rushed assent for services and participation in a data-gathering activity is obtained. Adolescents should be given full, unbiased and clear information on the nature, risks and alternatives of a proposed intervention or data-gathering activity, to enable adolescents' participation in their own care and the communication of their choices. Information about an intervention should be provided to adolescents in a manner that is appropriate to their culture, education and level of understanding. While it is important to explain clearly to adolescents the potential risks, it is also important not to frighten them.

38. Adopt policies to protect the rights of adolescents with disabilities, including demanding that their views be given due weight in accordance with their capacity, age and maturity on an equal basis with others. Adolescents with disabilities face particular barriers; they must therefore be provided with opportunities for supported decision-making.

39. Where legal, modify legislation to include provision for adolescents easily to access safe abortion care, without parental or spousal consent requirements.

40. Ensure elimination of harmful practices inflicted on young people without consent, including FGM and early and/or forced marriage.

Sources: (15); (317); (323); (405).

Case Study 15

The USA's expansion of minors' access to STI services

Over the past 30 years, states within the United States of America have expanded minors' authority to consent to health care, including care related to sexual activity. All 50 states and the District of Columbia allow most minors to consent to testing and treatment for sexually transmitted infections (STIs), and many explicitly include testing and treatment of HIV. Many states, however, allow physicians to inform parents that the minor is seeking or receiving STI services when they deem it in the best interests of the minor. As of 1 November 2016:

- All 50 states and the District of Columbia explicitly allow minors to consent to STI services, although 11 states require that a minor be of a certain age (generally 12 or 14) before being allowed to consent.

- Thirty-two states explicitly include HIV testing and treatment in the package of STI services to which minors may consent (many of these laws only apply to HIV testing).

- Eighteen states allow physicians to inform a minor's parents that he or she is seeking or receiving STI services. However, with the exception of one state that requires parental notification in the case of a positive HIV test, no state requires that physicians notify parents about such services.

Source: (407).

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5.5.1.2.
An adolescent-competent workforce at all levels of care

Adolescents are not simply older children or younger adults. Returning to the ecological model described in Section 1, individual, interpersonal, community, organizational, environmental and structural factors make adolescent clients unique in the ways that they understand information, in what information and which channels of information influence their behaviours, and in how they think about the future and make decisions in the present (319). All health workers who are in places that adolescents visit (e.g. hospitals, primary care facilities and pharmacies) should develop their competencies (i.e. knowledge, skills and attitudes) in adolescent-responsive health care, to be able to respond to their specific needs (Fig. 5.3). See for example Box A 3.2 on how health workers can provide youth-friendly SRH services.

Figure 5.3. Domains for core competencies in adolescent health care

Understand adolescent development stages and implications for clinical practice.

Communicate in ways tailored to an adolescent's age and stage of life.

Apply laws and policies with regards to informed consent, confidentiality and privacy.

Respect adolescents' capacity for autonomous decision-making.

Comply with quality standards for adolescent-friendly care.

Manage adolescents with specific conditions in a manner that is adapted to the adolescents' stage of development

DOMAIN 1
Basic concepts in adolescent health and development, and effective communication

DOMAIN 2
Law, policies and quality standards

DOMAIN 3
Clinical care of adolescents with specific conditions

Foundation of adolescent health care

Situational clinical care

Source: (408)

Core competencies can be taught in both pre-service and in-service education. A progression across this spectrum of education is necessary to ensure lifelong learning. Many countries, however, do not have sustainable forms of continuous professional education (408). Therefore, improving the structure, content and quality of the adolescent health component of pre-service curricula is very important. Making competency-based education in adolescent health care mandatory in pre-service curricula and postgraduate education is one of the key actions towards a workforce that is competent in adolescent health (301).

To support countries in building an adolescent-competent workforce, WHO developed Core Competencies in Adolescent Health and Development for Primary Care Providers, which includes a tool to assess the adolescent health and development component in pre-service education, and develop recommendations (408).

In the Republic of Moldova, for example, an adolescent health component has recently been introduced into the pre-service training of family doctors and paediatricians, and a postgraduate training course for service providers (in-service training as part of ongoing education) has been developed, approved and integrated into the university curriculum for ongoing medical education (Case study 16).

Case Study 16

The Republic of Moldova's addressing of adolescent health and development in state medical university curricula

More than one fifth of the total population in the Republic of Moldova consists of young people aged 10–24 years. Since 2001, a network of youth-friendly health centres (YFHC) has been established and gradually expanded to provide adolescents and young people with the services they need. To ensure that services are being provided according to national quality standards, it was crucial to address providers' competences, such as age-appropriate communication, confidentiality and integrated health risk assessment, among others. For the first 10 years the initiative relied on in-service training, largely sponsored by donor agencies.

The country, with a population of 3.5 million people, has only one medical university – the State University of Medicine and Pharmacy "Nicolae Testemitanu". It provides university and postgraduate training, as well as clinical internships, residencies, doctoral, postdoctoral and continuous professional education training. To minimize reliance on donor funding, in 2014 a postgraduate training course for service providers (in-service training as part of ongoing education) was developed, approved and integrated into the university curriculum for ongoing medical education. This 50-hour course is run jointly by the State Medical University and the National Resource Centre for Youth-Friendly Health Services "Neovita". Providers can choose this course as part of their five annual applications for continuous professional education.

Having a dedicated course on adolescent health in continuous professional education was an important achievement, and a key to sustainability. However, it was soon realized that improving the structure, content and quality of the adolescent health component of pre-service curricula is also very important. There were two reasons for this. First, improving the adolescent health component in pre-service training would ensure that every medical graduate – and therefore the future workforce – is adolescent-competent at the level of basic competencies. Second, primary care reform in the Republic of Moldova was well established, and that reform put the family doctor at the centre of health-care provision. It is important, therefore, to ensure that every adolescent receives responsive care, irrespective of whether he or she seeks care in a primary care facility or in the YFHC. Therefore, targeting the adolescent health component in residency training of family doctors is crucial.

Between 2014–2016, adolescent health and development issues have been incorporated in postgraduate training in three ways:

- In residency training of family doctors (18 hours – 3 hours theory and 15 hours practical seminars).
- In residency training of paediatricians (45 hours – 6 hours theory and 39 hours practical seminars).
- In residency training of obstetricians and gynaecologists (140 hours – 70 hours theory and 70 hours practical). This course was established long before the 2000s, but its content has been recently updated.

With these successful efforts, the country has ensured that adolescent health and development training is now available in both pre-service and in-service education. Therefore, a progression across this spectrum of education is possible to ensure lifelong learning. It was not an easy or obvious process; some of the factors that contributed to the success were:

- Engaging top-level university decision-makers was inherent to gaining formal approval and integrating the adolescent health course into the university curriculum for continuous professional development.
- Having a National Resource Centre for Youth-Friendly Health Services "Neovita" provided the base for practical training in adolescent health care for residents and practitioners.
- Providing faculty staff from key departments with state-of-the-art adolescent health training was an important factor in building their understanding that adolescents are not simply older children or younger adults.
- Holding biannual National Conferences on Adolescent Health provided the opportunity to unite professionals (i.e. academics, practitioners and policy-makers) working for adolescent and youth health in the Republic of Moldova in sharing scientific and programmatic advances.
- Having longer-term financial support from the project Healthy Generation – Scaling up of YFHS in the Republic of Moldova, financed by the Swiss Agency for Development and Cooperation , made it possible to sustain and expand initial investments in building institutional capacity for adolescent health training.

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41. Create a common understanding about the importance of investing in an adolescent-competent workforce among key players, such as the ministries of health, education and youth; the national board of licensing and certification; curriculum development agencies; professional associations; and other civil society organizations.

42. Define core competencies in adolescent health and development in line with WHO Core Competencies for Adolescent Health and Development for Primary Care Providers (408). Where relevant, include competency in adolescent health in job descriptions and policies related to human-resource capacity.

43. Create and implement competency-based training programmes in pre-service and continuing professional education. To inform the development of such programmes, assess the structure, content and quality of the adolescent health component of existing pre-service curricula at key educational and training institutions. Identify opportunities to strengthen the adolescent health component. The WHO tool to assess the adolescent health and development component in pre-service education (408) may inform this process.

44. Establish a mechanism to consult health-care providers on their training and education needs in adolescent health care, and conduct capacity-building activities at national and district levels that are aligned with reported needs. Facilitate providers' access to online free-of-charge courses.

45. Develop and review information and training materials, practice guidelines and other tools to support decision-making in adolescent health care.

46. Strengthen the capacity of community health workers in reaching adolescents, especially those out of school, with health education and services.

47. Set up a system for supportive supervision of adolescent health care, and provide collaborative learning opportunities as a key strategy to improve providers' performance.

Sources: (301); (323); (408).

5.5.1.3.
Quality service delivery and service delivery platforms that maximize coverage

Global initiatives are urging countries to prioritize quality as a way of reinforcing rights-based approaches to health (132). However, evidence from high-, middle- and low-income countries shows that adolescents experience many barriers to receiving quality health care, and that services for adolescents are often fragmented, poorly coordinated and uneven in quality (18); (301). Recognizing the problems, many countries have moved towards a standards-driven approach to improve quality of care for adolescents (Figure A5.3 in Annex 5), although few actually measure progress towards achieving these standards. However, in order to inform action, surveys to measure the quality of the adolescent health services being provided have been conducted in Kyrgyzstan, Malawi, the Republic of Moldova, South Africa, Tajikistan, the United Republic of Tanzania and Ukraine (301).

Case study A5.10 shows how measuring quality of services against national standards in Kyrgyzstan helped to identify areas for improvement in assisting facilities to move toward adolescent-centred care.

Programming efforts should be directed to establishing, implementing and monitoring standards for assessing the quality of adolescent health care as a means to minimize variability, ensure a basic level of quality and protect adolescents' rights (322). Efforts should also be made to ensure that services are not simply accessed by a privileged minority of adolescents, but that services are reaching marginalized subgroups of adolescents as well.

A critical consideration in national adolescent health programming is integrating services at the delivery level. For example, integrating treatment of the presenting complaint with a broader assessment using the HEADS check list (home, education, activities/employment, drugs, suicidality, sex) is an opportunity to provide a context for anticipatory guidance and preventive interventions (319).

In another example, if HPV vaccination and deworming for schistosomiasis are identified as priorities during the national prioritization exercise, then co-delivery of HPV vaccination and deworming could be considered (301). Integration of services is important from the point of view of both maximizing efficiency and improving responsiveness to adolescents' needs.

Key areas for programming (continued):
Ensure adolescent health services are of high quality

48. Develop a shared understanding of adolescent health and the need to improve the quality of health-care services for adolescents.

49. Develop and implement national quality standards and monitoring systems in line with the WHO and UNAIDS Global Standards for Quality Health-Care Services for Adolescents (18); (323). Position standards-driven quality improvement within national adolescent health programmes, where such exist, or within overall national platforms for quality improvement.

50. Implement e-standards to automate the processes of data collection and analysis, and to improve adolescent participation in providing feedback to facilities by using IT.

51. Establish local, sub-national and national learning platforms for quality improvement.

Strengthen service-delivery platforms that maximize coverage

52. Improve primary- and referral-level care capacity to deliver integrated, adolescent-centred services (e.g. train providers in conducting a HEADS assessment to detect any health and development problems that the adolescent has not presented with, see Table A.3.2)

53. Strengthen school health services (school-based and school-linked) to facilitate adolescents' access to preventive services, and promptly manage conspicuous health problems. See Case study A5.11 from Morocco on health services mandated by the National Programme for School and University Health.

54. Engage community health workers in reaching adolescents, especially those out of school, with health education and services.

55. Establish mechanisms for formal engagement of NGOs in service delivery on behalf of the government to strengthen community-based platforms for service delivery, and to reach underserved populations of adolescents. See Case study A5.12 from India on the Mother NGO scheme to deliver reproductive and child-health services in underserved areas.

56. Explore the potential for information and service delivery through use of social and digital media to provide, for example, confidential and anonymous personalized interactions, helpline support, text messaging for health education and appointment reminders, online prescription, and payment of medication. See for example Case study A5.13. on the use of mobile phone games to create HIV/AIDS awareness in Asia and Africa.

Sources: (18); (324).

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5.5.1.4.
Age- and sex-disaggregated data in health management and information systemss

National health management and information systems rarely capture data specific to adolescents. Even when this does occur at the facility level, the data are often aggregated with data from other age groups as they move up from facility to district or national level. Age- and sex-disaggregated data on adolescents are rare in countries that most need them, i.e. those with large adolescent populations, high adolescent disease burdens and relatively weak infrastructures. Instead, data are typically compiled in ways that obscure adolescents' particular experiences; for example, through the use of 5–14 year and 15–49 year age bands. There are other weaknesses beyond age- and sex-disaggregation. Data on young adolescents (10–14 years) are mostly available from school-based data-collection systems that have limited utility where absenteeism is high and retention is low. Programmes should review all national systems for health-data collection and find ways to incorporate a focus on adolescents, including on very young adolescents and those out of school. Ideally, all data should be disaggregated by sex and five-year age bands for the first 25 years of life.

Key areas for programming (continued):
Health management and information systems

57. Identify and respond to specific weaknesses in national data collection systems, including a review of sources and mechanisms for data collection on impact, outcome, output, process and input indicators (see Section 6).

58. Improve the capacity of national and subnational statistics agencies to report regularly on the health, development and well-being of adolescents, disaggregated by age and sex. At a bare minimum, data should be disaggregated by age and sex, and wherever possible other relevant stratifiers should be included, e.g. education, rural or urban. Ensure that this information is easily accessible to constituents.

59. Implement participatory monitoring approaches to engage adolescents themselves in designing monitoring and evaluation systems, to capture the user perspective (i.e. service quality and policy implementation), and to ensure that mechanisms are in place to hear the voices of young adolescents (10–14 years).

60. Ensure that facility data collection and reporting forms allow for an explicit focus on adolescents (including young adolescents), cause-specific utilization of services, and quality of care (see Box 5.3).

61. Ensure that district and national reports address adolescents (10–19 years), including cause-specific utilization of services and quality of care.

62. Develop national capacity to conduct standardized surveys on key adolescent behaviours and social determinants, and conduct such surveys at regular intervals. Examples include the Global School-Based Student Health Survey (GSHS), the Global Youth Tobacco Survey (GYTS), and the Health Behaviour in School-Aged Children (HBSC) survey. Ensure that data-collection systems are available for out-of-school adolescents.

63. Develop national capacity to conduct standardized surveys to monitor inputs, processes and outputs within national school health programmes. Examples include the School Health Policies and Practices Study, and surveys using the Focusing Resources on Effective School Health (FRESH) tools. Conduct such surveys at regular intervals.

64. Strengthen the availability of disaggregated data and information to expose inequities. Use data to plan remedial actions to address inequities.

65. Strengthen the capacity to conduct qualitative research to understand the underlying causes of trends (e.g. in health-related behaviours or use of services).

66. Synthesize and disseminate the evidence base for action.

Sources: (300); (323).

Box 5.1. Age and sex disaggregation in national-level reporting

A number of countries have started age and sex disaggregation in their national-level reporting of routine health management and information systems (HMIS) data. These countries include Argentina, El Salvador, Indonesia, Malawi, the Republic of Moldova, Tajikistan, and the United Republic of Tanzania. The disaggregated HMIS data provide a yearly overview of which adolescents are using services and why. Such data are more timely and less resource-intensive to collect than self-reported household survey data – usually only collected every four years – or school-based data, which are also less frequently collected. Health-facility statistics can make an important contribution to monitoring and strengthening service provision for adolescents. However, as data from facilities are only representative of the adolescents who access services, so they need to be interpreted with caution.

In Argentina until 2010, the available health information was fragmented or non-existent. Information systems did not consider adolescence as a stage in the course of life, and adolescent health data were recorded in either the child or the adult group, depending on whether they were younger or older than 14 years respectively. Since 2010, the Statistics and Informatics Department of the Ministry of Health has published a data directory of vital statistics of the adolescent population: **http://www.msal.gob.ar/images/stories/bes/graficos/0000000872cnt-linea-base-adolescencia-2016.pdf**. This compendium presents data on key sociodemographic characteristics of the adolescent population, main causes of mortality and morbidity, coverage within public health services, health-related behaviours, and cause-specific utilization of hospital services.

Sources: (301); (325).

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5.5.2.
Adolescent-specific programmes within the health sector

Influencing the process of sectors' routine strategic and operational planning will help to ensure sustainable, long-term results. However, it is unlikely to produce immediate results, especially if there is no mandated coordination of these efforts within the Ministry of Health. Therefore, some countries have also found it necessary to establish adolescent-specific national programmes.

Broadly, these programmes are of three types:

- Programmes that focus on a single issue (e.g. HPV immunization programmes, Case study A5.14 in Annex 5).
- Programmes that have a single issue as their primary consideration, but which use a broad-based approach to respond to the problem; for example improving the availability of adolescent-friendly services for SRH (e.g. the National Adolescent Sexual and Reproductive Health Programme in Nepal, Case study A5.1 in Annex 5).

- Programmes with a broad focus that address multiple issues in an integrated way (Case study 17). Examples of this type of programme are the national adolescent health programmes that exist in many countries, including Chile (Case study A5.15 in Annex 5), Costa Rica, Hungary, Mexico, Philippines, Portugal, Uruguay, and Uzbekistan.

To sustain efforts, it is important that the programme is institutionalized (Box 5.2).

Box 5.2. Features of an institutionalized adolescent-health programme (326).

A national adolescent health programme is a comprehensive set of planned and sequential strategies, activities and services designed to achieve well-defined objectives and targets. The terms project, initiative and programme are often used interchangeably. Successful small-scale projects and initiatives may mature into national programmes (see for example the Case study A5.1. on Nepal's transition from projects to a national adolescent SRH programme). In this document we focus on institutionalized adolescent health programmes.

Their common features are:

- having policy statements to support programme efforts;
- being a line item in a permanent health or education departmental budget;
- having a place in an organization chart;
- having permanent staff assigned to specific programme roles (e.g. national, subnational and local coordinators);
- having descriptions that include prevention functions and level of effort;

- having facilities and equipment for programme operations; and
- developing an institutional memory for important agreements and understandings.

Argentina's national programme for integrated adolescent health (Case study 17), USA's school health services programme (Case study A5.2), and Rwanda and Portugal's school health programmes (Case studies 18 and A5.3.) are examples of programmes that display these features.

Case Study 17

Argentina's national programme for integrated adolescent health

In Argentina, the National Programme for Integrated Adolescent Health (Programa Nacional de Salud Integral en la Adolescencia, PNSIA) was created in 2007. It is managed by an interdisciplinary team of 15 people (13 technical officers, including the National Coordinator, and two administrative staff) and all 24 jurisdictions have a provincial coordinator. In 2016, an Advisory Council of the Programme was established, and plans are being made to include youth organizations in the governance of the programme.

The PNSIA budget comes from the budget of the National Directorate of Maternity, Childhood and Adolescence. In 2016, the PNSIA budget constituted the equivalent of US $440,000. This is a budget for activities and does not include remuneration of human resource.

PNSIA aims to achieve the following objectives:

- achieve universal health coverage through access to quality essential care services, medicines and vaccines;
- promote holistic adolescent health by promoting healthy lifestyles, supporting planning of life projects and incorporating gender perspectives into the health system; and
- improve health in adolescence by reducing maternal morbidity and mortality in adolescence; decreasing early pregnancy; reducing morbidity and mortality from external causes (unintentional injuries-accidents, suicides and homicides); and reducing problematic consumption of alcohol and other substances.

PNSIA implementation strategies include facilitating the establishment of provincial programmes; strengthening the HMIS; improving human resource capacity and quality health-care services for adolescents; establishing financial risk protection mechanisms for adolescents; and ensuring adolescent participation in programme design and activities.

In 2007, at the time of programme's establishment, only five jurisdictions had a provincial adolescent health programme. Given the federal structure of the health system in Argentina, one of the key priorities of PNSIA was to encourage provinces to establish local programmes to contribute to the achievement of objectives. Currently, 23 out of 24 jurisdictions have a provincial programme and a coordinator in charge, and these make up the National Network of Adolescent Health. To strengthen this network, and build the capacity of staff, three annual meetings are held with the provincial coordinators. In these meetings, experiences are shared and good practice disseminated, training is carried out on selected topics of adolescent health, and management and technical guidelines are agreed. Due to this investment in the capacity of provincial coordinators, they have managed to install the adolescent health agenda firmly in their provincial ministries. In spite of political changes in the provinces, the network remained relatively stable. Even when provincial coordinators changed, there was a continuity with the previous provincial efforts.

Across Argentina, more than 250 adolescent-friendly spaces have been established in health facilities at primary and referral care levels. Importantly, they are distributed in different locations throughout the country. In-service education and training opportunities in adolescent health care were expanded at national and provincial levels, including through distance learning. Finally, adolescent health training has been integrated into the residency training courses of paediatricians and general practitioners.

Among the key achievements of PNSIA are the improvement of the HMIS to reflect the adolescent population (see Box 5.1), and ensuring financial risk protection of adolescents. In 2012, the National Ministry of Health of Argentina integrated the PNSIA with Programa SUMAR.

Programa SUMAR finances the coverage of an essential health-service package, including:

- general health check-up and referral to specialists;
- gynaecological services (including IUD insertion and removal);
- dental and ophthalmological check-up;
- Follow up in case of nutritional disorders and asthma
- confidential pregnancy testing and diagnosis;
- immunizations against hepatitis B, HPV and influenza (for adolescents with risk factors) and all those indicated by the national schedule;
- sexual health counselling;
- mental health consultation;
- urgent care for suicide attempts and victim of sexual violence; and
- health promotion workshops for adolescents, held at different settings.

Programa SUMAR has made substantial contributions to improve effective health coverage for adolescents. By early 2017, almost 3 million adolescents had effective health coverage provided entirely by the public system. During 2014, 958 648 adolescents received at least one health check-up that was compliant with national quality requirements, and 840 828 during 2015.

These two national programmes are also fully integrated with other social policies, such as the National Program for the Control of Vaccine-Preventable Diseases, the National Program for Sexual Health and Responsible Procreation, and the Universal Child Allowance. The latter is a conditional cash transfer (with specific requirements such as school attendance, medical check-ups and vaccinations) provided to those families that are unemployed and which have children under the age of 18 years.

Source: (325).

5. National programming

As stated in section 5.1, successful health-sector programmes are rarely implemented in isolation from other sectors. For example, in Argentina, PNSIA is led by the Ministry of Health (Case study 17).

However, activities are implemented in collaboration with the education, justice and social welfare sectors. Key areas for programming 4–68 should inform actions to establish or strengthen existing adolescent health programmes.

5.6.
Programming with other sectors to address broad determinants of health

5.6.1.
Programming for AHiAP

Similarly to the health sector, other sectors need to normalize the attention to adolescent specific needs in all aspects of their work. This is known as an Adolescent Health in All Policies approach (Box 5.3).

Box 5.3. Adolescent Health in All Policies (AHiAP)

AHiAP is an approach to public policies across sectors that systematically takes into account the implications of decisions on adolescent health, avoids harmful effects and seeks synergies – in order to improve adolescent health and health equity (292); (327). It is a strategy that facilitates the formulation of adolescent-responsive public policies in sectors other than health (328). Strategic and operational planning within key sectors – such as

education, family and social affairs, recreation and sports, transport, food and agriculture – should be carried out with the participation of health-sector experts. Such planning should aim to ensure that policies for each sector are formulated and implemented with due attention to the inclusion of evidence-based policies and interventions that will improve adolescent health.

In AHiAP, even if the responsibility for implementation lies with other sectors, the health sector has an important role to play in raising awareness, mobilizing, and providing technical support to other sectors (see key areas for programming 69–71). It should proactively seek opportunities to influence the routine strategic and operational planning of key sectors (292). For example, the education sector may use strategic planning to adjust investments in response to changing labour markets and social demands for education (329), and this is an opportunity for the health sector to engage to ensure that the revised education policies consider

implications for adolescent health. A governance structure and coordination mechanisms should therefore be in place (see key areas for programming 1 and 2) to facilitate such engagement (295); (331).

Many of the practical considerations in planning and managing an intersectoral programme that are described in section 5.6.1 (Box 5.4) are also applicable to the collaboration between the health and other sectors within AHiAP.

Key areas for programming (continued):
Adolescent Health in All Policies: The health sector

67. Create platforms for the Ministry of Health to engage in the planning cycles of other sectors for the development of sectors' long-, medium- and short-term plans with due consideration to adolescent health needs (see key area for programming 2c). This arrangement should be reciprocal, so that other relevant sectors also participate in developing health plans.

68. Support AHiAP by implementing joint activities at all stages of the strategic planning of other sectors, including during situation and needs assessment, policy formulation, preparation of plans, and evaluation of key policies. See Case study A5.16 on the Cardiff model for the strategic use of information from the health sector to improve policing. In particular, the health sector can:

a. Work with legislators to ensure that laws and policies recommended in Section 3 (i.e. minimum age for purchase or consumption of alcoholic beverages, regulating marketing of unhealthy products etc.) are adopted and implemented.

b. Use tools and processes such as health impact assessment (332) to identify the impact of a sector's policies – including potential unintended consequences – on adolescent health and equity. Communicate these to all concerned and to the public, and support the sector concerned to develop interventions to address them. Highlight the potential consequences of inaction on adolescent health.

c. Assist the sector to carry out needs-based assessments for adolescents, including those related to lifestyle changes, food use and other health determinants related to the sector's mandate.

d. Work with the relevant ministry to develop evidence-based policies, guidelines, standards and recommendations on areas of the sector's mandate that have a direct impact on adolescent health. As appropriate, ensure that integrated service delivery across sectors is being planned and implemented (e.g. support for students with chronic conditions in educational institutions).

e. Support actions to ensure a competent adolescent public health workforce in key sectors (e.g. education or criminal justice), including the provision of training and support to address new developments.

f. Mobilize regional and local partnerships to identify and address public-health concerns that have implications for action in other sectors, e.g. strengthen coalitions of professionals – such as those working in public health, environment, nutrition, chronic disease epidemiology and social and behavioural sciences – to collaborate on adolescent health policy development and advocacy.

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69. Improve education-system facilities and reduce exposure to environmental hazards by ensuring minimum standards are met for the design of facilities (e.g. safe and sound building materials; shelter; protection from heat or cold; light; clean energy access; ventilation; sanitary facilities) and the availability of sanitation and safe water.

70. Ensure adequate conditions for menstrual hygiene management, such as lockable, single-sex, private toilets with water and soap for washing, as well as a private open-air space to dry wet menstrual cloths and/or a closed bin or incinerator for used menstrual pads.

71. Support teachers' adolescent health literacy through a combination of pre- and in-service training opportunities. See Case study A5.17 on how supporting teachers to better understand mental health through the HeadStrong curriculum improved mental health literacy and reduced stigma.

72. Become involved in programmes to improve access to health and education, such as through provision of conditional and unconditional cash transfers.

73. Support policies to improve girls' access to schools, for example by adopting an integrated strategy that addresses cultural and gender barriers impacting on girls' education; redeploying teachers to remote areas where inequalities in access between boys and girls are highest; and increasing the number of female teachers.

74. Provide education for hard-to-reach children and collaborate with health professionals in the design and delivery of the educational activities.

75. Address the needs of students with chronic conditions and disabilities, by adapting buildings and classrooms to their special needs; creating inclusive, learning-friendly environments; and by strengthening linkages with health services for early diagnosis and interventions.

76. Collaborate with local authorities to establish healthy school-meals programmes (see Case study A 3.2 on Sweden's national programme to provide school meals to all students).

77. Develop curricula to promote health literacy; address homophobic bullying and stigma related to HIV and gender-based violence; and incorporate comprehensive sexuality and life-skills based education. Promote positive development approaches to improve self-esteem through learning interventions, participatory governance approaches and broader community involvement.

78. Plan and implement a comprehensive education sector response to early and unintended pregnancy to support pregnant and parenting adolescents to continue and return to education. This includes curriculum-based interventions; eradication of policies and practices that result in the expulsion or exclusion of pregnant girls and adolescent mothers; promoting a safe school environment, free of gender-based violence, stigma, discrimination and bullying against pregnant adolescents and adolescent mothers; ensuring an supportive environment for adolescent mothers, such as parenting instructions or classes, breastfeeding space, and counselling; engaging with teachers and school directors to ensure support to pregnant girls and adolescent mothers; and facilitating and promoting effective linkages between schools and adolescent-responsive health services, both within and outside the health sector.

79. Plan and implement comprehensive education-sector responses to substance use. The guidance Education Sector Responses to the Use of Alcohol, Tobacco and Drugs (326) presents evidence-based and promising policies and practice, including practical examples from different regions, on education sector responses to substance use.

80. Implement "extended schools" to improve social and family conditions for schooling success by offering different social and support services for students, families and communities. Actions may include:

    a. working with health authorities and other social agencies to provide health services, family counselling and training for parents;

    b. family visits or school-based training to discuss health issues, such as sleeping, eating and behavioural problems; and

    c. outreach activities jointly with the health sector to increase health literacy and parenting skills.

81. Monitor quality in the implementation of health-promoting schools programmes, using available tools and resources (see Box A3.1.2 for the list of resources).

82. Implement policies to ensure a life-course approach to education by acknowledging the importance of early child development interventions for improving health and health equity in the long term.

Key areas for programming (continued):
The social protection sector (335).

83. Implement conditional and unconditional cash transfer programmes that create incentives to increase specific health-promoting behaviours (e.g. nutrition, school attendance, medical check-ups and vaccinations). Design demand-side interventions to increase adolescents' access to health services, which may include reimbursing user fees and the costs adolescents incur in transportation.

84. Increase the portability of social protection benefits so that health coverage is more responsive to the needs of increasingly mobile populations of older adolescents and young adults who may also be subject to more frequent changes of employer.

85. Tailor health and nutrition interventions to the developmental needs of adolescents at various ages, e.g. ensure that in-kind transfers to improve nutrition take into consideration recommended calorific intake for adolescent boys and girls.

86. Contribute to the design, implementation and evaluation of active youth labour policies so that policies provide unemployed youth with opportunities for re-training and job-seeking support, as well as schemes for income security to protect young adults from being disproportionally affected by unemployment.

87. In collaboration with the education sector, implement programmes for adolescents, who due to family circumstances are compelled to be employed, to assist them to return to schooling.

88. Engage in public-private partnerships to combat child labour in countries where a large number of children are involved in labour (e.g. farming), by enhancing coordination with national child-labour committees and supporting the development and extension of community-based monitoring systems.

Telecommunications (22); (336).

89. Work with legislators to ensure that all necessary legal powers exist to enable law enforcement and other relevant agencies to protect persons under the age of 18 online on all internet-enabled platforms.

90. Work with all the relevant stakeholders with an interest in online child safety to formulate a national strategy for child online protection. See Table A3.3 for key areas for consideration when formulating a national strategy for child online protection (22).

91. Ensure that companies that develop, provide or make use of telecommunications or related activities in the delivery of their products and services follow the recommended guidelines for the industry (336).

They should take appropriate actions to integrate child rights considerations into all appropriate corporate policies and management processes; develop standard processes to handle material involving child sexual abuse; create a safe and age-appropriate online environment; educate children, parents and teachers about children's safety and their responsible use of information and communication technologies; and promote digital technology as a mode for increasing civic engagement

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Key areas for programming (continued):
The road and transportation sector (337).

92. Ensure law enforcement on the use of motorcycle helmets and seatbelts.

93. Implement graduated drivers' licensing.

94. Implement age-adjusted alcohol-control measures.

95. Promote active transport (e.g. walking and cycling spaces) between residential communities and schools.

96. Promote special road-safety measures around schools and playgrounds. Identify opportunities for traffic calming and increase the number of speed bumps around schools and playgrounds, to lower speeds and improve the environment for pedestrians and cyclists.

97. Ensure that transport costs for adolescents do not adversely affect their access to schools, social services and health services.

98. Reduce the negative health impacts of road infrastructure expansion, such as decreasing safe playgrounds and sports areas for adolescents. Collaborate with the health sector to undertake assessment of potential health impacts of infrastructure projects, and anticipate, prevent or mitigate their negative impact on adolescents. Support and facilitate community consultations to assess adolescents' needs, particularly for vulnerable or excluded groups (e.g. adolescents with limited mobility).

The housing and urban planning sector (338).

99. Ensure that the development of master plans for urban planning takes into consideration the needs of adolescents (e.g. for safe playgrounds or cycle paths to schools) in the planned configuration of buildings, traffic, public infrastructure and land use. Facilitate adolescents' voices in informing such master plans.

100. Increase green spaces around schools to provide shade and improve air quality.

101. Prevent crime through environmental design by planning physical environments in a way that enhances openness and promotes social interaction.

Implement initiatives to prevent urban physical degradation, which can encourage minor delinquency and further abandonment of public spaces (see Case study A5.7 on how bringing inclusive public transport to the urban poor contributed to the reduction of youth violence in Medellín, Colombia).

102. In the event of forced evictions, assess the negative impacts on adolescents and ensure that relocation plans take into consideration the rights of adolescents to education and safe recreational activities.

Key areas for programming (continued):
The energy sector (114); (339).

103. Ensure access to reliable and clean (i.e. non-polluting) energy in homes, schools and health facilities.

104. Support initiatives to implement energy-efficient public transport and cycle and pedestrian routes.

105. Support or advocate measures to address energy poverty for women and girls, including the supply of clean, safe fuels to low-income households for cooking, heating and lighting. Disseminate information on how safely to install, manage and maintain improved cooking stoves.

The environment sector (114).

106. Promote eco-labelling programmes in which a label indicates that the product's manufacture conforms to recognized environmental standards, and promote adolescents' literacy in eco-labelling.

107. Collaborate with health and education ministries to integrate sustainable living (e.g. lifestyle changes to reduce greenhouse gas emissions).

108. Support the identification of pollution sources and advocate with urban planning authorities to locate residences, schools and hospitals away from roads that are highly polluted due to vehicle traffic.

109. Formulate strategies aimed at prevention of ill-health and disease caused throughout the life course by chemicals, including strategies directed specifically to the health of children and adolescents.

110. Apply environmental management measures to water resources in areas where schistosomiasis is endemic, to protect vulnerable adolescents (children and adolescents swimming in contaminated water).

111. Provide information to consumers on environmental hazards of most concern to the country or region.

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Key areas for programming (continued):
Criminal justice system (340), (342).

112. Provide guidance and training to frontline police officers on how to recognize different forms of violence against adolescents and how to identify signs that adolescents may be at risk, or victims of violence.

113. Establish detection and reporting mechanisms to detect incidents of violence against children and adolescents, including creating a legal obligation for certain groups of professionals who are routinely in contact with them (e.g. doctors, nurses and teachers) to notify the authorities when they suspect that a child is, or is likely to become, a victim of violence.

114. Adopt legislation to facilitate the detection and the investigation of child pornography.

115. Make available facilities and services for child victims who need temporary protection and care in a safe place pending a full determination of what is in their best interests.

116. When participation of adolescent victims of violence in the criminal justice process is necessary, put in place measures to ensure that this does not result in further hardship and trauma for them.

117. Promote the victims' physical and psychological recovery and successful social reintegration by creating an integrated, multidisciplinary specialized unit. This should promote greater coordination and cooperation between the criminal justice system and the child protection, health, education and social service sectors, enabling them to respond quickly and competently to the medical, psychological, social and legal needs of adolescents, while protecting the privacy of adolescent victims of violence.

118. Make available training, operational policies, guidance tools and effective supervision to ensure that any investigation (including collection of evidence) is conducted in an adolescent-sensitive manner and respects adolescents' dignity and integrity.

119. Implement adolescent-sensitive procedures, such as interview rooms designed for children; interdisciplinary services for child victims; collocated services for easy access; modified court environments that take child witnesses into consideration; recesses during a child's testimony; hearings scheduled at times of day appropriate to the age and maturity of the child; an appropriate notification system to ensure the child appears in court only when necessary; and other appropriate measures to facilitate the child's testimony.

120. Take measures to ensure that deprivation of liberty is used only as a measure of last resort and for the shortest appropriate period of time, and that other sentencing options are available such as care, guidance and supervision orders; counselling; probation; foster care; education and vocational training programmes; and other alternatives to institutional care.

121. Implement competency-based training for criminal-justice professionals on appropriate, adolescent-sensitive and gender-sensitive ways of dealing with child victims.

122. Implement measures to prevent and respond to violence against children in places of detention, such as preventing overcrowding; separating children from adults, boys from girls; and ensuring that all detention facilities adopt and implement child-sensitive policies, procedures and practices and strictly monitor compliance with them.

123. Prohibit and effectively prevent the use of corporal punishment as a disciplinary measure, and adopt clear and transparent disciplinary policies and procedures that encourage the use of positive and educational forms of discipline.

124. Implement measures to eliminate the risk of all forms of harassment, violence and discrimination against girls in detention facilities, and to ensure that the special needs and vulnerabilities of girls are taken into account in all decisions that affect them.

125. Establish complaint mechanisms for child victims of violence within the justice system that are safe, confidential, effective and easily accessible.

126. Employ skilled health practitioners, who are sensitive to the particular conditions of adolescents, in prisons that contain women or young people.

127. Make available treatment programmes for juvenile offenders in the criminal justice system, including interventions such as counselling and skills training (including cognitive behavioural approaches).

Sources: (11); (45); (106); (300); (301); (310); (311); (332); (333); (335); (337); (338); (339); (340); (342); (343).

5.6.2.
Intersectoral programmes

Patton and colleagues have suggested that the most impressive results for adolescent health and well-being are achieved when actions are intersectoral, multilevel and multicomponent (55). Unlike single-sector programmes, intersectoral actions require public policies that involve two or more ministries performing different roles for a commonly agreed purpose. Such collaborations are much more complicated than merely involving other sectors in programme implementation through information exchange, coordination or cooperation. Intersectoral programmes require action integrated across sectors, and involve defining a

new policy or programme together with other sectors – and sharing resources, responsibilities and actions related to it. This requires solidarity and power-sharing to achieve a common social goal, rather than particular sectoral objectives (106). Intersectoral programmes for adolescent health, as for other areas, are not easy to achieve. To be most effective, they need to include both national and, perhaps especially, local government. For this, the strong governance mechanisms described in key areas for programming 1 and 2 are necessary to enable coordination of efforts across sectors and government ministries.

5.6.2.1.
Practical considerations in planning and managing intersectoral action

The problems that require intersectoral action are usually the most complex ones (e.g. adolescent pregnancy, youth violence, injuries and suicide). In many settings the idea that such complex problems are not merely unavoidable accidents but can

be prevented is likely to be new. It is therefore important to build the necessary human and institutional foundations for intersectoral action even before establishing a formal intersectoral programme (176). This can be done systematically (Box 5.4).

Box 5.4. Practical considerations in planning and managing an intersectoral programme

Raise awareness of the extent of the problem, and that prevention is possible. Because ministries of health, both at national and local levels, generate much of the available data on issues such as youth violence, self-harm, adolescent pregnancy and undernutrition – and oversee the treatment of a substantial proportion of victims – they are well positioned to campaign for more attention to these issues. Three types of awareness generally need to be achieved: awareness within the ministry of health and district health management teams, awareness among other sectors, and public awareness. See the example from Brazil for how Ministry of Health data on a dramatic increase in mortality from road traffic incidents led to a change in legislation (Case study A3.6).

Clarify the policy framework that mandates or enables intersectoral action for the issue at stake. Identify policy documents, such as national strategies and plans of action, that stipulate the necessity of joint action across sectors for the problem in hand, or otherwise are important for ensuring the good planning, coordination and implementation of intersectoral action.

Invest in consulting with different sectors and in establishing a shared vision among key stakeholders. Identify focal points for the issue(s) at stake from other sectors and organize an informal meeting or meetings with other key sectors. Share information about your current work and goals, identify common interests, and establish a mechanism to exchange information regularly.

Be aware of common barriers to intersectoral action, and take anticipatory remedial actions. Collaboration with other sectors brings specific communication challenges. These include lack of understanding of the political agendas and administrative imperatives of other sectors, or differences in the discourse between sectors in framing priorities and goals. Structural barriers also exist. For example, budget allocations within each sector might be difficult to align with the budget lines needed for intersectoral action. Effective intersectoral action will have to anticipate these barriers (see Box A5.2 that presents a check list of behavioural and structural impediments for intersectoral action) and plan remedial actions. Box A5.3 describes particular challenges that face adolescent sexual and reproductive health programmes in low- and middle-income countries.

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Establish a formal partnership with clear governance structure and a mandate from the highest level of the government, and strong representation of adolescents and the community (see Case study A5.18 on the governance for the Scottish Pregnancy and Parenthood in Young People Strategy). Appoint a national lead with a mandate from the highest level of the government, who will be responsible for the overall delivery of the programme and engaging with local and national organizations. Develop and agree the terms of reference for the national lead and each agency involved. Organizations and individuals involved in partnerships need to have both the authority and the flexibility to engage in mutual decision-making. Clarity about partners and stakeholders is key: who, how many, their roles and responsibilities, and the need for consistency of participation and commitment.

Consider an independent advisory group. Based on annual progress reports, this will ensure independent scrutiny of progress, and will highlight potentially neglected issues for the attention of sectors involved.

Invest early in organizational capability. A well-designed programme reaches and builds the capacity of a wide variety of health professionals, programme administrators and policy-makers to assist them in the development of local plans, service delivery and research. It provides guidance materials and manuals to support local implementation and to facilitate fidelity in programme implementation. Key areas where such resources might be needed include: community and youth engagement; district planning; working across disciplines and government sectors; public/research/practice partnerships; core indicators and measures; and specific health issues. Such a programme collaborates with key national research centres and institutions, and leverages their resources for intervention development and implementation research. It also develops the core capacity of other ongoing adolescent health and development programmes (e.g. national mental health programmes and HIV programmes)

Ensure adequate financing. Discretionary funding for national, subnational and local activities should be available and maintained throughout the programme. Funding should be allocated to local areas through programme implementation grants and contracts that are subject to conditions, such as appointing local coordinators and developing local plans (Case study 14 and Case study A5.2 from the USA describe how an approved local services plan completed by the district is a condition to receive state funding).

Create a mechanism for review. This should be informed by systematic collection of data through the information system, and should facilitate adjustment of the response of the sectors involved, as required, at regular intervals. Provide continuous support to the ongoing monitoring, continuous quality improvement and rigorous evaluation of interventions and policies.

Plan for long-term sustainability from the outset. This applies if the programme was conceived as a local project with the view of subsequently scaling up to a subnational or national level. The WHO guide, Beginning With the End in Mind: Planning Pilot Projects and Other Programmatic Research for Successful Scaling up (345), contains 12 recommendations on how to design pilot projects with scaling up in mind. It also includes a checklist that provides a quick overview of the scalability of a project. Case study A5.19 from Mozambique shows how an initiative that started at two sites in 1999 was designed from the outset for scaling up, and in 10 years managed to cover all the provinces of the country. Learning from the first generation of scaled-up adolescent sexual and reproductive health programmes in low- and middle-income countries reiterates the importance of careful planning and management of the scale-up (Box A5.3).

Sources: (176); (301); (326); (345).

5.6.2.2.
Priorities for intersectoral programmes

Priorities for intersectoral programmes will be established during the process of national prioritization, as described in Section 4. They can be focused on a single issue or area of concern, such as adolescent pregnancy (Case study 14) or adolescent sexual and reproductive health (Case study A5.19 in Annex 5) or be broad-based. Examples of the latter include a school health service programme (Case study A5.2 in Annex 5) and a health-promoting school programme (Case study 18 from Rwanda, and Case study A5.3 in Annex 5). It is beyond the scope of this document to attempt an exhaustive list of intersectoral programmes for adolescent health. As a general rule, a priority for intersectoral programmes is to tackle the structural and intermediate determinants of health, none of which could be adequately achieved by any single sector (331). Areas such as mental health and substance use, youth violence, NCDs prevention, and early marriage could be prioritized for intersectoral programmes. However, this list is not exclusive and other priorities could be identified during the process of national prioritization.

With improvements in primary and secondary school enrolment, schools become a very important setting to act on broader determinants of health, as well as a convenient platform to ensure universal health coverage with preventive, early support and management interventions. This is perhaps why school health programmes are common in many countries.

School health programmes are the most common form of institutionalized intersectoral programmes. These are in place in almost all countries in the European and Eastern Mediterranean Regions, in many countries in Latin America, South-East Asia and the Western Pacific, and in at least 21 countries in the African Region. Various initiatives promote a whole-school approach to student health. These include FRESH, led by UNESCO; Child Friendly Schools, led by UNICEF; School Health and Nutrition, led by the World Bank; and the WHO Health-Promoting Schools Framework.

The evidence-base for the positive effects of school-based interventions and school health programmes is compelling. They have shown positive impact across health outcomes, including SRH, substance use, nutrition, physical activity, mental health and immunization (347); (348); (349); (350); (351); (352). Investing in school health is a fundamental priority for intersectoral programmes (353). Countries that do not have school health programmes should consider establishing them, and countries that do have school health programmes in place should consider critically reviewing them to align them with the evidence base and emerging priorities. Resources that can inform school health programmes are listed in A 3.1.2.

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Rwanda's comprehensive school health policy

School-aged children in Rwanda face many challenges related to poor health, poverty and environmental hazards, such as inadequate water and sanitation facilities, limited school infrastructure, communicable and NCDs, and gender-based violence. Other important health issues relate to sexuality, SRH, HIV prevention, trauma, violence, substance abuse and mental health problems. These factors impact on attendance at schools and on learners' abilities to concentrate on school lessons, leading to poor retention rates.

In order to overcome such barriers, the Government of Rwanda has developed a comprehensive national school health policy as an integrated set of planned and sequential efforts designed to promote the students' physical, social, psychological and educational development.

The school health policy recommends policy actions in eight key areas:

- health promotion and disease prevention and control
- HIV, AIDS and other STIs
- sexual and reproductive health and rights
- environmental health
- school nutrition
- physical education
- mental health and related needs
- gender and gender-based violence issues.

The policy takes a whole-school approach, with interventions directed at improving the school curriculum; physical infrastructure; access to school-based health services; school ethos; school policies; and linkages with the community. It recommends a school health minimum package, including health promotion and education; referral and follow-up of minor health issues; safe water and sanitation provision; deworming; and school nutrition. Nine ministries implement the policy, each with its specific areas of responsibility.

The policy is governed by both political and operational structures, as shown in Figure 5.4.

Figure 5.4. Responsibilities of Rwanda school health programme managers, at different government levels

Steering Committee	• Key ministries and partners • Provides overall leadership and guidance on the implementation of the school health policy
Technical Working Group	• Chaired by the Ministry of Education, composed of technical staff from key ministries, institutions, UN agencies and NGOs
Crosscutting Programme Unit	• Responsible for the implementation of activities
District Level	• District sexual health committee composed of vice-mayor in charge of social affair; district education officer; district health officer; agriculture officer; school feeding officer; faith-based organisations' representative; and a private-sector federation representative
Sector and Cell Levels	• Coordination is led by the unit in charge of social affairs.
School Level	• Committee responsible for school health activities, including head teacher; a representative from students; one nurse from the nearest health facility; and others • Focal-point teacher

The policy is financed by budget lines in all sectors. The monitoring and evaluation strategy focuses on strengthening the data collection of school health indicators, building on the current data collection of the Ministry of Education. These data will allow the Ministry of Education to monitor the implementation of school health services and education, and measure their impact on the progress of learners. A set of indicators has been identified and suggested to measure and monitor the implementation of activities.

Source: (354).

Key areas for programming (continued):
Intersectoral programmes

128. Establish, or critically review, school health programmes to address priorities (e.g. NCDs, SRH, communicable diseases and violence) in an integrated way. Plan interventions across the six programme components recommended by the WHO Health Promoting Schools Framework:

a. School health policies and plans, which aim to ensure a safe, secure and healthy physical and psychosocial environment (addressing issues such as bullying, sexual harassment, substance use, school violence, nutrition and diet, and mental health). See for example the Case study A3.4 on Sweden's national programme to provide school meals to all students.

b. A safe physical environment that addresses safety and the physical condition of school premises, water, sanitation and menstrual hygiene services, and healthy environments to promote healthy eating and physical activity, among others. See Case studies A3.16 from Mauritania, A3.17 from Papua New Guinea, and A3.19 from Pakistan on creating better conditions in schools for sanitation, menstrual hygiene management and physical activity.

c. A safe and supportive school social environment, through supportive school policies and ethos to address individual psychological vulnerabilities; and improve the classroom environment, and students' participation and connectedness.

d. Engage with families and with the wider community for a safe and supportive environment beyond school premises, and provide support to parents. See Case study 8 on teacher involvement in Bhutan to enhance the skills and capacities of parents of adolescents.

e. Curriculum-based interventions to develop personal health skills. Health-related education is usually, and most appropriately, accommodated in a health-related subject area (variously termed healthy active living; health and family living; health and physical education; personal and social skills education; health and career education; life-skills education, etc.). See Case study A5.20 from Ukraine and A3.21 from Costa Rica on curriculum-based substance-use prevention, and the example from Brazil on curriculum-based sex education in schools (Case study A3.5).

f. School health services (school-based or school-linked) to provide a continuum of health promotion, prevention and early detection and referral services, either within school premises or by linking with services elsewhere in the community. School health services should be mandated by a formal arrangement between the educational institution and the provider health-care organization. See Case study A5.2 on how collaboration across sectors is formalized through memoranda of agreements between state public health and education agencies.

129. Establish programmes to improve the nutritional status of adolescent girls (see Characteristics of nutrition programmes targeting adolescent girls in Box A5.4 in Annex):

a. Use a variety of delivery platforms and strategies – such as nutrition education and promotion; mass media; distribution of micro-nutrients, food or cash; and capacity building of service workers, local organizations and local governments, among others – to reach adolescent girls in schools, homes and the community with nutritional interventions.

b. Address practices beyond iron and folic acid intake alone, to include promoting dietary diversity, general eating practices, exercise and food fortification, among others.

c. Expand in scope beyond under-nutrition to include prevention of nutrition-related NCDs to address the epidemic of overweight and obesity.

d. Strengthen the collaboration between the health, agriculture and education sectors to ensure nutrition education for adolescent girls attending school; fortification of food products served to adolescent girls attending school; and gardening programmes in schools for adolescent girls for livelihoods and dietary diversity.

e. Address gender norms through nutrition programming, for example through: task shifting initiatives that train adolescent girls on nutrition approaches – including general eating practices and iron and folic acid supplementation – and empower them to provide services to their peers within the community; promotion of more equitable intra-household distribution of food; inclusion of agricultural programmes in the school setting for adolescent girls to learn about crop raising to increase future earning

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potential and to positively impact household dietary diversity; training female community members on gardening techniques to increase their ability to contribute to household nutrition; and targeting female-headed households for livestock raising programmes to provide a base earning potential and increase available nutritious foods available within the household.

130. Implement programmes to prevent youth violence, prioritizing promising approaches and strategies (see more details on recommended key activities and interventions in Tables A3.5 and A3.6):

a. Parenting and early childhood development programmes.

b. School-based academic and social skills development, and bullying prevention.

c. Therapeutic approaches for young people at higher risk of, or already involved in, violence.

d. Community- and society-level strategies such as hotspots policing; community- and problem-orientated policing; reducing access to and harmful use of alcohol; drug-control programmes; reducing access to and the misuse of firearms; and spatial modification, urban upgrading and poverty de-concentration. See the Case study A3.11 from Colombia on the upgrading of low-income urban neighbourhoods.

131. Implement programmes to prevent early pregnancy, considering the following components:

a. Reduce marriage before age 18 (prohibit early marriage, keep girls in school, and influence cultural norms that support early marriage).

b. Reduce pregnancy before age 20 (advocate for pregnancy prevention among adolescents, educate girls and boys about sexuality, and work with communities to promote early pregnancy prevention).

c. Increase use of contraception by adolescents at risk of unintended pregnancy (legislate access to contraceptives, information and services; reduce cost of contraception and enable use of contraceptive services; educate adolescents about contraceptive use; increase community support for contraceptive provision to adolescents).

d. Reduce coerced sex among adolescents (prohibit coerced sex; empower girls to resist coerced sex; influence social norms that condone coerced sex; and engage men and boys to challenge gender norms).

132. Implement national drug prevention programmes in early and late adolescence in accordance with the International Standards on Drug Use Prevention (355). This guidance provides a comprehensive overview of evidence-based national drug prevention programmes, and for each type of programme summarizes its key characteristics associated with positive prevention outcomes. Box A5.5 provides examples of registries of evidence-based mental health and substance-use disorder programmes.

133. Implement multi-sectoral programmes to reduce youth suicide rates. Annex A3.7.2 and Box A3.4 provide details on recommended step-wise approaches to developing a national suicide prevention strategy, and evidence-based suicide prevention interventions. See Case studies A3.23 from New Zealand and A3.24 from Hong Kong (China SAR).

Sources: (176); (190); (300); (301); (326); (356).

5.7.
Programming in humanitarian and fragile settings

Section 3 identifies evidence-based approaches and interventions in humanitarian and fragile settings relevant to adolescent health. This section looks at the adolescent-specific aspects of programming for the delivery of these interventions.

A recovery programme in a humanitarian and fragile setting should be guided by development principles that seek to generate self-sustaining, nationally owned, resilient processes for postcrisis recovery (357). Therefore, the core implementation strategies as outlined in the logical framework (Figure 5.1) will be the same in humanitarian and fragile settings. They will encompass addressing laws and policies, human resource capacity, adolescent-responsive service delivery and financial risk protection, and promote adolescent participation in leadership and governance arrangements for accountability. Key areas for programming described in earlier sections are largely relevant for humanitarian and fragile settings. This section looks at aspects of these programming areas that are specific to humanitarian and fragile settings.

Programming for adolescents in humanitarian and fragile settings must be conducted in accordance with general humanitarian guidance that requires all interventions and support to:

- be well coordinated between the relevant and responsible authorities, humanitarian agencies, civil society organizations and representatives of affected populations;
- be based on participatory principles and implemented together with communities;
- be based on an assessment of capacities and needs;
- build and strengthen existing resources and helpful practices;
- promote human rights and protect affected populations from violations of human rights; and
- ensure that all data-collection efforts follow existing safety and ethical standards for researching, documenting and monitoring health risks, programmes and interventions.

  (44); (161); (357); (404).

The general principles for programming in humanitarian and fragile settings are outside of the scope of this guidance document and can be found elsewhere (316); (404).

Key areas for programming (continued):
Health in humanitarian and fragile settings (key areas are presented in detail in Box A5.6 in Annex 5)

134. Ensure that policies are in place to protect girls and boys from child labour and from exploitation and abuse by humanitarian workers.

135. Put in place specific protection measures for unaccompanied minors, orphans and other vulnerable children. Re-establish community support networks and structures for orphans and vulnerable children, and ensure that adolescents who have lost their parents or carers have consistent, supportive care-giving.

136. Ensure that programmes address the complex relationship between fragility and child marriage. See the Case study A5.21 on actions to prevent and mitigate the consequence of child marriage and forced marriage among Syrian refugees in Jordan.

137. Ensure that policies and practices in humanitarian and fragile settings respect adolescents' right to dignity, best interests, safety, autonomy and self-determination, in line with their evolving capacity.

138. Put in place policies for free access to essential interventions and services across sectors (e.g. health services, learning and schooling), including the basic package of health services for all adolescents, and enact policies to promote inclusion.

139. Build humanitarian workers' and careers' capacities in adolescent-centred approaches and the principles of confidentiality, safety and security, respect and non-discrimination.

140. Establish, as appropriate, adolescent- and girl-friendly spaces as a first response to adolescent needs for protection, psychosocial well-being and non-formal education. See Case studies A3.25 from Nigeria and A3.26 from Malawi on establishing safe spaces for displaced adolescents and girls. Ensure that community resources are identified, mobilized and used to implement education programmes and other learning activities in schools or other settings.

141. Ensure safe access to and use and maintenance of toilets; and materials and facilities for menstrual hygiene management. See Box A3.6 on good practice design for menstrual hygiene-friendly water, sanitation and hygiene facilities in emergencies, and Case study A3.27 from Ethiopia.

Sources: (11); (44); (159); (161); (198); (357); (361); (363); (364); (365); (366); (404).

5. National programming

5.8.
Positive development and gender transformative approaches in programming

Supporting healthy transitions and growth in adolescence is an important objective for programmes (see Box 1.1, a positive development approach to adolescent health intervention and programming). Programmes should therefore imbed interventions to increase adolescents' resilience and protective factors (e.g. a positive school environment and school attainment), and not just focus on reduction of risk factors (e.g. removing barriers to health-care services). In programming, positive development is both a means and an end in its own right: in order to achieve health outcomes, approaches that promote positive development should be considered, and positive development outcomes should be part of what the programme is trying to achieve.

A useful example is sexuality education. A holistic approach to sexuality education requires looking beyond mortality, morbidity and risks (e.g. reducing the risk of pregnancy or STIs) to developing a focus on health and well-being and a positive approach to sexuality for all programmes and services (116). Comprehensive sexuality education requires a broader approach that addresses key issues such as young people's self-confidence, self-expression, citizenship, sexuality and aspirations, and ability to think critically and make informed decisions (116). Case study A5.22 in Annex 5 illustrates an example of a rights-based, gender-focused and citizenship approach to sexuality education.

> Positive development and gender transformative approaches should be cross-cutting principles in designing programmes (see Case studies 19, A5.18, and A5.22–A5.24).

Case Study 19

The Sahel region's initiatives to empower girls

The Sahel Women's Empowerment and Demographic Dividend (SWEDD) project covers Burkina Faso, Chad, Cote d'Ivoire, Mauritania, Mali and Niger. The World Bank has provided US$ 205 million in funding to the project with an aim to accelerate the demographic transition and position the region to benefit from a demographic dividend. Investing in the social and economic empowerment of adolescent girls is essential to achieve these aims.

Adolescent girls are marginalized throughout the world, and their vulnerabilities and constraints are particularly acute in the Sahel region. Across that region, most girls are married during their adolescence, with the median age at marriage ranging from 15.7 years in Niger to 19.7 in Cote d'Ivoire. Once married, girls typically drop out of school. The primary school completion rates for girls in SWEDD countries are alarmingly low, particularly in rural areas. Early marriage also means early sexual activity and, in most cases, early childbearing. In all of the project countries except for Mauritania, the adolescent fertility rate exceeds the average for sub-Saharan Africa.

A key component of the SWEDD project is positive development. It aims to expand the range of choice and opportunities available to poor girls and their families in order to make decisions to delay marriage and childbearing more viable and desirable. The project targets girls aged

10–19 years who are at high risk of early marriage and early childbearing. Nineteen age-appropriate and evidence-based interventions were developed by multiple ministries across the six countries and will be conducted over the coming years to:

- **Empower girls** –These interventions build girls' capacity to lead healthy and productive lives and support an enabling community environment. Examples include community- or school-based clubs that provide safe spaces and deliver lifeskills training to girls; and community-level sensitization activities that target husbands, parents and/or other community members.

- **Improve economic opportunities** – These programmes seek to expand the range of economic opportunities available to girls (especially out-of-school girls) and/or their families. Examples include business or vocational skills training; productive cash and/or in-kind grants (some of which will be made conditional on delayed marriage); and access to financial assets or services.

- **Keep girls in school** – These interventions seek to promote school retention, reduce dropout, or allow re-entry to formal school. Examples include conditional or unconditional cash transfers; in-kind transfers (e.g. food, transportation and accommodation) to girls and/or their families; and creation of girl-friendly learning environments.

Source: (115).

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6. Monitoring, evaluation and research

Key messages:

1. The rapid physical, emotional and social changes across the adolescent period pose special challenges for adolescent health programmes, making it essential to disaggregate data by age (five-year age groups) and sex.

2. It is essential for adolescent health programmes to monitor the full range of indicators from inputs and processes to outputs, outcomes and impact – they answer different questions and are useful for different purposes.

3. To monitor programmes, and especially their outcomes and impact, the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) has 60 indicators, which include 43 that are either adolescent-specific (e.g. adolescent mortality rate) or include adolescents (e.g. experience of sexual violence). Countries should collect and use the data on these indicators to monitor their progress towards the Sustainable Development Goals and, within the health sector specifically, to monitor progress towards universal health coverage.

4. The Health Data Collaborative is working with countries to improve the availability, quality and use of data for local decision-making and tracking of progress toward the health-related Sustainable Development Goals.

5. Countries should consider establishing youth-led data-collection mechanisms to ensure youth engagement with the implementation and accountability of the Sustainable Development Goals.

6. Periodic evaluations of adolescent health programmes are essential, and should build on routinely collected monitoring data.

7. Three recent global exercises to set adolescent health-related research priorities show that priorities have shifted away from basic questions about adolescent health status towards how to best scale-up existing interventions and test the effectiveness of new ones.

8. Special attention needs to be given to the involvement of adolescents in programme monitoring, evaluation and research, taking into account their evolving capacity and need for appropriate protection. Despite these additional issues, adolescents should not be excluded unnecessarily from participation in programme monitoring, evaluation and research.

6.1.
Monitoring adolescent health programmes

Monitoring is the systematic collection of data to check on the progress of a programme. It aims to answer the question, are we doing what we planned to do? It is an essential component of programmes to guide efforts and investments and to act as the basis to accelerate and reinforce progress. It is also a critical tool for advocacy to redouble programme efforts. The new Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) has put considerable emphasis on monitoring and accountability (11). Section 5 of this report sets out the logical framework (Figure 5.1) required to translate priority adolescent policies and interventions into programme implementation. Monitoring the success and challenges of implementation is important not only for demonstrating progress, but also for identifying areas where corrective action is needed for the programme to be able to meet its objectives.

The International Health Partnership (IHP+) Common Monitoring and Evaluation Framework (368); (369) classifies indicators for monitoring health programmes into five categories: inputs (e.g. financing, human resources); processes (e.g. supply chain and mechanisms for sharing information); outputs (e.g. availability of services and interventions and their quality); outcomes (e.g. intervention coverage and prevalence of risk behaviours); and impact (e.g. health impact and system efficiency). The IHP+ Framework is useful for thinking about the processes that will be needed to monitor and evaluate adolescent health programmes (Table 6.1).

Table 6.1. Examples of indicators to monitor a programme designed to ensure that the national health system is adolescent-responsive

PROGRAMME (SEE SECTION 5)	INPUTS AND PROCESSES	OUTPUTS	OUTCOMES	IMPACT
Programme to ensure that the national health system is adolescent-responsive	**Programme funding and resources available** • By source • Number of health workers per 10 000 populations by categories, geographical distribution, place of employment, etc. **Appropriate processes in place to support adolescent health** • Governance structures for the adolescent health programme are defined at national, subnational and local levels • Mechanisms in place to ensure that health systems are adolescent-responsive	**Adolescent health training provided to health-care providers** • Number and percentage of health-care providers trained in the provision of health services to adolescents • Proportion of target education and training institutions that have an adolescent health component in their curriculum in line with WHO core competencies in adolescent health for primary-care providers **Adolescent-responsive health services available and accessible** • Number and proportion of health facilities with adolescent-friendly accreditation • Number and proportion of health workers with adolescent-friendly accreditation by category **Teachers trained to provide adolescent health education** • Proportion of target education and training institutions that have their faculty trained in recommended approaches to adolescent health education and training	**Health services acceptable to adolescents** • Proportion of adolescents reporting satisfaction with care **Coverage** Percentage of 15- to 19-year-old girls and young women who have their need for family planning satisfied with modern methods	**Improved adolescent health outcomes** • Adolescent mortality rate (by sex) • Adolescent birth rate (by age group)

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The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) Indicator and Monitoring Framework (370) provides explicit guidance on indicators that should be collected by national adolescent programmes to monitor progress to meet the 17 Global Strategy targets. These targets align with the SDGs and include indicators that will be relevant to all health systems. They also allow valid comparisons within and between programmes.

The Global Strategy indicators related to adolescents are mapped against the IHP+ Framework in Table A6.1 in Annex 6.1. This shows that most of the Global Strategy indicators (370) either measure health outcomes or impact – and the great majority of the adolescent health-related indicators that measure inputs, processes or outputs are not specific to adolescents but to women, children and adolescents combined. In the national context, selected indicators for monitoring inputs, processes and the outputs unique to a country's context need to be added to drive improvements in programme effectiveness, efficiency and sustainability.

This section on adolescent health programme monitoring builds on the previous sections of the document by adding examples of indicators needed to measure the extent to which a programme is facilitating an adolescent-responsive national health system (Table 6.1).

As indicated in Section 5, the number of potential intersectoral adolescent health programmes and interventions is large. Examples of three specific programmes are given in Table 6.2, to illustrate key principles of how countries can monitor the success of their chosen programmes to improve the health of adolescents. The three examples are a programme to reduce adolescent pregnancies, a school health programme, and an adolescent mental health programme. The programme to reduce adolescent pregnancies is further explored in Table A6.2 in Annex A6.2.

The indicators that are suggested in Tables 6.1 and 6.2 are not intended to be either prescriptive or exhaustive, but are used as examples to demonstrate the importance of different types of indicators for day-to-day programme monitoring and evaluation.

Adolescent health programmes have specific features relative to those for other age groups, and these must be considered when designing systems to monitor them. Prominent among these is the fact that many of the health needs of young adolescents are very different from those of older adolescents. The developmental changes during adolescence are rapid and, unlike in younger children, they differ substantially between the two sexes. As a result, detailed age and sex disaggregation of monitoring data is needed to a greater degree than for any other age group.

The choice of monitoring indicators depends on the specific strategic priorities of the programme and is limited by practical considerations and available data sources. Countries will need to select relevant indicators to complement the generic indicators recommended by the Global Strategy Indicator and Monitoring Framework that are specifically tailored in order to give a clear picture of whether the programme is doing what is planned. These indicators will also provide information to support day-to-day programme management and decision-making.

To run a programme effectively, monitoring needs to be addressed at every stage of the programme, including programme planning. Each step in the logical framework (described in Section 5.1) needs to be considered separately, and each important activity should be monitored. In the short term, the most useful data will come from indicators that monitor progress in the first half of the results chain from inputs and process to outputs, since these should change relatively rapidly. However, outcomes and impact indicators should also be monitored from the start to ensure that a baseline is established to track progress over time.

Data collection systems and the use and reporting of the collected data should be planned from the start of the programme. Routine data collection has a cost in terms of staff time and other resources so each data collection point should be related to a specific decision-making mechanism, and sufficient funds should be allocated to this element of the programme cycle. If the data collection system is too cumbersome, the monitoring burden will affect both the data quality and the staff time left for direct service-related activities.

Systems need to be developed to ensure that monitoring data can and will be used for management at the lowest possible levels of the health system, such as the district or subdistrict levels. Systems are also needed to allow the monitoring data to be used for monitoring at regional and national levels.

Sixty specific indicators are recommended in the Global Strategy Indicator and Monitoring Framework. These 60 indicators, which are classified under the three key objectives of the Global Strategy (Survive, Thrive and Transform), were selected to provide sufficient depth for tracking national progress on the Global Strategy (370). The Global Strategy stresses the importance of disaggregation of reported data by age, sex and, where appropriate, other factors such as wealth and urban or rural location.

Notes related to Table 6.2:
[1] Functional means that water point provides sufficient quantity of water for the needs of the school that is safe for drinking and accessible to children with disabilities.
[2] As defined at local and national level.
[3] e.g. provisions for child- and adolescent-friendly mental health services, and provisions to address transition from paediatric to adult mental health services.
[4] e.g. mention school-based promotion and prevention, and anti-bullying programmes.

Table 6.2. Examples of indicators to monitor three specific adolescent health programmes

PROGRAMME (SEE SECTION 5)	INTERVENTION (SEE SECTION 3)	INPUTS AND PROCESSES	OUTPUTS	OUTCOMES	IMPACT
Programme to reduce adolescent pregnancies (384), (11), (370)	Information, counselling and services for com-prehensive SRH, including contraception	**Programme funding for reducing adolescent pregnancy** • Source of funding • Number of health workers per 10 000 population by category, geographic area **Appropriate processes in place to support the programme** • Mechanisms in place to ensure that health systems are a dolescent-responsive (including provision of contraceptive services to adolescents) • Mechanisms in place for producing and disseminating information, education and communication about reducing adolescent pregnancies • Laws and regulations • Laws and regulations that guarantee adolescent girls and young women (15–19) access to SRH care, information and education (including contraceptive services)	**Health-care providers provide information and services for comprehensive SRH, including contraception to adolescents** • Number and percentage of health-care providers trained in the provision of health services to adolescents (including provision of contraceptive services) • Proportion of target education and training institutions that have their faculty trained in recommended approaches to adolescent health education and training (including provision of contraceptive services) **Pregnancy reduction messages shared** • Proportion of target audiences for adolescent pregnancy reduction messages reached	**Contraceptive services available with modern methods** • Percentage of adolescent girls and young women (15–19) who have their need for family planning satisfied with modern methods • Proportion of adolescent girls and young women (15–19) who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health **Sexuality education provided in secondary schools** • Proportion of secondary schools that provide CSE • Proportion of men and women aged 15–24 who have basic knowledge about sexual and reproductive health and rights (SRHR) **Legal protection for adolescent girls and young women** • Proportion of women aged 20–24 who were married or in a union before age 15 and before age 18 • Proportion of women aged 20–24 who report sexual debut before age 15 and before age 18	**Reduce the adolescent birth rate** • Adolescent birth rate (10–14, 15–19) per 1000 women in that age group **To reduce obstetric complications in adolescents** • Proportion of adolescent girls and young women (15–19) with obstetric complications due to abortion
School health programmes (385); (386).	Promotion of healthy behaviour (e.g. nutrition, physical activity, no tobacco, alcohol or drugs)	**Programme funding for promotion of healthy behaviour** • Source of funding **School health services provide a continuum of health promotion, prevention, and early detection and referral services** • Staff trained in the principles and practice of the health promoting schools initiative • Priority health content and skills-based pedagogy are present in national guidance for school curricula, teacher training and learning assessments **School health strategy/policies/standards** • School health-related strategy or policy exist, either as part of a broader health, education or poverty reduction policy or strategy or as a stand-alone document • National school safety standards exist, which address both the physical and socio-emotional environment	**Health promoting school infrastructure and services** • Percentage of schools with a functional water point at or near the school[1] • Percentage of schools providing the minimum package of school-based health and nutrition services[2] **Teachers trained in school health principles** • Number and percentage of teachers have received pre-service training in skills-based health education, including participative teaching approaches **School curriculum contains priority health content** • Percentage of schools providing regular skills-based health education sessions, as recommended in the national guidance • Proportion of secondary schools that provide CSE	**Key health-risk behaviours** • Prevalence of insufficient physical activity among adolescents • Prevalence of current tobacco use among school-going persons 15 years and older (age disaggregated) • Harmful use of alcohol among adolescents • Proportion of men and women aged 15–24 with basic knowledge about SRH services and rights **Positive adolescent development and connectedness to school** • Do you feel that there is an adult (a teacher or someone else) in school who really cares about you as a person? **Adolescents are vaccinated against HPV** • Percentage coverage with HPV vaccine in adolescent girls and young women aged 15–24 years	**Prevent communicable and noncommunicable diseases in adolescents** • Adolescent mortality rate • Adolescent suicide mortality rate (by age and sex) • Proportion of 15- to 24-year-olds not in education, employment and training
Adolescent mental health programme (387)	Psychosocial support and related services for adolescent mental health and wellbeing	**Programme funding for psychosocial support and related services** • Source of funding • Mental health workers per 100 000 population (psychiatrists, nurses, psychosocial care providers, paediatricians) **National policies or plans for mental health** • Existence of a national policy and/or plan for mental health that is in line with international human rights instruments and includes a focus on adolescents[3] **Appropriate training and support for health-care workers** • Mechanisms in place for training, support and supervision of health-care workers in adolescent mental health	**Health facilities offer mental services to adolescents** • Number and proportion of health facilities providing mental health services to adolescents • Number and proportion of health workers with specific training in provision of mental health services to adolescents • Proportion of target education and training institutions that have an adolescent mental health in their training curriculum for primary care providers • Functioning programmes of multisectoral mental health promotion and prevention in existence that address the specific needs of adolescents[4]	**Mental health services accessible to and used by adolescents** • The proportion of adolescents aged 10–14 and 15–19 years with severe mental disorders who utilized a specified package of (mental) health services in the last 12 months	**Prevent depression and suicide among adolescents** • Number of suicide deaths per year per 100 000 adolescents • Proportion of adolescents who report experiencing symptoms of depression in a specified period

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In order to minimize the reporting burden for countries, 16 of these indicators were selected as key indicators that all countries will be expected to monitor in the near term.

Key Indicators: Twelve of the 16 key Global Strategy indicators are relevant to adolescent health (Table A6.1 in Annex 6.1) and six of these, "cover adolescents and include a specified age range."

- Survive
  - adolescent mortality rate.
- Thrive
  - adolescent birth rate;
  - number of countries with laws and regulations that guarantee women aged 15–49 access to SRH care, information and education.
- Transform
  - proportion of children and young people (in schools) in grades 2/3; at the end of primary; and at the end of lower secondary achieving at least minimum proficiency level in reading and mathematics, by sex;
  - proportion of ever-partnered women and girls aged 15 and older subjected to physical, sexual or psychological violence by a current or former intimate partner, in the last 12 months, by form of violence and by age group;
  - proportion of young women and men aged 18–29 who had experienced sexual violence by age 18.

Out of the full list of 60 main indicators, 43 are related to adolescents (see Table A6.1 in Annex 6.1).

Indicators for further development
An additional 25 indicators have been identified as requiring further development (370). Seventeen of these can be used as indicators of adolescent health, if they are disaggregated by age. The indicators requiring further development that are related to adolescent health are shown in italics in Table A6.1.

Many programmes aim to empower adolescents, to improve their positive development, and/or to influence their social and gender norms, as well as their health-related knowledge.

Measuring positive adolescent development is usually done using composite indicators to form an index from a battery of questions asked in a survey. An example of such a validated scale is the Gender Equitable Men (GEM) Scale (371). Indicators that measure attributes of positive adolescent development are also useful, such as positive self-image; relationships (connectedness) to parents, peers, school and the wider community; gender norms; skills for dealing with emotions or conflicts; and personal self-efficacy. The Global Early Adolescent Study provides an example of an attempt to do this among young adolescents in study sites in 15 countries (105).

Contextual indicators
An additional 18 contextual indicators have also been suggested (370). These include indicators that are indirectly relevant to adolescent health, such as:

- number of health workers per 100 000 population
- proportion of 15–24 year olds not in education, employment, or training.

Monitoring strategy
Indicators monitoring progress towards the targets of the Global Strategy are required at the global and regional levels. Additionally, Global Strategy indicators need to be monitored where the specific actions to improve the health of women, children and adolescents will take place, at national and subnational levels.

Data sources
The 2016 report on country data for the Global Strategy (391) showed that many countries will have empirical data on some but not all of the adolescent health-related indicators in Table A6.1 in Annex 6.1. The Health Data Collaborative is working with countries to improve the availability, quality and use of data for local decision-making and tracking of progress toward the health-related Sustainable Development Goals (https://www.healthdatacollaborative.org/). For monitoring and evaluation of adolescent health programming, countries will need to ensure that they include a focus on age and sex disaggregation.

An example of improving measurement at the country-level is shown in Box 6.1 for the adolescent mortality rate.

Box 6.1. Measuring the adolescent mortality rate

The main source for the adolescent mortality rate should be reasonably complete civil registration and vital statistics (CRVS) systems, yet these do not exist or are far from perfect in many low- and middle-income countries. Initiatives to improve the completeness and accuracy of CRVS systems include the Health Data Collaborative (www.healthdatacollaborative.org), which has recently been set up to work with countries to improve the availability, quality and use of data for local decision-making and tracking of progress toward the health-related Sustainable Development Goals. In the meantime, the United Nations Department of Economic and Social Affairs (UN DESA) plans to use a mix of data from CRVS systems and population censuses to generate model life tables from which the adolescent mortality rate can be estimated.

Countries with sample or sentinel vital registration systems and/or with local health and demographic surveillance systems should make full use of these to obtain estimates of the adolescent mortality rate by sex. They should triangulate these with estimates produced by the UN DESA, the Global Health Observatory and other sources, such as the Global Burden of Disease Project of the Institute of Health Metrics and Evaluation.

In the absence of other sources, data from population surveys are often used to model newborn, child and even adult mortality, but many of these surveys do not include adolescents and thus cannot be used to model mortality in this age group.

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The main data source for many of the adolescent health-related indicators will be nationally representative household surveys, such as the DHS or multiple indicator cluster surveys (MICS) (though these usually do not include adolescent boys and young men), or school-based health surveys, such as the Global School-Based Student Health Survey (GSHS), the Health Behaviour in School-Aged Children (HBSC) survey, and the Global Youth Tobacco Survey (GYTS). While sources such as DHS and MICS do not explicitly focus on adolescents, older adolescent girls, and sometimes boys aged 15–19 years, are usually included. Table 6.3 lists the data sources that programme managers can draw upon to report on different types of indicators. Some of these data may not be routinely collected, and special surveys or studies may be needed.

Table 6.3. Data sources for adolescent health-related indicators collected at the national level

INDICATOR TYPE	DATA SOURCE	ROUTINE COLLECTION?	EXAMPLE
Adolescent health outcomes	• CRVS • Nationally representative household surveys such as DHS, MICS	Yes	Adolescent birth rate (10–14, 15–19) per 1000 women in each age group
Service availability	• Routine facility reports • Administrative data	Yes	Proportion of rape survivors who sought care within 72 hours who received HIV postexposure prophylaxi
Service provision	• Health facility surveys	No	Proportion of health facilities providing adolescent health services
Service readiness	• Health facility surveys	No	Proportion of health workers with specific training in provision of health services to adolescents
Policies, legislation and regulation	• Key informant interviews • Self-reported by governments	No	National policies and plans for mental health are in line with international human rights instruments and have an adolescent health focus
Programme funding and resources	• Administrative data from the programme • Self-reported by governments	Yes	Source of programme funding and amount provided (US$)
Processes available to support the programme	• One-off nationally or locally representative surveys • Cohort studies	No	Proportion of target audiences for adolescent pregnancy reduction messages reached

Health risks are rarely distributed equally in populations, and health programmes reach different subpopulations to different degrees. In adolescent programmes, it is often harder to reach those at the greatest risk, both in terms of risk behaviours and ill-health, as those adolescents might also be the least likely to attend school or seek health services.

Monitoring of equity and adolescents' rights is critically important, and the Innov8 technical handbook provides a useful tool for this (106). WHO guidance on health inequality monitoring is also relevant to monitoring of adolescent health programmes (372).

Evaluating the coverage and impact of a programme among subgroups of the adolescent population will measure whether the programme is reaching all groups equally. To do this, data must be disaggregated by age, sex and social attributes such as wealth and school attendance. Many data sources have data on subpopulations that are not published in summary reports. For example, DHS data on women of reproductive age can be disaggregated to show results among 15- to 19-year-olds.

For Global Strategy monitoring, it may also be important to disaggregate within adolescents. For example, one of the Global Strategy indicators is the prevalence of insufficient physical activity among adolescents, but this may differ substantially between young adolescents and older adolescents, by sex within each of these age groups, by rural or urban residence, and by in-school versus out-of-school adolescents. Ignoring these differences may mean that the needs of particular subpopulations remain unaddressed by programmes. Furthermore, the specific needs of young adolescents (10–14 years) are often forgotten.

Few surveys collect data on a representative sample of all adolescents. Some, such as GSHS and GYTS, aim to include a representative sample of school-going adolescents within specified age ranges. The biases introduced by excluding out-of-school adolescents will vary by country, as the proportion of adolescents who are in school differs considerably. However, accessing out-of-school adolescents is more problematic than accessing young children, as they are much more mobile.

The Every Woman Every Child partnership will be preparing an annual report on progress towards the Global Strategy's targets. Other collations of existing data related to adolescents are planned, such as the Adolescent Country Tracker led by UNICEF, and the Global Youth Index led by the United Nations Population Fund (UNFPA) and the Office of the United Nations Secretary-General's Envoy on Youth. Initiatives are also under way or being planned for actively involving adolescents and young adults in tracking progress towards the Global Strategy's targets, or more broadly towards the Sustainable Development Goals.

Examples include Phase 4 of the ACT! 2015 project in 12 countries, which is being led by a coalition of youth organizations (the PACT) with UNAIDS and the International Planned Parenthood Federation (IPPF). The aim is, "to establish youth-led, data-driven accountability mechanisms to ensure youth engagement with the implementation of the SDGs and build an evidence base for advocacy" (http://www.ippf.org/our-approach/programmes/act2015). Another initiative is being developed under the provisional title of Youth Voices Count, led by WHO. Countries should prepare to make full use of these global initiatives and should consider establishing similar youth-led, data-collection mechanisms to ensure youth engagement with the implementation and monitoring of national adolescent health programming.

The potential for collecting and/or mining data that come directly from adolescents and young adults through electronic media, such as text messages, radio phone-in programmes and social media is likely to increase considerably during the period of the Global Strategy.

Two existing examples are:

- U-Report – a "social messaging tool that allows anyone from any community, anywhere in the world to respond to polls, report issues, support child rights, and work as positive agents of change on behalf of people in their country" https://ureport.in/);
- Crisis Trends – which explores the crises that people face in the USA, such as anxiety(http://crisistrends.org/).

Two case studies in Annex 6.3 illustrate the usefulness of routine monitoring of adolescent health programmes to:

- detect the impact of a national Year of Sobriety on clinic attendances for alcohol toxicity among 7- to 14-year-olds in Lithuania (Case study A6.1; (321)); and
- evaluate the impact of England's Teenage Pregnancy Strategy on under-18 conception rates, and to promote action in areas where performance was suboptimal (Case study A6.2).

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6. Monitoring, evaluation and research

6.2.
Evaluation of adolescent health programmes

While monitoring is the systematic collection of data to check on the progress of a programme or the implementation of an intervention, evaluation is the critical assessment of the degree to which the programme fulfils its stated goals and objectives. It aims to answer questions such as, Is the programme achieving its objectives, goals and associated targets? and Is it run in an effective and efficient way? Evaluations contribute to the overall evidence-base for the effectiveness of interventions and can be used to improve or redirect implementation and for subsequent programme planning. They can either be conducted by internal programme staff or by external evaluators. Monitoring data are a major resource for any programme evaluation.

Programme evaluations should follow the Development Assistance Committee criteria (373), which include measurements of programme:

- **relevance** – consistency with the overall programme goal and its desired impact;
- **effectiveness** – reasons for achievement (or not) of the programme's main objectives;
- **efficiency** – whether the least costly resources were used to achieve results;
- **impact** – measures that the programme made a real difference to its beneficiaries; and
- **sustainability** – likelihood that the programme benefits will continue in the absence of external support.

This document will not cover the basics of programme evaluation in general. Good guidance on that can be found elsewhere (368); (369). The aim here is to highlight issues that are particularly important considerations for evaluations of adolescent health programmes.

Countries should conduct periodic evaluations of the degree to which their adolescent health programme is meeting its goals and targets related to the Global Strategy. An example of an evaluation of the National Adolescent-Friendly Clinic Initiative in South Africa is given in Case study 20 (374). An evaluation of a reproductive and sexual health programme in Jharkhand State, India, is provided in Case study A6.3 in Annex 6.3 (375).

Case Study 20

South Africa's evaluation of standards to improve the quality of adolescent services in clinics

The South African National Adolescent Friendly Clinic Initiative (NAFCI) was initiated in 1999 as an integral component of loveLife, a national multidimensional HIV/AIDS programme for youth. NAFCI clinics agreed to a set of 10 standards related to the provision of adolescent-friendly services. An independent evaluation was carried out between June 2002 and March 2003. A one-day assessment was conducted in 11 NAFCI clinics by a team that included a youth representative, and also in 11 control clinics that were randomly selected from within the same community. The 10 standards were assessed using 41 specific criteria.

NAFCI clinics performed significantly better than control clinics on criteria specific to provision of adolescent-friendly services, determining adolescent

health needs in the community, knowledge of adolescent rights, availability of adolescent-specific information, and non-judgemental attitudes of staff. Overall the evaluation showed that the NAFCI clinics had significantly better scores for eight of the 10 standards.

These results were used to support calls for the further expansion of the NAFCI clinic initiative. The evaluation also revealed areas where further improvements were needed to ensure that all NAFCI clinics would meet all 10 of the desired adolescent-friendly standards, and showed that a single orientation to the standards was not sufficient. Significant improvements were only seen if clinics were supported over a period of time by a facilitator trained in quality improvement approaches.

For a programme evaluation to be meaningful and useful, it must be both rigorous and objective. It should go beyond a superficial checklist that reveals little about the quality or coverage of an implemented programme. For example, an evaluation of a national comprehensive sexuality education (CSE) programme should go further than simply documenting that sex education is in the national curriculum. The evaluation should review whether each aspect of the CSE curriculum is in line with the topics and approaches proposed in the UNESCO International Technical Guidance on Sexuality Education (376), particularly any topics which may be sensitive or controversial. The evaluation should assess the quality and coverage of related aspects of teacher-training programmes. It should also include an assessment of the quality and coverage of CSE programme implementation. Ideally, such an evaluation would include the participation of external CSE experts, to ensure there is the technical capacity rigorously to evaluate the programme and to reduce the potential for bias – as education sector representatives may have a conflict of interest.

Planning for evaluations should be an integral part of programme planning, and should be included in the initial programme plan so that adequate budget is allocated for the evaluations. Evaluation planning also helps clarify the specific goals and targets of the programme, making it easier to anticipate and avoid the challenges that would otherwise be detected by the evaluators.

The main function of a monitoring and evaluation system is to produce information on which to base management decisions. If programmes are evaluated, the information obtained should feed directly and promptly into programme planning and priority setting. Periodic programme reviews are a way to make sure that the findings of evaluations are used rather than gathering dust on bookshelves. These reviews should include an assessment that takes into account the findings from both internal and external programme evaluations. An example of such a review for India is given in Case study A6.4 in Annex 6A.3, which is based on an article by Hoopes et al. 2016 (377). Programme reviews should also take account of available monitoring data and stakeholder opinions, which should include the opinions of adolescents themselves and of youth-led and youth-serving organizations. The assessment findings should feed into participatory review processes where programme priorities, approaches and targets are re-evaluated, and changed where necessary.

6. Monitoring, evaluation and research

6.3.
Priority areas for future research

Research aims to increase current knowledge through the discovery of new facts. The earlier sections of this document have demonstrated that much is known about the burden of disease and injuries in adolescence and the risk factors for future adult burden; what adolescent health interventions are effective; and how best these interventions might be prioritized and then implemented within adolescent health programmes. However, further research will be essential to push progress forward within the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) in order to achieve the ambitious health-related Sustainable Development Goals. Reflecting this, research and innovation is one of the nine action areas highlighted by the Global Strategy (11). Key research areas will include research to develop evidence on which interventions should be implemented (research on the what of adolescent health programming), and research on how best to deliver evidence-based interventions (research on the how of adolescent health programming).

However, adolescent research capacity is weak relative to the capacity for maternal, newborn and child health research, and especially in LMICSs where it is needed most (55). Investment in research capacity strengthening will need to involve multiple disciplines and is likely to bring a substantial return on investment.

The number of important research questions is large. Priorities will need to be selected for investment.

WHO recently conducted two global adolescent health research priority-setting exercises to help countries prioritize their research investments (378); (379). Both used versions of the Child Health and Nutrition Research Institute (CHNRI) methodology (380), in which experts propose potential research questions and then score them based on explicit criteria related to clarity, answerability, importance, potential for implementation and relevance for equity.

The first priority-setting exercise (378) focused on seven areas related to adolescent SRH:

- maternal health
- contraception
- gender-based violence
- treatment and care of patients with HIV infection
- abortion
- integration of family planning and HIV-related services
- sexually transmitted infections.

The five top-ranked SRH research questions in each of these seven areas are summarized in Table A6.3 in Annex 6.4, along with the type of question. The majority of the questions were either descriptive: epidemiological research or evaluation of existing interventions (n=16) or related to development of interventions: operations research or scaling up of existing interventions (n=18), with only two relating to discovery of new interventions.

The second exercise (379) covered eight other adolescent health areas:

- communicable diseases prevention and management
- injuries and violence
- mental health
- NCD management
- nutrition
- physical activity
- substance use
- policy, health and social systems.

The five top-ranked research questions in each of these eight areas are summarised in Table A6.4 in Annex 6.4, along with the type of question. The majority of the 40 questions that were ranked in the top five across the eight health areas related to descriptive epidemiology (n=13), intervention development and testing (n=8), or intervention delivery and implementation (n=14), with few related to intervention discovery (n=3) or adolescent health policy or health and social systems research (n=2).

Both exercises showed that priorities have shifted away from basic questions on the prevalence of specific health conditions towards questions about how best to scale-up existing interventions and testing the effectiveness of new ones.

Research priorities on child marriage were also identified at an expert group meeting held by WHO in 2013 (396). Five key areas were identified: prevalence and trends; causes; consequences; prevention efforts; and efforts to support married girls.

6.4.
Involving adolescents in monitoring, evaluation and research

Ideally, the monitoring, evaluation and research of programmes designed to improve the health of adolescents should always include the opinions of adolescents themselves. There is also the increasing potential for adolescents or young people to be engaged as active evaluators rather than only as subjects of the evaluation. This engagement can include adolescents actively and meaningfully participating in the design, implementation, analysis and interpretation of results, and in formulating the recommendations resulting from the programme evaluation. Ideas for how to involve adolescents can be found in the Youth Participation Guide developed by Family Health International and Advocates for Youth (382).

Adolescents' rapidly evolving capacity is important related to their consent and assent in data collection, and the role that adolescents can have in actively being involved in the design, implementation, analysis and interpretation of programme evaluations. The capacity of a 19 year old will be very different from that of a 10 year old. Furthermore, all adolescents of the same age will not have the same capacity. As a result, data collection methods and study instruments may need to vary across adolescence, and special data collection approaches may be required to overcome shyness or to ensure understanding, especially among young adolescents. Different data collection instruments may be needed for young versus older adolescents, or for disabled adolescents, for example.

Extra consultation is often required with adolescents, their families and their communities prior to data collection. An example of this would be if a questionnaire survey is to be used that will require asking sensitive questions to adolescents who are under the legal age of majority (usually under 18 years), such as questions to unmarried adolescents about their sexual behaviour, or use of illegal drugs. Also, appropriate consent from parents or legal guardians, in addition to assent from adolescents themselves, is required for underage adolescents. Legal and ethical provision of protection and ensuring access to services also need to be considered.

Balancing the benefits that might accrue to all adolescents from an evaluation or research study with the rights of the specific adolescent participants who will be involved in the data collection requires careful review by an ethics review committee (160).

All monitoring, evaluation and research should take account of adolescents' evolving capacity and should provide appropriate protection. Despite these additional issues, adolescents should not be excluded unnecessarily from participation in programme monitoring, evaluation and research.

7. Conclusion

This is an exciting time for adolescent health. In many countries, adolescent health services and programmes are no longer simply subsumed under those for children or adults. Instead, numerous governments have developed and now implement adolescent-specific national health programmes. These efforts vary greatly within and between countries and regions, but many countries have succeeded in scaling up basic SRH education in schools, and provide SRH services and commodities to adolescents through health facilities. In addition, some countries are working to expand adolescent health programmes to include other priorities, such as injuries and violence, communicable and noncommunicable diseases, nutrition and physical activity, and mental health and substance use.

This is an exciting time for adolescent health.

Much remains to be done, however. It has become increasingly evident that other adolescent health concerns – among them major contributors to adolescent and future adult mortality and ill health – have been neglected and warrant specific country-level programming. These include other causes of disease and injury, as well as broader social, educational and economic issues related to adolescent health, development and well-being.

Today, national governments have the necessary evidence and tools to address these challenges effectively, as outlined in this AA-HA! Guidance to Support Country Implementation document. Governments also have strong economic, public health and human rights arguments to do so. Through this, they will harness the triple dividend of benefits for adolescents now, for their future adult lives, and for the next generation. The United Nations partners involved in the production of this Guidance document stand ready to provide technical assistance as countries act to accelerate action for the health of adolescents.

It is important that governments and their partners learn as they implement adolescent health programmes based on the guidance contained in the AA-HA! Guidance document and the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) as a whole. Learning platforms will be needed to assist with sharing experiences, so that the AA-HA! Guidance becomes a living document.
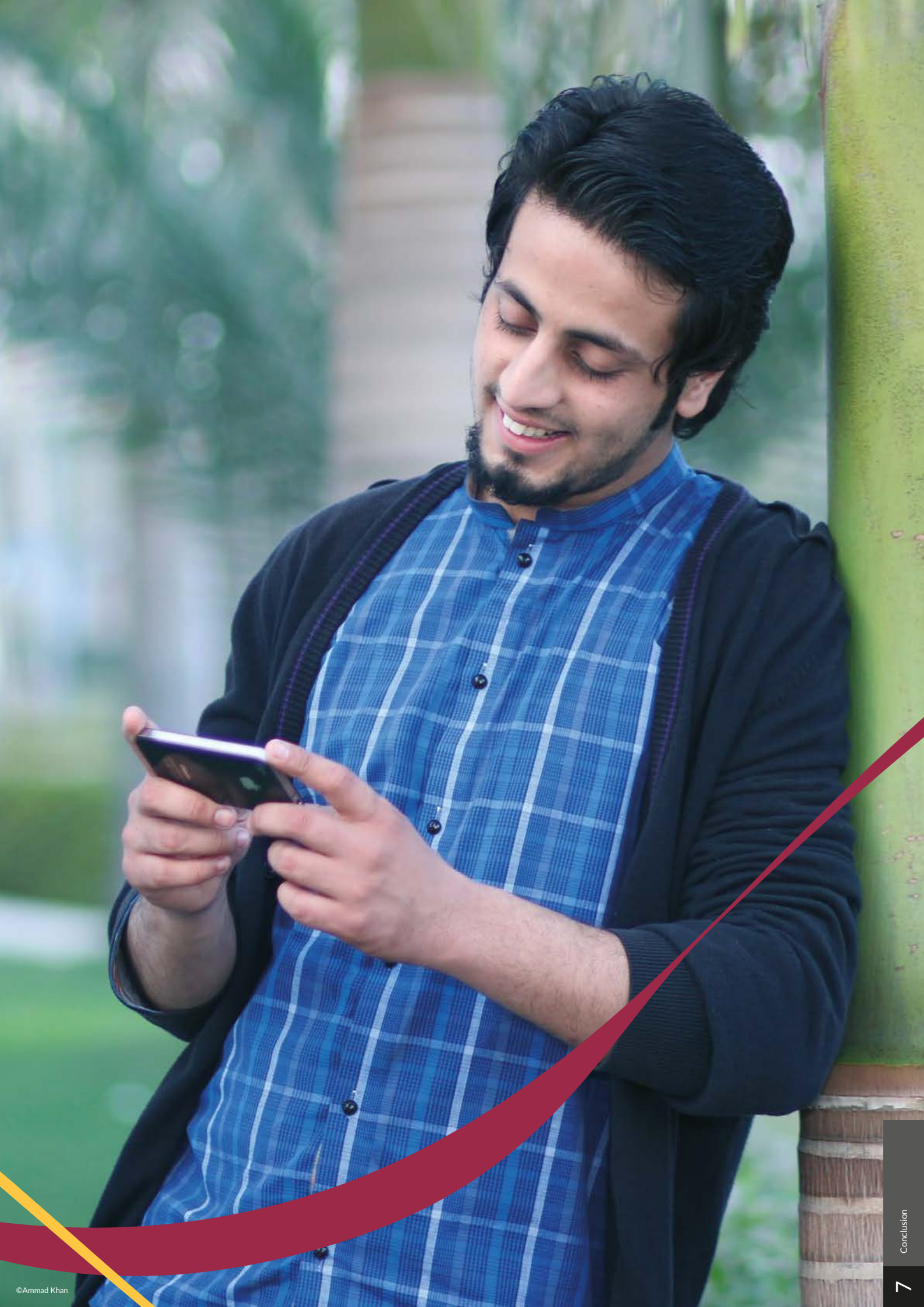
8. References

1. United Nations Department of Economic and Social Affairs. Definition of youth. Fact sheet; 2016. (http://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf).

2. World Bank. World development indicators. Washington DC; 2016. (http://data.worldbank.org/data-catalog/world-development-indicators).

3. Mathers C, Gretchen S et al. WHO methods and data sources for global burden of disease estimates 2000–2011. Geneva: WHO; 2013. (http://www.who.int/healthinfo/statistics/GlobalDALYmethods_2000_2011.pdf).

4. Population Reference Bureau. The challenge of attaining the demographic dividend. Policy brief. Washington DC; 2012. (http://www.prb.org/pdf12/demographic-dividend.pdf)

5. The determinants of health. In: WHO health impact assessment [website]. (http://www.who.int/hia/evidence/doh/en/).

6. WHO. Emergency response framework (ERF). Geneva; 2013. (http://www.who.int/hac/about/erf_.pdf).

7. Harper K, Armelagos G. The changing disease-scape in the third epidemiological transition. International journal of environmental research and public health. 2010;7(2):675-97. (http://www.mdpi.com/1660-4601/7/2/675).

8. WHO. Gender. In: WHO gender, equity and human rights [website]. (http://www.who.int/gender-equity-rights/understanding/gender-definition/en/).

9. Napierala Mavedzenge S, Luecke E, Ross DA. Effectiveness of HIV prevention treatment and care interventions among adolescents: a systematic review of systematic reviews. UNICEF technical brief. New York: UNICEF; 2013. (http://www.grassrootsoccer.org/wp-content/uploads/SystReview-of-Syst-Review-Napierala-Mavedzenge-et-al-UNICEF-Techn-Brief-Systematic-Review_Effective-HIV-Response-in-Adolescents_2013.pdf).

10. WHO. Global plan of action to strengthen the role of the health system within a national multisectoral response to address interpersonal violence, in particular against women and girls, and against children. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/252276/1/9789241511537-eng.pdf?ua=1)

11. EWEC. The global strategy for women's, children's and adolescents' health (2016–2030). New York; 2015. (http://www.who.int/pmnch/media/events/2015/gs_2016_30.pdf).

12. Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R (editors). World report on violence and health. Geneva: WHO; 2002. (http://apps.who.int/iris/bitstream/10665/42495/1/9241545615_eng.pdf).

13. Risk factors. In: WHO health topics [website]. (http://www.who.int/topics/risk_factors/en/.

14. OHCHR. Convention on the rights of the child. New York; 1989. (http://www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx).

15. United Nations Committee on the Rights of the Child. General comment No. 20 (2016) on the implementation of the rights of the child during adolescence; CRC/C/GC/20. (http://www.refworld.org/docid/589dad3d4.html).

16. a. WHO. Global health estimates 2015: deaths by cause, age, sex, by country and by region, 2000–2015 Geneva; 2016. (http://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html).
b. WHO. Global health estimates 2015: DALYs by cause, age, sex, by country and by region, 2000-2015 Geneva; 2016. (http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html).
c. UNAIDS. Prevention Gap Report. Geneva; 2016. (http://www.refworld.org/docid/57862e014.html).

17. Mokdad AH, Forouzanfar MH, Daoud F, Mokdad AA, El Bcheraoui C, Moradi-Lakeh M, et al. Global burden of diseases, injuries, and risk factors for young people's health during 1990–2013: a systematic analysis for the global burden of disease study 2013. Lancet. 2016;387(10036):2383-401. (http://www.sciencedirect.com/science/article/pii/S0140673616006486).

18. WHO, UNAIDS. Global standards for quality health-care services for adolescents. A guide to implement a standards-driven approach to improve the quality of health-care services for adolescents. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/183935/1/9789241549332_vol1_eng.pdf)

19. UNESCO. Puberty education & menstrual hygiene management. Paris; 2014. (http://unesdoc.unesco.org/images/0022/002267/226792e.pdf).

20. Catalano RF, Berglund ML, Ryan JAM, Lonczak HS, Hawkins JD. Positive youth development in the United States: research findings on evaluations of positive youth development programs. The Annals of the American Academy of Political and Social Science. 2004;591(1):98-124. (http://journals.sagepub.com/doi/abs/10.1177/0002716203260102).

21. House S, Mahon T, Cavill S. Menstrual hygiene matters. A resource for improving menstrual hygiene around the world. WaterAid: 2012. (http://www.wateraid.org/what-we-do/our-approach/research-and-publications/view-publication?id=02309d73-8e41-4d04-b2ef-6641f6616a4f).

22. ITU. Guidelines for policy makers on child online protection. Geneva; 2009.https://www.itu.int/en/cop/Documents/guidelines-policy%20makers-e.pdf

23. ITU. Guidelines for children on child online protection. Geneva; second edition 2016. (https://www.itu.int/en/cop/documents/s-gen-cop.child-2016-pdf-e%5b1%5d.pdf).

24. ITU. Guidelines for parents, guardians and educators on child online protection. Geneva; second edition 2016. (http://www.itu.int/en/cop/pages/guidelines.aspx).

25. Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. PLoS One. 2013;8(4):e62004. (https://www.ncbi.nlm.nih.gov/pubmed/23637945).

26. UNFPA. UNFPA framework for action on adolescents & youth. Opening doors with young people: 4 keys. New York; 2007.

27. Save the Children, UNICEF. Every child's right to be heard: a resource guide on the UN committee on the rights of the child general comment No.12. London; 2011.

28. WHO. Oral health promotion: an essential element of a health-promoting school. WHO information series on school health, document 11. Geneva; 2003. (http://www.who.int/oral_health/media/en/orh_school_doc11.pdf).

29. WHO. Adolescent friendly health services: an agenda for change. Geneva; 2002. (http://www.who.int/maternal_child_adolescent/documents/fch_cah_02_14/en/).

30. WHO. Creating an environment for emotional and social well-being: an important responsibility of a health promoting and child-friendly school. Information series on school health document 10. Geneva; 2003. (http://apps.who.int/iris/handle/10665/42819).

31. WHO. Skills for health. Skills-based health education including life skills: an important component of a child-friendly/health-promoting school. Information series on school health document 9. Geneva; 2003.

32. WHO. Family life, reproductive health, and population education: key elements of a health-promoting school. Information series on school health document 8. Geneva; 2003. (http://www.who.int/goe/publications/goe_mhealth_web.pdf).

33. WHO. Helping parents in developing countries improve adolescents' health. Geneva; 2007. (http://apps.who.int/iris/bitstream/10665/43725/1/9789241595841_eng.pdf).

34. WHO. Adolescent job aid: a handy desk reference tool for primary level health workers. Geneva, Development. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44387/1/9789241599962_eng.pdf).

35. WHO. mHealth: new horizons for health through mobile technologies. Based on the findings of the second global survey on ehealth. Geneva; 2011. (http://www.who.int/goe/publications/goe_mhealth_web.pdf).

36. WHO. Report of the commission on ending childhood obesity. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/204176/1/9789241510066_eng.pdf).

37. WHO. mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings. Mental health gap action programme (mhGAP) – version 2.0. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/250239/1/9789241549790-eng.pdf).

38. WHO. Preventing suicide: a resource for suicide case registration. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44757/1/9789241502665_eng.pdf).

39. UNHCR, UNICEF, WFP, WHO. Food and nutrition needs in emergencies. Geneva, 2002. (http://www.who.int/nutrition/publications/emergencies/a83743/en/).

40. The Sphere Project. The sphere handbook: humanitarian charter and minimum standards in humanitarian response. Bourton on Dunsmore, United Kingdom: Practical Action Publishing; 2011. (http://www.sphereproject.org).

41. WHO. Guidance note on disability and emergency risk management for health. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/90369/1/9789241506243_eng.pdf).

42. Partnership for Maternal, Newborn & Child Health. Advocating for change for adolescent health. A toolkit for youth organizations to champion and advocate for adolescent health and well-being. Geneva; 2017 (in print; title is provisional).

43. WHO, UNHCR. Clinical management of rape survivors: developing protocols for use with refugees and internally displaced persons. Geneva; 2004. (http://apps.who.int/iris/bitstream/10665/43117/1/924159263X.pdf).

44. WHO. Do's and don'ts in community-based psychosocial support for sexual violence survivors in conflict-affected settings. Geneva; 2012. (http://www.unhcr.org/protection/health/50b48c4f6/dos-donts-community-based-psychosocial-support-sexual-violence-survivors.html).

45. WHO. INSPIRE: seven strategies for ending violence against children. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/207717/1/9789241565356-eng.pdf).

46. Inter-Agency Standing Committee. Sexual and reproductive health (SRH) including HIV: From minimum initial response to comprehensive services. 2010.

47. Inter-agency Working Group on Reproductive Health in Crises. Inter-agency field manual on reproductive health in humanitarian settings. 2010 revision for field review. (https://www.ncbi.nlm.nih.gov/books/NBK305149/pdf/Bookshelf_NBK305149.pdf).

48. WHO, UNICEF, USAID. Improving nutrition outcomes with better water, sanitation and hygiene: practical solutions for policies and programmes. Geneva; 2015. (https://www.unicef.org/media/files/IntegratingWASHandNut_WHO_UNICEF_USAID_Nov2015.pdf).

49. WHO, UNHCR. mhGAP humanitarian intervention guide (mhGAP-HIG). Clinical management of mental, neurological and substance use conditions in humanitarian emergencies. Geneva; 2015. (http://www.who.int/mental_health/publications/mhgap_hig/en/).

50. EWEC. A global strategy for every woman every child in every setting. EWEC Technical Content Workstream Working Group on Humanitarian Challenges (21/03/2015). (http://www.everywomaneverychild.org/wp-content/uploads/2015/02/15__revised_EWEC_Humanitarian-150322RKMT-HD_11__2015-03-24.pdf).

51. UN Secretary-General announces $25 billion in initial commitments to end preventable deaths of women, children and adolescents by 2030. In: United Nations Sustainable Development Goals [website] 26 September 2015. (http://www.un.org/sustainabledevelopment/blog/2015/09/un-secretary-general-announces-25-billion-in-initial-commitments-to-end-preventable-deaths-of-women-children-and-adolescents-by-2030/)

8. References

52. United Nations General Assembly A/RES/70/1. Transforming our world: the 2030 agenda for sustainable development. New York; 2015. (http://unctad.org/meetings/en/Sessional-Documents/ares70d1_en.pdf).

53. United Nations Committee on the Rights of the Child. General comment No. 4 (2003): Adolescent health and development in the context of the convention on the rights of the child. CRC/GC/2003/4. (http://www.refworld.org/docid/4538834f0.html).

54. Deogan C, Ferguson J, Stenberg K. Resource needs for adolescent friendly health services: estimates for 74 low- and middle-income countries. PLoS One. 2012;7(12):e51420. (https://www.ncbi.nlm.nih.gov/pubmed/23300548).

55. Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Allen NB et al. Our future: a Lancet commission on adolescent health and wellbeing. Lancet. 2016;387(10036):2423-78. (http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)00579-1/fulltext).

56. Stenberg K, Axelson H, Sheehan P, Anderson I, Gülmezoglu AM, Temmerman M et al. Advancing social and economic development by investing in women's and children's health: a new global investment framework. Lancet. 2014;383(9925):1333-54. (http://www.sciencedirect.com/science/article/pii/S014067361362231X).

57. Urdal H. A clash of generations? youth bulges and political violence. Expert paper No. 2012/1. New York: United Nations Department of Economic and Social Affairs (Population Division); 2012. (http://www.un.org/esa/population/publications/expertpapers/Urdal_Expert%20Paper.pdf).

58. United Nations Department of Economic and Social Affairs (Population Division). Population 2030: Demographic challenges and opportunities for sustainable development planning. (ST/ESA/SER.A/389). New York; 2015. (http://www.un.org/en/development/desa/population/publications/pdf/trends/population2030.pdf).

59. UNFPA. The case for investing in young people as part of a national poverty reduction strategy. New York; 2010. (http://www.unfpa.org/publications/case-investing-young-people).

60. World Bank. World development report 2007: development and the next generation. Washington DC; 2007. (http://documents.worldbank.org/curated/en/556251468128407787/pdf/359990WDR0complete.pdf).

61. Chaaban J, Cunningham W. Measuring the economic gain of investing in girls: the girl effect dividend. New York: World Bank; 2011. (http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5753).

62. Resnick MD, Catalano RF, Sawyer SM, Viner R, Patton GC. Seizing the opportunities of adolescent health. Lancet. 2012;379(9826):1564-7. (http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(12)60472-3.pdf).

63. Bird K. The intergenerational transmission of poverty: an overview. Overseas Development Institute working paper 286/ Chronic Poverty Research Centre Working Paper 99. London: ODI/CPRC; 2007. (https://pdfs.semanticscholar.org/b845/f2b2e157e341a8f4b9fde9d1477ef4ac1fca.pdf).

64. d'Addio AC. Intergenerational transmission of disadvantage: mobility or immobility across generations? OECD social, employment and migration working papers. 2007(52):0_1. (www.oecd.org/els/38335410.pdf).

65. UNICEF. The state of the world's children 2011. Adolescence – an age of opportunity. New York; 2011. (https://www.unicef.org/sowc2011/).

66. WHO. Risk and protective factors affecting adolescent reproductive health in developing countries. Geneva; 2004. (http://158.132.116.146/adh/2_AD_sexual_reproductiveH/WHO%20-%20Risk%20and%20protective%20factors%20affecting%20ASRH%20in%20developi.pdf).

67. WHO, UNODC, UNDP. Global status report on violence prevention 2014. Geneva; 2014. (http://www.who.int/violence_injury_prevention/violence/status_report/2014/en/).

68. UNFPA. How our future depends on a girl at this decisive age: 10. The state of world population 2016. New York; 2016. (https://www.unfpa.org/sites/default/files/pub-pdf/the_state_of_world_population_2016_-_english.pdf).

69. EWEC. Technical guidance for prioritizing adolescent health. New York: UNFPA; 2017. (http://www.unfpa.org/publications/technical-guidance-prioritizing-adolescent-health).

70. WHO. Brief sexuality-related communication: recommendations for a public health approach. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/170251/1/9789241549004_eng.pdf).

71. WHO. Building an adolescent-competent workforce. Policy brief. Geneva; 2015. (http://www.who.int/maternal_child_adolescent/documents/adolescent-competent-workforce/en/).

72. Giedd JN. The teen brain: insights from neuroimaging. J Adolesc Health. 2008;42(4):335-43. (http://www.sciencedirect.com/science/article/pii/S1054139X0800075X).

73. WHO. Health for the world's adolescents a second chance in the second decade: Summary. Geneva; 2014. (http://apps.who.int/adolescent/second-decade/files/1612_mncah_hwa_executive_summary.pdf).

74. Crone EA, Dahl RE. Understanding adolescence as a period of social–affective engagement and goal flexibility. Nature Reviews Neuroscience. 2012;13(9):636-650. (http://www.nature.com/nrn/journal/v13/n9/full/nrn3313.html).

75. Patton GC, Viner R. Pubertal transitions in health. Lancet. 2007;369(9567):1130-9. (http://www.sciencedirect.com/science/article/pii/S0140673607603663).

76. Johnson SB, Blum RW, Giedd JN. Adolescent maturity and the brain: the promise and pitfalls of neuroscience research in adolescent health policy. J Adolesc Health. 2009;45(3):216-21. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2892678/pdf/nihms207310.pdf).

77. American College of Obstetricians and Gynecologists' Committee on Adolescent Health Care. Committee opinion No. 653 summary: concerns regarding social media and health issues in adolescents and young adults. Obstet Gynecol. 2016 Feb;127(2):414. (https://www.ncbi.nlm.nih.gov/pubmed/26942381).

78. Bailin A, Milanaik R, Adesman A. Health implications of new age technologies for adolescents: a review of the research. Current Opinion in Pediatrics. 2014;26(5):605-19. (http://www.medscape.com/medline/abstract/25160783).

79. Boyar R, Levine D, Zensius N. TECHsex USA: youth sexuality and reproductive health in the digital age. Oakland: ISIS, Inc; 2011. (https://yth.org/wp-content/uploads/yth-youth-health-digital-age.pdf).

80. Third A, Bellerose D, Dawkins U, Keltie E, Pihl K. Children's rights in the digital age: a download from children around the world. Melbourne: Young and Well Cooperative Research Centre; 2014. (https://www.unicef.org/publications/index_76268.html).

81. Parker I. Young people, sex and relationships: the new norms. London: Institute for Public Policy Research; 2014. (http://www.ippr.org/files/publications/pdf/young-people-sex-relationships_Aug2014.pdf?noredirect=1).

82. Aboujaoude E, Savage MW, Starcevic V, Salame WO. Cyberbullying: review of an old problem gone viral. J Adolesc Health. 2015;57(1):10-8. (http://www.sciencedirect.com/science/article/pii/S1054139X15001664).

83. Calado F, Alexandre J, Griffiths MD. Prevalence of adolescent problem gambling: a systematic review of recent research. Journal of Gambling Studies. 2016:1-28. (https://link.springer.com/article/10.1007/s10899-016-9627-5).

84. Day A. Getting the 'blues': the existence, diffusion and influence of pornography on young peoples' sexual health in Sierra Leone. Cult Health Sex. 2014;16(2):178-89. (https://www.ncbi.nlm.nih.gov/pubmed/24387328).

85. Hamm MP, Newton AS, Chisholm A, Shulhan J, Milne A, Sundar P et al. Prevalence and effect of cyberbullying on children and young people: a scoping review of social media studies. JAMA Pediatrics. 2015;169(8):770-7. (http://jamanetwork.com/journals/jamapediatrics/article-abstract/2337786).

86. Kuss DJ, Griffiths MD. Online gaming addiction in children and adolescents: a review of empirical research. J Behav Addict. 2012 Mar;1(1):3-22. (https://www.ncbi.nlm.nih.gov/pubmed/26166826).

87. Lam LT. Risk factors of internet addiction and the health effect of internet addiction on adolescents: a systematic review of longitudinal and prospective studies. Current Psychiatry Reports. 2014;16(11):1-9. (https://link.springer.com/article/10.1007/s11920-014-0508-2).

88. Moreno MA, Whitehill JM. Influence of social media on alcohol use in adolescents and young adults. Alcohol Research: current reviews. 2014;36(1):91. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc4432862/).

89. N'Dri KM, Yaya I, Saka B, Aboubakari AS, Kouassi DP, Ekou KF. Pornography and sexual behaviour of schoolchildren in the Cocody district of Abidjan. Santé Publique. 2015;27(5):733-7. (https://www.ncbi.nlm.nih.gov/pubmed/26752039).

90. Shek DT, Ma CM. A six-year longitudinal study of consumption of pornographic materials in Chinese adolescents in Hong Kong. J Pediatr Adolesc Gynecol. 2016;29(1):S12-S21. (http://www.jpagonline.org/article/S1083-3188(15)00325-3/abstract).

91. Svedin CG, Åkerman I, Priebe G. Frequent users of pornography. A population based epidemiological study of Swedish male adolescents. Journal of Adolescence. 2011;34(4):779-88. (http://www.sciencedirect.com/science/article/pii/S0140197110001387).

92. Commission on Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health. Geneva: WHO; 2008. (http://www.who.int/social_determinants/thecommission/finalreport/en/).

93. Viner RM, Hargreaves DS, Ward J, Bonell C, Mokdad AH, Patton G. The Health Benefits of secondary education in adolescents and young adults: an international analysis in 186 low-, middle-and high-income countries from 1990 to 2013. SSM-Population Health. 3 (2017) 162–171. (http://www.sciencedirect.com/science/article/pii/S2352827316301690).

94. Prüss-Üstün A and Corvalán C. Preventing disease through healthy environments: towards an estimate of the environmental burden of disease (first edition). Geneva: WHO; 2006. (http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf).

95. WHO, UNEP. Healthy environments for healthy children: key messages for action. Geneva; 2010. (http://www.who.int/ceh/publications/hehc_booklet_en.pdf).

96. WHO, UNEP. State of the science of endocrine disrupting chemicals – 2012. Geneva; 2013. (http://www.who.int/ceh/publications/endocrine/en/).

97. Climate change and health fact sheet (reviewed June 2016). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs266/en/).

98. WHO. Childhood lead poisoning. Geneva; 2010. (http://www.who.int/ceh/publications/leadguidance.pdf)

99. WHO. Children's exposure to mercury compounds. Geneva; 2010. (http://www.who.int/ceh/publications/children_exposure/en/).

100. WHO. WHO framework convention on tobacco control. Geneva; 2003. (http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf).

101. WHO. MPOWER: a policy package to reverse the tobacco epidemic. Geneva; 2008 (http://www.who.int/tobacco/mpower/mpower_english.pdf).

102. WHO. Global strategy to reduce the harmful use of alcohol. Geneva; 2010. (http://www.who.int/substance_abuse/msbalcstragegy.pdf).

103. WHO. Policy brief: taking measures to implement the who set of recommendations to reduce the impact of the marketing of unhealthy foods and non-alcoholic beverages to children. Geneva; 2014. (http://www.who.int/nmh/ncd-coordination-mechanism/Policybrief31.pdf?ua=1).

8. References

104. Sonenstein FL. Introducing the well-being of adolescents in vulnerable environments study: methods and findings. J Adolesc Health. 2014;55(6 Suppl):S1-3. (https://www.ncbi.nlm.nih.gov/pubmed/25453997).

105. WHO, Johns Hopkins Bloomberg School of Public Health, UNFPA. The global early adolescent study: an exploration of the evolving nature of gender norms and social relations 10-14 years: a critical age. (http://aphrc.org/wp-content/uploads/2015/04/GEAS-March-2015.pdf).

106. WHO. Innov8 approach for reviewing national health programmes to leave no one behind: technical handbook. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/250442/1/9789241511391-eng.pdf?ua=1)

107. Autism spectrum disorders fact sheet (updated April 2017). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/autism-spectrum-disorders/en/).

108. WHO. The world health report 2002: reducing risks, promoting healthy life. Geneva; 2002. (http://www.who.int/whr/2002/en/).

109. USAID, PEPFAR, Youthpower. Positive youth development measure toolkit: a practical guide for implementers of youth programs. Washington DC; 2016. (https://static.globalinnovationexchange.org/s3fs-public/asset/document/pyd%20measurement%20toolkit%20final.pdf?fmetopj.28pxhwjfwdxarknamnnbvg_r).

110. WHO Western Pacific Region. Young people and alcohol: a resource book. Geneva; 2015. (http://www.wpro.who.int/mental_health_substance_abuse/publications/youngpeoplealcohol_wpro/en/).

111. National Registry of Evidence-Based Programs and Practices (NREPP). Learning Center literature review: positive youth development. Rockville: Substance Abuse and Mental Health Services Administration (SAMHSA); 2015. (http://www.nrepp.samhsa.gov/docs/literatures/nrepp%20lit%20review_positive%20youth%20development.pdf).

112. UNICEF. Accelerating programming for and with adolescents. UNICEF 2014-2017 strategic plan. New York; 2014. (https://www.ungm.org/unuser/documents/downloadpublicdocument?docid=314191).

113. Cook P. understanding the effects of adolescent participation in health programmes. The International Journal of Children's Rights. 2008;16(1):121-39. (http://booksandjournals.brillonline.com/content/journals/10.1163/092755608x267139).

114. WHO. Inheriting a sustainable world? Atlas on children's health and the environment. Geneva; 2017. (http://apps.who.int/iris/bitstream/10665/254677/1/9789241511773-eng.pdf?ua=1).

115. World Bank. Working together to attain women's empowerment and demographic dividend in the Sahel. New York; 2015 (unpublished).

116. International Planned Parenthood Federation. Everyone's right to know: delivering comprehensive sexuality education for all young people. London; 2016 (http://www.ippf.org/sites/default/files/2016-05/ippf_cse_report_eng_web.pdf).

117. WHO. Food safety in natural disasters. International Food Safety Authorities Network (INFOSAN) information note No. 5/2005. (http://www.who.int/foodsafety/fs_management/no_05_naturaldisasters_sept05_en.pdf)

118. WHO. Youth and road safety. Geneva; 2007. (http://www.who.int/management/programme/ncd/youth%20and%20road%20safety.pdf)

119. WHO, UNICEF. World report on child injury prevention: Geneva; 2008. (http://www.who.int/violence_injury_prevention/child/injury/world_report/en/).

120. WHO. Injuries and violence: the facts 2014. Geneva; 2014. (http://www.who.int/violence_injury_prevention/media/news/2015/Injury_violence_facts_2014/en/).

121. WHO. Youth violence: the health sector role in prevention and response. Infographic. Geneva; 2015 [http://www.who.int/violence_injury_prevention/violence/youth/yv_infographic_small.pdf?ua=1).

122. WHO. Global routine immunization strategies and practices (GRISP): a companion document to the global vaccine action plan (GVAP). Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/204500/1/9789241510103_eng.pdf).

123. UNAIDS. Global AIDS up date. Geneva; 2016. (http://www.unaids.org/en/resources/documents/2016/global-aids-update-2016).

124. WHO. HIV and adolescents: guidance for HIV testing and counselling and care for adolescents living with HIV. Recommendations for a public health approach and considerations for policy-makers and managers. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/94334/1/9789241506168_eng.pdf).

125. IPU, WHO. Child, early and forced marriage legislation in 37 Asia-Pacific countries. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/246283/1/9789241565042-eng.pdf?ua=1).

126. Looker KJ, Magaret AS, May MT, Turner KM, Vickerman P, Gottlieb SL et al. Global and regional estimates of prevalent and incident herpes simplex virus type 1 infections in 2012. PLoS One. 2015;10(10):e0140765. (http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0140765).

127. Herpes simplex virus fact sheet (updated January 2017). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs400/en/).

128. WHO. Sexually transmitted infections: issues in adolescent health and development. WHO discussion papers on adolescence. Geneva; 2004. (http://apps.who.int/iris/bitstream/10665/42902/1/9241591420_eng.pdf).

129. The human papillomavirus (HPV) and cervical cancer fact sheet (updated June 2016). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs380/en/.

130. Adolescent pregnancy fact sheet (updated September 2014). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs364/en/).

131. Lopez LM, Grey TW, Hiller JE, Chen M. Education for contraceptive use by women after childbirth. Cochrane Database of Systematic Reviews 2015. Issue 7. art. No. CD001863. (http://onlinelibrary.wiley.com/doi/10.1002/14651858.cd001863.pub4/full).

132. WHO. 2015 Every woman, every child, every adolescent: achievements and prospects. The final report of the independent expert review group on information and accountability for women's and children's health. Geneva; 2015. (http://www.who.int/woman_child_accountability/ierg/reports/2015/iERG2015-ExecutiveSummary-EN.pdf?ua=1).

133. Neelofur-Khan D. Adolescent pregnancy – unmet needs and undone deeds. A review of the literature and programmes issues in adolescent health and development. Geneva; 2007. (http://apps.who.int/iris/bitstream/10665/43702/1/9789241595650_eng.pdf).

134. Blanc AK, Winfrey W, Ross J. New findings for maternal mortality age patterns: aggregated results for 38 countries. PLoS One. 2013;8(4):e59864. (https://www.ncbi.nlm.nih.gov/pubmed/23613716).

135. WHO. Eliminating female genital mutilation. An interagency statement. Geneva; 2008. (http://www.who.int/reproductive-health/publications/fgm/9789241596442/en/).

136. Banks E, Meirik O, Farley T, Akande O, Bathija H, Ali M. Female genital mutilation and obstetric outcome: WHO collaborative prospective study in six African countries. Lancet. 2006;367(9525):1835. (http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(06)68805-3/fulltext).

137. WHO. Global health sector strategy on sexually transmitted infections, 2016–2021. Towards ending STIs. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/246296/1/who-rhr-16.09-eng.pdf).

138. WHO, UNFPA. Married adolescents. No place of safety. Geneva; 2006. (http://apps.who.int/iris/bitstream/10665/43369/1/9241593776_eng.pdf).

139. WHO. Typhoid vaccines: WHO position paper. Geneva; 2008. (http://www.who.int/wer/2008/wer8306.pdf).

140. Meningococcal meningitis fact sheet (updated November 2015). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs141/en/).

141. WHO. Guidelines for the treatment of malaria – 3rd edition. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/162441/1/9789241549127_eng.pdf).

142. WHO. World malaria report 2016. Geneva; 2016. (http://www.who.int/malaria/publications/world-malaria-report-2016/report/en/).

143. Global Burden of Disease Pediatrics Collaboration, Kyu HH, Pinho C, Wagner JA, Brown JC, Bertozzi-Villa A et al. Global and national burden of diseases and injuries among children and adolescents between 1990 and 2013: findings from the global burden of disease 2013 study. JAMA Pediatrics. 2016;170(3):267-87. (https://www.ncbi.nlm.nih.gov/pubmed/26810619).

144. Nankabirwa J, Brooker SJ, Clarke SE, Fernando D, Gitonga CW, Schellenberg D et al. Malaria in school-age children in Africa: an increasingly important challenge. Trop Med Int Health. 2014;19(11):1294-309. (https://www.ncbi.nlm.nih.gov/pubmed/25145389).

145. WHO. Global tuberculosis report 2015. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/191102/1/9789241565059_eng.pdf).

146. WHO. Roadmap for childhood tuberculosis: towards zero deaths. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/89506/1/9789241506137_eng.pdf).

147. Congenital anomalies fact sheet (updated September 2016). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs370/en/).

148. Sickle-cell disease and other haemoglobin disorders fact sheet (January 2011). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs308/en/).

149. Verduzco LA, Nathan DG. Sickle cell disease and stroke. Blood. 2009;114(25):5117-25. (http://www.bloodjournal.org/content/114/25/5117?variant=full-text&sso-checked=true).

150. WHO. Global surveillance, prevention and control of chronic respiratory diseases: a comprehensive approach. Geneva; 2007. (http://www.who.int/gard/publications/gard_manual/en/).

151. Sanfilippo AM, Barrio V, Kulp-Shorten C, Callen JP. Common pediatric and adolescent skin conditions. J Pediatr Adolesc Gynecol. 2003;16(5):269-83. (http://www.sciencedirect.com/science/article/pii/s1083318803001475).

152. Krowchuk DP. Managing adolescent acne: a guide for pediatricians. Pediatr Rev. 2005;26(7):250-61.

153. WHO. Noncommunicable diseases risk behaviours among youth in the South-East Asia Region: findings from GSHS and GYTS. New Delhi: WHO Regional Office for South-East Asia; 2016. (http://apps.who.int/iris/bitstream/10665/249590/1/9789290225232.pdf).

154. Fliege H, Lee J-R, Grimm A, Klapp BF. Risk factors and correlates of deliberate self-harm behavior: a systematic review. Journal of Psychosomatic Research. 2009;66(6):477-93. (http://www.sciencedirect.com/science/article/pii/S0022399908004935).

155. Hawton K, Saunders KEA, O'Connor RC. Self-harm and suicide in adolescents. Lancet. 2012;379(9834):2373-82. (http://www.sciencedirect.com/science/article/pii/S0140673612603225).

156. Jans T, Taneli Y, Warnke A. Suicide and self-harming behaviour. In: Rey JM, editor. IACAPAP e-textbook of child and adolescent mental health. Geneva: International Association for Child and Adolescent Psychiatry and Allied Professions; 2012:1-35. (http://iacapap.org/wp-content/uploads/e.4-suicide-072012.pdf).

157. WHO. Comprehensive and coordinated efforts for the management of autism spectrum disorders: report by the Secretariat. Geneva; 2013. (http://apps.who.int/gb/ebwha/pdf_files/eb133/b133_4-en.pdf).

8. References

158. Women's Refugee Commission. We believe in youth. Global Refugee Youth Consultations final report, November 2016. New York; 2016. (https://www.womensrefugeecommission.org/youth/resources/document/download/1385).

159. WHO. WHO ethical and safety recommendations for researching, documenting and monitoring sexual violence in emergencies. Geneva; 2007. (http://www.who.int/gender/documents/oms_ethics&safety10aug07.pdf). /

160. WHO. The sexual and reproductive health of young adolescents in developing countries: reviewing the evidence, identifying research gaps, and moving the agenda: report of a WHO technical consultation, Geneva, 4–5 November 2010. Geneva; 2011. (http://www.who.int/reproductivehealth/publications/adolescence/rhr_11_11/en/).

161. WHO. Mental health and psychosocial support for conflict-related sexual violence: principles and interventions. Geneva; 2012. (https://www.unicef.org/protection/files/summary_en_.pdf).

162. Save the Children. Every last girl. London; 2016. (http://www.ceipaz.org/images/contenido/every_last_girl.pdf).

163. UNICEF. Children with disabilities. The state of the world's children 2013. New York; 2013. (https://www.unicef.org/sowc2013/files/SWCR2013_ENG_Lo_res_24_Apr_2013.pdf).

164. UNICEF. Ending child marriage: progress and prospects. New York; 2014. (https://www.unicef.org/media/files/child_marriage_report_7_17_lr..pdf).

165. Barker G. What about boys? A literature review on the health and development of adolescent boys. Geneva: WHO; 2000. (http://whqlibdoc.who.int/hq/2000/WHO_FCH_CAH_00.7.pdf).

166. Menstrual Hygiene Scheme. In: National health mission, Rashtriya Kishor Swasthya Karyakram [website]. New Dehli: Ministry of Health and Family Welfare, Government of India; 2012. (http://nrhm.gov.in/nrhm-components/rmnch-a/adolescent-health-rksk/menstrual-hygiene-scheme-mhs/background.html#).

167. WHO. IMAI district clinician manual: hospital care for adolescents and adults. Geneva; 2011. (http://www.who.int/hiv/pub/imai/imai2011/en/).

168. WHO. Global status report on road safety 2013: supporting a decade of action. Geneva; 2013. (http://www.who.int/iris/bitstream/10665/78256/1/9789241564564_eng.pdf?ua=1).

169. WHO. Child development and motorcycle safety. New Delhi: WHO Regional Office for South-East Asia; 2015. (http://www.searo.who.int/entity/disabilities_injury_rehabilitation/documents/childdevandmcsafety2015.pdf?ua=1).

170. WHO. Global report on drowning: preventing a leading killer. Geneva; 2014. (http://www.who.int/violence_injury_prevention/global_report_drowning/final_report_full_web.pdf).

171. WHO. Drowning prevention in the South-East Asia Region–2014. New Delhi: WHO Regional Office for South-East Asia; 2014. (http://www.searo.who.int/entity/disabilities_injury_rehabilitation/documents/infosheetdrowningprevention-sear2014.pdf?ua=1).

172. WHO. A WHO plan for burn prevention and care. Geneva; 2008. (http://apps.who.int/iris/bitstream/10665/97852/1/9789241596299_eng.pdf).

173. WHO. Burning opportunity: clean household energy for health, sustainable development, and wellbeing of women and children. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/204717/1/9789241565233_eng.pdf).

174. Peden M, Scurfield R, Sleet D, Mohan D, Hyder AA, Jarawan E et al. World report on road traffic injury prevention. Geneva: WHO; 2004. (http://cdrwww.who.int/violence_injury_prevention/publications/road_traffic/world_report/intro.pdf).

175. WHO. Burn prevention: success stories and lessons learned. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/97938/1/9789241501187_eng.pdf).

176. WHO. Preventing youth violence: an overview of the evidence. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/181008/1/9789241509251_eng.pdf?ua=1&ua=1&ua=1).

177. Child maltreatment fact sheet (reviewed September 2016). In: WHO media centre [website]. (http://www.who.int/entity/mediacentre/factsheets/fs150/en/).

178. Smith CA, Ireland TO, Thornberry TP. Adolescent maltreatment and its impact on young adult antisocial behavior. Child Abuse & Neglect. 2005;29(10):1099-119. (http://ac.els-cdn.com/s0145213405002097/1-s2.0-s0145213405002097-main.pdf?_tid=ede1cece-185f-11e7-9e14-00000aab0f-6c&acdnat=1491218775_87fbba76035feec14819d8c50a-84d3ad).

179. Roach ES, Golomb MR, Adams R, Biller J, Daniels S, Deveber G et al. Management of stroke in infants and children: a scientific statement from a special writing group of the American Heart Association Stroke Council and the Council on Cardiovascular Disease in the Young. Stroke. 2008;39(9):2644-91. (https://www.ncbi.nlm.nih.gov/pubmed/18635845).

180. WHO. Preventing child maltreatment: a guide to taking action and generating evidence. Geneva; 2006. (http://apps.who.int/iris/bitstream/10665/43499/1/9241594365_eng.pdf).

181. Rothman EF, Butchart A, Cerdá M. Intervening with perpetrators of intimate partner violence: a global perspective. Geneva: WHO; 2003. (http://www.who.int/violence_injury_prevention/resources/publications/en/intervening_full.pdf).

182. WHO. Strengthening care for the injured: success stories and lessons learned from around the world. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44361/1/9789241563963_eng.pdf).

183. WHO, London School of Hygiene and Tropical Medicine. Preventing intimate partner and sexual violence against women: taking action and generating evidence. Geneva: WHO; 2010. (http://www.who.int/violence_injury_prevention/publications/violence/9789241564007_eng.pdf).

184. De Koker P, Mathews C, Zuch M, Bastien S, Mason-Jones AJ. A systematic review of interventions for preventing adolescent intimate partner violence. J Adolesc Health.

2014;54(1):3-13. (http://www.sciencedirect.com/science/article/pii/S1054139X13004606).

185. WHO. Responding to intimate partner violence and sexual violence against women: WHO clinical and policy guidelines. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/85240/1/9789241548595_eng.pdf).

186. WHO. Guidelines for medico-legal care of victims of sexual violence. Geneva; 2003. (http://apps.who.int/iris/bitstream/10665/42788/1/924154628X.pdf).

187. UNESCO. International technical guidance on sexuality education: an evidence-informed approach for schools, teachers and health educators. Paris; 2009. (http://unesdoc.unesco.org/images/0018/001832/183281e.pdf).

188. Fonner VA, Armstrong KS, Kennedy CE, O'Reilly KR, Sweat MD. School based sex education and HIV prevention in low- and middle-income countries: a systematic review and meta-analysis. PLoS One. 2014;9(3):e89692. (http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0089692).

189. UNESCO. Comprehensive sexuality education: a global review 2015. Paris; 2015. (http://unesdoc.unesco.org/images/0023/002357/235707e.pdf).

190. WHO. Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries: what the evidence says. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/70813/1/who_fwc_mca_12_02_eng.pdf).

191. Meuwissen LE, Gorter AC, Knottnerus AJA. Impact of accessible sexual and reproductive health care on poor and underserved adolescents in Managua, Nicaragua: a quasi-experimental intervention study. J Adolesc Health. 2006;38(1):56.e1-e9. (http://ac.els-cdn.com/S1054139X05000273/1-s2.0-S1054139X05000273-main.pdf?_tid=a4f544f8-1863-11e7-914d-00000aab0f6c&acdnat=1491220370_91069469824dde958c9729a9e2f862ed)

192. Crisman B, Dykstra S, Kenny C, O'Donnell M. The impact of legislation on the hazard of female genital mutilation/cutting: regression discontinuity evidence from Burkina Faso. Working paper 432, July 2016. Washington DC: Center for Global development; 2016. (https://www.cgdev.org/sites/default/files/impact-legislation-hazard-female-genital-mutilationcutting-regression-discontinuity.pdf).

193. WHO. WHO guidelines on the management of health complications from female genital mutilation. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/206437/1/9789241549646_eng.pdf).

194. WHO. WHO guidelines on preventing early pregnancy and poor reproductive health outcomes among adolescents in developing countries. Geneva; 2011. (http://www.who.int/immunization/hpv/target/preventing_early_pregnancy_and_poor_reproductive_outcomes_who_2006.pdf).

195. UNICEF. Early marriage: child spouses. Florence; 2001. (https://www.unicef.org/childrenandislam/downloads/early_marriage_eng.pdf).

196. UNFPA. Girlhood, not motherhood: preventing adolescent pregnancy. New York; 2015. (https://www.unfpa.org/sites/default/files/pub-pdf/Girlhood_not_motherhood_final_web.pdf).

197. WHO and UNFPA. Ensuring human rights within contraceptive service delivery: implementation guide. Copenhagen; 2015. (http://apps.who.int/iris/bitstream/10665/158866/1/9789241549103_eng.pdf).

198. WHO. Mental health and psychosocial support for conflict-related sexual violence: 10 myths. Geneva; 2012. (http://www.unicef.org/protection/files/policy_brief_10_myths_english_19-7.pdf).

199. WHO. Sexually transmitted infections (STIs): the importance of a renewed commitment to STI prevention and control in achieving global sexual and reproductive health. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/82207/1/WHO_RHR_13.02_eng.pdf?ua=1).

200. WHO, UNAIDS. A framework for voluntary medical male circumcision: effective HIV prevention and a gateway to improved adolescent boys' & men's health in eastern and southern Africa by 2021. Geneva; 2016. (http://www.ehpsa.org/revhivprev/key-resources/6-voluntary-male-medical-circumcision/framework-2021/211-policy-brief-vmcc-2021-web/file).

201. WHO. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/85321/1/9789241505727_eng.pdf).

202. WHO. WHO policy on collaborative TB/HIV activities: guidelines for national programmes and other stakeholders. Geneva; 2012. (http://www.who.int/tb/publications/2012/tb_hiv_policy_9789241503006/en/).

203. WHO. HIV and young people who sell sex. Technical brief. Geneva; 2015. (http://www.unaids.org/sites/default/files/media_asset/2015_young_people_who_sell_sex_en.pdf)

204. WHO. HIV and young people who inject drugs. Technical brief. Geneva; 2015. (http://www.unaids.org/sites/default/files/media_asset/2015_young_people_drugs_en.pdf).

205. WHO. HIV and young men who have sex with men. Technical brief. Geneva; 2015. (http://www.unaids.org/sites/default/files/media_asset/2015_young_men_sex_with_men_en.pdf).

206. WHO. Technical brief: HIV and young transgender people. Geneva; 2015. (http://www.unaids.org/sites/default/files/media_asset/2015_young_transgender_en.pdf).

207. Government of the Republic of South Africa. A message to educators on tuberculosis. Pretoria: Department of Basic Education; 2015. (http://www.education.gov.za/portals/0/documents/publications/ls%20a%20message%20to%20educators_final.pdf?ver=2015-01-21-141829-000).

208. WHO. Guidance for national tuberculosis programmes on the management of tuberculosis in children. Geneva; second edition 2014. (http://apps.who.int/iris/bitstream/10665/112360/1/9789241548748_eng.pdf).

8. References

209. WHO. Global health sector response to HIV, 2000-2015. Focus on innovations in Africa: progress report. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/198065/1/9789241509824_eng.pdf?ua=1).

210. WHO. Principles and considerations for adding a vaccine to a national immunization programme: from decision to implementation and monitoring. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/111548/1/9789241506892_eng.pdf?ua=1).

211. WHO. WHO cervical cancer prevention and control costing tool (C4P) user's guide. Geneva; 2012. (http://www.who.int/immunization/diseases/hpv/c4p_user_guide_v1.0.pdf).

212. US Department of Health and Human Services Centers for Disease Control and Prevention. HPV vaccine for preteens and teens. Diseases and the vaccines that prevent them: information for parents. Atlanta; 2015. (https://www.cdc.gov/vaccines/parents/diseases/teen/hpv-indepth-color.pdf).

213. Cancer Council Australia. Has the program been successful? In: HIV vaccine [website]. (http://www.hpvvaccine.org.au/the-hpv-vaccine/has-the-program-been-successful.aspx) accessed 4 April 2017.

214. WHO. Malaria prevention and control: an important responsibility of a health-promoting school. Geneva; 2007. (http://apps.who.int/iris/handle/10665/43734).

215. Asthma fact sheet (updated November 2013). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs307/en/).

216. WHO. Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide: global update 2005, summary of risk assessment. Report No. 9289021926. Geneva; 2006. (http://apps.who.int/iris/bitstream/10665/69477/1/who_sde_phe_oeh_06.02_eng.pdf).

217. Ambient (outdoor) air quality and health fact sheet (updated September 2016). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs313/en/).

218. WHO. Preventing diarrhoea through better water, sanitation and hygiene: exposures and impacts in low- and middle-income countries. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/150112/1/9789241564823_eng.pdf).

219. Rickert B. Water safety plan: a field guide to improving drinking-water safety in small communities. WHO Regional Office for Europe. Copenhagen; 2014. (http://www.euro.who.int/__data/assets/pdf_file/0004/243787/water-safety-plan-eng.pdf).

220. WHO, UNICEF. Water, sanitation and hygiene in health care facilities: status in low and middle income countries and way forward. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/154588/1/9789241508476_eng.pdf?ua=1).

221. WHO. Protecting surface water for health. Identifying, assessing and managing drinking-water quality risks in surface-water catchments. Geneva; 2016. (http://apps.who.int/iris/handle/10665/246196).

222. WHO. Sanitation safety planning: manual for safe use and disposal of wastewater, greywater and excreta. Geneva; 2016. (http://www.susana.org/es/recursos/biblioteca/details/2443).

223. WHO. Healthy Nutrition: an essential element of a health-promoting school. Geneva; 1998. (http://www.who.int/hpr).

224. WHO. The physical school environment: an essential component of a health-promoting school. Geneva; 1998. (http://www.who.int/school_youth_health/media/en/physical_sch_environment.pdf).

225. WHO. Local action: creating health promoting schools. Geneva; 2000. (http://www.who.int/school_youth_health/media/en/sch_local_action_en.pdf).

226. WHO. Cholera vaccines: WHO position paper. Geneva; 2010. (http://www.who.int/wer/2010/wer8513.pdf?ua=1).

227. WHO. Investing in water and sanitation: increasing access, reducing inequalities. Special report for the sanitation and water for all (SWA) high-level meeting (HLM) 2014. GLAAS team in the water sanitation, hygiene and health (WSH). Geneva; 2014. (http://www.who.int/water_sanitation_health/glaas/2013/14063_swa_glaas_highlights.pdf).

228. WHO. Diarrhoea: why children are still dying and what can be done. Geneva; 2009. (http://apps.who.int/iris/bitstream/10665/44174/1/9789241598415_eng.pdf).

229. WHO. Meningococcal vaccines: WHO position paper. Geneva; 2011. (http://www.who.int/wer/2011/wer8647.pdf?ua=1).

230. WHO. Managing meningitis epidemics in Africa: a quick reference guide for health authorities and health-care workers. Geneva; revised 2015. (http://apps.who.int/iris/bitstream/10665/154595/1/who_hse_gar_eri_2010.4_rev1_eng.pdf).

231. WHO. Set of recommendations on the marketing of foods and non-alcoholic beverages to children. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44416/1/9789241500210_eng.pdf).

232. The Partnership for Maternal, Newborn & Child Health. PMNCH knowledge summary No. 18. Nutrition. Geneva; 2012. (http://www.who.int/pmnch/knowledge/publications/summaries/ks18.pdf?ua=1).

233. WHO. Global recommendations on physical activity for health. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf).

234. WHO. Implementation tools: package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/133525/1/9789241506557_eng.pdf).

235. WHO. Global status report on noncommunicable diseases 2014. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf?ua=1).

236. WHO. Guideline: daily iron supplementation in adult women and adolescent girls. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/204761/1/9789241510196_eng.pdf?ua=1&ua=1).

237. WHO Regional Office for the Western Pacific. Be smart drink water: a guide for school principals in restricting the sale and marketing of sugary drinks in and around schools. Manila; 2016. (http://iris.wpro.who.int/handle/10665.1/13218).

238. WHO. Promoting physical activity in schools: an important element of a health-promoting school. Geneva; 2007. (http://apps.who.int/iris/bitstre am/10665/43733/1/9789241595995_eng.pdf).

239. WHO. Tobacco use prevention: an important entry point for the development of health-promoting schools. Geneva; 1998. (http://apps.who.int/iris/handle/10665/65608).

240. WHO. Toolkit for delivering the 5A's and 5R's brief tobacco interventions to TB patients in primary care. Geneva; 2014. (http://apps.who.int/iris/bitstre am/10665/112835/1/9789241506953_eng.pdf).

241. WHO. Cancer control: planning. Geneva; 2006. (http://www.who.int/cancer/publications/cancer_control_planning/en/).

242. WHO. Cancer control: prevention. Geneva; 2007. (http://www.who.int/cancer/publications/cancer_control_prevention/en/).

243. WHO. Cancer control: early detection. Geneva; 2007. (http://apps.who.int/iris/bitstream/10665/43743/1/9241547338_eng.pdf).

244. WHO. Cancer control: diagnosis and treatment. Geneva; 2008. (https://www.cabdirect.org/cabdirect/abstract/20083162695).

245. WHO. Cancer control: palliative care. Geneva; 2007. (http://www.who.int/cancer/publications/cancer_control_palliative/en/).

246. WHO. Cancer control: policy and advocacy. Geneva; 2008. (http://www.who.int/cancer/publications/cancer_control_advocacy/en/).

247. Abdul Rahim O, Al-Hafez G. Health education for adolescent girls. WHO Regional Office for the Eastern Mediterranean. Cairo; 2006.

248. WHO Regional Office for Europe. Youth-friendly health policies and services in the European region: sharing experiences. Copenhagen; 2010.

249. WHO. Self care for health. New Delhi: WHO Regional Office for South-East Asia; 2013.

250. WHO. Health education of adolescents: guidelines for parents, teachers, health workers and the media. Geneva; 2006. (http://apps.who.int/iris/bitstream/10665/119824/1/dsa723.pdf).

251. de Bes J, Legierse CM, Prinsen CA, de Korte J. Patient education in chronic skin diseases: a systematic review. Acta Derm Venereol. 2011; 91(1):12-7.

252. WHO Regional Office for Africa. The health of the people: what works – the African regional health report 2014. Brazzaville; 2014. (http://apps.who.int/iris/bitstre am/10665/137377/4/9789290232612.pdf).

253. WHO. Intermittent iron and folic acid supplementation in menstruating women: guideline. Geneva; 2011.

254. WHO Regional Office for Africa. Sickle cell disease: a strategy for the WHO African Region. Report of the regional director. Brazzaville; 2010. (http://www.afro.who.int/index.php?option=com_docman&task=doc_download&gid=5436).

255. Gutenbrunner C, Negrini S, Kiekens C, Zampolini M, Nugraha B. The global disability action plan 2014–2021 of the World Health Organization (WHO): a major step towards better health for all people with disabilities. Chance and challenge for physical and rehabilitation medicine (PRM). Eur J Phys Rehabil Med.2015; 51:1-4.

256. WHO. World report on disability 2011. Geneva; 2011. (http://www.who.int/disabilities/world_report/2011/report.pdf).

257. Quint EH. Adolescents with special needs: clinical challenges in reproductive health care. J Pediatr Adolesc Gynecol. 2016;29(1):2-6. (http://ac.els-cdn.com/s1083318815002053/1-s2.0-s1083318815002053-main.pdf).

258. WHO. Psychosocial interventions, treatment of emotional disorders. Geneva: Mental health gap action programme (mhGAP); updated 2015. (http://www.who.int/mental_health/mhgap/evidence/resource/child_q14.pdf?ua=1).

259. WHO. Promoting rights and community living for children with psychosocial disabilities. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/184033/1/9789241565004_eng.pdf?ua=1).

260. WHO. Summaries of projects in developing countries assisting the parents of adolescents. Geneva; 2007. (http://apps.who.int/iris/bitstream/10665/43707/1/9789241595667_eng.pd).

261. WHO. Update of the mental health gap action programme (mhGAP) guidelines for mental, neurological and substance use disorders. Geneva; 2015. (http://apps.who.int/iris/bitstre am/10665/204132/1/9789241549417_eng.pdf?ua=1).

262. WHO. Prevention of mental disorders: effective interventions and policy options: summary report. Geneva; 2004. (http://apps.who.int/iris/handle/10665/43027).

263. WHO. Psychosocial interventions for treatment of behavioural disorders. Geneva; updated 2015. (http://www.portal.pmnch.org/mental_health/mhgap/evidence/resource/child_q5.pdf).

264. WHO. Prevention of psychoactive substance use. A selected review of what works in the area of prevention. Geneva; 2002. (http://www.who.int/mental_health/evidence/en/prevention_intro.pdf).

265. WHO. A training package on substance use, sexual and reproductive health including HIV/AIDS and STDs. Geneva; 2000. (http://apps.who.int/iris/bitstream/10665/66756/4/who_msd_mdp_00.14_module3.pdf).

266. Humeniuk R et al. The alcohol, smoking and substance involvement screening test (ASSIST): manual for use in primary care. Geneva: WHO; 2010. (http://apps.who.int/iris/bitstre am/10665/44321/1/9789241599399_eng.pdf).

8. References

267. WHO. Mental health in emergencies: mental and social aspects of health of populations exposed to extreme stressors. Geneva; 2003. (http://apps.who.int/iris/handle/10665/67866).

268. WHO. Psychological first aid: guide for field workers. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44615/1/9789241548205_eng.pdf).

269. WHO. 2015 WHO humanitarian response: summary of health priorities and WHO projects in interagency strategic response plans for humanitarian assistance to protracted emergencies. Geneva; 2015. (http://www.who.int/hac/who_humanitarian_response_plans2015.pdf).

270. UNICEF. Adolescent programming experiences during conflict and post-conflict: case studies; 2004. (https://www.unicef.org/adolescent_conflict(1).pdf).

271. Millstein S, Petersen A, Nightingale E, editors. Promoting the health of adolescents: new directions for the twenty-first century. Oxford University Press on Demand; 1994.

272. Alderman E, Rieder J, Cohen M. The history of adolescent medicine. Pediatr Res. 2003;54(1):137-47. (http://www.nature.com/pr/journal/v54/n1/pdf/pr2003374a.pdf).

273. WHO. The world health report: 1998: life in the 21st century: a vision for all. Report of the director-general. Geneva; 1998. (http://apps.who.int/iris/handle/10665/42065).

274. WHO Regional Office for the Eastern Mediterranean. Summary report on the regional workshop on adolescent health situation analysis and core indicators. Cairo; 2012. (http://applications.emro.who.int/docs/ic_meet_rep_2012_en_14636.pdf).

275. Republic of Zambia, Ministry of Health and WHO. Draft report situation analysis: adolescent health in Zambia. Lusaka; 2009.

276. Republic of Zambia, Ministry of Health. Adolescent health strategic plan: 2011 to 2015. Lusaka; 2012. (http://www.bettercarenetwork.org/sites/default/files/zambia%20-%20adolescent%20health%20strategic%20plan%202011-2015.pdf).

277. Scottish Executive. Delivering a healthy future. An action framework for children and young people's health in Scotland: a draft for consultation. Edinburgh; 2006. (http://www.gov.scot/resource/doc/110080/0026619.pdf).

278. Barnekow V, Smith L, Simonelli F, Majer K, Fernandes Guerreiro A. Development of national strategies – case studies from five countries: WHO Regional Office for Europe: Copenhagen; 2008. (http://apps.who.int/iris/bitstream/10665/107921/1/e92117.pdf).

279. Scottish Government. Supporting young people's health & wellbeing a summary of Scottish Government policy. Edinburgh; 2013. (http://www.gov.scot/resource/0041/00418332.pdf).

280. Government of Mongolia, Ministry of Health. Health sector strategic master plan 2006-2015. Ulaanbaatar; 2015. (http://www.wpro.who.int/health_services/mongolia_nationalhealthplan.pdf).

281. Kirby D. BDI logic models: a useful tool for designing, strengthening and evaluating programs to reduce adolescent sexual risk-taking, pregnancy, HIV and other STDs. Scotts Valley: ETR Associates; 2004. (http://recapp.etr.org/recapp/documents/bdilogicmodel20030924.pdf).

282. WHO. Accelerating implementation of adolescent friendly health services (AFHS) in the South-East Asia region. Report of the meeting of the national adolescent health programme managers in member countries of the South-East Asia region, Bali, Indonesia, 12–15 February 2008. New Delhi: WHO Regional Office for South-East Asia; 2008. (http://apps.who.int/iris/bitstream/10665/204739/1/b3251.pdf).

283. Royal Government of Bhutan, Ministry of Education, Department of Youth and Sports. National youth policy. Thimphu; 2011. (http://www.gnhc.gov.bt/wp-content/uploads/2012/04/inside-national-youth-policy.pdf).

284. Royal Government of Bhutan. National strategic plan for HIV/AIDS (2011-2015). Thimphu; 2011.

285. Royal Government of Bhutan. National standards and implementation guide for youth friendly health services. Thimphu; 2011. (http://hivhealthclearinghouse.unesco.org/sites/default/files/resources/iiep_yfhsguide.pdf).

286. Royal Government of Bhutan Ministry of Health. National adolescent health strategic plan: 2013-2018. Thimphu; 2013. (http://www.health.gov.bt/wp-content/uploads/ftps/iec/national%20adolescent%20health%20strategic%20plan%202013-2018.pdf).

287. Save the Children USA and UNFPA. Adolescent sexual and reproductive health toolkit for humanitarian settings: a companion to the inter-agency field manual on reproductive health in humanitarian settings. Westport; 2009. (https://www.unfpa.org/sites/default/files/pub-pdf/unfpa_asrhtoolkit_english.pdf).

288. WHO Regional Office for the Western Pacific. Giving adolescents a voice. Conducting a rapid assessment of adolescent health needs: a manual for health planners and researchers. Manila; 2001. (http://apps.who.int/iris/bitstream/10665/207047/1/9290611596_eng.pdf).

289. WHO Regional Office for the Eastern Mediterranean. A regional guide to conducting an adolescent health situation analysis. Cairo; 2011. (http://applications.emro.who.int/dsaf/emropub_2011_1268.pdf).

290. Health systems strengthening glossary. In: WHO health systems [website]. (http://www.who.int/healthsystems/hss_glossary/en/index8.html).

291. WHO. Intersectoral action for health: a cornerstone for health-for-all in the twenty-first century. Halifax; 1997 (http://apps.who.int/iris/handle/10665/55730?locale=en&locale=en&null).

292. WHO. Practising a health in all policies approach: lessons for universal health coverage and health equity: a policy briefing for ministries of health based on experiences from Africa, South-East Asia and the Western Pacific. Geneva;

2013. (http://apps.who.int/iris/bitstre am/10665/105529/1/9789241506632_eng.pd-f?ua=1&ua=1).

293. Hadley A, Chandra-Mouli V, Ingham R. Implementing the United Kingdom Government's 10-year teenage pregnancy strategy for England (1999–2010): applicable lessons for other countries. J Adolesc Health. 2016;59(1):68-74.(http://ac.els-cdn.com/s1054139x16001026/1-s2.0-s1054139x16001026-main.pdf?_tid=2c455f7a-1953-11e7-bf38-00000aab0f6b&acd-nat=1491323247_5dba22d112ffc975d6bb72faaad82ce4).

294. Hadley A, Ingham R, Chandra-Mouli V. Implementing the United Kingdom's ten-year teenage pregnancy strategy for England (1999–2010): how was this done and what did it achieve? Reproductive Health. 2016;13(1):139. DOI 10.1186/s12978-016-0255-4. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc5120422/pdf/12978_2016_arti-cle_255.pdf).

295. Public Health Agency of Canada. Toward health equity: Canadian approaches to the health sector role. Ottawa; 2014. (http://www.who.int/social_determinants/publica-tions/64-03-towards-health-equity-en-final.pdf)

296. The United Nations Interagency Task Force on Adolescent Girls. Girl power and potential: a joint programming frame-work for fulfilling the rights of marginalized adolescent girls. ILO, UNESCO, UNFPA, UNICEF, UNIFEM, WHO; 2009. (http://www.unfpa.org/sites/default/files/pub-pdf/ungirls-jointframeworkpdf.pdf).

297. United Nations. World Youth Report. Young people's transi-tion to adulthood: progress and challenges. New York; 2007. (http://www.un.org/esa/socdev/unyin/documents/wyr07_complete.pdf).

298. Asker S, Gero A. The role of child and youth participation in development effectiveness: a literature review. Surry Hills: University of Technology and Child Fund Australia; 2012. (https://www.unicef.org/adolescence/cypguide/files/role_of_child_and_youth_participation_in_development_effectiveness.pdf).

299. Social participation. In: WHO social determinants of health [website]. (http://www.who.int/social_determinants/thecom-mission/countrywork/within/socialparticipation/en/).

300. EWEC, WHO. Operational framework for the Global Strategy for Women's, Children's and Adolescents' Health. New York; 2016. (http://www.who.int/life-course/partners/global-strate-gy/ewec-operational-framework/en/).

301. Health for the world's adolescents: a second chance in the second decade [website]. Geneva: WHO; 2014. (http://apps.who.int/adolescent/second-decade/).

302. Waddington C, Sambo C. Financing health care for adoles-cents: a necessary part of universal health coverage. Bull World Health Organ. 2015;93(1):57-9. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc4271683/pdf/blt.14.139741.pdf).

303. Geissler P, Nokes K, Prince R, Achieng'Odhiambo R, Aa-gaard-Hansen J, Ouma J. Children and medicines: self-treat-ment of common illnesses among Luo schoolchildren in west-ern Kenya. Social Science & Medicine. 2000;50(12):1771-83. (http://ac.els-cdn.com/s0277953699004281/1-s2.0-s0277953699004281-main.pdf?_tid=29ae4b7c-1959-11e7-a9a0-00000aab0f27&acdnat=1491325820_94f1c15e0c-737ca45267eaaa729b6e32).

304. Geissler P, Meinert L, Prince R, Nokes C, Aagaard-Hansen J, Jitta J et al. Self-treatment by Kenyan and Ugandan schoolchildren and the need for school-based education. Health Policy Plan. 2001;16(4):362-71.) (https://oup.sil-verchair-cdn.com/oup/backfile/Content_public/Journal/heapol/16/4/10.1093_heapol_16.4.362/1/160362.pdf?Expires=1491814154&Signature=Mk44nEqJM-0dq5SHsyNVHhw8EqsKlBE~CYRMALieVwGQTBrx-98AM4z-DHYitobZacTYja0La~dklwkkJf2k6dG4CdW9Tn-w5gY9zansB6cjU0haLNJvMOFEw1zmvmPDLJAgOk4or-3TRYL5rqgh8OJHSFdWzHVsp6rxTCcPakF77KbrE~J4DeT6j~-gevp2YhxxcZquOv6EuDbOR7RBInTOuUr8oAv9BV-lo54Ip98ng4DCjCW4JbfhLWJO05OKE3rEdEkpEpp88aeijl-YzyTTh7RnkejViM12YUhhhSGT93yYwC~jQJVPXwJJaJ4PC-nAaS9JGioywMRiPlGZWKi16GAIBA__&Key-Pair-Id=APKAI-UCZBIA4LVPAVW3Q).

305. Hampshire K, Porter G, Owusu S, Tanle A, Abane A. Out of the reach of children? Young people's health-seeking practices and agency in Africa's newly-emerging ther-apeutic landscapes. Soc Sci Med. 2011;73(5):702-10. (http://ac.els-cdn.com/S027795361100400X/1-s2.0-S027795361100400X-main.pdf?_tid=e027c14e-1959-11e7-9fb6-00000aacb360&acdnat=1491326126_cb044ea15f16f-c5d8a1e9e3ad22816d3).

306. Rainey D, Brandon D, Krowchuk D. Confidential bill-ing accounts for adolescents in private practice. J Ado-lesc Health. 2000;26(6):389-91. (http://ac.els-cdn.com/S1054139X99000798/1-s2.0-S1054139X99000798-main.pdf?_tid=2f4fc064-195a-11e7-8bf8-00000aacb361&acd-nat=1491326259_74b0ee2ea0250f2feaf1153c6c484631).

307. Anderson I, Maliqi B, Axelson H, Ostergren M. How can health ministries present persuasive investment plans for women's, children's and adolescents' health? Bull World Health Organ. 2016;94(6):468-74. (http://cdrwww.who.int/bulletin/volumes/94/6/15-168419.pdf).

308. Water-related diseases: anaemia fact sheet. In: WHO water sanitation hygiene [website]. (http://www.who.int/water_sani-tation_health/diseases-risks/diseases/anemia/en/).

309. Rajan D, Barroy H, Stenberg K. Budgeting for health. In: Strategizing national health in the 21st century: a handbook. Geneva: WHO; 2016. (http://www.who.int/healthsystems/publications/nhpsp-handbook/en/).

310. WHO. Public health agencies and cash transfer programmes: making the case for greater involvement. Geneva; 2011.(http://www.who.int/iris/handle/10665/44797).

8. References

311. WHO. OneHealth Tool: supporting integrated strategic health planning, costing and health impact analysis. Geneva; 2013. (http://www.who.int/choice/onehealthtool/onehealth_tool_supporting_integrated_strategic_health_planning.pdf)

312. WHO. Gender mainstreaming for health managers: a practical approach. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44516/1/9789241501071_eng.pdf).

313. Health financing for universal health coverage. In: WHO programmes [website]. (http://www.who.int/health_financing/universal_coverage_definition/en/).

314. WHO. A framework for national health policies, strategies and plans. Geneva; 2010. (http://www.who.int/nationalpolicies/frameworknhpsp_final_en.pdf).

315. UNICEF, WHO. Progress on sanitation and drinking water – 2015 update and MDG assessment. New York; 2015. (https://www.unicef.org/publications/index_82419.html).

316. 64th World Health Assembly. Agenda item 13.4. Strengthening national health emergency and disaster management capacities and resilience of health systems. WHA64.10. 24 May 2011. (http://apps.who.int/iris/bitstream/10665/3566/1/A64_R10-en.pdf).

317. Convention on the Rights of Persons with Disabilities. In: United Nations Division for Social Policy and Development Disabilities CRPD [website]. (https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html).

318. WHO. Nutrition in adolescence – Issues and Challenges for the Health Sector Issues in Adolescent Health and Development. Geneva; 2005. (http://apps.who.int/iris/bitstream/10665/43342/1/9241593660_eng.pdf).

319. Baltag V, Sawyer SM. Quality healthcare for adolescents. In: Cherry A, Baltag V, Dillon M, editors. International handbook on adolescent health and development: the public health response. Heidelberg: Springer; 2016. (http://www.springer.com/us/book/9783319407418).

320. The Republic of Moldova, Ministry of Health. Continuous professional education program for doctors and pharmacists. Chişinău; 2016. (http://educatiecontinua.usmf.md/wp-content/blogs.dir/146/files/sites/146/2013/10/programul-fecmf-2016.doc)

321. Zaborskis A, Veryga A, Zemaitiene N, Zuoza R, Gaizauskiene A, Petkevicius R, Laukaitiene A. Lithuania: mediating the effects of alcohol and traffic safety control and policies . In: WHO 2010. Socio-environmentally determined health inequities among children and adolescents: summary of outcomes, background papers and country case studies. Copenhagen: WHO Regional Office for Europe; 2010. (http://www.euro.who.int/__data/assets/pdf_file/0009/135891/e94866.pdf).

322. Nair M, Baltag V, Bose K, Boschi-Pinto C, Lambrechts T, Mathai M. Improving the quality of health care services for adolescents, globally: a standards-driven approach. J Adolesc Health. 2015 Sep:57(3):288-298. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc4540599/).

323. WHO, UNAIDS. Global standards for quality health-care services for adolescents: a guide to implement a standards-driven approach to improve the quality of health care services for adolescents. Volume2: implementation guide. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/183935/4/9789241549332_vol2_eng.pdf).

324. Bundy DAP, de Silva N, Horton S, Patton GC, Jamison DT, editors. Disease control priorities. Third edition. Volume 8: child and adolescent health and development. Washington DC: World Bank; 2017 (in press).

325. Argentine Republic, Ministry of Health. Programa nacional de salud integral en la adolescencia (PNSIA: national programme for integrated adolescent health). Personal communication to the author, 23 November 2016.

326. UNESCO, UNODC, WHO. Education sector responses to the use of alcohol, tobacco and drugs: good policy and practice in health education. Paris; 2017. (http://unesdoc.unesco.org/images/0024/002475/247509e.pdf).

327. 67th World Health Assembly. Contributing to social and economic development: sustainable action across sectors to improve health and health equity. 24 May 2014. Agenda item 14.6. (http://apps.who.int/gb/ebwha/pdf_files/wha67/a67_r12-en.pdf).

328. WHO. Demonstrating a health in all policies analytic framework for learning from experiences: based on literature reviews from Africa, South-East Asia and the Western Pacific. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/104083/1/9789241506274_eng.pdf).

329. UNESCO. Strategic planning concept and rationale. Paris: International Institute for Educational Planning; 2010. (http://unesdoc.unesco.org/images/0018/001897/189757e.pdf).

330. WHO. Children and radiation: children's health and the environment. WHO training package for the health sector. Geneva; 2016. (http://www.who.int/ceh/capacity/radiation.pdf).

331. Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Social determinants of health discussion paper 2 (policy and practice). Geneva: WHO; 2010. (http://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf).

332. Health impact assessment. In: WHO programmes [website]. (http://www.who.int/hia/tools/process/en/) accessed 16 March 2017.

333. UNESCO. Developing an education sector response to early and unintended pregnancy: discussion document for a global consultation, November 2014. Paris; 2014. (http://unesdoc.unesco.org/images/0023/002305/230510E.pdf).

334. UNESCO. Substance use prevention in educational settings in Eastern Europe and Central Asia: a review of policies and practices. UNESCO Office in Moscow; 2015. (http://iite.unesco.org/pics/publications/en/files/3214742.pdf).

335. WHO. Social determinants of health. Sectoral briefing series 4. Social protection: shared interests in vulnerability reduction and development. Geneva; 2012. (http://apps.who.int/iris/bitstream/10665/44876/1/9789241503655_eng.pdf).

336. ITU, UNICEF. Guidelines for industry on child online protection. Geneva; 2015. (https://www.unicef.org/csr/files/cop_guidelines_english.pdf).

337. WHO. Social determinants of health. Sectoral briefing series 3. Transport (road transport): shared interests in sustainable outcomes. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44749/1/9789241502580_eng.pdf).

338. WHO. Social determinants of health. Sectoral briefing series 3. Housing: shared interests in health and development. Geneva; 2011. (http://apps.who.int/iris/handle/10665/44705).

339. WHO. Social determinants of health. Sectoral briefing series 5. Energy: shared interests in sustainable development and energy services. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/91591/1/9789241506199_eng.pdf).

340. UNODC. Model strategies and practical measures on the elimination of violence against children in the field of crime prevention and criminal justice. New York; 2015. (https://www.unodc.org/documents/justice-and-prison-reform/14-08451_strategy_ebook.pdf).

341. WHO. Global health sector response to HIV, 2000-2015 Focus on innovations in Africa: progress report. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/198065/1/9789241509824_eng.pdf).

342. WHO. Health in prisons: a WHO guide to the essentials in prison health. Copenhagen; WHO Regional Office for Europe; 2007. (http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf).

343. Prüss-Üstün A, Corvalán C. Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks (second edition). Geneva: WHO; 2016. (http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf?ua=1)

344. WHO. Reducing harm from alcohol use: good practices. New Delhi: WHO Regional Office for South-East Asia; 2009. (http://apps.who.int/iris/bitstream/10665/205737/1/b4955.pdf)

345. WHO. Beginning with the end in mind: planning pilot projects and other programmatic research for successful scaling up. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44708/1/9789241502320_eng.pdf).

346. WHO. Health for the world's adolescents: a second chance in the second decade. In: Global Health Observatory visualizations [website]. (http://apps.who.int/gho/data/view.wrapper.MortAdov?lang=en&menu=hide) accessed 14 March 2017.

347. Das J, Salam R, Arshad A, Finkelstein Y, Bhutta Z. Interventions for adolescent substance abuse: an overview of systematic reviews. J of Adolesc Health. 2016;59(4):61-75. (http://www.sciencedirect.com/science/article/pii/S1054139X16301677).

348. Das J, Salam R, Arshad A, Lassi Z, Khan M, Mahmood W et. al. Interventions for adolescent mental health: an overview of systematic reviews. J Adolesc Health. 2016; 59(4):49-60. (http://www.sciencedirect.com/science/article/pii/S1054139X16301677).

349. Das J, Salam R, Arshad A, Lassi Z, Bhutta Z. Systematic review and meta-analysis of interventions to improve access and coverage of adolescent immunizations. J Adolesc Health. 2016;59(4):40-48. (http://www.sciencedirect.com/science/article/pii/S1054139X16301768).

350. Langford R, Bonell C, Jones H, Pouliou T, Murphy S, Waters E et al. The WHO health promoting school framework for improving the health and well-being of students and their academic achievement. Cochrane Database Syst Rev. 2014(4):CD008958. (http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008958.pub2/pdf).

351. Salam R, Faqqah A, Sajjad N, Lassi Z, Das J, Kaufman M et al. Improving adolescent sexual and reproductive health: a systematic review of potential interventions. J Adolesc Health. 2016;59(4):11-28. (http://www.sciencedirect.com/science/article/pii/S1054139X16301689).

352. Salam R, Hooda M, Das J, Arshad A, Lassi Z, Middleton P et al. Interventions to improve adolescent nutrition: a systematic review and meta-analysis. J Adolesc Health. 2016;59(4):29-39. (http://www.sciencedirect.com/science/article/pii/S1054139X16301690).

353. WHO. Education: shared interests in well-being and development. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44737/1/9789241502498_eng.pdf).

354. Republic of Rwanda, Ministry of Education. National school health policy. Kigali; 2014. (http://www.mineduc.gov.rw/fileadmin/health_1.pdf).

355. UNODC. International standards on drug use prevention. Vienna; 2015. (https://www.unodc.org/documents/prevention/unodc_2013_2015_international_standards_on_drug_use_prevention_e.pdf).

356. Duffy M, Lamstein S, Lutter C, Koniz-Booher P. Review of programmatic responses to adolescent and women's nutritional needs in low and middle income countries. Arlington: USAID and the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project; 2015. (https://www.spring-nutrition.org/sites/default/files/publications/reports/spring_review_programmatic_responses.pdf).

357. Child Protection Working Group. Minimum standards for child protection in humanitarian action. Geneva; 2012. (https://www.unicef.org/iran/Minimum_standards_for_child_protection_in_humanitarian_action.pdf).

358. WHO. Autism spectrum disorders and other developmental disorders: from raising awareness to building capacity. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/103312/1/9789241506618_eng.pdf).

359. WHO. Preventing suicide: a global imperative. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/131056/1/9789241564779_eng.pdf?ua).

360. WHO. Strengthening intersectoral collaboration for adolescent health: report of a meeting of regional programme managers, New Delhi; 25–27 November 2014. New Dehli; 2016. (http://apps.who.int/iris/handle/10665/204359).

8. References

361. International Network for Education in Emergencies. INEE minimum standards for education: preparedness, response, recovery. New York; 2010. (http://toolkit.ineesite.org/toolkit/ineecms/uploads/1012/inee_guidebook_en_2012%20lores.pdf).

362. WHO. Innovative care for chronic conditions. Building blocks for actions: global report. Geneva; 2002. (http://apps.who.int/iris/handle/10665/42500).

363. Save the Children. Delivering education for children in emergencies: a key building block for the future. London; 2008 (http://www.savethechildren.org/atf/cf/%7b9def2ebe-10ae-432c-9bd0-df91d2eba74a%7d/delivering_education_emergencies.pdf).

364. International Network for Education in Emergencies. Guidelines for child friendly spaces in emergencies. New York; 2011 (https://www.unicef.org/protection/child_friendly_spaces_guidelines_for_field_testing.pdf).

365. Inter-Agency Task Team on HIV and Young People. Guidance brief. New York; 2008. (http://www.who.int/maternal_child_adolescent/documents/iatt_hivandyoungpeople/en/).

366. Inter-Agency Standing Committee. Guidelines for HIV/AIDS interventions in emergency settings. Geneva; 2003. (http://data.unaids.org/publications/external-documents/iasc_guidelines-emergency-settings_en.pdf).

367. WHO. Les nouvelles stratégies nationales de santé scolaire et de promotion de la santé des jeunes ont été diffusées. In: Maroc; WHO Regional Office for the Eastern Mediterranean [website]. (http://www.emro.who.int/fr/mor/morocco-news/diffusion-de-nouvelles-strategies-nationales-de-sante-scolaire-et-de-promotion-de-la-sante-des-jeunes.html) accessed 16 March 2017.

368. WHO. Health programme evaluation: guiding principles for its application in the managerial process for national health development. Geneva; 1981. (http://www.who.int/iris/handle/10665/40674).

369. WHO. Monitoring, evaluation and review of national health strategies. A country-led platform for information and accountability. Geneva; 2011. (http://www.who.int/healthinfo/country_monitoring_evaluation/1085_IER_131011_web.pdf).

370. EWEC. Indicator and monitoring framework for the Global Strategy for Women's, Children's and Adolescents' health. New York; 2016. (http://www.who.int/life-course/publications/gs-Indicator-and-monitoring-framework.pdf).

371. Vu L, Pulerwitz J, Burnett-Zieman B, Banura C, Okal J, Yam E. Inequitable gender norms from early adolescence to young adulthood in Uganda: tool validation and differences across age groups. J Adolesc Health. 2017;60(2):15-21. (http://www.sciencedirect.com/science/article/pii/S1054139X16303767).

372. WHO. World handbook on health inequality monitoring: with a special focus on low- and middle-income countries. Geneva; 2013. (http://www.who.int/gender-equity-rights/understanding/health-inequality/en/).

373. OECD. Principles for evaluation of development assistance. Paris; 1991.(https://www.oecd.org/development/evaluation/2755284.pdf).

374. Dickson K, Ashton J, Smith J. Does setting adolescent-friendly standards improve the quality of care in clinics? Evidence from South Africa. Int J Qual Health Care. 2007;19(2):80-9. (https://academic.oup.com/intqhc/article-lookup/doi/10.1093/intqhc/mzl070).

375. Barua A, Chandra-Mouli V. The Tarunya project's efforts to improve the quality of adolescent reproductive and sexual health services in Jharkhand state, India: a post-hoc evaluation. Int J Adoles Med Health. 2016. (https://www.degruyter.com/downloadpdf/j/ijamh.ahead-of-print/ijamh-2016-0024/ijamh-2016-0024.pdf).

376. UNESCO. International technical guidance on sexuality education. Volume I: the rationale for sexuality education. Paris; 2009. (http://unesdoc.unesco.org/images/0018/001832/183281e.pdf).

377. Hoopes A, Agarwal P, Bull S, Chandra-Mouli V. Measuring adolescent friendly health services in India: a scoping review of evaluations. Reproductive Health. 2016;13(1):137. (https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-016-0251-8).

378. Hindin M, Christiansen C, Ferguson B. Setting research priorities for adolescent sexual and reproductive health in low-and middle-income countries. Bull World Health Organ. 2013;91(1):10-8. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3537249/pdf/blt.12.107565.pdf).

379. Nagata J, Ferguson B, Ross D. Research priorities for eight areas of adolescent health in low-and middle-income countries. J Adolesc Health. 2016;59(1):50-60. (http://www.sciencedirect.com/science/article/pii/s1054139x16000951).

380. Rudan I, Gibson J, Ameratunga S, Arifeen S, Bhutta Z, Black M et al. Setting priorities in global child health research investments: guidelines for implementation of CHNRI method. Croatian Medical Journal. 2008;49(6):720-33. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2621022/pdf/CroatMedJ_49_0720.pdf).

381. Villa-Torres L, Svanemyr J. Ensuring youth's right to participation and promotion of youth leadership in the development of sexual and reproductive health policies and programs. J Adolesc Health. 2015;56(1):51-7. (https://www.ncbi.nlm.nih.gov/pubmed/25528979).

382. YouthNet, Family Health International, Advocates for Youth. Youth participation guide: assessment, planning, and implementation. Arlington; 2005. (https://www.advocatesforyouth.org/publications/publications-a-z/1652-youth-participation-guide-assessment-planning-and-implementation).

383. IHP+, WHO. Monitoring, evaluation and review of national health strategies: a country-led platform for information and accountability. Geneva; 2011. (https://www.internationalhealthpartnership.net/fileadmin/uploads/ihp/documents/tools/m_e_framework/m%26e.framework.2011.pdf).

384. WHO. Technical consultation on indicators of adolescent health. WHO, Geneva, Switzerland, 30 September – 1 October 2014. Geneva; 2015. (http://www.who.int/maternal_child_adolescent/documents/adolescent-health-technical-consultation/en/).

385. UNESCO, WHO, UNICEF, UNODC, EDC, PDCP et al. Monitoring and evaluation guidance for school health programs thematic indicators supporting FRESH (focusing resources on effective school health). New York; 2014. (https://www.unicef.org/lifeskills/files/freshdocument.pdf).

386. UNESCO, WHO, UNICEF, UNODC, EDC, PDCP et al. Monitoring and evaluation guidance for school health programs eight core indicators to support FRESH. New York; 2014. (http://hivhealthclearinghouse.unesco.org/sites/default/files/resources/fresh_m%26e_core_indicators.pdf).

387. Baltag V, Servili C, Macintyre A. Adolescent mental health: new hope for a "Survive, Thrive and Transform" policy response. Journal of Public Mental Health. 2016;15(1):63-70. (http://www.emeraldinsight.com/doi/abs/10.1108/jpmh-12-2015-0054).

388. Rehm J, Mathers C, Popova S, Thavorncharoensap M, Teerawattananon Y, Patra J. Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. Lancet. 2009;373(9682):2223-33. (http://www.thelancet.com/journals/lancet/article/piis0140-6736(09)60746-7/abstract).

389. 68th World Health Assembly, Geneva, 18–26 May 2015. resolutions and decisions: annexes. WHA68/2015/REC/1. (http://apps.who.int/gb/ebwha/pdf_files/wha68-rec1/a68_r1_rec1-en.pdf).

390. Population Reference Bureau. Ending female genital mutilation/cutting: lessons from a decade of progress. Washington DC; 2013. (http://www.prb.org/pdf14/progress-ending-fgm.pdf).

391. WHO, The Partnership for Maternal, Newborn & Child Health, UNICEF, UNFPA, The World Bank, UN Women, UNAIDS, Countdown to 2030, Health Data Collaborative. Country data, universal accountability: monitoring priorities for the global strategy for women's, children's and adolescents' health (2016–2030). Geneva; 2016. (http://www.who.int/life-course/partners/global-strategy/gs-monitoring-readiness-report.pdf).

392. WHO. Recommendations on maternal and perinatal health. Geneva; 2013. (http://www.who.int/maternal_child_adolescent/documents/guidelines-recommendations-maternal-health.pdf?ua=1).

393. Family planning/contraception fact sheet (updated December 2016). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs351/en/).

394. WHO. HIV treatment and care. What's new in adolescent treatment and care; factsheet. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/204460/1/WHO_HIV_2015.45_eng.pdf).

395. WHO. WHO recommendations on health promotion interventions for maternal and newborn health. Geneva; 2015. (http://www.who.int/maternal_child_adolescent/documents/health-promotion-interventions/en/).

396. Svanemyr J, Venkatraman C-M, Raj A, Travers E and Sundaram L. Research priorities on ending child marriage and supporting married girls. Reprod. Health. 2015, 12:80. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4558638/pdf/12978_2015_Article_60.pdf).

397. WHO. WHO recommendations for routine immunization: a user's guide to the summary tables (updated 4 October 2012). Geneva; 2012. (http://www.who.int/immunization/policy/immunization_tables/en/).

398. WHO. Training package for health care providers In: children's environmental health [website].(http://www.who.int/ceh/capacity/trainpackage/en/) accessed 5 April 2017.

399. WHO. Community genetics services: report of a WHO consultation on community genetics. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44532/1/9789241501149_eng.pdf).

400. Murphy N, Young PC. Sexuality in children and adolescents with disabilities. Developmental Medicine & Child Neurology. 2005;47(9):640-4. (http://onlinelibrary.wiley.com/doi/10.1111/j.1469-8749.2005.tb01220.x/pdf).

401. WHO. The ASSIST-linked brief intervention for hazardous and harmful substance use: manual for use in primary care. Geneva; 2010 (http://apps.who.int/iris/bitstream/10665/44321/1/9789241599399_eng.pdf).

402. WHO. Working with street children. A training package on substance use, sexual and reproductive health including HIV/AIDS and STDs. Module 3: understanding substance use among street children. Geneva; 2010. (http://www.who.int/substance_abuse/activities/street_children/en/).

403. The Global Fund. Maximizing impact by addressing adolescents' needs in Global Fund concept notes: strategic investments for adolescents In HIV, tuberculosis and malaria programs. Geneva: 2016. (http://www.theglobalfund.org/documents/core/infonotes/core_adolescents_infonote_en).

404. WHO. Sexual and reproductive health during protracted crises and recovery. Geneva 2011. (http://apps.who.int/iris/bitstream/10665/70762/1/who_hac_bro_2011.2_eng.pdf).

405. WHO. Ensuring human rights in the provision of contraceptive information and services. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/102539/1/9789241506748_eng.pdf)

406. WHO. Reproductive, maternal, newborn and child health and human rights: a toolbox for examining laws, regulations and policies. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/126383/1/9789241507424_eng.pdf).

407. Guttmacher Institute. Adolescents' need for and use of abortion services in developing countries. New York; 2016. (https://www.guttmacher.org/sites/default/files/pdfs/pubs/fb_adolescent-abortion-services-developing-countries.pdf).

408. WHO. Core competencies in adolescent health and development for primary care providers, including a tool to assess the adolescent health and development component in pre-service education. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/148354/1/9789241508315_eng.pdf?ua=1).

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Global Accelerated Action for the Health of Adolescents (AA-HA!)

Guidance to Support Country Implementation

Annexes 1–6 and Appendices I–IV

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Acknowledgements

Annex 1. Additional information about the Global AA-HA! Guidance to support country implementation and adolescent development

A1.1.
The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030)

On 1 January 2016, spearheaded by the United Nations, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development officially came into force. Over the next 15 years, these goals will guide countries as they mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change. The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) is closely aligned to the SDGs. This is seen in its Survive, Thrive and Transform objectives and targets, i.e. to end preventable deaths, ensure health and well-being and expand enabling environments (1). The Global Strategy provides a roadmap for ending all preventable maternal, newborn, child and adolescent deaths by 2030, and for improving overall health and well-being. It is universal and applies to all people (including the marginalized and hard-to-reach), in all places (including humanitarian, fragile and crisis situations) and to transnational issues. For the first time, building on the first Global Strategy (2010–2015), which specifically targeted women and children, adolescents are at the heart of the Global Strategy. This acknowledges not only the unique health challenges facing adolescents, but also their pivotal role alongside women and children as key drivers of change in the new sustainable development era.

The Global Strategy takes a life-course approach that aims for the highest attainable standards of health and well-being – physical, mental and social – at every age. A person's health at each stage of life affects health then and at later stages, and also has cumulative effects for the next generation. The Global Strategy also guides greater integration among actors in the health sector and across other sectors, such as infrastructure, nutrition, education, water and sanitation. An operational framework has been developed to accompany the Global Strategy for its first five years, to be updated every five years through 2030 (2). The operational framework will guide countries as they develop and refine their plans for women's, children's and adolescents' health, based on country-identified needs and priorities. In addition, the Global Strategy Indicator and Monitoring Framework will support national SDG and health monitoring (3). These global documents will guide national governments in the coming years as they develop and update their plans for reproductive, maternal, newborn, child and adolescent.

The Global Strategy is guided by several well-established principles of global health and sustainable development. It is country-led; universal; sustainable; rights-based; equity-driven; gender-responsive; evidence-informed; partnership-driven; people-centred; community-owned; and accountable to women, children and adolescents. The Global Strategy identifies nine action areas to update national policies, strategies, plans and budgets: country leadership; financing for health; health system resilience; individual potential; community engagement; multisectoral action; humanitarian and fragile settings; research and innovation; and accountability (Appendix I) (1). For each action area, the Global Strategy outlines three broad actions, and seven to 13 specific interventions. The operational framework also identifies an "ingredient for action" for each of the nine Global Strategy action areas. For each ingredient for action, the operational framework lists up to five implementation objectives (Appendix I) (2).

Table 3.1 compiles the 26 Global Strategy interventions for children and adolescents that are directly relevant to adolescent health, and adds one composite intervention that represents the 48 maternal health interventions. Appendix II summarizes broader Global Strategy health-system and multisectoral policies and interventions that are relevant to adolescent health, including those related to emergency preparedness. The Global Strategy stresses that the SDGs will not be reached without specific attention to humanitarian and fragile settings that face social, economic and environmental shocks and disasters (e.g. armed conflict, natural disaster, epidemic or famine), as these can result in a critical threat to the health, safety, security and well-being of large groups of people. The Global Strategy further notes that humanitarian emergency responses have historically given insufficient attention to protecting adolescents, who in crises may face increased risks of poor physical and mental health outcomes, harassment, assault and rape.

In addition, a fundamental principle of the Global Strategy and this guidance document is that adolescents should be involved as actors and partners in the planning, implementation, monitoring and evaluation of interventions to improve and maintain their health and development. This is discussed further in Box A1.1.

Annex 1. Additional information about the Global AA-HA! Guidance to support country implementation and adolescent development

Box A1.1. Involvement of adolescents as partners in health programming

Adolescents can be a force for their own health and for the health of their families and communities. They also have the right to participate in decisions that affect their lives. Adolescents around the world already contribute in many ways to their families and communities, for example, by taking responsibility for domestic chores and caring for older and younger family members. This engagement gives them both a stake in their communities and important first-hand perspectives on a range of life issues. Increasingly, young people are developing local, national, regional, and international networks, and their voices are reaching influential platforms and earning respect and appreciation (e.g. Global Youth Meet on Health 2015). Adolescents are a strong transformative force, with great potential creativity, maturity, and roles as agents of positive change. In taking a more active role in the development, implementation and monitoring of health interventions that affect them, they not only realize their potential but contribute to improved programming and outcomes.

Many stakeholders agree that adolescents can and should have a say in the programmes and policies that affect their lives, but ensuring their meaningful involvement is not always straightforward. Several global resources have been developed to provide practical guidance on facilitating youth engagement in development and health programming (e.g. ECPAT International (4); YouthNet, Family Health

International, Advocates for Youth (5); SPW/DFID Youth Working Group (6); USAID (7); WHO and UNAIDS (8). For example, the 2015 WHO and UNAIDS Global Standards for Quality Health-care Services for Adolescents identifies adolescent participation as one of the eight global standards of adolescent health care. That guidance document stresses that adolescents have important contributions to make in health-care policy-making, planning, implementation, and monitoring. If empowered and trained, adolescents can also be effective peer educators, counsellors, trainers, and advocates, particularly as they may have the best knowledge about their lives and needs, and they have the capacity to identify best approaches or solutions to health challenges.

At an individual level, ignoring adolescent views regarding their own health care can lead to disengagement (e.g. discontinuation of a treatment) and loss to follow-up. At a broader level, upholding adolescents' participation in their own care and that of their community helps create sustainable, acceptable, locally appropriate and more effective solutions, while also encouraging more adolescents to seek and remain engaged in care. Towards that end, Table A1.1 lists measureable criteria for adolescent participation in health care (8).

Table A1.1. Measurable criteria for adolescent participation in health care services

INPUT	PROCESS	OUTPUT
1. The governance structure of the facility includes adolescents.	4. The health facility carries out regular activities to identify adolescents' expectations about the service, and to assess their experience of care, and it involves adolescents in the planning, monitoring and evaluation of health services.	7. Adolescents are involved in planning, monitoring and evaluation of health services.
2. There is a policy in place to engage adolescents in service planning, monitoring and evaluation.		8. Adolescents are involved in decisions regarding their own care.
3. Health-care providers are aware of laws and regulations that govern informed consent, and the consent process is clearly defined by facility policies and procedures in line with laws and regulations.	5. Health-care providers offer accurate and clear information on the medical condition and management/treatment options, and explicitly take into account the adolescent's decision on the preferred option and follow-up actions.	9. Adolescents are involved in certain aspects of health-service provision.
	6. The health facility carries out activities to build adolescents' capacity in certain aspects of health-service provision.	

Source: (8).

A1.2.
Development of the Global AA-HA! Guidance to support country implementation

The Sixty-Eighth World Health Assembly endorsed a proposal by the WHO Secretariat to develop an adolescent health framework aligned with the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) and its operational framework. This Global AA-HA! Guidance to support country implementation document is the result of that process. Initiated by the WHO Department of Maternal, Newborn, Child and Adolescent Health in October 2015, this guidance document was developed, reviewed and refined based on the input of many stakeholders before finalization in February 2017.

The goal of the Global AA-HA! Guidance is to provide countries with a basis for developing a coherent national plan for the health of adolescents. It is intended to help align the contributions of relevant stakeholders in planning, implementing and monitoring actions across sectors towards agreed goals to help adolescents Survive, Thrive and Transform the environment in which they live. The primary target audience for this document is national-level policy-makers and programme managers. Secondary audiences include representatives of nongovernmental organizations (NGOs) and funding agencies, as well as researchers, educators, activists and community and religious leaders.

A1.2.1.
Assessment of adolescent health (Section 2)

Section 2 describes major disease and injury burdens that affect adolescent well-being detrimentally. The main sources of information on adolescent disease and injury burdens in the Global AA-HA! Guidance document are the 2015 Global Health Estimates (GHE). The GHE database compiles health statistics reported by countries to WHO on an annual basis and provides comprehensive and comparable estimates of rates of mortality and disability-adjusted life years (DALYs) lost. The 2015 adolescent GHE data are accessible online within the WHO Global Health Observatory app: http://apps.who.int/gho/data/view.wrapper. MortAdov?lang=en&menu=hide. In a few instances, the Global AA-HA! Guidance refers to different figures than shown online; these newer figures represent updated estimates based on new analyses.

Based on the 2015 GHE, the Global AA-HA! Guidance to support country implementation summarizes the five leading causes of adolescent mortality and DALYs lost, disaggregated by sex, age group (10–14, 15–19 years) and modified WHO region. The 2015 GHE database only identifies the five leading causes of adolescent rates of mortality and DALYs lost because there is considerable uncertainty about empirical estimates of mortality rates and DALYs lost for lower-ranked causes. To create the seven groups of modified WHO region, all high-income countries (HICs) were extracted from the six WHO regions into a separate HIC group, with the remaining low- and middle-income countries (LMICs) grouped together for each of the six WHO regions (Appendix III).

The GHE database offers important insights into adolescent health globally, disaggregated by WHO region, country income level, sex and age group. Nonetheless, assessment of rates of mortality or DALYs lost only give a partial view of the relative importance of health conditions. For example, these data may not capture key aspects of positive adolescent health and development (e.g. menstrual hygiene and access to contraception). They may also underestimate the importance of disease burdens that are highly sensitive and challenging to measure (e.g. female genital mutilation, induced abortion, sexually transmitted infections, sexual violence, and self-harm). In addition, some burdens may result from diverse causes and outcomes, so they are difficult to define and assess consistently (e.g. maternal conditions). Finally, some countries with very limited health systems may under report conditions due to poor diagnostic services, health care access or documentation (e.g. road injury, and diseases related to poor water and sanitation). To compensate for such limitations, the Global AA-HA! Guidance also draws on complementary sources of data.

Annex 1. Additional information about the Global AA-HA! Guidance to support country implementation and adolescent development

A1.2.2.
Selection of evidence-based interventions (Section 3)

Section 3 describes evidence-based interventions to promote and protect adolescent health, development and well-being. For this section, a literature review was conducted to identify examples of each of the 27 Global Strategy adolescent health interventions, as well as examples of interventions for positive adolescent development, and interventions addressing the needs of adolescents in humanitarian and fragile settings.

An initial search and review was conducted of relevant publications from all WHO departments published since 2000. This review provided the vast majority of the intervention examples described in Section 3. When there were gaps in the WHO literature, other United Nations publications related to

the topic of interest were searched and reviewed. When those sources also proved insufficient, a third tier of search and review took place focused on other major international agency publications and/or review articles in academic journals. In total, more than 2000 documents were at least briefly reviewed for content relevant to the Global AA-HA! Guidance to support country implementation, approximately 600 of which are cited in the final publication.

Finally, once content on evidence-based interventions was drafted for the Global AA-HA! Guidance, relevant WHO departments reviewed and provided feedback on any topics related to their areas of expertise; their recommended edits were incorporated in the final draft.

A1.2.3.
Participation of adolescents

Two special studies were commissioned to enhance the participation and input of adolescents in development and finalization of the Global AA-HA! Guidance to support country implementation. First, a series of focus-group workshops were conducted with young and/or vulnerable adolescents in the six WHO regions. In each location, workshops were held with one or two groups of early adolescents (generally 12–14 years old) as well as one or two groups of vulnerable adolescents, i.e. those who were new immigrants or out-of-school (Hong Kong [China SAR] and Slovenia); lesbian, gay, bisexual or transgender (Indonesia and Philippines); pregnant and/or rural (Nigeria and Turkey); refugee and/or rural (West Bank and Gaza Strip); or from urban settlements (Colombia). In the workshops, adolescents were asked about their perceptions of health and happiness; their main concerns about those issues; the types of actions they believe can be implemented in the schools and communities to improve them; and the most important thing that adolescents themselves can do to improve their health and happiness, both now and in the future.

The second study involved secondary data analysis of health themes in the Global Early Adolescent Study, which used narrative interviews with 10–14 year olds to examine the

development of gender norms that predispose sexual health risks and contribute to healthy sexuality. For the Global AA-HA! Guidance to support country implementation, young adolescent perceptions of the following topics were examined: what is healthy and unhealthy; empowerment and related factors; what influences health and ill-health; risk and protective factors, including safety and security; actions they can take to stay healthy; and access to and use of media, including social media. Themes were analysed from study sites in Belgium, China, Democratic Republic of Congo, Ecuador, Egypt, India, Kenya, Nigeria, Scotland, and the United States of America.

All of the adolescent opinions and feedback above informed the ongoing analysis, interpretation and writing of this Global AA-HA! Guidance document. In addition, the AA-HA! advisory groups included adolescents and young adult members, while adolescents and young people were consulted about the development of the draft document in a series of meetings in each of the WHO regions and through two global online surveys, as described further below. To illuminate key concepts and individual opinions, adolescent quotes from the two commissioned studies and the second global online survey are highlighted throughout the document.

Annex 1. Additional information about the Global AA-HA! Guidance to support country implementation and adolescent development

A1.3.
Stakeholder review of the draft Global AA-HA! Guidance to support country implementation

From October 2015 to February 2017, the Global AA-HA! Guidance document was developed, reviewed and refined based on the input of many stakeholders. Consultations included:

• ongoing draft review and feedback from key WHO departments;

• ongoing draft review, and a global meeting involving an external advisory group of 30 non-WHO members representing ministries of health of selected Member States in the six WHO regions; United Nations agencies and partners (e.g. the International Association for Adolescent Health); civil society (including youth and youth-serving organizations); and academia;

• consultation meetings with national-level programme managers, policy-makers and adolescents and young adults in each WHO region;

• a series of focus-group discussions conducted with young and/or vulnerable adolescents in the six WHO regions, as described above;

• secondary data analysis of health themes in the Global Early Adolescent Study, as described above; and

• two global consultations on the Global AA-HA! Guidance document, as described below.

The first round of global consultation on the development of the Global AA-HA! Guidance to support country implementation document took place between October 2015 and March 2016 in order to review the proposed principles for the document. In total, 888 participants from 126 countries in all six WHO regions participated in face-to-face or online surveys (9). Participants represented individual adolescents and young adults, youth groups and government, civil society, private sector, academic and donor agencies. Among respondents who indicated their country (n=599), most were from the Region of the Americas (34%), followed by the African (22%), South-East Asia (17%), European (17%), Western Pacific (7%) and Eastern Mediterranean (3%) Regions. Adolescents and young adults from 57 countries participated and made up 12% of respondents. Public health or national or regional health managers from 72 countries also participated.

Overall, this consultation found there was strong agreement with all principles proposed for the Global AA-HA! Guidance document, i.e. the central involvement of youth; equity, human rights and gender equality; a comprehensive approach to positive adolescent development; reinforcement of relevant existing WHO global and regional strategies and action plans; acknowledgement of diversity and adequate attention to vulnerable adolescents; promotion of integrated responses that address multiple outcomes, risk factors and determinants; and flexibility to account for various epidemiological and socioeconomic contexts. Sixty per cent of respondents agreed or strongly agreed that the document should have the role of the health sector as its primary focus. However, there was also overwhelming agreement that it should address social determinants of health, the role of sectors other than health, and performance targets and indicators to ensure accountability. There were no major differences between answers given by young people and other groups.

> During this first round of consultation, participants were invited to suggest the one most important thing that the Global AA-HA! Guidance document should aim to achieve.
>
> The most frequent suggestions were:
>
> • give attention to and involve adolescents; and
> • address a range of health needs related to comprehensive prevention and care (e.g. mental health, violence, nutrition and sexual and reproductive health).

> Conversely, when participants were invited to suggest the single most important thing that the Global AA-HA! Guidance document should avoid, the most frequent recommendations were to avoid:
>
> • not involving youth properly;
> • creating a general blueprint rather than accounting for specific contexts; and
> • not being comprehensive enough (i.e. focusing too much on a single issue).

The second round of global consultations on the development of the Global AA-HA! Guidance document was an online survey that took place from 15 December 2016 to 15 January 2017. The survey was available in all six of the official WHO languages, and respondents were allowed to write narrative responses in those languages. Respondents were asked to comment on one or more sections of the penultimate draft of the guidance document and its annexes. Specifically, they were asked to identify aspects that they liked and thought should be kept, and also those they disliked and thought should be reduced or altered. In total, there were 386 respondents from 55 countries, representing all six WHO regions. Among respondents who indicated their country (n=340), the largest number were from the Region of the Americas (39%), followed by the European (24%), African (14%), Western Pacific (11%), and Eastern Mediterranean and South-East Asia Regions (6% each). Participants represented all key categories of stakeholder. Adolescents and young adults constituted less than 10% of respondents.

Overall, there was strong satisfaction with the penultimate draft of the Global AA-HA! Guidance document. Respondents greatly welcomed the consultative process that guided its design and development. Of particular interest was the adoption of the ecological model; respondents saw considerable merit in the utilization of this multidimensional approach to adolescent health and well-being. The focus on positive adolescent development was also highly appreciated. Respondents also identified the content, flow and layout of the draft document as key strengths.

In response to questions about how the penultimate draft could be improved, some respondents suggested restructuring and possibly shortening it, expressing concern that it might be too lengthy for consultative purposes. There were also recommendations to update reference citations with more recent and available information. Finally, there was a request to increase content related to sexual and reproductive health and gender issues, including increased disaggregation of results by gender.

Annex 1. Additional information about the Global AA-HA! Guidance to support country implementation and adolescent development

A1.4.
Adolescent rights

The 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs), and the WHO Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) (Global Strategy), emphasize the importance and centrality of internationally recognized human rights standards in all efforts to improve the health and development of adolescents and young people.

The Convention on the Rights of the Child (CRC) (10) and other relevant, legally binding human rights instruments provide useful legal and normative frameworks. These guide the development, implementation, monitoring and evaluation of national laws, policies and programmes, budgetary processes, strategies, plans of action and services aimed at optimizing adolescent health and development, including sexual and reproductive health (11). Based on recognized legal entitlements and freedoms of all adolescents, they require and facilitate a comprehensive, inclusive and participatory approach. This includes, "recognition and respect for the dignity and agency of adolescents; their empowerment, citizenship and active participation in their own lives; the promotion of optimum health, well-being and development; and a commitment to the promotion, protection and fulfilment of their human rights, without discrimination" of any kind (12). In other words, protecting and improving the health and development of adolescents is not merely a matter of recognizing their needs and accepting responsibility. It also requires recognizing these needs as legal entitlements, and enforcing that governments and other stakeholders uphold these entitlements by fulfilling their legal obligations. Even when responsibilities are delegated or provided by non-state actors, states are held primarily responsible (13).

The rights of adolescents are summarized in Table A1.2. Articles from relevant human rights instruments are highlighted in blue text. The overarching principles relate to equality and non-discrimination, including gender equality, participation and accountability. All actions should be guided by the best interest of the child (14) and consideration for the child's views (15) while keeping in mind the child's right to privacy (16) and to protection from inappropriate information (10). In Table A1.2 specific health-related rights are summarized under seven headings: health; nutrition; education and the transition to work; clean air; water, sanitation and hygiene; infrastructure; child protection and provisions for vulnerable groups.

A critical issue to consider within human rights is the role of gender and how it impacts on adolescent health. "Gender" refers to socially constructed male and female characteristics, such as norms, roles and relationships of and between groups of adolescent girls and boys (21). Gender norms, roles and relations often contribute to enhanced vulnerability in adolescents. For instance, marginalized adolescent girls affected by harmful traditional practices bear burdens of discrimination and human rights violations that often affect their health and well-being as well as curtail their schooling (22). Girls who are married or who work in domestic service are examples of socially isolated girls whose needs are often overlooked and whose behaviour may be dictated by others, to their detriment (e.g. access to health care, or rapid repeat pregnancy)(23). Gender roles may also detrimentally influence the health of adolescent boys; for example, social norms of masculinity may contribute to risk-taking and resultant injuries (24).

All adolescents have rights in relation to health and development that are protected under the Convention on the Rights of the Child and other relevant human rights treaties CRC[1] Art. 24(1)(10); ICESCR[2] Art. 12, 10 &13(17); UDHR[3] Art. 25 & 26(18); CRPD[4] Art.25 &24(19); CEDAW[5] Art. 5(20); ICMW[6] 30 & 45(17)

Overarching principles that are necessary to respect, protect and fulfil enshrined entitlements and freedoms. Equality and non-discrimination, including gender equality: without discrimination of any kind, irrespective of the child's or his or her parent's or legal guardian's race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status CRC[1] 2; Disability: CRC[1] 23 (1), (2) & (3); Gender: Art. 43, 56 of CRC GC 15[7] & Art. 27-30, 33, 34 of CRC GC 20[8](10); Health care services: CRC[1] 24(1); Education: CRC[1] 28(1)(b) & (d)(10)

Participation: Freedom of expression including the right to express views on all matters affecting him or her; freedom of thought, conscience and religion; freedom of association and assembly and right to maintain direct contacts with both parents CRC 13; 12(1); 14; 15; 10(2); 9(3)(10)

Accountability: Awareness of the principles and provisions of the Convention; right to justiciability* and non-retrogression of entitlements**; best interest of the adolescent to be considered in all proceedings depending on age and maturity (evolving capacity); international cooperation and exchange of information with particular attention given to the needs of developing countries CRC[1] 42; 44(6); 4; 3(1); 23(4); 28(3); 24(4) (10)

Table A1.2.
A summary of adolescents' rights related to health

HEALTH	Right to highest attainable standard of health and to health care (that is sufficiently available, accessible and acceptable to all adolescents, without discrimination of any kind, and is of high quality) **CRC[1] 24(1); 24(2) (b)&(f); Art. 12 of ICESCR GC 149 (10)** Right to health-related information and education, including in relation to sexual and reproductive health **CRC[1] 24(2)(f); 17 (10)** Right to access to education and support in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation, prevention of accidents and family planning education **CRC[1] 24(2)(e)&(f) (10)**
NUTRITION	Right to adequate and nutritious food and basic knowledge of health and nutrition **CRC[1] 24(2)(c) & (e) (10)** Right to material assistance and support programmes for nutrition from parents, guardians or the State to realize the right to a standard of living adequate for healthy development **CRC[1] 27 (10)**
EDUCATION & TRANSITION TO WORK	Right to free and available compulsory primary education **CRC[1] 28(1)(a) (10)** Right to non-discrimination in accessing secondary and higher education and to available and accessible educational and vocational information **CRC[1] 28(1)(b) & (d) (10)**
CLEAN AIR	Right to be free of impediments (e.g. environmental pollution) that prevent the full implementation of the right to health **CRC1 24(2)(c) (10)**
WATER, SANITATION & HYGIENE	Right to clean drinking-water and to regulate environmental pollution in combating disease to ensure full implementation of the right to health **CRC[1] 24(2)(c) (10)** Right to support in the use of basic knowledge on hygiene and environmental sanitation **CRC[1] 24(2)(e) (10)**
INFRASTRUCTURE	Right to a standard of living adequate for healthy development, including housing and health-care facilities **CRC[1] 27(1)&(3); 24(1)**
CHILD PROTECTION AND PROVISIONS FOR VULNERABLE GROUPS	Right to be protected from – and to recovery and reintegration when victim of – violence, abuse, neglect, maltreatment or exploitation, including sexual exploitation and abuse, harmful traditional practices and discipline, and to periodic review of treatment provided under protection*** **CRC[1] 19; 34; 36; 39; 24(3); 28(2); 25; CRC OP (Sale of children, child prostitution and child pornography)[10] (10)** Right to legal help and fair treatment in a justice system, including alternatives to institutional care, and right to not be punished in a cruel or harmful way when accused of breaking the law, for example death sentence or life imprisonment without possibility of release **CRC[1] 40(1); 40(3)(b); 37 (10)** Right to be protected from harmful and exploitative work that endangers education, health or development **CRC[1] 32(1); ILO C138[11] & C182[12] (10)** Right to be protected from using harmful drugs and being used in the drug trade **CRC[1] 33 (10)** Right of adolescents deprived of a family environment, adopted, refugees or belonging to indigenous and minority groups to special protection and care and to enjoy their own culture, religion or language **CRC1 20; 21; 22: 30 (10)** Right not to be forced or recruited to take part in a war or join the armed forces and be protected when affected by war as guaranteed under international humanitarian law, including for adolescent refugees **CRC1 38; 39; 22; CRC OP (Involvement of children in armed conflicts)[13] (10)**

Key: Table shows rights enshrined in various human rights instruments with the article number and instrument highlighted in bold.
*Justiciability: ability to take an issue to court (standing) and for the court to exercise its judicial authority.
**Non-retrogression of entitlements: guarantee not to be deprived of rights that one is used to enjoying by acts of omission or of commission by the state (implicit right derived from the entitlement of progressive realization of economic, cultural and social rights).
***Under Protection: children who are looked after by their local authorities, rather than their parents, for the purposes of care, protection or treatment of his or her physical or mental health.

Annex 1. Additional information about the Global AA-HA! Guidance to support country implementation and adolescent development

A1.5.
Digital media opportunities and challenges

Adolescents today are engaged with digital media in many diverse ways. In most HICs, for example, it is not unusual for adolescents to have access to multiple digital platforms (e.g. laptops, digital music players and mobile phones), and for them to spend many hours per day using them (25); (26). Adolescents in LMICs are also often exposed to digital media in a variety of forms. Some LMICs, for example, have developed extensive mobile phone systems in recent years, because these are far more affordable and accessible than pre-existing landline telephone systems.

Social media can be an opportunity for adolescent education, self-expression, creativity, entertainment and activism (27). A combination of digital, media and social literacy are fundamental to an adolescent's capacity to use digital media competently and safely. Such literacy provides adolescents with the technical and higher-order evaluative skills required to access, understand, produce and participate in digital media. In addition to the opportunities for positive development provided by digital media and the online environment, several important risks exist, particularly as adolescence is a time of significant developmental change, when adolescents exhibit a limited capacity for self-regulation and an increased susceptibility to peer pressure and experimentation (28). Relationships may be more intense, with more opportunities for contact and less visibility or moderation by adults, and relationships and friendships often create permanent digital content (26). Access to adult or extreme material is fundamentally different and much easier online than offline, and quality information, clear social norms and opportunities for redress are less present in digital spaces than is usual offline.

Research on the potentially harmful effects of digital media on adolescents has largely focused on negative impacts on mental health, particularly moderate to severe depressive symptoms, substance use and suicide ideation and attempts (e.g. Hamm et al. (29)). The International Telecommunication Union (ITU), the United Nations specialized agency for information and communication technologies, has broadly outlined risks for children online relating to content, contact, conduct, commerce, excessive use and societal inequity (30). Specific risks and negative consequences for adolescents can result from sleep disruption; cyberbullying; gambling; contact with strangers; sexual messaging (known as sexting); pornography exposure; and influence on alcohol use, self-esteem and body image (29); (31-38). For example, a review of studies of cyberbullying estimated that a significant proportion of children and adolescents (20–40%) have been victims of cyberbullying, and found that accompanying psychopathology is common, including an increasingly well-established link to suicidality (39).

Studies in HICs and LMICs have also found that adolescent exposure to pornography is not unusual and sometimes is associated with negative consequences. In a Swedish study, for example, frequent pornography use was associated with increased alcohol use and selling of sex. In a Côte d'Ivoire study, it was associated with being sexually active, early onset of sexual intercourse and multiple sexual partners. In a Sierra Leone study, it seemed to have become the default, primary source of sex education. In a Hong Kong (China SAR) study, family functioning and positive development characteristics were found to be protective factors in reducing pornography consumption (40); (41).

Annex 2. Additional information about disease and injury burdens

A2.1.
Risk factors for specific adolescent disease and injury burdens

The following sections describe risk factors that are associated with the main causes of adolescent mortality and DALYs lost, as described in Section 2.1. Importantly, these are examples of risk factors rather than exhaustive lists.

A2.1.1.
Unintentional injury

Risk factors associated with road injury can be grouped in four categories: those related to exposure to risk (e.g. inadequate separation of high-speed motorized traffic from vulnerable road users); accident involvement (e.g. inappropriate or excessive speed; presence of alcohol, medicinal or recreational drugs; use of a mobile phone); accident severity (e.g. non-use of seat-belts, child restraints or crash helmets); and severity of post-accident injuries (e.g. those for which medical care is not needed or sought; those that result in a permanent disability) (42); (43). For young car drivers, principal risks include being male, night-time driving, and transporting other young people as passengers.

Risk factors associated with drowning include a lack of physical barriers restricting exposure to water bodies; poor swimming skills; low awareness of water dangers; high-risk behaviour (e.g.

consuming alcohol near water); use of unsafe transport on water and water crossings; lack of a safe drinking-water supply; and flood disasters (44); (45). Adolescents tend to be less supervised than smaller children, and are more likely to engage in risky behaviour around water, including consuming alcohol. These factors can contribute to adolescent drowning mortality and morbidity (46).

Risk factors associated with burn injury differ according to region, but typically include alcohol and smoking; high set temperature in hot water heaters; substandard electrical wiring; fireworks (particularly for adolescent boys); use of open fires to heat rooms and use of kerosene for lamps; and the use of open fires for cooking, especially when wearing long, loose-fitting clothing (particularly for adolescent girls and women) (44); (47).

A2.1.2.
Violence

Risk factors associated with youth violence include those at the individual level (e.g. male sex; conduct disorder; low academic achievement; involvement in delinquency, illicit drug use; harmful alcohol use); the family and peer level (e.g. poor parental supervision; family history of antisocial behaviour, bullying and victimization; antisocial peers); and the community and society level (e.g. poverty; weak governance and poor rule of law; easy access to alcohol, illicit drugs and firearms) (48).

Risk factors associated with intimate partner and/or sexual violence include those at the individual level for either the perpetrator (e.g. experience of childhood sexual abuse; antisocial personality) or the victim (e.g. young age; intra-parental violence) or both (e.g. low education; harmful use of alcohol; acceptance of violence); the community level (e.g. weak community sanctions; poverty); and the societal level (e.g. traditional gender norms; social norms supportive of violence) (49).

Risk factors associated with child maltreatment include the child being an adolescent as opposed to a child aged 5–9 years, being unwanted or having special needs. For the caregiver, they include

having been maltreated themselves as a child; lacking awareness of child development, or having unrealistic expectations; misusing alcohol or drugs; and experiencing financial difficulties. For the relationship, they include physical, developmental, or mental health problems of a family member, and being isolated in the community. For the community, risk factors include inadequate policies and programmes to prevent child maltreatment, child pornography, child prostitution and child labour. They also include social and cultural norms that promote or glorify violence towards others, support the use of corporal punishment, demand rigid gender roles, or diminish the status of the child in parent-child relationships (50); (51).

Figure A2.1 provides an overview of how risk factors associated with violence against children relate to each other within a social ecological model.

Figure A2.1. Social ecological model summarizing factors contributing to violence against children

SOCIETAL	COMMUNITY	RELATIONSHIP	INDIVIDUAL
• Rapid social change • Economic inequality • Gender inequality • Policies that increase inequalities • Poverty • Weak economic safety net • Legal and cultural norms that support violence • Inappropriate access to firearms • Fragility due to conflict/post-conflict or natural disaster	• Concentrated poverty • High crime levels • High residential mobility • High unemployment • Local illicit drug trade • Weak institutional policies • Inadequate victim care services • Physical enviroment situational factors	• Poor parenting practices • Marital discord • Violent parental conflict • Early and forced marriage • Low socio-economic household status • Friends that engage in violence	• Sex • Age • Income • Education • Disability • Victim of child maltreatment • History of violent behaviour • Alcohol/substance abuse • Psychological personality disorder

Source: (52).

Annex 2. Additional information about disease and injury burdens

A2.1.3.
Sexual and reproductive health, including HIV

Risk factors associated with horizontal infection with HIV in adolescence include living in settings with a generalized HIV epidemic; sharing needles and syringes to inject drugs; having sexual intercourse without using a condom; having another sexually transmitted infection; having a high number of sexual partners; being an older adolescent rather than a younger one; the boy or man being uncircumcised; and (females only) being divorced, separated or widowed (53-55). HIV has also been associated with transactional sex, i.e. non-marital, non-commercial sexual relationships motivated by the assumption that a girl or woman will exchange sex for status or material benefit received from a boy or man (56). Key populations such as males who have sex with males, transgender persons, sex workers, or injecting drug users are also more vulnerable to HIV. The involvement of adolescents under 18 years in sex work is, by definition, sexual exploitation. Any adolescents who are sexually abused and/or exploited are vulnerable to HIV, as are those in prisons and other closed settings (54).

Risk factors associated with becoming pregnant, or making someone pregnant, in adolescence include early marriage; sexual coercion; lack of access to and use of contraception; alcohol use; not already having a child; low access and other barriers to condom use; having a sexual partner with lower education or negative attitudes about condoms; and (females only) early pubertal development; being an older rather than a young adolescent; younger age at first marriage; having low future aspirations; having a pregnant friend; and being employed (53); (57).

Risk factors associated with maternal health problems among pregnant adolescents include low educational attainment; inadequate nutrition (e.g. anaemia; iodine deficiency); being a young adolescent; immaturity of the pelvic bones and birth canal; malaria; HIV; and pregnancy-induced hypertension (58). In addition, pregnancy and lactation can cause weight loss, depletion of fat and lean body mass, and a ceasing of linear growth in young adolescent girls. This may contribute to stunting, may exacerbate the outcome of future pregnancies, and may increase the risk of maternal morbidity and mortality (59); (60).

A2.1.4.
Communicable diseases

Risk factors associated with lower-respiratory infections include outdoor air pollution; ambient particulate matter pollution; indoor air pollution from solid fuel use; tobacco exposure; alcohol use; and zinc deficiency (61-63) ([Annex 3]).

Risk factors associated with diarrheal diseases include poor personal hygiene (e.g. in food-handlers); lack of sanitation (e.g. in food preparation and health-care settings); eating undercooked food; contaminated soil, water and food; poverty; and climate change (61); (64).

Risk factors associated with meningitis take place at the level of the organism (e.g. some strains are more virulent than others); individual (e.g. low socioeconomic status; tobacco use; HIV infection; mucosal lesions; concomitant respiratory infections); population (e.g. immunological susceptibility of the population) and environment (e.g. crowding; travel to epidemic areas; special climatic conditions such as the dry season or dust storms) (65-67).

Risk factors associated with malaria can relate to being a young adolescent; being female; occupation (e.g. migrant worker); location (e.g. near a large dam); ecology (e.g. deep forests); climate change; use of insecticide-treated nets; and weak health systems. For example, malaria may concentrate in marginalized populations, such as those living in remote border areas, and tribal populations (61); (68). Important preventive factors are using a long-lasting insecticide treated bednet (LLIN) when sleeping at night. Household surveys ask about number of LLINs in each household as a proxy measure for LLIN use.

Risk factors associated with tuberculosis include those related to exposure and transmission (e.g. household air pollution; poverty) and those related to developing tuberculosis after infection, including age (i.e. adolescence); immunodeficiency (e.g. that caused by HIV infection, measles or severe malnutrition); several noncommunicable diseases (e.g. diabetes mellitus; silicosis); smoking; and harmful alcohol and drug use (69); (70).

A2.1.5.
Noncommunicable diseases

Risk factors associated with congenital anomalies can relate to genetics (e.g. consanguinity; ethnicity) and/or maternal factors (e.g. infections; poor nutrition; environmental exposure) (72).

Risk factors associated with leukaemia include genetic susceptibility and environmental factors. The major environmental risk factor for leukaemia is ionizing radiation, but weaker associations have also been found for non-ionizing radiation; chemicals (e.g. hydrocarbons; pesticides); and alcohol, cigarette and illicit drug use (62); 73).

Risk factors associated with cerebrovascular disease and stroke include behaviours such as tobacco use; physical inactivity; having an unhealthy diet (rich in salt, fat and calories); and harmful use of alcohol. Metabolic risk factors include raised blood pressure (hypertension); raised blood sugar (diabetes); raised blood lipids (e.g. cholesterol); and overweight and obesity. Other risk factors include ambient particulate matter pollution; household air pollution from solid fuels; lead exposure; poverty; low educational status; advancing age; being male; genetic disposition; and psychological factors (e.g. stress or depression) (62); (74); (75).

Risk factors associated with chronic respiratory diseases, including asthma, include tobacco use; second-hand tobacco smoke; other indoor air pollutants; outdoor air pollutants; allergens; and occupational agents (76); (77).

Risk factors associated with iron-deficiency anaemia primarily relate to dietary inadequacies (e.g. diets based mostly on staple foods with little meat intake; past malnutrition; low body nutrient stores). Risk factors also include early pregnancy and specific health conditions (e.g. infections that cause blood loss, such as hookworms, malaria and urinary schistosomiasis) (78); (79).

Risk factors associated with skin disorders in low- and middle-income countries include hot and/or humid climate; poor hygiene; low water use; overcrowding; and other skin disorders (80).

Annex 2. Additional information about disease and injury burdens

A2.1.6.
Mental health, substance use, and self-harm

Risk factors associated with non-suicidal self-injury in adolescents include a history of sexual or physical abuse, negative or stressful life events, and symptoms often linked with psychiatric morbidity (e.g. depression; dissociation; anxiety; hostility; poor self-esteem; antisocial behaviour; smoking; emotional reactivity; and deficits in emotion regulation). Stressful life events often involve interpersonal conflict; losses; family discord; difficulties with friends; problems in romantic relationships; and school problems. Notably, all of these risk factors are not specific and are also risk factors for suicidal behaviour (81).

Risk factors associated with suicide can function at different ecological levels, including:
- **individual** – e.g. history of self-harm or previous suicide attempt; mental disorders; harmful use of alcohol or drugs; job or financial loss; hopelessness; chronic pain; family history of suicide; genetic and biological factors;
- **interpersonal** – e.g. sexual, physical or emotional abuse or neglect in childhood or adolescence; sense of isolation and lack of social support; relationship conflict, discord or loss; intimate partner violence; experience of cyberbullying;
- **community** – e.g. discrimination against lesbian, gay, bisexual, transgender or intersex persons; stigma associated with help-seeking; stresses of acculturation and dislocation;
- **organization** – e.g. barriers to accessing health care; and
- **environment/structure/macro** – e.g. access to means; disaster, war and conflict.

  (51); (62); (82-84).

Risk factors associated with depression include those that are biological (e.g. being female for a postpubertal adolescent; family history of a mood disorder) and experiential (e.g. harsh parenting or parental rejection; child abuse and neglect; bullying; stressful life events, such as loss of a parent) (62); (85); (86).

Risk factors associated with anxiety include adverse childhood experiences (e.g. abuse, neglect, separation from parents and death of a parent); genetic and biological factors (e.g. family history of anxiety; anxious temperament as an infant/child); learning processes during childhood (e.g. modelling and over-control by overanxious parents); feelings of lack of control; and low self-efficacy, coping strategies and social support (85); (87).

Risk factors associated with conduct disorder include maternal smoking during pregnancy; behavioural impulsivity; parenting issues, such as harsh and inconsistent discipline and inadequate supervision; parental antisocial behaviour and substance use; child abuse; early aggressive behaviour and conduct problems; early substance use; deviant peer groups; low popularity among peers; and impoverished and socially disorganized neighbourhoods with high levels of crime (85).

Risk factors associated with adolescent alcohol use disorders include environmental factors (e.g. peer influence on risk-taking; peer acceptance as reward; high peer alcohol use and favourable attitudes of peers toward alcohol use; low levels of parental supervision; exposure to a close family member who drinks; easy access to alcohol; positive expectations of alcohol); a family history of alcohol problems; and mental health (e.g. childhood sexual abuse; sensation seeking and behavioural disinhibition; conduct disorder; antisocial behaviour; depression) (62); (88).

Risk factors associated with drug-use disorders include: early onset of drug use; using multiple types of illicit drugs; onset before age 15 years of externalizing (e.g. conduct disorder) and internalizing mental disorders (e.g. depression); high unemployment; and poverty (89).

A2.2.
Additional information about humanitarian and fragile settings

Many of today's humanitarian crises involve collective violence, including political conflicts that occur within or between states (e.g. war; terrorism), state-perpetrated actions (e.g. genocide; repression; disappearances; torture), and organized crime (e.g. banditry and gang warfare) (90). Civilians are often the primary victims and may be exposed to human rights abuses, physical and sexual violence, arbitrary detention and imprisonment, intimidation, and forced displacement (91). During both natural and human-caused crises, health infrastructure can be damaged and health systems and service delivery severely disrupted (92). Such events have devastating impacts on human health, potentially causing hundreds of thousands of deaths, and illness and injury for millions of others. Table A2.1 summarizes the main ways that large-scale conflicts or natural disasters directly impact on the health of general populations.

Table A2.1. Examples of increased mortality, morbidity, and disability in humanitarian and fragile settings

HEALTH IMPACT	CAUSES
Increased mortality	Deaths due to external causes, mainly related to weapons
	Deaths due to infectious diseases (such as measles, poliomyelitis, tetanus and malaria)
	Deaths due to noncommunicable diseases, as well as deaths otherwise avoidable through medical care (including asthma, diabetes and emergency surgery)
Increased morbidity	Injuries from external causes, such as those from weapons, mutilation, antipersonnel landmines, burns and poisoning
	Morbidity associated with other external causes, including sexual violence
	Infectious diseases: • water-related (such as cholera, typhoid and dysentery due to Shigella spp.); • vector-borne (such as malaria and onchocerciasis); and • other communicable diseases (such as tuberculosis, acute respiratory infections, HIV infection and other STIs).
	Reproductive health: • a greater number of stillbirths and premature births, more cases of low birth weight, and more delivery complications; and • longer-term genetic impact of exposure to chemicals and radiation.
	Nutrition: • acute and chronic malnutrition and a variety of deficiency disorders.
	Mental health: • anxiety • depression • post-traumatic stress disorder • suicidal behaviour.
Increased disability 8. Adolescents' participation	Physical
	Psychological
	Social

Source: (90).

Annex 3. Additional information about evidence-based interventions

A3.1.
Positive development interventions

A3.1.1.
Adolescent-friendly health services

Adolescent-friendly health services are those that are accessible, acceptable and appropriate for adolescents (93). They are equitable because they are inclusive and do not discriminate against any group within this young clientele on grounds of gender, ethnicity, religion, disability, social status or any other reason. Indeed, they may reach out to those who are most vulnerable and those who lack services. In 2012, WHO published Making Health Services Adolescent Friendly, a guidance document on developing national quality standards (94). Table A3.1 defines the eight global standards for health-care services for adolescents (8).

Table A3.1. Global standards for quality health-care services for adolescents

STANDARD	DEFINITION
1. Adolescents' health literacy	The health facility implements systems to ensure that adolescents are knowledgeable about their own health, and they know where and when to obtain health services.
2. Community support	The health facility implements systems to ensure that parents, guardians and other community members and community organizations recognize the value of providing health services to adolescents and support such provision and the utilization of services by adolescents.
3. Appropriate package of services	The health facility provides a package of information, counselling, diagnostic, treatment and care services that fulfils the needs of all adolescents. Services are provided in the facility and through referral linkages and outreach. Service provision in the facility should be linked, as relevant, with service provision in referral-level health facilities, schools and other community settings.
4. Providers' competencies	Health-care providers demonstrate the technical competence required to provide effective health services to adolescents. Both health-care providers and support staff respect, protect and fulfil adolescents' rights to information, privacy, confidentiality, non-discrimination, non-judgemental attitudes and respect.
5. Facility characteristics	The health facility has convenient operating hours, a welcoming and clean environment and maintains privacy and confidentiality. It has the equipment, medicines, supplies and technology needed to ensure effective service provision to adolescents.
6. Equity and non-discrimination	The health facility provides quality services to all adolescents irrespective of their ability to pay, age, sex, marital status, education level, ethnic origin, sexual orientation or other characteristics.
7. Data and quality improvement	The health facility collects, analyses and uses data on service utilization and quality of care, disaggregated by age and sex, to support quality improvement. Health facility staff are supported to participate in continuous quality improvement.
8. Adolescents' participation	Adolescents are involved in the planning, monitoring, and evaluation of health services and in decisions regarding their own care, as well as in certain appropriate aspects of service provision.

Source: (8).

Adolescent-friendly health services are comprehensive in that they deliver an essential package of services to the whole target group (e.g. Case studies A3.1 and A3.2) (8). The 2010 WHO Adolescent Job Aid is a desk reference tool to assist primary health care workers to respond appropriately to adolescents and to provide integrated management of common concerns, including developmental conditions; menstrual conditions; pregnancy-related conditions; genital conditions; questions related to HIV; abdominal pain; suspected anaemia; tiredness; headache; skin problems; body image concerns; vision problems; and concerns about assault or abuse (95).

Case Study A3.1

Egypt's youth-friendly health services and health education in schools

Studies have shown that many young Egyptians have sexual relations before marriage. However, Egyptian adolescents receive little accurate information about sexuality and protecting their health, leaving them vulnerable to coercion, abuse, unintended pregnancy and HIV and other STIs. Since 2003, the Egyptian Family Planning Association, which is the government's primary partner in sexual and reproductive health (SRH), has attempted to address these issues through youth-friendly clinics and school-based health education. Over a decade, approximately 30 clinics in Cairo and Upper and Lower Egypt participated in initiatives to build their capacities to respond appropriately to adolescent SRH issues.

Each youth-friendly clinic is staffed by a doctor and a nurse who has been trained in providing youth SRH services at subsidized prices, including pre-marital counselling and examination; counselling, examination and treatment or referral for STIs; counselling, examination and treatment of pubertal disorders; counselling and provision of contraceptive methods for married youth; antenatal and postnatal care and counselling; and laboratory services. Limitations include that, in accordance with government policies, youth-friendly clinic providers can only provide information and counselling and are not allowed to give physical examinations to unmarried youth. In addition, despite the need for youth SRH services, the youth-friendly clinics are currently underutilized. Several factors have contributed to this situation, including ineffective advertising, fear of stigma and lack of female physicians in some clinics.

As an extension to youth-friendly clinics, an SRH education project was rolled out in schools close to clinics in 22 governorates. The project aims to provide accurate and appropriate reproductive health information to adolescent students, correct their misconceptions, and respond to their questions and concerns. Two physicians from each governorate – one male and one female – were trained in communication skills and a participatory approach to teaching. In health education sessions, the physicians and/or peer educators discuss topics such as puberty, life skills, reproductive anatomy and physiology, nutrition, anaemia and smoking with the students. More than 2000 sessions in 667 schools were conducted between 2010 and 2012. These were attended by almost 32 500 students, of whom more than 17 000 were girls.

Source: (8).Sources: (96-98).

Case Study A3.2

Zimbabwe's youth-friendly health services to reduce unintended pregnancies

In 2009, Zimbabwe conducted a pilot project focusing on behaviour change among young people and delivery of effective, quality health services for this age group. The purpose of the project was to reduce unintended pregnancies among nursing students at Parirenyatwa Nursing School. The problems identified before launching the project were: a high pregnancy rate; a high unsafe abortion rate; a high rate of unmet contraceptive need among students who had discontinued their studies; and a lack of friendly health-care services tailored to young people. The project was a student-run programme, so young people were involved in the planning, implementation and monitoring of all activities. Priority was given to treating students who attended health facilities with respect and protecting their privacy and confidentiality. After three years of implementation, more than 75% of students had used the services; the number of pregnancies per year fell from 21 to two; the number of unsafe abortions decreased from five to one; students from other institutions began to use the service; similar services were established in two other nursing schools; and planning for nationwide provision of such services was underway.

Source: (37).

Annex 3. Additional information about evidence-based interventions

Importantly, when adolescents seek help from a health worker, they tend to volunteer information about the health problem that seems most important to them (i.e. the presenting complaint). They may have other health problems and concerns but may not say anything about them unless directly asked, especially if they feel embarrassed or scared. In such situations, health workers should consider conducting a HEADSSS assessment (an acronym for home, education/employment, eating, activity, drugs, sexuality, safety, suicidal thinking/depression) to detect any health and development problems that the adolescent has not presented with, and whether the adolescent engages in, or is likely to engage in, behaviours that could put them at risk of negative health outcomes (such as injecting drugs or having unprotected sex) (95). Information that can be obtained from a HEADSSS assessment is detailed in Table A3.2.

Table A3.2. Content of a primary care HEADSSS assessment with an adolescent: home, education/employment, eating, activity, drugs, sexuality, safety, suicidal thinking/depression

CATEGORY	INFORMATION TO BE ASSESSED
1. Home	• where they live • with whom they live • whether there have been recent changes in their home situation • how they perceive their home situation.
2. Education/ employment	• whether they study or work • how they perceive how they are doing • how they perceive their relation with their teachers and fellow students/employers and colleagues • whether there have been any recent changes in their situation • what they do during their breaks.
3. Eating	• how many meals they have on a normal day • what they eat at each meal • what they think and feel about their bodies.
4. Activity	• what activities they are involved in outside study or work • what they do in their free time – during week days and on holidays • whether they spend some time with family members and friends.
5. Drugs	• whether they use tobacco, alcohol or other substances • whether they inject any substances • if they use any substances, how much do they use; when, where and with whom do they use them.
6. Sexuality	• their knowledge about sexual and reproductive health • their knowledge about their menstrual periods • any questions and concerns that they have about their menstrual periods • their thoughts and feelings about sexuality • whether they are sexually active; if so, the nature and context of their sexual activity • whether they are taking steps to avoid sexual and reproductive health problems • whether they have in fact encountered such problems (unintended pregnancy, infection, sexual coercion); if so, whether they have received any treatment for this • their sexual orientation.
7. Safety	• whether they feel safe at home, in the community, in their place of study or at work • on the road (as drivers and as pedestrians) etc. • if they feel unsafe, what makes them feel so.
8. Suicidal thinking/ depression	• whether their sleep is adequate • whether they feel unduly tired • whether they eat well • how they feel emotionally • whether they have had any mental health problems (especially depression); if so, whether they have received any treatment for this • whether they have had suicidal thoughts • whether they have attempted suicide.

Source: (95).

Related to sexual and reproductive health assessments with adolescents in primary care, WHO recommends a brief sexuality related communication for prevention of STIs among adults and adolescents in primary health services. Health-care providers thus should be trained in the sexual health knowledge and skills they need to carry out such communication (99). Sexual health here is defined as a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. The WHO working definition of sexuality is: "a central aspect of being human throughout life that encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction" (99).

Brief sexuality related communication involves a nurse, doctor or health educator using counselling skills, when the opportunity arises, to address sexuality and to promote sexual well-being during the length of a typical primary health care visit. It is rooted in the understanding that there is often a gap between intention and behaviour, and seeks to enable clients to bridge this gap by helping them to establish clear personal goals, as well as to initiate and sustain their motivation and actions towards achieving these. Because this communication is provided by a health worker, it has a greater likelihood of overcoming cultural sensitivities that exist in many contexts around giving information and support to adolescents in relation to sexuality – assuming that the provider has received appropriate training and support to deliver it well.

Annex 3. Additional information about evidence-based interventions

A3.1.2.
School health, hygiene and nutrition interventions

WHO, the United Nations Children's Fund (UNICEF), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Bank have agreed upon a core group of cost-effective components of a school health, hygiene and nutrition programme, as follows:

- health-related policies in schools that help to ensure a safe and secure physical environment and a positive psychosocial environment, and address all types of school violence, such as abuse of students, sexual harassment and bullying;
- safe water and sanitation facilities, as first steps in creating a healthy school environment;
- skills-based health education that focuses on the development of the knowledge, attitudes, values and life skills needed to make, and act on, the most appropriate and positive decisions concerning health; and
- school-based health and nutrition services that are simple, safe and familiar, and address problems that are prevalent and recognized as important in the community.

(100).

WHO has provided detailed guidance to countries on these and other aspects of a health-promoting school through a series of publications. WHO's Information Series on School Health includes issues focused on local action (24); healthy nutrition (101); emotional and social well-being (102); skills for health (103); violence prevention (104); reproductive health (105); HIV/AIDS/STI and related discrimination (106); physical activity (107); reducing helminth infections (108); tobacco use prevention (109); sun protection (110); oral health (111); and the physical environment (112).

For example, in 2003 WHO published a guidance document that outlines what is needed for a school to provide a healthy psychosocial environment for students (102). The document explains how teachers and other school staff can assess the psychosocial environment at their school and make organizational changes to improve promotion of the mental health and well-being of students. This process includes assessing whether the school provides a friendly, rewarding and supportive atmosphere; supports cooperation and active learning; forbids physical punishment and violence; does not tolerate bullying, harassment and discrimination; values the development of creative activities; connects school and home life through involving parents; and promotes equal opportunities and participation in decision-making (e.g. Case study A3.3).

Table A3.3 lists more resources from various organizations on planning, implementing, monitoring and evaluating school health programmes.

Table A3.3. Resources from various organizations on planning, implementing, monitoring and evaluating school health programmes

ORGANIZATION/INITIATIVE	ADVOCACY, POLICY GUIDANCE, CASE STUDIES FROM COUNTRIES	IMPLEMENTATION MANUALS AND TOOLS	MONITORING AND EVALUATION
WHO	European framework for quality standards in school health services and competences for school health professionals		Global school-based student health survey (GSHS) Global Youth Tobacco Survey (GYTS) Health Behaviour in School-Aged Children (HBSC) Case studies from countries on HBSC data-driven policy
School for health in Europe	School health promotion: evidence for effective action	School for health online school manual School action planner	SHE (online) rapid assessment tool
International Union for Health Promotion and Education (IUHPE)	Monitoring and assessing progress in health-promoting schools: issues for policy-makers to consider Facilitating Dialogue between the Health and Education Sectors to advance School Health Promotion and Education Promoting Health in Schools: From evidence to Action (the document is available in Arabic, Simple Chinese, Traditional Chinese, English, French, Italian, Japanese, Portuguese, Russian and Spanish)	Achieving Health-Promoting Schools: Guidelines to Promote Health in Schools (the document is available in Arabic, Chinese, English, French, Italian, Japanese, Portuguese, Russian and Spanish)	
Interagency partnership on Focusing Resources on Effective School Health (FRESH)	FRESH examples from countries and policy guidance on HIV School health in Latin America and the Caribbean	FRESH implementation tools on food and nutrition, water, sanitation and the environment	Monitoring and Evaluation Guidance for School Health Programmes – Eight Core Indicators to Support FRESH Monitoring and Evaluation Guidance for School Health Programmes – Thematic Indicators Monitoring and Evaluation Guidance for School Health Programmes – Appendices Frequently Asked Questions
Centers for Disease Control and Prevention (CDC)	CDC tools and resources on school health across topics Professional Development and Training	School Health Policies and Practices Study (SHPPS) (survey questionnaires, reports)	

Annex 3. Additional information about evidence-based interventions

Case Study A3.3

The Islamic Republic of Iran's school mental health promotion project

The national mental health programme in the Islamic Republic of Iran was launched in 1988, and at that time focused mainly on the integration of mental health into primary health care for the general population. Subsequent student surveys highlighted psychosocial problems among adolescents, which led to a new focus on mental health promotion in schools. A pilot project for school children and their parents was started in Damavand, a city north of Tehran. An evaluation found the intervention significantly improved students' and parents' attitudes towards mental health, increased student self-esteem, reduced fear of examinations, ended corporal punishment, reduced sexual assaults, and reduced student smoking. The programme was subsequently scaled-up to the national level.

Source: (113).

Nutrition services, including meal provision

Schools provide a wealth of opportunities to improve adolescent nutrition through formal learning, gardening, cooking and feeding (79). To implement comprehensive school-based nutrition programmes, national governments should:

- establish standards for meals provided in schools, or foods and beverages sold in schools, that meet healthy nutrition guidelines;
- eliminate the provision or sale of unhealthy foods, such as sugar-sweetened beverages and energy-dense, nutrient-poor foods, in the school environment;
- ensure access to potable water in schools and sports facilities;
- require inclusion of nutrition and health education within the core curriculum of schools;
- improve the nutrition literacy and skills of parents and caregivers; and
- make food preparation classes available to children, their parents and caregivers.

(114)

School feeding programmes are especially important as they can ensure equitable food availability even for disadvantaged adolescents, and promote healthy eating for all on a large scale (e.g. Case study A3.4) (101). These programmes might provide breakfast, lunch and/or snacks at reduced price or free of charge. Feeding programmes have been shown to increase the weight of children who do not otherwise have access to adequate food, and in some cases they have increased school attendance and achievement, particularly among girls (79); (101). In addition, the controlled nature of the school environment and its position within society makes establishing norms for nutritional quality a relatively easy task (115). School food is generally subject to strict quality and composition regulation, and studies have found that the nutritional quality of school lunches is significantly better when it is provided by the school, compared to food brought from home or purchased externally. WHO has also produced resources to aid governments in promoting healthy drinks in school environments, e.g. the 2016 WPRO guidelines Be Smart: Drink Water: A Guide for School Principals in Restricting the Sale and Marketing of Sugary Drinks in and around Schools (116).

Case Study A3.4.

Sweden's national programme to provide school meals to all students

Sweden has a long tradition of providing free school meals in primary and secondary school. This is regulated by state law, although state regulation is interpreted differently by municipalities across the country. School meals are funded by municipal taxes and municipalities operate the services in most areas; private-contract caters do so in some others. Head teachers, municipal dieticians or private-contract caterers are responsible for school-meal staff. The focus is on lunch, but a growing number of schools now also offer breakfast. School food must comply with Swedish Government Food Agency quality criteria and guidelines based on national nutrition recommendations that address nutrient content, menu planning, hygiene, eating environment and integration of the school food service within curricular activities. The main focus is on healthy food provision, but the choice of meals varies between municipalities and schools despite state regulation. The Swedish Government Food Agency hosts a website on which pupils, parents, school-meal personnel and decision-makers can rate meals. The meal service is mandatory, so the compliance and participation rate is very high. However, in many cases the school food is unpopular among students, teachers and parents.

The Swedish Municipality of Malmø, which has 82 primary schools, has made considerable efforts to make an appealing and sustainable food service through its environmental protection agency, taking a particular focus on the climate effects of food choices. One of its flagship schools developed new recipes based on the local food supply, school-based gardening and seasonal, organic produce, and rebuilt the school kitchen to support such innovation. The school has reported increased support and demand for school meals since this revitalization effort began. School and municipal practitioners attribute their success to the wide participation of catering and educational staff, and the creation of education opportunities for staff to support implementation.

Source: (115).

Health education, including comprehensive sexuality education

Skills-based health education uses participatory activities to help students acquire knowledge and develop the attitudes and skills required to adopt healthy behaviours (98). These can include cognitive skills (e.g. problem-solving, creative thinking, critical reflection and decision-making); personal skills (e.g. self-awareness, anger management and emotional coping); and interpersonal skills (e.g. communication, cooperation and negotiation). For example, skills-based health education seeks to clarify students' perceptions of risk and vulnerability, which can help them avoid becoming infected with HIV; increase their understanding of the importance of washing hands after going to the toilet or before eating; or realize their own role in the use of resources and their impact on the environment. It has the potential to empower adolescents to protect and improve their own and others' health, safety and well-being, leading to better health and educational outcomes for them and their communities.

Within broader health programmes, adolescents should have access to reproductive health education, focused not only on reproduction's biological and technical aspects, but also on the social and emotional issues (98). Adolescents particularly need to explore feelings and relationships, as well as female and menstrual hygiene, male hygiene, body awareness, the maturation process and changes during puberty. Box A3.1 details the topics that should be addressed within school-based puberty education.

Annex 3. Additional information about evidence-based interventions

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Box A3.1. Topics that should be included within puberty education

- What is puberty?
- When does puberty start? When does it end?
- What changes take place in female and male bodies? Body image.
- Hormonal and psychological changes and how to manage them.
- The male and female reproductive systems, i.e. sexual and reproductive anatomy and physiology, and the maturation process.
- What emotional changes are experienced?
- Erections, ejaculation, wet dreams and male hygiene.
- What is menstruation? What is premenstrual syndrome? Does menstruation hurt? How do you manage pain? How do you manage your menstruation?

- Menstrual hygiene materials, hygiene around menstruation, and how to dispose of menstrual materials. Menstrual calendar for tracking monthly menstrual flow, as well as identification of signs that a girl is going to have her period (e.g. breast sensitivity or changes in vaginal discharge).
- Cultural and religious beliefs, social norms and myths surrounding menstruation and puberty (location-specific).
- Gender roles.
- Privacy and bodily integrity.
- Adult perceptions – changing expectations and roles, and the way girls and boys are viewed as a result of reaching puberty (context-specific).
- How puberty affects a young person's role and relationship with family and friends.

Source: (98).

Puberty education should be provided in the context of comprehensive sexuality education (CSE). CSE covers a broad range of topics, including decision-making about sex and relationships, sexual health and well-being, and STI and pregnancy prevention (e.g. Case study A3.5). It should be gender-sensitive, contextually adapted, rights-based, scientifically accurate and age-appropriate (117). CSE is curriculum-based education that aims to equip adolescents with the knowledge, skills, attitudes and values that will enable them to develop a positive view of their sexuality, in the context of their emotional and social development (118). By embracing a holistic vision of sexuality and sexual behaviour, which goes beyond a focus on prevention of pregnancy and STIs, CSE enables children and young people to acquire accurate information, explore and nurture positive values and attitudes and develop life skills (118).

Case Study A3.5.

Brazil's experience with curriculum-based sex education in schools

In 2000 in Brazil, a curriculum-based sex education pro-gramme endorsed by the State Departments of Education and Health of the State of Minas Gerais was adopted in five municipalities. This programme, known as PEAS Belgo, was based on the principle that sex education is a right and an essential component of adolescent development. At least 60% of staff in participating schools were trained as part of the programme, and the curriculum included activities both inside and outside of school designed to engage adolescents in a participatory learning process. Activities included workshops, radio programmes, research projects and theatrical plays as well as the distribution of educational materials and communication tools. Adolescents participating in the sex education programme reported positive changes in sexual behaviour, including increased modern contraceptive use and more consistent condom use with casual partners.

Characteristics of an effective CSE curriculum relate to development, content and implementation, as follows:

- Development – assessing the relevant needs and assets of the particular adolescent target group; identifying health goals, behaviours affecting those goals, and risk and protective factors affecting those behaviours; and designing activities consistent with those factors, community values and available resources (e.g. staff skills, staff time, space and supplies).

- Content – creating a safe social environment for adolescent participants; focusing on prevention of HIV, other STIs, early pregnancy and unsafe abortion; targeting specific sexual behaviours that lead to these health goals (e.g. reducing number of sexual partners, or using condoms and other contraceptives); clearly addressing how to avoid situations that might lead to risky behaviours; multiple activities to change each of the targeted risk and protective factors affecting these behaviours (e.g. knowledge, perceived risks, attitudes, perceived norms and self-efficacy); and using teaching methods that actively involve youth participants and help them to personalize the information.

- Implementation – educators with desired characteristics and training to carry out the curriculum; at least minimum support from appropriate authorities (e.g. Ministry of Health, Ministry of Education, school district and community organization); and implementation of curriculum activities with quality and fidelity.

(121)

CSE content must respond appropriately to the specific context and needs of young people in order to be effective. This adaptability is central to culturally relevant programming, and includes understanding the messages that cultures convey around gender, sex and sexuality (122). This may include a concerted focus on topics such as gender discrimination, sexual and gender-based violence, HIV and AIDS, child marriage and harmful traditional practices.

The 2014 United Nations Population Fund (UNFPA) Operational Guidance for Comprehensive Sexuality Education provides tools to support governments in designing, implementing and evaluating CSE programmes (118). Ideally adolescents will be involved in the development, content and implementation of CSE programmes, both as a participatory right and as a way to maximize programme relevance, quality and effectiveness.

Menstrual hygiene management interventions

Adolescent girls need an adequate, regular supply of materials for menstrual hygiene management, as well as access to a lockable, single-sex, private toilet with water and soap for washing, and a suitable private space to dry wet menstrual cloths and/or a closed bin or incinerator for used menstrual pads (123); (124). Currently there is an absence of guidance, facilities and materials for girls to manage their menstruation in many LMICs (125). Following menarche, the social effects of ineffective management of regular menstruation can result in girls being excluded from everyday tasks, including touching water, cooking, cleaning, attending school, participating in religious ceremonies, socializing, or sleeping in their own homes or beds (124). In schools, girls may lack provisions for menstrual hygiene management. Many have also reported feelings of fear, confusion and shame in class due to leakage and dropping of sanitary material, smell and staining of clothes, teasing, and experience of harassment by male students and teachers (124); (126).

The NGO WaterAid has produced a useful, comprehensive resource with nine modules on menstrual hygiene management addressing: sanitary protection materials and disposal; initiatives in communities, schools, workplaces and emergency settings; and support for girls and women in vulnerable, marginalized or special circumstances (123); (126). Each module has a toolkit with checklists, technical designs and specifications, case studies and references.

Annex 3. Additional information about evidence-based interventions

A3.1.3.
Multisectoral initiatives

There are many multisectoral interventions that can contribute to the positive development of adolescents. The examples described below focus on the five Cs, adolescent participation, parenting skills and digital media.

Table A3.4. The five Cs of positive youth development: competence, confidence, connection, character and caring/compassion, which lead to contribution

NO.	ATTRIBUTE	DEFINITION
1	Competence	A positive view of one's actions in social, academic, cognitive, health, vocational and other areas. Social competence refers to interpersonal skills (e.g. conflict resolution). Cognitive competence refers to school performance, as shown, in part, by school grades, attendance and test scores. Health competence involves using nutrition, exercise and rest to keep oneself fit. Vocational competence involves work habits and exploration of career choices (e.g. effective entrepreneurial skills).
2	Confidence	An internal sense of overall positive self-worth and self-efficacy.
3	Connection	Positive bonds with people and institutions that are reflected in exchanges between the individual and peers, family, school and community, in which both parties contribute to the relationship.
4	Character	Respect for societal and cultural rules, possession of standards for correct behaviours, a sense of right and wrong (morality) and integrity.
5	Caring/ Compassion	A sense of sympathy and empathy for others.
	Together these five result in no. 6:	
6	Contribution	Contributions to self, family, community and the institutions of a civil society.

Source: (127).

Interventions to promote the five Cs – often referred to as positive youth development (PYD) interventions – generally take place in family, school or community settings, and target the individual, a system or both (128). They may focus on increasing resilience by improving young people's overall social and emotional well-being, and/or helping adolescents to develop the knowledge, skills and resources needed to succeed in school and at work. Interventions to increase resilience aim to promote psychological well-being, reduce problem behaviours and help young people form stable attachments. They include cognitive behavioural therapy, multisystemic and functional family therapy, and mentorship, e.g. pairing adolescents with caring, supportive adults who serve as role models. Interventions to develop the knowledge, skills and resources that adolescents need to succeed in school and at work focus on increasing their human, social, cultural and economic capital. These include: educational programmes for at-risk students; career-focused training in educational settings (e.g. vocational schools and community colleges); career and employment programmes (e.g. career mentoring and internships); family-focused programmes that encourage parental involvement in children's education; and community-based programmes that help young people access employment, training, educational and supportive services.

PYD interventions vary in strategy and form, but a review by Catalano and colleagues (2004) found that effective ones share certain attributes, including that they: shape messages from family and community about clear standards for youth behaviour; increase healthy bonding with adults, peers and younger children; expand opportunities and recognition for youth; provide structure and consistency in programme delivery; and intervene with youth for at least nine months (129).

Interventions to promote the five Cs

Lerner and colleagues (2011) have described positive adolescent psychosocial development in terms of the five Cs: competence, confidence, connection, character and caring/compassion. These lead to a sixth C: contribution. These are detailed in Table A3.4.

Adolescent participation initiatives

Article 12 of the United Nations Convention on the Rights of the Child specifies, "State parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child" (10). Adolescent participation has been explored and promoted in many different initiatives, ranging from health programme implementation to advocacy to broader issues of citizenship (130). In most contexts, the focus of participation is on inclusion of adolescents in meaningful and substantial ways, both as a human right and as a component that will improve the health or development outcomes of a given programme or intervention (131).

UNICEF and Save the Children (2011) identify three broad approaches to child participation that are valid and meaningful (132). Specified for adolescents, these are:

- **Consultative participation** – This is a process in which adults seek adolescents' views in order to build knowledge and understanding of their lives and experience. It is characterized by being adult-initiated, adult-led and adult-managed. It does not allow for sharing or transferring decision-making to adolescents. However, it does recognize that adolescents have expertise and perspectives that should inform adult decision-making.
- **Collaborative participation** – This provides a greater degree of partnership between adults and adolescents, with the opportunity for active engagement at any stage of a decision, initiative, project or service. It can be characterized as adult-initiated, involving partnership with adolescents, empowering adolescents to influence both process and outcomes, and allowing for increasing levels of self-directed action by adolescents over a period of time.
- **Adolescent-led participation** – This is where adolescents are afforded or claim the space and opportunity to initiate activities and advocate for themselves. It is characterized by the issues of concern being identified by adolescents themselves, adults serving as facilitators rather than leaders, and adolescents controlling the process.

The UNFPA Framework for Action on Adolescents and Youth (2007) identifies practical programming components that relate to adolescent participation (133), including:

- devise creative mechanisms for adolescents to engage in policy dialogue and advocacy efforts at the country level;
- build strategic alliances with youth networks and civil society partners;
- incorporate gender and social equity considerations in young people's participation;
- create an enabling environment contributing to the perception of young people as citizens and contributors to development;
- give a leadership role to young people in behaviour change communication and other forms of communication;
- address issues of capacity building for promoting young people's participation;
- take youth participation beyond peer education to include identifying vulnerabilities and risks, designing programming, participation in governance structures, monitoring, and evaluation of results;
- identify institutional mechanisms for incorporating young people's input into policy and programming processes and ensuring the rights of young people to participate in partnerships with adults;
- invest in capacity building and leadership skills of young people to help them become advocates for their own rights and development issues; and
- promote peer educators as agents for transacting SRH education, linking peers with services, and allying with young people's networks and coalitions.

Annex 3

3

Annex 3. Additional information about evidence-based interventions

Digital media interventions

The International Telecommunication Union (ITU) has produced guidelines for policy-makers and the technology industry on child online protection (134); (135).

The policy-maker guidelines encourage countries to formulate national strategies; key areas for consideration in this process are summarized in Table A3.5.

Table A3.5. Key areas for consideration when formulating a national strategy for child online protection

KEY AREAS FOR CONSIDERATION	FURTHER EXPLANATION
Legal framework	Review the existing legal framework to determine that all necessary legal powers exist to enable law enforcement and other relevant agencies to protect persons under the age of 18 online on all internet-enabled platforms.
	Establish that any act against a child that is illegal in the real world is illegal online and that the online data protection and privacy rules for legal minors are also adequate.
Law enforcement resources and reporting mechanisms	Ensure that a mechanism is established and is widely promoted to provide a readily understood means for reporting illegal content found on the internet; for example, a national hotline that has the capacity to respond rapidly and have illegal material removed or rendered inaccessible.
National Focus	Draw together all of the relevant stakeholders with an interest in online child safety, in particular: • government agencies; • law enforcement; • social services organizations; • internet service providers and other electronic service providers; • mobile phone network providers; • other relevant hi-tech companies; • teacher organizations; • parent organizations; • children and young people; • child protection and other relevant NGOs; • academic and research community; and • owners of internet cafés and other public access providers e.g. libraries, telecentres and online gaming centres.
	Consider the advantages that a self- or co-regulatory policy development model might present, as expressed by the formulation and publication of codes of good practice, both to help engage and sustain the involvement of all relevant stakeholders and to enhance the speed with which appropriate responses to technological change can be formulated and put into effect.
Education and awareness resources	Draw on the knowledge and experience of all stakeholders and develop internet safety messages and materials that reflect local cultural norms and laws and ensure that these are efficiently distributed and appropriately presented to all key target audiences. Consider enlisting the aid of mass media in promoting awareness messages. Develop materials that emphasize the positive and empowering aspects of the internet for children and young people and avoid fear-based messaging. Promote positive and responsible forms of online behaviour.
	Consider the role that technical tools such as filtering programmes and child-safety software can play in supporting and supplementing education and awareness initiatives.
	Encourage users to take responsibility for their computers through regular servicing, which includes updates of the operating system and the installation and upgrading of a firewall and antivirus application.

Source: (134).

There is a great need for education about online risks with each new generation of adolescents and their families. However, a recent WHO survey found that only 41% of governments conduct initiatives to provide information and education to citizens about internet safety and literacy, and only 30% of the countries with such initiatives specifically target children (136). Increasingly, safety tools and security technologies (such as filters, blocks or monitors) are required by law for schools, libraries and other public places with internet facilities used by children. However, approximately half (47%) of countries surveyed reported they did not have such arrangements. One third (33%) of countries surveyed require internet service providers to provide online safety tools or technologies to protect children.

In addition to the policy and industry guidelines mentioned above, ITU has produced guidelines on child online protection for parents, educators and children (134); (138). For example, the ITU guidelines for 8–12 year olds address online friends, netiquette (i.e. electronic standards of conduct or procedure), playing online games, bullying, and a child's digital footprint (134). For children aged 13 and above, the guidelines focus on harmful and illegal content, grooming (i.e. when sexual predators contact, manipulate and gain the confidence of children for sexual purposes), cyberbullying, defending one's privacy, respect for copyright, and online commerce.

In addition to child online protection interventions, there is promising potential to promote adolescent health through online, e-health (electronic health), and m-health (mobile health) initiatives. e-health is the use of information and communication technologies for health, including treating patients, educating the health workforce and monitoring public health. M-health is a type of e-health involving mobile phones and other wireless technology use in health care, including telemedicine, helplines, emergency services, surveys, surveillance, awareness-raising, and decision-support systems (139). Communication technologies cannot replace contact with a competent health-care provider, but e-health and m-health technologies may complement efforts to bring services closer to adolescents, as they can achieve high coverage at low cost. Increasingly, e-health and m-health technologies are being used to support adolescent health related to a variety of conditions, including SRH, obesity prevention and treatment, and chronic disease prevention and management (e.g. type 1 diabetes, asthma, cancer, smoking cessation and alcohol-related problems) (140-144). Methods include web-based learning, active video games, text messaging, and mobile phone and tablet software programme apps. Evaluations of such interventions has been very limited to date, but they do provide preliminary evidence indicating that targeted digital media interventions have the potential to improve adolescent health knowledge, attitudes and behaviours.

Annex 3. Additional information about evidence-based interventions

A3.2.
Road injury interventions in-depth

Globally, the highest road traffic fatality rates occur in middle-income countries (MICs) (43). One half of all deaths occur among vulnerable road users, i.e. motorcyclists (23%), pedestrians (22%) and cyclists (5%). Low-income countries (LICs) have the highest rate of such deaths (57%), followed by MICs (51%) and high-income countries (HICs) (39%) – reflecting the fact that a relatively high proportion of road users in LICs and MICs are vulnerable. As noted in Section 2, older adolescent males have very high rates of mortality and DALYs lost due to road injury. Indeed, fully three quarters of all road traffic deaths are among young males. Among drivers, young males under the age of 25 years are almost three times as likely to be killed as their female counterparts, which may reflect the fact that males are more likely to be on the roads because of sociocultural reasons, as well as a greater propensity to take risks compared to females (145). Distracted driving is also a serious and growing threat to road safety. For example, drivers using a mobile phone are about four times more likely to be involved in a accident than those not using a phone. This risk is similar for both hand-held and hands-free phones (43).

Many key interventions to reduce adolescent road injury are also key multisectoral interventions for general populations (e.g. Case study A3.6). At the country level, an adequately funded lead agency and a national plan or strategy with measureable targets are crucial components of a sustainable response to road safety (146). Related to this, the 2013 WHO Global Status Report on Road Safety stated three major recommendations for governments: (1) pass comprehensive legislation that meets best practice on all key risk factors to address preventable road death, injury and disability; (2) invest sufficient financial and human resources in the enforcement of these laws, as an essential component for their success; and (3) make a concerted effort to make road infrastructure safer for pedestrians and cyclists (43).

Case Study A3.6.

Brazil's improvement of road safety legislation

Between 1991 and 1997, the Ministry of Health of Brazil recorded a dramatic increase in mortality from road traffic accidents. In response, legislators introduced a new traffic code in 1998 to toughen the punishment for driver infractions and transfer administrative duties to local government. Between 1998 and 2001, mortality rates from road traffic injuries fell markedly. Subsequent analysis estimated that the new code had saved some 5000 lives nationally during that period. In 2001, a National Policy on Morbidity and Mortality Reduction due to Accidents and Violence was approved, allowing the Ministry of Health to build on the groundwork laid by the new traffic code and implement further violence and traffic accident prevention measures.

Source: (147).

The WHO Global Plan for the Decade of Action for Road Safety (2011–2020) outlines more specific, practical guidance to help governments and other stakeholders develop national and local plans of action to reduce road injury. Effective interventions include incorporating road safety features into land-use, urban planning and transport planning; designing safer roads and requiring independent road safety audits for new construction projects; improving the safety features of vehicles; promoting public transport; effective speed management by police and through the use of traffic-calming measures; setting and enforcing internationally harmonized laws requiring the use of seat-belts, helmets and child restraints; setting and enforcing blood alcohol concentration limits for drivers; and improving post-accident care for victims of road accidents, including pre-hospital care, hospital care and rehabilitation (e.g. Case study A3.7). Public awareness campaigns also play an important role in supporting the enforcement of legislative measures, by increasing awareness of risks and of the penalties associated with breaking the law (146).

Case Study A3.7.

Iraq's post-conflict innovative emergency medical services

In post-conflict, rural Iraq there were no formal emergency medical services. An innovative programme created a two-tier network of village first responders, i.e. villagers who had completed a two-day basic first aid course, and paramedics who had been trained in a 450-hour course. Mortality among injured people declined dramatically, from 40% to 9%. This programme supplied training and basic equipment, but no ambulances or other vehicles. Over time, the system grew and adapted to a changing epidemiological pattern, including caring for increasing numbers of road traffic accident victims and other medical emergencies.

Source: (148).

In addition to interventions for general populations, which in some contexts may be the most effective way to reduce the adolescent road injury burden, some evidence-based programmes specifically target youth. One example is interventions to lower blood alcohol limits for young and novice drivers, because those who drink and drive have a greatly increased risk of an accident compared older and/or more experienced drivers (43). Setting a lower permitted blood alcohol concentration limit (0.02 g/dl) for young drivers than WHO recommends for older drivers (0.05 g/dl) effectively reduces accidents related to drink-driving. Currently, 42 countries have implemented such limits (43).

Another example of a youth-specific intervention to reduce road injury is the promotion of helmet use among young drivers and passengers of motorized two-wheelers (e.g. Case study A3.8). Motorcycles are less safe than cars, but in LMICs children riding on a motorcycle as a passenger or driver are a very common sight, even where this might be prohibited by law for the driver (149).

Related to this, WHO recommends that children under 15 years old should not be allowed to drive a motorcycle; children whose feet cannot reach the footrest of a motorcycle not be transported on it; children use all available protective gear when being carried on a motorcycle (i.e. a crash helmet, covering for their legs, and footwear); and only motorcyclists who have passed a test for carrying a child passenger be allowed to carry children under 12 years. For adolescent drivers, WHO recommends: driving education and skills development training programmes be designed to increase adolescent knowledge of safe driving and hazard perception; and novice drivers be supervised during the first few months of driving, and limited in their driving to reduce high-risk situations according to road type, passengers and night-time driving. Supervision and limitation criteria should reflect physical growth and motor, cognitive and psychosocial development, so that criteria are more stringent for young age groups (e.g. 15–17 years) than for older ones (e.g. 18–19 years).

Case Study A3.8.

Viet nam's promotion of child motorcycle helmet use

Since 1999, the Asia Injury Prevention Foundation in Hanoi has promoted motorcycle helmet use through public awareness campaigns; lobbying of the government; helping develop helmet standards for both adults and children; distributing child helmets along with information on their use; and pushing to increase the production of helmets. At the end of 2007, the Vietnamese government passed a law that made helmet wearing compulsory for drivers and passengers on motorcycles. Following its introduction, rates of helmet use increased to more than 90%. Hospitals began reporting reductions in the number of deaths and brain injuries resulting from motorcycle accidents.

Source: (44).

Annex 3. Additional information about evidence-based interventions

A3.3.
Youth violence interventions in-depth

For LICs and MICs, the highest estimated rates of homicide in general populations are in the WHO Region of the Americas, with an annual rate of 29 deaths per 100 000 population, followed by the African Region with a rate of 11 per 100 000 (150). Males account for 82% of all homicide victims and are associated with estimated rates of homicide that are more than four times those of females (11 and 3 per 100 000 respectively). The highest estimated rates of homicide in the world are found among males aged 15–29 years (18 per 100 000); in contrast, rates of homicide among females range from 1 per 100 000 in the age range 5–14 years, to 3 per 100 000 for 15–29 years. When women are killed, it is often their partners who are responsible. In 2013, WHO and others estimated that as many as 38% of female homicides globally were committed by male partners, while 6% of males were killed by their female partner (150).

In the age range 5–14 years, homicide rates increase progressively from high- to low-income countries. By contrast, homicide rates in the 15–29 age range are highest in upper-middle-income countries, followed by low-income countries. This may reflect the influence of factors other than income, particularly in upper middle-income countries in the Region of the Americas. For example, firearms are highly prevalent in the Region of the Americas and are the predominant weapon used in violent encounters, including intimate partner homicides. In other regions, weapons such as knives and beatings with fists, feet or objects are more common. Firearm homicides account for 75% of all homicides in the Region of the Americas, compared to 38%, 35%, 26% and 25% of homicides in the African, South-East Asia, Eastern Mediterranean and European Regions respectively (150).

As noted in Section 2, youth violence has a great impact on DALYs lost as well as mortality. Globally, an estimated four out of 10 young people are in a physical fight annually; one out of four teenagers are bullied each month; and two out of three victims of school violence ever tell anyone about it (150).

Many evidence-based initiatives to reduce and respond to violence in general populations also positively reduce youth violence (e.g. Case study A3.9). The 2014 WHO Global Status Report on Violence Prevention made several recommendations to national governments to reduce violence in general populations, namely:

- strengthen data collection to reveal the true extent of the problem;
- develop comprehensive and data-driven national action plans;
- integrate violence prevention into other health platforms;
- strengthen mechanisms for leadership and coordination;
- ensure prevention programmes are comprehensive, integrated and informed by evidence;
- ensure that services for victims are comprehensive and informed by evidence;
- strengthen support for outcome-evaluation studies;
- enforce existing laws and review their quality;
- implement and enact policies and laws relevant to multiple types of violence; and
- build capacity for violence prevention. (150)

Case Study A3.9.

Colombia's upgrading of low-income urban neighbourhoods

In 2004, municipal authorities in Medellín, Colombia, built a public transport system to connect isolated low-income neighbourhoods to the city's urban centre. Transit-oriented development was accompanied by municipal investment in the improvement of neighbourhood infrastructure. Rates of violence were assessed in intervention neighbourhoods and comparable control neighbourhoods before (in 2003) and after (in 2008) completion of the project, using a longitudinal sample of 466 residents and homicide records from the Office of the Public Prosecutor. When compared to control communities, intervention communities had a 66% greater decline in homicide rates, and a 75% greater decline in resident reports of violence.

Source: (48).

Globally, there has been wide enactment of laws relevant to violence, but enforcement of those laws is usually much lower than would be expected based on the legislation (150). Limited progress has also been made in the area of national action plans: 51% of 133 countries surveyed had a national action plan that addressed all forms of violence. Countries in the Region of the Americas reported a much higher frequency of such plans (76%), as well as a higher frequency of all types of subplans related to specific types of violence, e.g. 91% of American countries had national action plans specifically addressing child maltreatment, compared to 86% addressing intimate partner violence and sexual violence, and 71% addressing youth violence.

In the 2014 Global Status Report on Violence Prevention, WHO and its partners identified seven "best-buy" anti-violence strategies – six focused on preventing violence and one focused on response efforts. These strategies can potentially reduce multiple types of violence and help decrease the likelihood of individuals perpetrating violence or becoming a victim.

The strategies are:

1. develop safe, stable, and nurturing relationships between children and their parents and caregivers (e.g. case study A3.10);
2. develop life skills in children and adolescents;
3. reduce the availability and harmful use of alcohol (e.g. Case study A3.11);
4. reduce access to guns and knives;
5. promote gender equality to prevent violence against women;
6. change cultural and social norms that support violence; and
7. implement victim identification, care and support programmes (150)

Case Study A3.10.

The Russian Federation's mentoring programme

The Big Brothers, Big Sisters mentoring programme is currently implemented in the Russian Federation and 11 other countries. The programme matches a volunteer adult mentor to a child, with the expectation that a caring and supportive relationship will develop. Once matches are made, they are monitored and supervized by a professional. Relationships between mentor and child are one-to-one, and involve meeting for three to five hours per week over the course of a year or longer. Goals are set jointly with the child and parents at the beginning of the mentoring relationship and may relate to problem behaviours, school attendance, academic performance, relationships with other children or learning new skills. The case manager maintains regular contact with the mentor and the child to determine how the relationship is developing. Internationally, this programme has been shown to reduce alcohol and drug use, physical violence and absenteeism from school, and to improve the quality of relationships between children and their parents.

Source: (48).

Case Study A3.11.

The former USSR's strict alcohol regulation

A strict anti-alcohol campaign was implemented in the former USSR in 1985 to address growing levels of alcohol consumption and related harm. Facilitated by a state monopoly on legal alcohol production and sales, the campaign included:

- reduced state alcohol production;
- reduced numbers of alcohol outlets;
- increased alcohol prices;
- a ban preventing alcohol use in public places and at official functions;
- increased age of alcohol purchase (to age 21); and
- increased penalties for, and the enforcement of a ban on, the production and sale of homemade alcohol.

The campaign initially had significant impact. In Moscow, state alcohol sales fell by 61% (1984–1987), alcohol consumption by 29%, total violent deaths by 33% and alcohol-related violent deaths by 51% (1984–1985/6). However, the campaign became unpopular, and by 1988 the consumption of illegal alcohol had increased while government finances suffered due to reduced alcohol taxes. Late that year, alcohol production, outlets and trading hours were expanded, effectively ending the campaign. By 1992, market reforms had been introduced that liberalized prices and trade, and the number of violent deaths rose dramatically to exceed previous levels. Given the additional social and political changes in the Russian Federation over this period, the increase in violent deaths was unlikely to be due to alcohol alone. However, temporal relationships between the changes in alcohol regulations and subsequent variation in violence suggest that they are at least closely related.

Source: (152).

Annex 3. Additional information about evidence-based interventions

The 2015 WHO Preventing Youth Violence report identifies six activity areas for governments initiating a public health approach to youth violence. For each of the six, the report outlines core responses that can be undertaken without additional resources; expanded responses that require extra resources; and desirable responses for which considerable additional resources may be required. These are described in Table A3.6 below.

Table A3.6. Activity areas for governments initiating a public health approach to youth violence

CORE OPTIONS	ENHANCED OPTIONS	DESIRABLE OPTIONS
1. Raise awareness about prevention		
• Consult with key persons from government, including ministries of justice, education and social services. • Develop/adapt and disseminate a policy brief describing the scale of victimization, consequences of youth violence, and effective interventions to prevent it.	• Organize a national policy discussion around youth violence prevention with representatives from various sectors. • Develop an awareness-raising campaign and distribute printed and electronic documents. • Organize a study tour for policy-makers and planners to visit emergency wards, the police and youth violence prevention programmes.	• Produce educational materials, brochures, pamphlets, posters, videos, slides, multimedia, websites and electronic bulletins. • Organize conferences, workshops and group discussions on youth violence. • Work with the media to organize news conferences, television and radio shows and training to advise journalists how to report on youth violence in newspapers and the media. • Document adverse long-term consequences of youth violence.
2. Develop partnerships across sectors		
• Identify focal points for youth violence prevention from other sectors and organize an informal meeting with at least two other sectors. • Share information about your current work and goals, identify common interests, and establish a mechanism to exchange information regularly. • Develop a stakeholder map for youth violence prevention.	• Establish a formal partnership with key sectors. • Establish a coordination platform and terms of reference. • Explore joint initiatives and projects that do not require substantial additional resources (e.g. joint mechanisms for data exchange).	• Develop a partnership workplan, which is reflected in the annual workplans and budgets of the individual organizations that are members of the partnership.
3. Strengthen knowledge about the importance of data collection on fatal and non-fatal youth violence, and on related risk and protective factors		
• Identify existing data sources that contain information on the prevalence, consequences and risk factors for youth violence.	• Compile existing data on youth violence. • Draft a policy brief informed by existing data.	• Conduct and regularly repeat a nationwide population-based survey on prevalence and risk factors for youth violence. • Ensure that existing health information systems, emergency department trauma registries, and vital registration systems for causes of death capture age- and sex-disaggregated data on violence using International Classification of Disease codes.
4. Enhance the capacity to evaluate existing prevention programmes		
• Conduct developmental and process evaluations of your country's violence prevention programmes. • Identify data sources that can provide information about the effectiveness of your programme, project or policy from existing data sources, e.g. emergency department records. • Collect implementation data (e.g. information on dropouts); conduct focus groups and in-depth interviews with various stakeholders to identify strengths and weaknesses of the programme.	• Conduct a simple outcome evaluation by collecting data before and after an intervention, ideally comparing findings for the group that received the intervention with a comparison group that has the same characteristics but did not receive the intervention.	• Conduct quasi-experimental outcome evaluations or randomized, controlled trials with an experimental and a control group, which is similar to the group that receives the intervention but is not exposed to the programme. • Publish your evaluation results in scientific journals.
5. Establish a policy framework		
• All steps of the policy development process are key to youth violence prevention efforts and can be pursued with almost no or very few additional resources. • Review existing laws on youth violence prevention.		
6. Build capacity for youth violence prevention		
• Integrate youth violence prevention into existing curricula and training for health and social workers. • Establish a focal point or unit in charge of youth violence prevention.	• Develop jointly with other sectors and NGOs a strategy on how to increase human capacity for youth violence prevention.	• Establish a career path for violence-prevention professionals. • Establish university courses or studies in the area of violence prevention.

Source: (48).

Although the burden of youth violence is higher in LMICs, until recently almost all studies of prevention effectiveness come from HICs (48); (52). Within the pool of existing studies, the evidence is unevenly distributed over different ecological levels. The largest proportion of youth violence interventions and outcome evaluation studies concerns strategies that address risk factors at the individual and close relationship levels. Far fewer community- and society-level interventions have been evaluated. In addition, despite the importance of prevention efforts that target children at an early stage, few longitudinal studies measure the effects of interventions delivered in early childhood on subsequent youth violence outcomes.

Globally, a half of 133 reporting countries currently implement life-skills and social-development programmes (51%) and bullying-prevention programmes (47%) to address youth violence on a large scale. Approximately one third implement large-scale programmes focused on parent-child relationships, pre-school enrichment, and after-school activities, and one quarter report the same for mentoring programmes (150).

The last two sections have focused on interventions to prevent and respond to youth injury and violence, but additional resources exist to help countries better respond to other forms of violence, e.g. the 2016 Global Plan of Action to Strengthen the Role of the Health System within a National Multisectoral Response to Address Interpersonal Violence, in Particular against Women and Girls, and against Children (153). Also available are resources to help countries better respond to adolescent injury and violence after it occurs, including guidelines related to pre-hospital response, hospital-based trauma programmes, and long-term care (154-156).

Annex 3. Additional information about evidence-based interventions

A3.4.
Sexual and reproductive health interventions in-depth

In 2003, the United Nations Convention on the Rights of the Child focused its General Comment No. 4 on Adolescent Health and Development in the Context of the Convention on the Rights of the Child. In that document, the Committee stated, "In light of Articles 3, 17, and 24 of the Convention [i.e., best interest of the child, access to information, and health/health services, respectively], States Parties should provide adolescents with access to sexual and reproductive information, including on family planning and contraceptives, the dangers of early pregnancy, the prevention of HIV/AIDS and the prevention and treatment of sexually transmitted diseases. In addition, States Parties should ensure that they have access to appropriate information, regardless of their marital status and whether their parents or

guardians consent. It is essential to find proper means and methods of providing information that is adequate and sensitive to the particularities and specific rights of adolescent girls and boys. With regard to privacy and confidentiality, and the related issue of informed consent to treatment, States Parties should (a) enact laws or regulations to ensure that confidential advice concerning treatment is provided to adolescents so that they can give their informed consent. Such laws or regulations should stipulate an age for this process, or refer to the evolving capacity of the child; and (b) provide training for health personnel on the rights of adolescents to privacy and confidentiality, to be informed about planned treatment and to give their informed consent to treatment" (16).

A3.4.1.
Early and/or unintended pregnancy interventions in-depth

Recent research suggests that adolescents have somewhat elevated rates of maternal mortality compared to older age groups, although this risk is lower than that estimated by previous research (158); (159). It is evident, however, that adolescents have high rates of unintended pregnancy, which can lead to a range of adverse physical, social and economic outcomes. The clearest way to prevent these adverse outcomes is by ensuring access to contraception to prevent unintended pregnancies.

Adolescents in many countries lack adequate access to contraceptive information and services that are necessary to protect their SRH. Analysis of inequalities in survey data from 98 LMICs found that, in virtually all countries, sexually active adolescents had lower coverage of family planning needs than sexually active women aged 20 years or older. In several countries, the differences are substantial. In addition, adolescents aged 15–17 years tend to have lower coverage than those aged 18–19 years (160).

Structural interventions to reduce unintended pregnancies among adolescents include legislating adolescent access to contraceptive services, reducing the cost of contraceptives to adolescents, and legally prohibiting child marriage and coerced sex (57). Adolescents' best interests and their evolving capacities need to be systematically considered. Human rights bodies have called on states strictly to respect adolescents' rights to privacy and confidentiality, including when providing advice on health matters, and to ensure the availability of youth-friendly, confidential contraceptive and other reproductive health-care services for adolescents from all socioeconomic backgrounds (161-163).

Adolescents are eligible to use all the same methods of contraception as adults, and must have access to a variety of contraceptive choices. Age alone does not constitute a medical reason for denying any method to adolescents. Recommended policy actions to expand adolescent access to high-quality contraceptive services include eliminating social and nonmedical restrictions on the provision of contraceptives to adolescents (e.g. prohibitive social or gender norms) and enacting policies enabling adolescents to obtain a full range of contraceptive methods and services, through delivery mechanisms that are appropriate and acceptable to them (161).

Recommended programme actions include:

- engage adolescents as full partners in designing, implementing and monitoring contraceptive information and service provision;

- draw upon the support of parents and other influential adults in providing contraceptive services;

- make available a full range of contraceptive methods through outlets that different groups of adolescents are likely to frequent, including social marketing outlets, educational and social facilities, and the health system;

- use traditional and innovative ways of providing contraceptive information and services to both girls and boys;

- link the provision of contraceptive services to the provision of wider SRH service for adolescents, including information and clinical services related to HIV and other STIs, and as an integral component of a comprehensive response to sexual violence; and

- require and support contraceptive service providers to be respectful of adolescents, regardless of whether or not they are in formal unions.

(161)

Box A3.2 provides guidance on how health-care providers can engage with adolescents in youth-friendly ways during clinical interactions.

Box A3.2. Examples of how health workers can provide youth-friendly sexual and reproductive health services

All adolescents deserve high-quality and respectful care. Criticism or unwelcoming attitudes will keep them away from the care they need. Counselling and services do not encourage adolescents to have sex. Instead, they help young people protect their health.

To make services friendly to adolescents, health-care providers can:

- Show adolescents that they enjoy working with them.
- Counsel in private areas where they cannot be seen or overheard, ensuring confidentiality and assuring the client of confidentiality.
- Listen carefully and ask open-ended questions such as, "How can I help you?" and "What questions do you have?"
- Use simple language and avoid medical terms.
- Use terms that suit young people, avoiding terms such as family planning, which may seem irrelevant to those who are not married.

- Welcome partners and include them in counselling, if the client desires.
- Try to make sure that a young woman's choices are her own and that she is not pressured by her partner or her family. In particular, if she is being pressured to have sex or to not use condoms, providers should help a young woman think about, and practise, what she can say and do to resist and reduce that pressure.
- Speak without expressing judgment (say, for example, "You can" rather than "You should"), and avoid criticizing the adolescent even if the provider does not approve of what the adolescent is saying or doing. The provider should help adolescents make decisions that are in their best interest.
- Take time to address fully questions, fears and misinformation about sex, STIs and contraceptives. Many adolescents want reassurance that the changes in their bodies and their feelings are normal. Providers should be prepared to answer common questions about puberty, monthly bleeding, masturbation, night-time ejaculation and genital hygiene.

Source: (336).

Annex 3. Additional information about evidence-based interventions

Box A3.3 explains the safety and appropriateness of each method of contraception for young people.

Box A3.3. The safety and appropriateness of different contraceptive methods for young people

Young people can safely use any contraceptive method.

- Young women are often less tolerant of contraceptive side effects than older women. With counselling, they will know what to expect and may be less likely to stop using their methods.
- Unmarried young people may have more sex partners than older people and so may face a greater risk of STIs. Considering STI risk, and how to reduce it, is an important part of counselling.

For some contraceptive methods, there are specific considerations for young people:

- **Hormonal contraceptives (oral contraceptives, injectables, combined patch, combined vaginal ring, and implants)**
  - Injectables and the combined ring can be used without others knowing.
  - Pills must be taken every day, so this method requires the user's conscientious action.
- **Emergency contraceptive pills**
  - Young women may have less control than older women over having sex and using contraception. They may need emergency contraceptive pills more often.
  - Provide young women with emergency contraceptive pills in advance, for use when needed. Emergency contraceptive pills can be used whenever a young woman has any unprotected sex, including if she has sex against her will, or if a contraceptive mistake has occurred (e.g. condom was used incorrectly, slipped or broke; or she missed three or more combined oral contraceptive pills).

- **Female sterilization and vasectomy**
  - Provide with great caution. Young people and people with few or no children are among those most likely to regret sterilization.
- **Male and female condoms**
  - These protect against both STIs and pregnancy.
  - They also are readily available in many settings (particularly male condoms), and they are affordable and convenient for occasional sex.
  - It may help to practise putting condoms on alone, before using them with a partner for the first time.
- **Intrauterine device (copper-bearing and hormonal intrauterine devices)**
  - Intrauterine devices are more likely to come out among women who have not given birth because their uteruses are small.
- **Diaphragms, spermicides and cervical caps**
  - Although among the least effective methods, young women can control use of these methods, and they can be used as needed.
- **Fertility awareness methods**
  - Until a young woman has regular menstrual cycles, fertility awareness methods should be used with caution.
  - Users need to have a backup method or emergency contraceptive pills on hand.
- **Withdrawal**
  - Requires the man to know when he is about to ejaculate so he can withdraw in time. This may be difficult for some young men.
  - This is one of the least effective methods of pregnancy prevention, but it may be the only method available – and always available – for some young people.

Source: (336).

As for other contraceptive methods, for long-acting prevention methods such as the intrauterine device and the progestogen implant, WHO recommends the elimination of medical and non-medical barriers to use, including the requirement of parent or partner consent, or limiting the use of methods based on an adolescent's age or parity (165).

When they do become pregnant, adolescents may be more likely than older women to delay seeking maternal health care because they do not know they are pregnant or that they are having complications, they are experiencing shame or stigma if they are pregnant outside of marriage, or they are constrained in making decisions about their use of medical care (e.g. by in-laws) (166). Prenatal care is important to prevent, identify and treat iron deficiency and anaemia in adolescents, and also to identify and treat pregnancy-induced hypertension, which is a leading health risk among adolescents having a first baby. Pregnant adolescents also have a higher risk of malaria-related mortality, spontaneous abortions and preterm delivery (107).

Skilled attendance is particularly important during first births because of the lack of birth history, increased likelihood of complications among first births, and potential lack of awareness of danger signs (166). The pelvic bones and birth canals of adolescents, especially very young ones, are still growing, which increases their risk of complications during vaginal birth. Therefore, young adolescents are more at risk of prolonged or obstructed labour and ideally should have skilled care in a setting where labour augmentation, caesarean section, and operative vaginal delivery with vacuum or forceps extraction can be performed. Obstructed or prolonged labour is one of the more serious complications that can cause mortality or potentially long-term injuries, including obstetric fistulae. In the latter case, a girl may not only suffer the medical consequences of the fistula, but in many cases may also be shunned by her partner, family and community, leading to social isolation and problems with mental health. Care during pregnancy and soon after childbirth is also critical for reducing levels of maternal mortality. For example, because adolescents have a higher risk of difficult labour than older women, they may be at increased risk for postpartum infections.

Final issues in considering the SRH intervention needs of adolescents are the particular health risks posed by early and/or forced marriage, and unsafe abortion. Married adolescent girls are vulnerable to sexual and reproductive ill-health, with potentially life-threatening consequences. The age of marriage is rising in most parts of the world, but the number of early marriages is still substantial. The 10 countries with the highest rates of child marriage – measured as rates among women who are now aged 20–49 years – are all in Africa and South-East Asia (167). In Africa these include Niger (77%), Chad (69%), Mali (61%), the Central African Republic (60%), Guinea (58%), Ethiopia (58%) and Burkina Faso (52%), while in South-East Asia they are Bangladesh (74%), India (58%) and Nepal (52%). Niger has the highest overall prevalence of child marriage in the world, but Bangladesh has the highest rate of marriage involving girls under 15 years. In absolute numbers, South Asia is home to 42% of all child brides worldwide; India alone accounts for one third of the global total.

Once adolescent girls are married, they typically are not reached by school-based or peer-led adolescent health programmes. They may also not make use of programmes for married women, because they do not know what services are available or how to access them, especially if they have not yet had a child (167). In some settings, specialized outreach services may be effective in promoting services with such girls (e.g. Case study A3.12).

Case Study A3.12.

The USA's home visits to prevent rapid repeat adolescent pregnancies

Rapid repeat pregnancy, which is usually defined as pregnancy onset within 12–24 months of a previous pregnancy, is common among adolescent mothers. A randomized controlled intervention trial conducted in Baltimore recruited adolescent mothers following delivery and assigned them either to receive a theory-based home-mentoring curriculum for up to 19 visits, or to receive the usual care. Compared with controls, adolescents who received multiple home visits were significantly less likely to have a repeat birth, while those who participated in more than eight of the 19 sessions had no births in the two-year follow-up period.

Sources: (169); (170)

Complications from unsafe abortion are also an important cause of adolescent maternal disorders, so countries should strive to reduce unsafe abortions among adolescents. This may include enabling access to safe abortion and postabortion services, actively informing adolescents about them, and increasing community awareness of the dangers of unsafe abortion (120). According to the Guttmacher Institute, in developing regions in 2008, 3.2 million adolescent girls and women aged 15–19 years are estimated to have undergone unsafe abortions, which is an annual rate of about 16 unsafe abortions per 1000 15- to 19-year-old females (171). These overall figures mask substantial variation in the unsafe abortion rate between geographic regions. Africa, and Latin America and the Caribbean, where most countries have very restrictive abortion laws, had very high unsafe abortion rates, i.e. 26 per 1000 15–19 year old females in Africa, and 25 per 1000 in Latin America and the Caribbean. In Asia, which contains many countries with more liberal abortion laws, the unsafe abortion rate in 2008 was only nine per 1000 adolescents.

Annex 3. Additional information about evidence-based interventions

A3.4.2.
HIV interventions in-depth

Access to and uptake of HIV testing and counselling (HTC) by adolescents is lower than for many other age groups, which detrimentally affects adolescent HIV prevention, treatment and care services (172). This is especially true of adolescents in key populations who are at higher risk of horizontal (i.e. sexual or intravenous) HIV infection in all regions and epidemic types. These include sex workers, males who have sex with males, transgender people, youth, and/or injecting drug users (54); (172). Another important consideration is the role of counselling prior to HIV testing and how it encourages or discourages access among adolescents. While specific programmes may be developed to test adolescents (e.g. through schools), all strategies directed to adults – including community-based testing and counselling, prevention of mother-to-child transmission, and physician-initiated testing and counselling – should take the needs of adolescents into equal consideration (54).

All adolescents should have access to HIV testing, and structural interventions may be necessary to ensure this (e.g. Case study A3.13). It is especially important to ensure that those who are most vulnerable, and those with high-risk behaviours, are supported to access testing that is linked with adequate post-test counselling and prevention and/or treatment and care. Late diagnosis of HIV infection resulting in delayed anitretroviral therapy (ART) initiation is a significant problem among vertically (i.e. perinatally) infected adolescents in Africa. Access to treatment and care also remains inadequate. Following HTC, there are poor linkages to and retention in HIV care for most populations, and ART coverage rates for adolescents are even lower than for other age groups. Interventions and support for sustained ART adherence and retention in care are inadequate in many settings, which has led to high levels of adolescent treatment failure and HIV-related morbidity and mortality (54).

Countries should promote equitable, accessible, acceptable, appropriate and effective adolescent-friendly health services to ensure that adolescents are diagnosed and receive ART in a timely manner, and are supported to remain in HIV care and to stay on treatment. The implementation of adolescent-friendly health services has been proven to improve health outcomes, utilization and acceptability of services for adolescents, including those living with HIV (e.g. Case study A3.14) (173).

Case Study A3.13.

South Africa's reduced age of consent for HIV testing

In 1997, the South African Law Commission reviewed the existing Child Care Act, which allowed children above the age of 14 to consent to medical treatment. The Commission held public consultations and actively sought input from children themselves. The outcome of the process was a new Children's Act that reduced age-related barriers to children's access to health care. Review of the age of consent for medical interventions, including HTC, was at least partly informed by research on the age of sexual debut, rates of STIs in adolescents, and the realization that the age threshold needed to be lowered to allow children younger than 14 years to access needed sexual and reproductive health services. Since July 2007, any adolescent aged 12 years and older in South Africa has had the right to consent to an HIV test, if it is considered to be in his or her best interest, and so long as he or she is of sufficient maturity to understand the benefits, risks and social implications of the test. According to South African HIV counselling and testing guidelines, an HIV test is in the best interests of a child if the test will result in access to the continuum of care and support for their physical and emotional welfare.

Sources: (54)

Case Study A3.14.

Namibia's strengthened linkage of HIV testing and support services for adolescents living with HIV

Namibia has implemented a programme in the Caprivi and Khomas regions to strengthen the design, development and implementation of HTC for adolescents, including post-test support services and improved service provision for adolescents living with HIV. The programme was developed with input from government, non-government and other stakeholders, and was supported by the Ministry of Health's adoption of a training curriculum on adolescent-friendly health services specifically focused on adolescents living with HIV. The programme was initiated in a hospital where there was already a functional teen club, with the support of hospital management and ART site staff. Activities include training of adolescent facilitators who are living with HIV, and also their parents, caregivers and health-care providers; establishment of peer support groups and spaces for them to meet; and use of a disclosure tool with all adolescents with HIV attending the paediatric ART target site. In addition, HTC is emphasized as an entry point to other HIV services through strengthened referral linkages between HTC and prevention, care and treatment, and support services, and through community-based mobilization, including interpersonal and mass-media communication to reach out to adolescents.

Sources: (54)

HIV care and treatment has shifted rapidly in recent decades. For example, ART drugs have become safer and more efficacious; new classes of drugs have become available; and a public health approach has led to consolidation and simplification of ART drugs for HIV treatment and prevention across all age groups and populations, based on the HIV service continuum (174). The 2013 WHO Consolidated Guidelines on the Use of Antiretroviral (ART) Drugs for Treating and Preventing HIV Infection provide comprehensive clinical recommendations on the provision of ART for all populations, including first, second and third line ART for adolescents (174).

As noted in Section 3, currently ART should be initiated in, and provided lifelong to, all adolescents living with HIV, regardless of WHO clinical stage and at any CD4 cell count (consolidated guidelines). As a priority, ART should be initiated in all adolescents with severe or advanced HIV clinical disease (WHO clinical stage 3 or 4) and adolescents with CD4 count ≤350 cells/mm3. Antiretroviral (ARV) regimens for adolescents should be guided by the convenience of once-daily dosing and the use of fixed-dose combinations whenever possible; and the desirability of aligning recommended regimens for adolescents with those for adults (174). Countries are at different stages of ART coverage and implementation of the consolidated guidelines, but there is a consistent trend towards initiating treatment earlier and expanding the use of ARV drugs for HIV prevention to achieve greater impact. For example, since 2014 Uganda has provided ART to all children younger than 15 years, regardless of immune or clinical status. In 2014 this resulted in a 74% increase in the number of children starting ART, and 75% of children and adolescents were reported to have started ART within two days after enrolment into care (173).

In all settings, symptom screening for tuberculosis (TB) should be conducted at every health visit with adolescents living with HIV. In addition, TB-preventive therapy should be carried out for those living with HIV in whom active TB has been ruled out. Access to TB diagnostic services and linkage to treatment should also be provided as necessary (175).

Annex 3. Additional information about evidence-based interventions

It is also critical to address the needs and vulnerabilities of adolescents from key populations. For example, to make HIV services more accessible, acceptable and affordable for young people who sell sex, community-based, decentralized services are recommended, both through mobile outreach and at fixed locations where sex is sold (e.g. Case study A3.15). Depending on the needs of the particular setting, differentiated approaches are also recommended to reach those who do not sell sex regularly, those who are trafficked or have restrictions on movement, and those may use the internet to make contact with clients (176).

Case Study A3.15.

The United Republic of Tanzania's drop-in centre to reach young people who sell sex or inject drugs

Kimara Peer Educators and Health Promoters Trust Fund – a community-based NGO in a low-income area of Dar es Salaam in the United Republic of Tanzania – has a drop-in centre to provide outreach and services to young people aged 16 and above who inject or otherwise use drugs. It also serves young people who sell sex, since there is an overlap between the two populations. Services include individual and group psychosocial therapy and support; referrals to methadone-assisted therapy; and basic information on harm reduction, HIV and AIDS, viral hepatitis, other STIs, sexual and reproductive health, and condom use. Referrals to government hospitals are made only with the young person's consent, and confidentiality is maintained unless the young person gives permission for their parents or other family members to be informed. Government approval is being sought for provision of clean needles and syringes upon request at the drop-in centre and by outreach workers. Services are offered by a professional social worker and community outreach workers from the local area.

Sources: (55)

It is important to consider that adolescents living with HIV need access to a full range of contraceptive options (177). Dual methods – condoms, both male and female, and lubricants in conjunction with hormonal methods, including emergency contraception – are essential to protect against unwanted pregnancy, STIs and HIV transmission. Sexual and reproductive health services must also be able to address unwanted pregnancy for HIV-positive adolescent women, where the law allows, either providing or referring clients for termination of pregnancy services if requested.

Finally, it is important to note that rapid growth in the numbers of adolescents in the coming years is likely to challenge progress in combating HIV, particularly in countries with generalized HIV epidemics (178). Indeed, many of the countries presently struggling to reverse generalized HIV epidemics are experiencing rapid growth in their numbers of adolescents and youth, meaning that an increasing amount of resources are needed to maintain and expand coverage of HIV prevention and treatment services to young people. This is especially true for the countries with 5–15% of the adult population living with HIV in 2013, as they are likely to be challenged to provide services to 30–50% more adolescents and youth in 2030 than they needed to serve in 2015.

A3.5.
Water, sanitation and hygiene (WASH) interventions in-depth

Diarrhoeal diseases are major adolescent health burdens, as was shown in Section 2. There are many ways that adolescents can be exposed to diarrhoeal infections, so prevention efforts must identify and effectively target all possible modes of transmission in a particular country or setting. Diarrhoeal diseases are typically caused by faecal-oral pathogens that are transmitted through poor sanitation and hygiene. For instance, when faeces are disposed of improperly, and hand washing facilities and practices are inadequate, then human excreta may contaminate hands and be ingested by hand-to-mouth contact, or through food preparation. Current handwashing prevalence is low in LMICs where the levels of diarrhoeal diseases are high (179).

Globally in 2015, an estimated 2.4 billion people still use unimproved sanitation facilities. The vast majority of them live in the South-East Asia, African, and Western Pacific Regions (180). In the last decades, use of improved sanitation facilities increased in most parts of the world, except Oceania. Rates of improvement were much lower in sub-Saharan Africa (6 percentage points) than in East Asia (28 percentage points), Southern Asia (25 percentage points), and South-East Asia (24 percentage points), but two thirds (64%) of those without access to improved sanitation in South Asia still practise open defecation, compared with one third (33%) in sub-Saharan Africa (180). In addition to direct contamination of the environment through open defecation and unimproved latrines, faecal pathogens may be transferred to waterborne sewage systems through flush toilets or latrines, and these may subsequently contaminate surface waters and groundwater.

Through such pathways, drinking water, recreational water or food may be contaminated and cause diarrhoeal disease following ingestion. Globally, recent research estimates that 26% of people drink water that is at least occasionally contaminated with faecal-indicator bacteria, with rates ranging from 14% in Europe LMICs to more than 52% in African LMICs (179).

Annex 3. Additional information about evidence-based interventions

A3.5.1.
WASH interventions for general populations

Many WASH interventions for general populations are known to be effective in reducing diarrhoeal disease transmission, and these would also reduce the substantial rates of adolescent mortality and DALYs lost due to diarrhoeal diseases in LMICs. For example, large potential health gains could be achieved from the widespread adoption of appropriate handwashing practices, and related policies and programmes to promote this behaviour. Estimates suggest that simple interventions to improve handwashing after toilet or latrine use, or before food preparation, reduce the risk of diarrhoeal disease by 23% (179). Promotion of other food-hygiene behaviours could also be effective, such as routine cleaning of kitchen surfaces and utensils with solutions of soap or bleach in water, or re-heating food before eating to reduce bacterial growth (e.g. Case study A3.16) (181).

> ## Case Study A3.16.
>
> **Nepal's approach to improved food hygiene**
>
> A recent study in Nepal developed and tested innovative, evidence-based behaviour-change approaches to improve food-hygiene practices. The intervention was implemented by conducting group sessions and household visits. Each session focused on a specific motivational theme, including nurture, disgust and social respect. Activities consisted of storytelling and motivational games introducing an Ideal Mother figure; providing reminder materials in kitchens related to five key food-hygiene behaviours; video screenings; a jingle installed on mobile phone ringtones; contamination demonstrations; public pledges of commitment to the campaign; competitions; and public reward ceremonies. One of the targeted behaviours was for mothers to keep food adequately hot to reduce bacterial growth. The nurture message communicated to mothers was that hot food is tastier food, so children will eat it more readily than food that is cold or at room temperature. Preliminary results of this campaign indicate that mothers practised the behaviours, in particular reheating food, because they found that children indeed liked it more.

Source: (181).

Other effective approaches are to increase access to basic sanitation at the household level, and to provide improved sanitation in households (e.g. flushing to a pit or septic tank, dry pit latrine with slab, or composting toilet). Limited evidence also suggests that connection to a sewerage system that safely removes excreta from both the household and community yields great health benefits (179). In addition, in settings where open defecation is widely practised, community campaigns to discourage the practice may be very effective.

The consistent application of household water treatment and safe storage has also been found to reduce diarrhoeal disease in general populations by between 28% and 45%, depending on the type of water supply. Shifting from an unprotected source of drinking water (e.g. dug well or spring; river, pond or other surface water; water provided by a vendor with a cart or tanker truck) to improved point sources of drinking water (e.g. borehole; protected dug well or spring; rainwater collection) only provides modest health gains, because the sources may be contaminated, or water may become contaminated before consumption (e.g. during transport, handling or household storage) (179). Limited evidence suggests that major diarrhoeal disease reductions (e.g. 73%) can be achieved by transitioning to water services that confer a safe and continuous supply of piped water.

Implementation of water-safety plans and guidelines for drinking-water quality are the most effective way of consistently ensuring the safety of a drinking-water supply at the country level. These plans require a risk assessment that considers all steps in water supply from catchment to consumer, followed by implementation and monitoring of control measures. WHO provides guidance and support to regulators, water suppliers and sanitation planners on how to implement and scale-up preventive risk management (e.g. WHO (182); WHO (183); WHO (184)). WHO standards of WASH in health facilities are also detailed according to hygiene; water quantity, access and quality; and sanitation quantity, access and quality (183).

A3.5.2.
Adolescent-specific WASH interventions

The heath sector must work closely with the education sector to reduce water- and sanitation-related health problems among adolescents, both in ensuring that schools provide safe water and sanitation facilities, and in implementing WASH interventions to promote healthy, lifelong practices at scale (e.g. Case study A3.17). In a recent survey, more than three quarters of 93 countries had nationally approved policies for sanitation and drinking water in schools, but only 22% of those measures were fully implemented, funded and regularly reviewed. Of the measures to sustain and improve services, sanitation had the lowest level of implementation: 80% of countries reported that measures are in place to rehabilitate broken or disused latrines at schools and other public facilities, but only 11% of those countries reported a high level of implementation of those measures (185).

> ## Case Study A3.17.
>
> **Mauritania's improvement of water quality, sanitation and hygiene in vulnerable schools**
>
> In Mauritania, sewage systems often contaminate the groundwater supply, and water for household and school use frequently is collected and transported in plastic containers. Many children suffer from diarrhoea and other diseases related to such environmental conditions. In recent years, the government has worked to improve the quality of drinking water, sanitation and hygiene in schools. In the El Baraka School in the capital city of Nouakchott, for example, water basins have been installed and advice provided on handwashing and hygiene in classrooms and toilets. The entire school community – students, teachers and administrative staff –actively participates in creating a more hygienic school. Street vendors who sell food to the school community have also been provided with recommendations to improve the quality and safety of their food. More than 6500 people have benefited from the project to improve hygiene in schools, and the improved conditions have led to reduced student absenteeism.

Source: (186).

The Global Health Estimates definition of diarrhoeal diseases does not include helminths (e.g. tapeworms, roundworms and schistosomes), but some of those diseases involve similar transmission routes and intervention approaches. Historically, health and hygiene education programmes in schools have been important entry points for deworming activities. In 2011, more than 300 million preschool-aged and school-aged children were treated with anti-helminthic medicines in endemic countries, corresponding to 30% of the children at risk. WHO and partners have produced guidelines on school-based WASH interventions, including teacher manuals on how to conduct a school deworming day (187), and related school health modules focused on healthy nutrition (101), the physical school environment (188), and local action to create health-promoting schools (189).

In half of all households worldwide, water is carried to the home for household use, and women and girls are the primary water collectors (190). This is a time-consuming activity that can reduce girls' school attendance and focus on homework, and can also contribute to musculoskeletal problems. Walking great distances to collect water, or not having access to a toilet or latrine, can both be unsafe conditions that make adolescent girls isolated and vulnerable. Indeed, not having adequate WASH facilities has been associated with sexual assault and gender-based violence (126).

In addition, many girls miss school when they are menstruating if schools do not have adequate water and sanitation facilities. Menstruating girls, due to lack of knowledge, cultural beliefs, and inadequate hygiene facilities and supplies, may feel shame and social isolation resulting in poor self-esteem and decreased school attendance (185). The WASH Yatra project in India found that more than 70% of girls did not know what was happening to their bodies when they began menstruation and regarded the process as dirty, leading to an increased sense of shame (126). Interventions that promote menstrual hygiene management in communities, schools and emergencies can improve these conditions by creating appropriate resources and information (e.g. Case study A3.18). Multisectoral approaches linking WASH with health, education and the private sector are essential to ensure that girls have access to supplies for menstrual hygiene management, knowledge, and the autonomy to improve personal hygiene practices.

Annex 3. Additional information about evidence-based interventions

Case Study A3.18.

Papua New Guinea's school WASH facilities designed by adolescent girls

Historically, girls in Papua New Guinea have sometimes missed school due to their monthly menstruation, or attended school but experienced teasing by classmates and had to dispose of their used materials in long grasses. Most schools provided no education on menstruation, and teachers and school board members were mainly men. In order to raise awareness, female staff discussed menstruation with their male colleagues, which led to the construction of showers and incinerators for use by the girls. However, when external facilitators led a knowledge-sharing workshop with girl students they said that they would prefer a simple facility that allowed them to sit down, and which also had a washing line positioned outside. Technicians helped them develop a prototype. A simple building was designed with woven grass matting lined with a waterproof shower liner to prevent the grass rotting, and for an increased level of privacy. A teacher and a student took part in a local radio programme and spoke about the challenges girls face and the knowledge-sharing workshop. A recording of this programme was broadcast on local radio several times for a month.

Source: (126).

A3.6.
Noncommunicable disease interventions

To date, most international efforts to prevent and treat noncommunicable diseases (NCDs) have focused on adults, but increasingly attention is also being given to NCDs experienced by children and adolescents (191). These NCDs may be triggered by a complex interaction between the child's body, the surrounding environment, living conditions, infectious agents, and nutritional and/or other factors.

Another important consideration is that major NCDs can influence and be influenced by other conditions (192). For example, childhood maltreatment is assumed to be a risk factor for the subsequent adoption of high-risk behaviours such as smoking, harmful use of alcohol, drug abuse and eating disorders, which in turn predispose individuals to NCDs, such as cardiovascular

diseases, cancer and chronic respiratory diseases. In another example, many NCDs, including cardiovascular diseases and chronic respiratory diseases, are directly or indirectly linked to infectious diseases. In LMICs, for instance, infections are estimated to cause one fifth of cancers. Strong population-level infectious disease services will thus reduce the burdens of both communicable and noncommunicable diseases.

Importantly, in LMICs some NCDs are major causes of preventable mortality, morbidity and disability among adolescents, because of late diagnosis or lack of access to appropriate treatment. Those adolescents who are fortunate to survive often experience significant hardship and disability as a result of living with a chronic health condition that is not optimally managed.

A3.6.1.
Overweight, physical inactivity and tobacco interventions in-depth

Behavioural risk factors for NCDs often begin in early childhood or adolescence and continue into adulthood (74). For example, if adolescents spend a substantial portion of their time watching television or computer screens, their physical activity is likely to be reduced, while the effect of advertising will contribute to an increase in their calorie consumption. Research has found that food marketing to children and adolescents is extensive, largely promotes foods high in salt, sugar or fat, and influences food preferences and consumption pattern at young ages (193). Children and adolescents also have little control over exposure to passive cigarette smoke, and adolescents may become smokers themselves. The nature and prevalence of such risk factors and outcomes can differ by country, ethnicity, socioeconomic group and sex. For instance, Cho and colleagues (2007) hypothesized that higher rates of binge drinking and smoking among 15- to 19-year-old Republic of Korean males in lower socioeconomic groups contributed to their higher rates of cardiovascular death while still adolescents, relative to their counterparts in higher socioeconomic groups (194).

Multisectoral, population-based approaches are needed to reduce the prevalence of modifiable NCD risk factors among adolescents and in the general population. A combination of fiscal policies, legislation, changes to the environment, and raised awareness of health risks works best for promoting healthier diets and physical activity and discouraging tobacco use (195). These efforts aim not only to reduce risk factors for NCDs, but also to shape the broader environments in which people live, eat, study, work and play, so that healthy choices are accessible and easy to make (e.g. Case study A3.19). Schools provide a particularly important opportunity to address adolescent NCD risk factors with quality and on a large scale. Several WHO documents provide guidance on how governments can best utilize this opportunity, including School Policy Framework: Implementation of the WHO Global Strategy on Diet, Physical Activity and Health (196), and issues of the WHO Information Series on School Health, which focused on promoting nutrition and physical activity and reducing tobacco use (101); (107); (109).

Annex 3. Additional information about evidence-based interventions

Case Study A3.19.

Samoa's family programme to improve health and combat noncommunicable diseases

Half of all adults in Samoa are at high risk of developing major NCDs, including heart disease, diabetes and cancer. In response to this public health threat, PEN (package of essential NCD interventions) Fa'a Samoa was initiated in November 2014 in several demonstration sites. PEN Fa'a Samoa (literally meaning PEN the Samoan way) has three main pillars: early detection of NCDs, NCD management, and increased community awareness. The model takes advantage of existing community structures in which extended families play a significant role in daily life and culture. Each village in Samoa has a women's committee representative whose role is to liaise with government agencies to facilitate early NCD detection.

In communities where the pilot has been implemented, more than 92% of the target population has been reached. Members of the community with abnormal results for blood glucose are referred to a district health facility where they are seen by a physician who discusses a management and treatment plan with them, and prescribes medication and behaviour changes. Trained women in the community then help patients carry out their treatment plans. The Ministry of Health and the National Health Service aim to replicate PEN Fa'a Samoa and to achieve full implementation nationally by the end of 2016.

Source: (197).

Case Study A3.20.

Pakistan's promotion of physical activity for girls

In 2003, through the collaborative efforts of the NGOs Insan Foundation-Pakistan and Right to Play, a physical activity programme promoting inclusion of girls in play and sport activities was implemented in 14 Afghan schools and in two schools of Afghan and Pakistani children in Pakistan. The programme focuses on the inclusion of girls who had previously been culturally restricted from participating in sports and physical activity.

Through consultation with community elders, play sites were modified and girls-only events were organized. The project was well received by teachers and students, and girls' physical activity is now an integral part of these schools. This programme is an example of how NGOs can support the implementation of policies that promote physical activity in culturally sensitive ways.

Source: (196).

Overweight

The prevalence of adolescent obesity is rising alarmingly in many countries around the world, although rates may be plateauing in some settings (114). WHO defines adolescent overweight and obesity in terms of body mass index (BMI) for age relative to the WHO growth reference for adolescents. Specifically, "overweight" is one or more standard deviations above the reference (equivalent to BMI 25 kg/m2 at 19 years), and "obesity" is two or more standard deviations above the reference (equivalent to BMI 30 kg/m2 at 19 years) (198); (199). In absolute numbers, there are more children who are overweight and obese in LMICs than in HICs. In many LMICs, however, malnutrition due to both under- and overweight are great burdens in adolescent populations. In the South-East Asia Region, for example, thinness in 15- to 19-year-old females is estimated to range from 24% to 47%, while overweight in the same population ranges from 2% to 24% (200).

Physical Inactivity

Physical activity has many positive health benefits for adolescents. Appropriate levels of physical activity contribute to the development of healthy musculoskeletal tissues (i.e. bones, muscles and joints) and cardiovascular systems (i.e. heart and lungs); neuromuscular awareness (i.e. coordination and movement control); and maintenance of a healthy body weight (95).

Physical activity can include play; games; sports; transportation (e.g. cycling); chores; recreation; physical education or planned exercise in the context of broader family; and school and community activities. For older adolescents it can also include appropriate occupational activity. Physical activity can also psychologically benefit adolescents by improving their control over anxiety and depression symptoms, and providing them with opportunities for self-expression; confidence-building; leadership; community contribution; and social interaction and integration.

Despite the benefits of physical activity, inactivity is alarmingly common among adolescents: 84% of adolescent girls and 78% of adolescent boys do not meet recommended minimum requirements for physical activity (195). The prevalence of physical inactivity is highest in HICs, where it is almost double that of LICs. Among WHO regions, the Eastern Mediterranean Region has the highest prevalence of inactivity in both adults and adolescents. In many cultures, boys have far more opportunity than girls to engage in sports or play outside, and they may also be far more mobile away from their home for school, work and other activities. Conversely, girls may be expected to stay inside their homes and have minimal physical activity, in accordance with modesty norms. This may be even more pronounced as girls reach their older adolescent years, suggesting that targeted interventions to promote physical activity with adolescent girls, and particularly older adolescent girls, may be beneficial (e.g. Case study A3.20).

More in-depth guidance on adolescent physical activity can be found in several resources published by WHO or UNESCO, including Promoting Physical Activity in Schools: An Important Element of a Health-Promoting School (107), Global Recommendations on Physical Activity for Health (201), and Quality Physical Education (QPE): Guidelines for Policy Makers (202).

Tobacco use

Exposure to tobacco smoke can be both a behavioural and an environmental risk factor for cerebrovascular disease and many other NCDs, depending on the extent to which an individual smokes or is exposed to second-hand smoke. In 2010, the global Health Behaviour in School-Aged Children survey found that, among 15 year olds, 15% of boys and 13% of girls smoked tobacco daily. In contrast, in 2013 the global Adolescent Health and Lifestyle Survey found much lower reports of any tobacco use among 14-year-old boys (4%) and girls (6%) (203). Imagery in motion pictures continues to give misleadingly positive impressions of tobacco use. Such images have been identified as a cause of smoking initiation among adolescents (204).

School-based tobacco-prevention programmes that identify the social influences prompting youth to smoke and teach them skills to resist those influences have demonstrated consistent, significant reductions or delays in adolescent smoking (109). These programmes usually target young adolescents, when smoking experimentation and initiation is most common (e.g. Case study A3.21). Effectiveness of school-based programmes is strengthened by school policies and community-wide programmes that involve community organizations, parents, mass media and youth. Some of the WHO regions have developed youth tobacco intervention guidelines and recommendations for their populations that address such broad interventions. For example, the Pan American Health Organization produced a tobacco-free youth life-skills primer that outlines comprehensive policy efforts, prevention programming, school-based programmes, life-skills training and the WHO life-skills initiative (205).

Annex 3. Additional information about evidence-based interventions

Case Study A3.21.

Costa Rica's life-skills programme to prevent adolescent alcohol and tobacco use

In 1995, a study conducted with the in-school adolescent population in Costa Rica found that, in the previous year, 51% of the students had consumed alcohol, 15% had smoked and fewer than 1% had consumed illegal substances. The age of substance use initiation averaged around 13 years old. In response, the government's National Center on Drug Abuse and the Ministry of Education developed a national substance-use prevention programme based on a life-skills teaching approach. The first version involved weekly sessions for seventh graders, and included cognitive, decision-making, stress-management, communication and self-directed behaviour-change components.

Process evaluation found there was generally a high acceptance of the programme by both participants and facilitators, but implementation was limited by several factors, including some facilitators having insufficient time, training or materials. The evaluation identified several ways to improve future implementation of the scaled-up national programme, including working more with school directors to increase their understanding and commitment to the programme; having teachers volunteer rather than be appointed to teach it; and ensuring they have adequate and sufficient training and resources to implement it fully, particularly in resource-poor schools.

Source: (205).

Interventions to reduce adolescent tobacco use or exposure should be implemented by the government through relevant legislation and regulations. These are included in the WHO Framework Convention on Tobacco Control, an international treaty with 180 Parties (179 countries and the European Union) and promoted by WHO as very cost-effective demand reduction measures (137); (168).

Stroke

Although stroke is a leading cause of adolescent mortality in some countries, there are controversies in screening adolescents for cardiovascular risk factors, because body fat distribution, blood pressure and lipids are all affected by puberty and normal growth (75). Early diagnosis of stroke in adolescents is also challenging because of limited awareness and its relative infrequency compared with other health problems that have similar signs and symptoms as stroke (207). Adolescents are less likely to seek emergency assistance in a timely way, and emergency services often delay or misdiagnosis adolescent stroke victims because they do not recognize the risk of stroke in young people. Management can also be difficult because of the diversity of underlying risk factors and the absence of a uniform treatment approach (207); (208).

Adolescents with stroke have remarkable differences in presentation compared with older patients, limiting the applicability of recommendations developed for adults. Nonetheless, research on adolescent stroke has been very limited and has mainly taken place in HICs – even though rates of adolescent mortality due to stroke are highest in African, European and Eastern Mediterranean LMICs (208); (143). Prognosis is also an important issue in adolescent stroke because of the longer expected survival compared with older people with stroke (207).

A3.6.2.
Interventions to prevent and treat adolescent undernutrition

Undernutrition in low-resource settings

Most programmes addressing undernutrition focus on children under the age of 2 years, because that is the age when undernutrition has the greatest impact on a child's health, growth and brain development (210). Increasingly, however, adolescents are recognized as a neglected group at risk of chronic malnutrition and deficiency of micronutrients (e.g. iron, vitamin A and iodine) in LICs, and also at risk of acute malnutrition and deficiency of other micronutrients (thiamine, niacin and vitamin C) in emergencies (e.g. famine) or when living with particular medical conditions (e.g. AIDS or TB) (79); (211).

Girls are particularly vulnerable to malnutrition, because preferential treatment based on gender can result in differing feeding practices and food intake, and their malnutrition can be worsened by high rates of adolescent pregnancy (212). Up to half of all adolescent girls are stunted in some countries (213). There is some evidence that early growth deficits can be treated (i.e. that catch-up growth for height can occur) in adolescents, provided that a high-quality diet is sustained, although there is no evidence of similar recovery of other deficits associated with stunting, such as cognitive deficits (210); (214). In addition to such potential catch-up, diverse nutrition is needed for the rapid growth that takes place during adolescence itself, when up to 45% of skeletal growth occurs, and between 15% and 25% of adult height is achieved (79).

Despite concerns about adolescent undernutrition, a recent literature search identified only a handful of single-nutrient supplementation interventions in adolescence, and no comprehensive supplementation studies (214). International guidance on malnutrition programming specific to adolescents is also very limited, so some countries have developed their own guidelines for it (215); (216). In 1999, WHO published guidelines on management of severe malnutrition in children, adolescents and adults, but little information is provided specific to adolescents (217). The main criteria of severe malnutrition in adolescents is a BMI below the fifth percentile of the reference population for age, or the presence of nutritional oedema; unlike for small children, anthropometric thresholds (e.g. mid-upper arm circumference to monitor growth) have not been established for adolescents (218). In the 1999 guidelines, treatment of severe malnutrition in adolescents is not considered to be very different from that in younger children, involving an initial (or acute) treatment phase of liquid feeds and a rehabilitation phase of progressive integration of traditional solid foods once appetite returns. In contrast to younger children, however, the guidelines note that adolescents may be reluctant to take the liquid formula feeds in the initial phase of treatment, unless they perceive these as medicine.

More generally, policies to address the underlying causes of malnutrition include those focused on gender, food insecurity, poverty (e.g. conditional cash transfers), hygiene (e.g. hand-washing promotion) and poor health (e.g. deworming and malaria-prevention or treatment) (219). The 2005 WHO Nutrition in Adolescence report outlines an overall strategy for nutrition intervention in adolescence, including school-based and community-based nutrition programmes in general adolescent populations; case management of adolescent nutritional problems in routine health care; and prevention and management of severe malnutrition of adolescents in emergency situations (79). Schools offer many opportunities to promote healthy dietary patterns for children, including through health education; feeding programmes; the physical environment; school health services; and community and family outreach (101). However, a recent WHO survey of 123 countries found that, although most countries reported nutrition activities in primary and secondary schools, schools are not sufficiently used to deliver nutrition interventions (219). Training of staff in nutrition and health was the most commonly reported activity. Provision of safe water and hygiene promotion were also frequently reported, except in the countries of the African Region. Provision of milk or fruit and vegetables in schools was reported by half of the countries in most regions, with the exceptions being the African Region and the South-East Asia Region, where this was less common.

Both fortification and supplementation can be implemented on a large scale to address iron-deficiency anaemia. For instance, in 2002 Jordan began a national programme to fortify wheat flour with iron and folic acid (220). In 2006, the fortification programme was expanded to include niacin, zinc and vitamins A, B1, B2, B6 and B12. In 2010, the government added vitamin D. Currently, the only subsidized brand of flour in Jordan is fortified in these ways, constituting 93% of all wheat flour production in the country. A recent survey of Jordanian school children showed improvements in serum ferritin levels, indicating a reduction in iron-deficiency anaemia. In another example, a programme of weekly iron and folic acid supplementation for adolescent girls was piloted in 52 districts in 13 Indian states, reaching both school-attending and non-attending adolescent girls. Evaluation of the pilot programme indicated a 24% reduction in the prevalence of anaemia after one year of implementation. In 2013, India then introduced national implementation of weekly iron and folic acid supplementation for approximately 120 million adolescent girls (220).

Annex 3. Additional information about evidence-based interventions

Eating disorders

Eating disorders often have an onset in adolescence, particularly among girls, although boys can also experience them (WHO 2005a(79)). Eating disorders include abnormal eating behaviour, as well as preoccupation with food, body weight and shape concerns. Two important examples are anorexia nervosa (an obsessive desire to lose weight by restricting food intake) and bulimia (an obsessive desire to lose weight, in which bouts of out-of-control overeating are followed by inappropriate compensatory behaviours aimed at preventing weight gain (e.g. self-induced vomiting, misuse of laxatives or enemas, or strenuous exercise).

The onset of anorexia nervosa usually occurs between 14 and 18 years, while the onset of bulimia onset usually occurs somewhat later, around the time of transition from adolescence to early adulthood (i.e. late teens or early twenties). Studies in HICs have found that, among adolescent girls and young women, anorexia nervosa has a prevalence of 1% and bulimia has a prevalence of 1–4%. An additional 5–13% of this group suffers from partial syndrome eating disorders (221). Although the prevalence of these conditions is relatively low, the physical and mental health outcomes can be very serious. Eating disorders show high levels of comorbidity with depressive, substance abuse and anxiety disorders, and they may contribute to cognitive deficits, dental damage and cardiac abnormalities.

To date, most eating-disorder prevention interventions have been targeted at elementary, middle and high-school students; professional schools with at-risk populations (e.g. ballet dancers, athletes, fashion models and cookery students); or adolescent girls who are showing unhealthy dieting behaviour at subclinical levels (221). The first generation of traditional educational programmes was focused on improving knowledge about eating problems and dieting behaviour, and changing related attitudes. In general, they showed an increase in knowledge but were not successful in changing disturbed attitudes and behaviours.

A more recent generation of multidimensional programmes has integrated traditional health education approaches within broader mental health promotion strategies, with more promising outcomes. In some studies, preventive effects have been found for eating-related attitudes, internalization or acceptance of societal ideals of appearance, feelings of ineffectiveness, body dissatisfaction and dieting behaviour. For instance, an Australian study of an interactive programme targeting self esteem, eating attitudes and eating behaviour in young adolescents found that, 12 months after the programme, participants showed improved body satisfaction, more positive self esteem and social acceptance, and a lower drive for thinness (222). In addition, adolescents at high risk showed an increase in body weight, while control at-risk students showed a decrease.

A3.7.
Additional information about mental health interventions

The WHO Mental Health Gap Action Programme (mhGAP) has developed an intervention guide for training non-specialized health workers (223). The adolescent module describes three broad conditions of particular concern to adolescent mental health, as follows:

- Developmental disorder is an umbrella term covering disorders such as intellectual disability and autism spectrum disorders. These conditions usually have a childhood onset; impair¬ment or delay in functions related to central nervous system matu¬ration; and a steady course rather than the remissions and relapses that tend to characterize many other mental disorders.

- Behavioural disorder is an umbrella term that includes specific disorders, such as attention deficit hyperactivity disorder and conduct disorders. Behavioural symptoms of varying severity are very common in the general population, but only adolescents with a moderate to severe degree of psychological, social, educational or occupational impairment should be diagnosed as having behavioural disorders.

- Emotional disorders are manifested as prolonged, disabling distress involving sadness, fearfulness, anxiety and/or irritability. They result in considerable difficulty with daily functioning in personal, family, social, educational, occupational or other areas. Adolescents often present with symptoms of more than one condition, and sometimes the symptoms overlap.

More broadly, common presentations of emotional disorders in adolescence include excessive fear, anxiety or avoidance of specific situations or objects (e.g. separation from caregivers; social situations; certain animals or insects; heights; closed spaces; sight of blood or injury); changes in sleeping and eating habits; diminished interest or participation in activities; and oppositional or attention-seeking behaviour (223). Early adolescents (10–12 years) may also experience recurrent, unexplained physical symptoms (e.g. stomach ache, headache or nausea); reluctance or refusal to go to school; and extreme shyness or changes in functioning (e.g. new wetting or soiling behaviour or thumb sucking). Adolescents of 13 years and older may experience problems with mood, anxiety or worry (e.g. irritable, easily annoyed, frustrated or depressed mood; extreme or rapid and unexpected changes in mood; emotional outbursts), excessive distress, and changes in functioning (e.g. difficulty concentrating; poor school performance; often wanting to be alone or stay home).

An overview of adolescent mental health services at different levels of a health system are shown in Table A3.7.

Annex 3. Additional information about evidence-based interventions

Table A3.7. Examples of an optimal mix of adolescent mental health services across different levels of a health system

TRIER	SITE	PERSONNEL	SERVICES
Informal community care	• Family • Schools • Prisons • Children's homes • NGOs	• Non-health workers • Volunteers	• Focus of services at this level to be on promotion of mental health and primary prevention of mental disorders
Primary health care	• Clinics • District hospital • Maternity services • Family services	• Health workers • Doctors • Nurses	• Parental and youth education about general health and mental health issues • Screening for mental health problems (including suicidal tendencies) • Identification of young people at risk of mental health problems • Short-term counselling services for young people and their families • Basic management of behavioural disorders; follow-up and support for young people with chronic conditions
Community mental health care	• Community mental health teams • Child guidance clinics • Child abuse units • Educational support services	• General mental health specialists, e.g. psychiatrists, psychologists, nurses, social workers • Multidisciplinary teams with additional training in child and adolescent mental health	• Investigation and treatment of severe problems referred from primary health care services • Consultation, supervision and training of staff at primary health care level • Link with other local and provincial sectors and NGOs in cross-sectoral prevention and promotion initiatives
General or paediatric hospitals	• Academic health complexes • Regional hospitals	• General mental health specialists, e.g. psychiatrists, psychologists, nurses, social workers • Child and adolescent mental health specialists • Mulidiscipliniary teams with additional training in child and adolescent mental health	• Investigation and treatment of severe problems referred from community mental health services • Consultaiton, supervision and training to community mental health service personnel • Links with other local and provincial sectors and NGOs in cross-sectoral prevention and promotion initiatives
Long-stay facilities and specialist services	• Chronic care institutions • Child and family units • Eating disaorder units • Adolescent units • Abuse units • Private sector	• Child and adolescent mental health specialists	• Highly specialized diagnostic and treatment services • Support consultation and training to all levels of service • Rehabilitation services for subgroups such as autistic children and youth and those with psychotic disorders

Source: (113).

A3.7.
Guidance for health workers in non-specialized health settings

The 2016 WHO mhGAP intervention guide outlines how non-specialized health workers should assess, communicate and advise adolescents and their parents on different mental health issues, including general well-being; the home environment; developmental disorders; depression; behavioural improvement; and substance use disorders. Each of these is summarized below.

A3.7.1.1.
Psychoeducation to promote adolescent well-being and functioning

The health-care provider should encourage the parent to:

• Spend time with the adolescent in enjoyable activities. Provide opportunities for the adolescent to talk to you.

• Listen to the adolescent and show understanding and respect.

• Protect them from any form of maltreatment, including bullying and exposure to violence in the home, at school and in the community.

• Anticipate major life changes (such as puberty, starting a new school, or birth of a sibling) and provide support.

The health-care provider should encourage and help the adolescent to:

• Get enough sleep. Promote regular bed routines and remove any TV or other electronic devices with screens from the sleeping area or bedroom.

• Eat regularly. All adolescents need three meals (breakfast, midday and evening) and some snacks each day.

• Be physically active. If they are able, adolescents aged 10–17 years should do 60 minutes or more of physical activity each day through daily activities, play or sports.

• Participate in school, community and other social activities as much as possible.

• Spend time with trusted friends and family.

• Avoid the use of drugs, alcohol and nicotine.

A3.7.1.2.
Clinical assessment of an adolescent's home environment

Adolescents should always be offered the opportunity to be seen on their own during a clinical assessment, without carers present, although in most cases it is important to have the carer's consent. When assessing an adolescent's home environment, clinicians should ask the adolescent questions directly if developmentally appropriate and safe to do so (e.g. not in the presence of a carer who may be suspected of having committed maltreatment). Red flags for adolescent maltreatment include both clinical features and aspects of carer interaction with the adolescent, as outlined below:

Clinical features:

Physical abuse

• injuries (e.g. bruises, burns, strangulation marks or marks from a belt, whip, switch or other object)

• any serious or unusual injury without an explanation or with an unsuitable explanation.

Sexual abuse

• genital or anal injuries or symptoms that are medically unexplained

• STIs or pregnancy

• sexualised behaviours (e.g. indication of age-inappropriate sexual knowledge).

Neglect

• being excessively dirty, or wearing unsuitable clothing

• signs of malnutrition or very poor dental health.

Emotional abuse and all other forms of maltreatment.

• any sudden or significant change in the behaviour or emotional state of the adolescent that is not better explained by another cause, such as:

• unusual fearfulness or severe distress (e.g. inconsolable crying)

• self-harm or social withdrawal

• aggression or running away from home

• indiscriminate affection seeking from adults.

Aspects of carer interaction with the adolescent:

• persistently unresponsive behaviour (e.g. not offering comfort or care when the adolescent is scared, hurt or sick)

• hostile or rejecting behaviour

Annex 3. Additional information about evidence-based interventions

A3.7.1.3.
Parental psychoeducation for an adolescent with developmental delay or disorder

The health-care provider should understand that persons with developmental disorders may have associated behavioural problems that are difficult for the carer to manage.

The provider should encourage the parent or guardian to:

- Learn what the adolescent's strengths and weaknesses are and how they learn best; what is stressful to the adolescent and what makes him or her happy; and what causes problem behaviours and what prevents them.
- Learn how the adolescent communicates and responds (using words, gestures and nonverbal expression and behaviours).
- Help the adolescent develop by engaging with her or him in everyday activities and play. Children and adolescents learn best during activities that are fun and positive.
- Involve the adolescent in everyday life, starting with simple tasks, one at a time. Break complex activities down into simple steps so that the adolescent can learn and be rewarded one step at a time.
- Make predictable daily routines by scheduling regular times for eating, playing, learning and sleeping.
- Keep the environment stimulating – avoid leaving the adolescent alone for hours without someone to talk to, ensure the adolescent spends time outdoors, and limit time spent watching TV and playing electronic games.
- Keep the adolescent in the school setting for as long as possible, attending mainstream schools even if only part-time.
- Use balanced discipline and positive parenting strategies. When the adolescent does something good, offer a reward.
- Never resort to threats or physical punishments when the behaviour is problematic. Physical punishment can harm the adolescent-carer relationship; it does not work as well as other methods and can make behaviour problems worse.
- Avoid institutionalization of the adolescent. Promote adolescent access to health information and services, schooling and other forms of education, occupations and participation in family and community life.

A3.7.1.4.
Psychoeducation for adolescent depression and other emotional disorders

For the adolescent and/or carer, as appropriate:

- Address any stressful situation in the family environment, such as parental discord or a parent's mental disorder. With the help of teachers, explore possible adverse circumstances in the school environment.
- Provide opportunities for quality time with the carer and the family.
- Encourage and help the adolescent to continue (or restart) pleasurable and social activities.
- Encourage the adolescent to practise regular physical activity, gradually increasing the duration of sessions.
- Consider training the adolescent and carer in breathing exercises, progressive muscle relaxation and other cultural equivalents.
- Make predictable routines in the morning and at bedtime. Promote regular sleep habits. Schedule the day with regular times for eating, playing, learning and sleeping.
- For excessive and unrealistic fears:
  – praise the adolescent or give small rewards when they try new things or act bravely;
  – help the adolescent practise facing the difficult situation one small step at a time (e.g. if the adolescent is afraid of doing oral presentations at school, support the adolescent to practise giving presentations over time, first for one person, then a small group, then the teacher, then the teacher and a few students, and finally the whole class);
  – acknowledge the adolescent's feelings and worries and gently encourage them to confront their fears; and
  – help the adolescent create a plan to enable them to cope in case a feared situation occurs.
- Explain that emotional disorders are common and can happen to anybody. The occurrence of emotional disorders does not mean that the person is weak or lazy.
- Emotional disorders can cause unjustified thoughts of hopelessness and worthlessness. Explain that these views are likely to improve once the emotional disorders improve.
- Make the person aware that, if they notice thoughts of self-harm or suicide, they should tell a trusted person and seek help immediately.

A3.7.1.5.
Parental psychoeducation to improve adolescent behaviour

The health-care provider should encourage the parent or guardian to:

- Give loving attention to the adolescent, including spending time with the adolescent in enjoyable activities every day. Provide opportunities for the adolescent to talk to you.
- Be consistent about what your adolescent is allowed and not allowed to do. Give clear, simple and short instructions on what the adolescent should and should not do.
- Give the adolescent simple daily household tasks to do that match their ability level and praise them immediately after they do the task.
- Praise or reward the adolescent when you observe good behaviour and give no reward when behaviour is problematic.
- Find ways to avoid severe confrontations or foreseeable difficult situations.
- Respond only to the most important problem behaviours and make punishment mild (e.g. withholding rewards and fun activities) and infrequent compared to the amount of praise.
- Put off discussions with the adolescent until you are calm. Avoid using criticism, yelling and name-calling.
- Never resort to threats or physical punishment, and never physically abuse the adolescent. Physical punishment can harm the adolescent-carer relationship; it does not work as well as other methods and can make behaviour problems worse.
- Encourage age-appropriate play (e.g. sports, drawing or other hobbies) for adolescents and offer age-appropriate support in practical ways (e.g. with homework or other life skills).

A3.7.1.6.
Assessment and psychoeducation for adolescent substance-use disorders

How to assess the adolescent:

- Clarify the confidential nature of the health-care discussion, including in what circumstances the adolescent's parents or carers will be given any information.
- Ask what else is happening in the adolescent's life. Identify the most important underlying issues for the adolescent. Keep in mind that adolescents may not be able fully to articulate what is bothering them.
- Open-ended questions may be helpful in eliciting information in the following areas: home, education/employment, eating, activity, drugs, sexuality, safety, and suicidal thinking/depression (HEADSSS). Allow sufficient time for discussion. Also assess for other priority mental health conditions.

Psychoeducation for the adolescent:

- Provide the adolescent and their parents with information on the effects of alcohol and other substances on individual health and social functioning.
- Encourage a change in the adolescent's environment and activities, rather than focusing on the adolescent's behaviour as being a problem. Encourage participation in school or work and activities that occupy the adolescent's time. Encourage participation in group activities that are safe and facilitate the adolescent's building of skills and contribution to their community. It is important that adolescents take part in activities that interest them.
- Encourage parents and/or carers to know where the adolescent is, who they are with, what they are doing and when they will be home, and to expect the adolescent to be accountable for their activities.

Annex 3. Additional information about evidence-based interventions

A3.7.2.
Suicide interventions in-depth

More information about adolescent suicide

As noted in Section 2, self-harm was the third leading cause of death among adolescents globally in 2015, and adolescents are also the age group at greatest risk of deliberate self-harm behaviour without suicidal intent (143); (224). Adolescents who harm themselves experience more frequent and more negative emotions, such as anxiety, depression and aggressiveness, than those who do not self-harm (224).

Self-harm presentations become increasingly common from age 12 years onwards, particularly in girls – such that between ages 12 and 15 years the girl-to-boy self-harm ratio is as high as five or six to one (225). The sex difference decreases with age in late adolescence as the behaviour becomes increasingly common in males and levels off in females. Judging from hospital statistics, self-harm has greatly increased in frequency in adolescents in the past few decades. This may be due to multiple factors, including greater availability of medication; more stress experienced by adolescents; increased alcohol and drug consumption; and social transmission of the behaviour, particularly through the media and more recently the internet (225); (226).

Adolescents who have experienced childhood and family adversity (e.g. physical violence; sexual or emotional abuse; neglect; maltreatment; family violence; parental separation or divorce; institutional or welfare care) have a much higher risk of suicide than others (83). Psychosocial stressors associated with suicide can arise from different types of trauma (including torture, particularly in asylum seekers and refugees), disciplinary or legal crises, financial problems, academic or work-related problems, and bullying. In addition, although reliable data on the scale of the problem are not available, pregnancy is increasingly recognized as a reason for suicide among pregnant girls (227). Suicide is particularly prevalent among indigenous youth, and particularly among young males. Native Americans in the USA, First Nations and the Inuit in Canada, Australian aboriginals, and the Māori in New Zealand all have rates of suicide that are much higher than those of the rest of the population (83).

It is estimated that the ratio of attempted suicide to actual suicide is 20 to one (228). Having engaged in one or more acts of attempted suicide or self-harm is the single most important predictor of death by suicide. A large number of those who die by suicide have had contact with primary health care providers within the month prior to the suicide. However, without appropriate training, health workers may not have adequate skills in self-harm assessment and management, including mental health literacy and experience, cooperation with psychiatrists, and interviewing skills (83).

The 2012 WHO framework Public Health Action for the Prevention of Suicide outlines a step-wise approach to developing a national suicide-prevention strategy, i.e. identifying stakeholders; undertaking a situation analysis; assessing the availability of needed resources; achieving political commitment; addressing stigma; and increasing awareness (229). The 2014 WHO report Preventing Suicide: A Global Imperative in turn describes evidence-based suicide-prevention interventions that have been developed for general populations at different levels of the ecological model, all of which are also applicable to adolescents (83).

Targeting vulnerable adolescents

Suicide-prevention efforts should target vulnerable adolescents who may be at relatively high risk of suicide with appropriately tailored interventions. Depending on the particular context, vulnerable adolescents may include those who have experienced abuse, trauma, conflict or severe natural disaster; those who are bereaved or who have been affected by suicide; and those who are indigenous, refugees, migrants, prisoners, in conflict with the law, or lesbian, gay, bisexual, transgender or intersex (LGBTI) (83); (230). For instance, adolescents who have survived a conflict or natural disaster may be less isolated and prone to suicidal thoughts if the ties to their communities are supported and strengthened.

Among indigenous groups, territorial, political and economic autonomy are often infringed and native culture and language negated. These circumstances can generate feelings of depression, isolation and discrimination, accompanied by resentment and mistrust of state-affiliated social and health-care services, especially if these services are not delivered in culturally appropriate ways. Community prevention initiatives, gatekeeper training, culturally tailored educational interventions, and interventions with high levels of local control and involvement of indigenous communities should be prioritized to prevent suicide among indigenous adolescents (e.g. Case study A3.22).

Case Study A3.22.

New Zealand's multisectoral programmes to reduce suicide among Māori youth

New Zealand has some of the highest youth suicide rates among HICs, particularly among indigenous Māori youth, who have two-and-a-half times higher rates of suicide than non-Māori youth. The Government of New Zealand has developed multiple initiatives to prevent suicide in these vulnerable groups. For example, the ministries of education, health, and youth development collaborated to produce, and nationally disseminate, resources for teachers that outline the roles and responsibilities of school personnel in suicide prevention. They also offer guidance about best prevention practices, and provide criteria that schools can use to assess the quality of suicide-prevention programmes. In addition, the Towards Well-Being programme is a highly structured initiative that straddles the welfare and education sectors and assists in identifying and managing young people who are at risk of suicide and may need to be referred to mental health services. Most recently, in the New Zealand Suicide Prevention Action Plan 2013–2016, the government prioritized collaboration with Māori communities in national suicide-prevention efforts, including targeted capacity building, information and resource sharing, training, and provision of more accessible support services.

Source: (231).

An example of an online intervention targeting vulnerable adolescents is the ReachOut programme, which was established in 1996 in response to Australia's growing youth suicide rates. ReachOut provides practical self-help to all young people aged 14–25 years and their carers. It includes an online youth discussion and support forum with dedicated moderators and staff members who can provide crisis support to young people seeking help (232). ReachOut particularly targets youth who have insufficient access to appropriate services, including those who are male, LGBTI, or living in regional and remote areas.

Restricting access to means

Structural, environmental and organizational interventions to restrict access to the means to commit suicide are critical, and particularly effective at preventing impulsive suicide because they give those contemplating suicide more time to reconsider (83). Globally, the most common means of suicide are self-poisoning with pesticides, hanging and jumping. Suicide by pesticide ingestion primarily occurs in rural areas of LMICs in Africa, Central America, South-East Asia, and the Western Pacific. Interventions to prevent suicide by pesticide include: ratifying, implementing and enforcing relevant international conventions on hazardous chemicals and wastes; legislating to remove locally problematic pesticides from agricultural practice; enforcing regulations on the sale of pesticides; reducing access to pesticides through safer storage and disposal by individuals or communities; and reducing the toxicity of pesticides (e.g. Case study A3.23).

Case Study A3.23.

Sri Lanka's targeted pesticide bans

Suicide rates in Sri Lanka increased eightfold between 1950 and 1995, with more than two thirds of suicides involving pesticide poisoning. From 1991, imports of WHO Class 1 (highly or extremely hazardous) pesticides were gradually reduced until a total ban on their import and sale was implemented in 1995. The ban was followed by a sharp decrease in suicide mortality. However, the number of hospital admissions for pesticide self-poisoning increased, as did the in-hospital mortality rate for pesticide poisonings. This occurred because the 1995 ban prompted farmers to switch to the Class 2 (moderately hazardous) insecticide endosulfan, which led to an increase in self-poisoning with endosulfan, a substance that results in conditions that are more difficult to treat than poisoning by more toxic Class 1 pesticides. Endosulfan was itself banned in 1998, a move associated with further decreases in suicide mortality, including in-hospital mortality. There were almost 20 000 fewer suicides from 1996–2005 compared to 1986–1995. Other factors were not associated with reduced suicide rates, and the pesticide bans were not associated with losses in agricultural output.

Source: (233).

Annex 3. Additional information about evidence-based interventions

Self-poisoning with medication is the second or third most common method of suicide and suicide attempt in most European countries (83). To prevent this possibility, health-care providers should restrict the amount of medication dispensed, inform patients and their families about the risks of treatment with medicines, and stress the importance of adhering to prescribed dosages and disposal of excess unused tablets. Legislative and pragmatic changes to domestic gas at national and regional levels have substantially reduced suicide by intentional carbon monoxide poisoning, but charcoal-burning poisoning by toxic gas is a method that has recently become common in China and its special administrative region of Hong Kong. Removing charcoal packs from open shelves into a controlled area in major store outlets in Hong Kong and other parts of China has significantly reduced such deaths (83).

Suicides by hanging or jumping (e.g. from bridges or high buildings, or in front of trains) are common in part because they are easily accessible methods in many settings (83). Making changes to structures to restrict access to high places are effective in preventing suicides by jumping. Attempted suicide by firearms is highly lethal, accounting for the majority of suicides in some countries, such as the USA. Legislation restricting firearm ownership has been associated with reduced firearm suicide rates in many countries. These restrictions include tightening rules on

the availability of firearms in private households and procedures for obtaining licences and registration; limiting personal gun ownership to hand guns; extending the waiting period for purchases; enforcing safe storage requirements; decreeing a minimum age for firearm purchase; and implementing criminal and psychiatric background checks for firearm purchases.

Gatekeeper interventions

Gatekeepers are people who are in a position to identify whether an adolescent may be contemplating suicide. They include parents; primary, mental and emergency health providers; teachers and other school staff; community leaders; police officers, firefighters and other first responders; military officers; social workers; spiritual and religious leaders or traditional healers; and human resource staff and managers. Some multicomponent suicide-prevention initiatives include training of gatekeepers in suicide crisis management (e.g. Case study A3.24). A WHO review found that school-based suicide prevention programmes that include mental health awareness training and skills training (e.g. problem solving, or coping with stress) can reduce suicide attempts and suicide deaths among students (234). The authors note, however, that potential harms may result if there is a lack of health-care and community resources to provide care for at-risk adolescents who seek help.

WHO has published a series of resource booklets on preventing suicide that target relevant social and professional groups, including teachers and other school staff; physicians; primary care health care workers; first responders; counsellors; media professionals; and survivors. The school resource book explains protective and risk factors, how to identify adolescents in distress and at possible risk of suicide, and how to manage them at school (235). Guidelines for management, for instance, include general prevention (e.g. strengthening students' self-esteem; promoting emotional expression; preventing bullying and violence at school;

and providing information about care services); intervention when a suicide risk is identified (e.g. trustworthy communication; improving school staff skills; referral to professionals; removing means of suicide from the proximity of distressed and suicidal adolescents'); and actions when suicide has been attempted or committed (e.g. how to inform school staff and schoolmates).

Box A3.4 summarizes the WHO recommendations for management of self-harm and suicide in nonspecialized health settings (236).

Case Study A3.24.

Hong Kong's (China SAR) initiatives to prevent suicide among youth and adults

In Hong Kong, a special administrative region of China, multiple governmental and nongovernmental initiatives focus on reducing suicide among young people and adults. The Hospital Authority runs an early assessment service for young people with psychosis that involves screening, early detection, emergency and fast-track treatment services, and follow-up care. Hong Kong also has a suicide crisis intervention centre, run by Samaritan Befrienders, that provides an outreach service to identify people at moderate to high risk of suicide, and to offer them crisis intervention and intensive counselling.

In addition, the Hong Kong Jockey Club Centre for Suicide Research and Prevention hosts a highly acclaimed website known as The Little Prince is Depressed (www.depression.edu.hk). This is designed to educate the community in general and young people in particular about depression and its treatment, with a view to reducing the stigma surrounding the condition and increasing the likelihood that those who need help will seek it. The Centre has also supported projects in Hong Kong to train secondary school teachers in suicide crisis-management skills.

Source: (231).

Box A3.4. WHO recommendations for management of self-harm and suicide ideation in nonspecialized health settings

At initial assessment, and periodically as required, health-care providers should ask individuals over 10 years of age about thoughts or plans of self-harm in the last month, or acts of self-harm in the last year, if they are suffering from depression; bipolar disorder; schizophrenia; epilepsy; alcohol use disorders; illicit drug use disorders; dementia; or other mental disorders; or if they present with chronic pain or acute emotional distress associated with current interpersonal conflict, recent loss or another severe life event. The adolescent, family and relevant others should be advised to restrict access to the means for self-harm as long as the individual has thoughts, plans or acts of self-harm.

Regular contact (e.g. telephone contact, home visits, letter, contact card, or brief intervention) with the nonspecialized health-care provider is recommended for adolescents with acts of self-harm in the last year. Such regular contact should also be considered for adolescents who volunteer thoughts of self-harm, or who are identified as having had plans of self-harm in the last month.

A structured problem-solving approach should be considered as a treatment for adolescents who have had acts of self-harm in the last year, if there are sufficient human resources (e.g. supervised community health workers).

Use of social support from available informal and/or formal community resources should be facilitated for adolescents who volunteer thoughts of self-harm, or who are identified as having had plans of self-harm in the last month, or acts of self-harm in the last year.

Hospitalization in nonspecialized services of general hospitals, with the goal of preventing acts of self-harm, is not routinely recommended for adolescents with self-harm. However, admission to general hospital for management of medical consequences of an act of self-harm may be necessary. In these cases, close monitoring of the adolescent's behaviour will be necessary to prevent subsequent self-harm in the hospital. In situations where a health worker is concerned about imminent risk of serious self-harm (e.g. when an adolescent is violent, extremely agitated or uncommunicative), urgent referral to a mental health service should be considered. However, if such a service is not available, family, friends, concerned individuals and other available resources should be mobilized to ensure close monitoring of the individual as long as the imminent risk persists.

Source: (228); (236).

Annex 3. Additional information about evidence-based interventions

A3.8.
Interventions in humanitarian and fragile setting

WHO and partners have produced numerous guidelines to address specific health burdens associated with humanitarian and fragile settings. These general population interventions also benefit adolescents, e.g. Environmental Health in Emergencies and Disasters (237), Food and Nutrition Needs in Emergencies (237), Food Safety in Natural Disasters (238), Emergency Sanitation Planning (239), Communicable Diseases Following Natural Disasters (240), Humanitarian Charter and Minimum Standards in Humanitarian Response (241), and Guidance Note on Disability and Emergency Risk Management for Health (242). An online database also provides access to WHO and other agency humanitarian health action technical guidelines and guidance notes (http://www.who.int/hac/techguidance/guidelines/en/) (243).

Sections 3.8.1–3.8.6 focus on health burdens with particular implications for adolescents in humanitarian emergencies, organized under the categories of nutrition; disability and injury; violence; sexual and reproductive health; WASH; and mental health. Some of these burdens and their interventions are closely interrelated, e.g. appropriate response to sexual violence includes both SRH and mental health services.

A3.8.1.
Nutrition

The 2004 guide Food and Nutrition Needs in Emergencies – which was published by the United Nations Refugee Agency (UNHCR), UNICEF, the World Food Programme and WHO – provides detailed guidance on this topic and is the source of all information in this section, unless otherwise specified (244). In humanitarian and fragile settings, stakeholders concerned with food and nutrition should assess conditions and determine adequate rations for different population groups according to age, gender, weight, physical activity levels and other key factors. Adolescent females and 15- to 19-year-old males are generally estimated to have the highest energy (kcal/day) requirements for their respective sexes. The specific requirements for emergency-affected populations are: 2040 kcal/day (10- to 14-year-old females), 2120 kcal/day (15- to 19-year-old females), 2370 kcal/day (10- to 14-year-old males), and 2700 kcal/day (15- to 19-year-old males). For a pregnant or lactating female in an emergency setting, requirements increase by 285 kcal/day if she is in her second or third trimester of pregnancy, and by 500 kcal/day during the first six months of the lactating period. Energy needs also increase during periods of nutritional rehabilitation and recovery from severe illness, requiring an upward revision of the basic ration level for individuals of that age and sex.

For example, this would be required for a population that has suffered severe prolonged food shortages that caused high levels of malnutrition, or for a population affected by a widespread epidemic.

Possible micronutrient deficiencies also need to be assessed to determine rations provided to adolescents in emergency settings. Older adolescents have higher requirements for some vitamins and minerals (i.e. thiamine, riboflavin, niacin equivalents and folic acid) than young adolescents of the same sex, while male adolescents overall have higher requirements for the same micronutrients than same-age females who are neither pregnant nor lactating. Iron is the one exception to this pattern by sex, as adolescent females have higher iron needs than their same-aged male counterparts, as described in Section 2.3. This difference is not great for 10- to 14-year-old adolescents, but the iron requirement for 15- to 19-year-old females is more than twice that of 15- to 19-year-old males. To address specific micronutrient deficiencies, supplements or fortified foods can be considered, involving interventions similar to those described in Section 3 (241).

A3.8.2.
Disability and injury

People with disabilities – including adolescents with disabilities – are among the most vulnerable and neglected in any type of emergency, and as a result they experience some of the highest rates of mortality and morbidity (242). People with visual, hearing or intellectual impairments and severe mental health conditions, and those who are socially excluded or living in institutions, may be unprepared for events that lead to emergencies, and may not know or understand what is happening. People with disabilities may also be less able to escape from hazards, may lose essential assistive devices such as spectacles, hearing or mobility aids and/or medications, or may be left behind when a community is forced to evacuate a location. In addition, they may have greater difficulty accessing basic needs, such as food, water, shelter, latrines and health-care services. The vulnerability of adolescents with disabilities becomes even more acute during emergencies when they are separated from their families, and traditional caring mechanisms in the community such as the extended family and neighbours break down. They face high risks associated with safety, protection and dignity, and they may be particularly vulnerable to violence, exploitation and sexual abuse.

In 2013, WHO and partners published Guidance Note on Disability and Emergency Risk Management for Health, a short, practical guide for people working in health that addresses general emergency risk assessment, prevention (including hazard and vulnerability reduction), preparedness, response, recovery and reconstruction (242). The guidance note briefly describes core health services to support children with disabilities in an emergency, including ensuring essential medicines are available in the appropriate dosages and formulations, e.g. for the treatment of epilepsy and juvenile diabetes.

In addition to assessing and responding to the special needs of disabled adolescents in humanitarian and fragile settings, consideration should be given to the particular needs of adolescents who are injured and disabled during the emergency itself. The 2005 WHO Emergency Surgical Care in Disaster Situations summarizes guidelines for both adults and children. This includes some adolescent-specific content, e.g. antibiotic prophylaxis and treatment dosages, and age-appropriate treatment of fractures, amputations, burns and female genital injury (245).

A3.8.3.
Violence

As noted above, different kinds of violence may occur in humanitarian crises, particularly in conflict settings. Forms of sexual violence that may be especially widespread include:

- Sexual exploitation by anyone who can provide safe passage, food or other basic needs. In other words, sex with women and children is traded for goods and services.
- Sexual violence, including sexual slavery, against civilian women and girls by soldiers or members of armed factions seeking to brutalize and humiliate the perceived enemy. This is used as a strategy of war and as a means to gain political power, and may also be a tool of so-called ethnic cleansing.
- Violence against adolescent girls and women by a husband or intimate partner, including in camps for refugees or internally displaced persons (246).

Other forms of sexual violence may also be more likely to occur during armed conflicts or in refugee camps than in other settings, such as rape or sexual coercion of men and boys (247). However, this has not been researched well and the scale of the problem is not clear.

Community-based psychosocial programmes that address sexual violence in conflict settings can play a critical role in promoting good practices and reducing harmful ones (248). Assessment and action to support people affected by sexual violence should be guided by a survivor-centred approach, which is based on survivors' rights, including the right to be treated with dignity and respect rather than victim-blaming attitudes; the right to choose what to do rather than feel powerless; the right to privacy and confidentiality rather than shame and stigma; the right to non-discrimination rather than differential treatment based on gender, ethnicity or other factors; and the right to information rather than being told what to do. Box A3.5 outlines approaches and actions that should be done in planning and implementation of programmes for survivors of sexual violence in conflict-affected settings.

Annex 3. Additional information about evidence-based interventions

Box A3.5. Guidance for providing community-based psychosocial support to survivors of sexual violence in conflict-affected settings

- Provide adolescent survivors with useful, accurate information on available services that is easily understood, presented in the relevant local language and delivered with compassion.
- Train and support first responders to provide a safe, calm environment; listen supportively; demonstrate compassion and non-judgment; provide reassurance without making false promises; and promote access to medical care and other support.
- Identify a first contact or appropriate case manager who is trained in case management and psychological first aid, and can provide basic support and help survivors to access needed services.
- Design programmes that offer survivors and other vulnerable women and girls the opportunity to participate in non-stigmatizing community-based activities that reduce their isolation.
- Consider establishing or supporting safe spaces for women, girls and boys to promote interaction, education and referral to relevant services.
- Consider whether and how to establish or link with financial support services that support survivors' recovery.

- Seek to strengthen access to clinical mental health care, ensuring that clinical referral services are available for those whose distress is so overwhelming that it interferes with their ability to carry out work, school or domestic activities.
- Work with communities to spread anti-stigma messages, enabling discussions of how to prevent and respond to sexual violence, engaging women's and men's support groups and dialogue groups, and linking with community education and advocacy efforts.
- Engage women, men, girls and boys affected by sexual violence in decisions about the design, delivery and evaluation of interventions.
- Consider how programming can be culturally sensitive, and promote positive gender and cultural norms, while also challenging potentially harmful attitudes and practices.
- Ensure that all relevant actors in the community know what their specific roles and responsibilities are in ensuring that interventions are implemented in a manner that protects the safety and security of women and children.

Source: (248).

The 2004 WHO Clinical Management of Rape Survivors: Developing Protocols for Use with Refugees and Internally Displaced Persons includes specific recommendations for care of child and adolescent survivors, e.g. performance of physical and genital examinations; presumptive treatments for different STIs, including postexposure prophylaxis of HIV infection; and development of protocols in accordance with local laws and reporting procedures.

Medical professionals should understand the need for thorough, but sensitive, medical screening of former child soldiers at the earliest possible opportunity (247). This may be at the time of formal demobilization, but may also occur when child soldiers are captured, escape or otherwise leave service. Screening may need to be carried out in stages, addressing the most vital problems first and then proceeding to more sensitive issues, such as sexual abuse. Health professionals may also play a valuable educational role in helping prevent children being recruited into armies (including as volunteers), by raising awareness among children and adolescents who are at risk – as well as among their families and communities – and by stressing the associated dangers, including the severe damage to psychological and mental health.

Adolescents may experience other forms of violence in emergency settings, including violence related to increased stress and trauma during and after natural disasters. The WHO and colleagues (2016) report, INSPIRE: Seven Strategies for Ending Violence Against Children, describes intervention strategies for general populations, but notes that these are also applicable in conflict, post-conflict and other humanitarian settings, such as those affected by natural disaster. These include strategies focused on implementation and enforcement of laws (e.g. to prevent alcohol misuse); norms and values (e.g. bystander interventions); safe environments (e.g. addressing violence hotspots); parent and caregiver support (e.g. training and support delivered in groups in community settings); income and economic strengthening (e.g. cash transfers); response and support services (e.g. counselling and therapeutic approaches); and education and life skills (e.g. life and social skills training). In principle, because these interventions do not depend upon intact social systems and functioning governance structures, interventions delivered through self-contained programmes can be delivered in any context, including in humanitarian and fragile settings. For example, the International Rescue Committee conducted parenting programmes with migrant and displaced families on the border between Myanmar and Thailand, as well as with very poor communities in rural Liberia. The programmes mainly consisted of parenting group support, combined with a limited number of home visits. Randomized controlled trials that evaluated those interventions found they reduced harsh physical and psychological punishment, increased positive strategies to manage children's behaviour, and enhanced the quality of caregiver-child interactions (52).

A3.8.4.
Sexual and reproductive health

In 2005, the Inter-Agency Standing Committee, which brings together key United Nations and non-United Nations humanitarian partners to coordinate global humanitarian assistance, appointed WHO as the lead agency of its Global Health Cluster. The Global Health Cluster subsequently recommended content for SRH/HIV responses within humanitarian and fragile settings, from minimum initial relief interventions to comprehensive, longer-term recovery activities. These are summarized in Figure A3.1 (249).

Annex 3. Additional information about evidence-based interventions

Figure A3.1. Sexual and reproductive health interventions for general populations in humanitarian and fragile settings, from a minimal initial service package to a comprehensive response
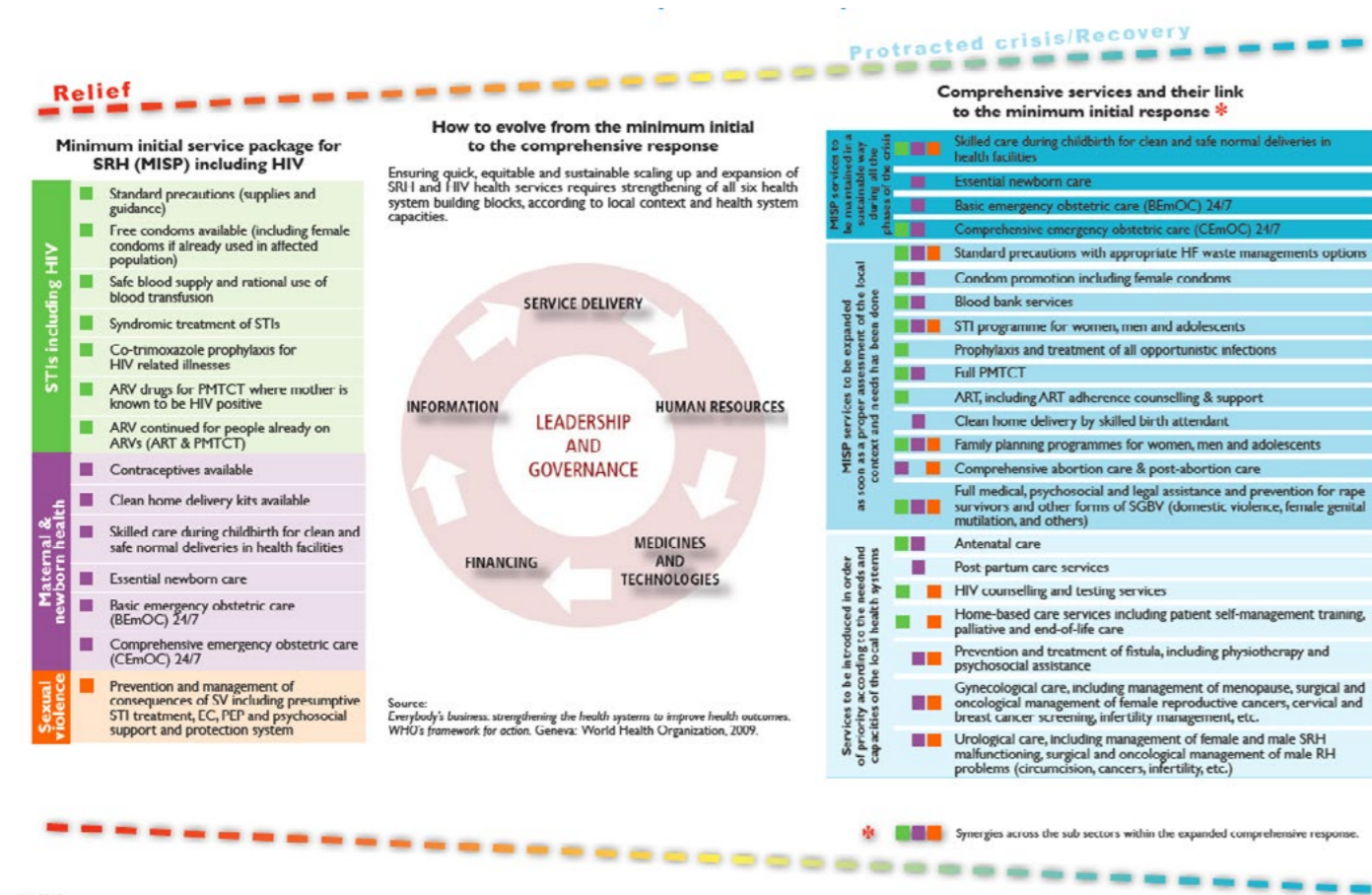
July 2010

Source: (249).

Several other major international collaborations have produced additional guidance documents on the management of SRH in humanitarian and fragile settings, all of which are relevant to adolescents (e.g. Inter-Agency Working Group on Reproductive Health in Crises (250); WHO et al. (251); Women's Refugee Commission (252); EWEC Technical Content Workstream Working Group on Humanitarian Challenges (91). For example, the EWEC Working Group on Humanitarian Challenges specifies that adolescent interventions should include:

- **preventive care** – including contraception; condoms; emergency contraception; gender-based violence (GBV) prevention; mental health; sexuality education; and life skills;
- **treatment** – including treatment of STIs; comprehensive abortion care; adolescent-friendly health facilities; clinical care for survivors of sexual violence; emergency contraception; nutrition; and trauma surgery;

- **delivery models** – including flexible and integrated adolescent SRH services; community-based, mobile and temporary clinics; provision of comprehensive SRH services for adolescents at a single site; home-based care, education and outreach through non-health facilities; safe spaces (e.g. Case study A3.25); and an adolescent lens applied to MISP and assessment;
- **kits** – including those for menstrual hygiene (dignity kits), post-rape, STI and contraception. (91)

Case Study A3.25.

Nigeria's safe spaces for girls and women displaced by the militant group Boko Haram

In the six years since the conflict with the militant Boko Haram group began in north-east Nigeria, more than 2.2 million people have been internally displaced, 20 000 civilians killed, and as many as 7000 women and girls abducted. An estimated 92% of internally displaced persons live within host communities and 8% in camp settings. More than 500 000 of them (53%) are girls and women of reproductive age, with more than 81 000 pregnancies expected during 2016.

With support from UNFPA, the United States Agency for International Development (USAID) and the Government of Japan, nine safe spaces for women and girls fleeing Boko Haram have been established since August 2015 in some of the most populated camps for the displaced in north-east Nigeria. The safe spaces serve several purposes, including building the resilience of girls and women by offering them opportunities to acquire livelihood skills and engage with others to rebuild community networks (253). They are also a confidential and non-stigmatizing entry point for reproductive health information and services, including family planning and psychosocial counselling for GBV. Between August 2015 and March 2016, 10 230 adolescent girls were reached through the camps, including 4379 who received psychosocial support (individual and group); 4322 who participated in information and awareness raising; 1105 who benefited from outreach on GBV prevention; 314 who gained livelihood skills; and 110 who received referral support as GBV survivors.

Source: (253)

The Inter-agency Field Manual on Reproductive Health in Humanitarian Settings further notes that an initial emergency response should:

- make condoms – both male and female – available in places where adolescents meet, preferably in private, accessible locations where they can access them without being observed;
- ensure adolescent girls are safe when carrying out household tasks such as collecting firewood, water or food;
- ensure pregnant adolescent girls have access to emergency obstetric care services and referral mechanisms when necessary; and
- establish clinical care and referral services for survivors of sexual violence that are sensitive to adolescent needs and respect confidentiality.
  (250)

In addition, several adolescent-specific SRH resources have been produced for emergency settings, including Adolescent Programming Experiences During Conflict and Post-conflict (254); Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings (255); Adolescent Sexual and Reproductive Health Programs in Humanitarian Settings (256); and Adolescent Girls in Disaster and Conflict (257). For example, the Save the Children and UNFPA toolkit outlines key interventions for different sectors responding to adolescent SRH needs; those considered essential for minimal preparation and response are summarized in Table A3.8 (255). The toolkit also provides participation tools for adolescents, parents and broader communities; assessment tools (e.g. an adolescent SRH emergency situation analysis); facility-based tools (e.g. an adolescent SRH checklist); and community-based distribution and peer education tools to help operationalize adolescent SRH interventions during and immediately after a crisis.

Annex 3. Additional information about evidence-based interventions

Table A3.8. Minimal interventions to prepare for and respond to adolescent sexual and reproductive health needs during emergencies

FUNCTIONS AND SECTORS	MINIMUM EMERGENCY PREPAREDNESS	MINIMUM RESPONSE (TO BE CONDUCTED DURING THE EMERGENCY)
Coordination	• Determine coordination mechanisms and responsibilities • Mainstream adolescent sexual and reproductive health (ASRH) in preparedness and contingency	• Advocate with the Global Health Cluster (the global humanitarian emergency response coordinating body) to ensure ASRH services are accessible to adolescents during implementation of the MISP • Identify the most-at-risk adolescents and ensure that they have access to ASRH services
Assessment and monitoring	• Advocate for inclusion of ASRH questions in rapid assessment tools	• Identify the most-at-risk subgroups of adolescents • Advocate for the inclusion of ASRH and adolescent demographic questions
Facility-based ASRH services	• Train health staff on rapid response of ASRH and working with at-risk adolescents	• Ensure adolescent-friendly health services during MISP implementation • Ensure adolescents have access to ARV treatment when needed
Community-based ASRH services	• Identify where adolescents receive ASRH services (outside of health facilities)	• Establish adolescent-friendly distribution points for condoms • Provide sanitary materials to adolescent girls
Protection and human rights	• Review or establish a code of conduct on sexual exploitation and abuse and train local and international humanitarian actors	• Ensure that all stakeholders are aware of the rights of adolescents • Strictly enforce a zero-tolerance policy for sexual exploitation and abuse
Information, education and communication	• Agree on the best communication channels to reach adolescents at the onset of emergencies	• Provide adolescents with information about what ASRH services are available and where they can be accessed

Source: (255).

As an emergency situation stabilizes, whether in the form of a protracted crisis or societal recovery, more focus should be given to re-establishing comprehensive adolescent health services, including non-health interventions that influence determinants and support SRH delivery (e.g. Case study A3.26) (257). These include:

- ensuring schooling options through targeted support (e.g. safe passage; financial support to families);
- comprehensive sexuality education and life-skills education, in and out of schools;
- protection of girls from child marriage;

- systems for adolescents' participation in decision-making (including specifically girls' participation) at community, provincial and national levels; and
- strengthening programme linkages and referral pathways, and coordination among sectors – including protection, education and livelihoods – for a holistic, multisectoral response. (91)

Case Study A3.26.

Malawi's youth clubs for adolescent girls and boys displaced by floods

Malawi suffered its worst flooding in decades in January 2015 when the southern region received 400% higher rainfall than average, and floodwaters submerged more than 63 000 hectares. Nearly 250 000 people were forced to seek shelter in schools, churches and temporary sites. Adolescent girls and boys were left largely idle, and girls and women said they feared walking to the toilets located at far reaches of the camps due to the threat of rape.

UNFPA, Youth Net and Counselling, and the Centre for Victimized Women and Children, responded to this need by establishing clubs in displacement camps for adolescent girls and boys. From January to June 2015, the 32 youth clubs provided services to more than 18 000 internally displaced adolescents. The clubs provided a variety of activities for entertainment and education, including games, sporting activities such as football and netball games, and traditional dance, drama competitions, song, poetry and art. Activities were initiated to keep adolescents and youth positively engaged during the displacement period and to provide psychosocial support. At the same time, the youth clubs served as an entry points for provision of adolescent SRH information and services with counselling and peer education addressing contraceptives, HIV prevention and GBV. Young people's GBV issues were addressed through collaboration between the youth clubs and women's safe spaces. Condoms were distributed free of change and were dispensed in strategic areas easily accessed by adolescents and youth. Condom uptake was high within the clubs compared to general condom uptake in the camps. The youth-friendly approach also contributed to uptake in use of modern contraceptives, with the oral pill the preferred contraceptive method among most of the adolescent girls referred by their youth clubs for family-planning services. Cases of STIs decreased as access to condoms and family planning services increased.

Sources: (257).

A3.8.5.
Water, sanitation and hygiene (WASH)

WASH needs for populations during humanitarian emergencies include safe access to, use and maintenance of toilets; access to water and soap or ash for handwashing at critical times; the hygienic collection and storage of water for consumption and use; hygienic food storage and preparation; and efficient waste management (181). A major effect of not meeting these WASH needs is increased diarrhoeal illnesses, which also compromise nutritional status. Poor nutritional status further increases children's risk of contracting other diseases, such as pneumonia, leading to a vicious cycle of comorbid conditions, which can continue to worsen health and cause malnutrition.

WASH interventions are also critical for adolescent girls, as they face particular challenges managing menstruation in humanitarian and fragile settings (e.g. Case study A3.27), Box A3.6. (241); (250); (258). These challenges may include losing their familiar coping strategies for managing menstruation, such as access to their usual sanitary protection materials or products and a place to wash, dry or dispose of them. If displaced, they may have to leave behind their clothes or possessions, such as sanitary cloths, soap, non-food items and underwear. They may have to live in unusually close proximity to men and boys, both their relatives and strangers. They may not have access to money for sanitary products if they do not control the family finances. And – because menstruation is a taboo subject – it may not be easy to discuss it with a male head of the household (123). In conflict situations, girls can experience additional difficulties accessing water supplies, sanitation and hygiene items. For example, water sources may be targeted for the planting of landmines and by sniper or cross-fire. There may be a risk of being attacked when travelling even short distances. And usual water supplies may break down due to lack of spare parts, lack of fuel, or the death or displacement of the technical personnel who run the systems. In a natural disaster such as earthquake or flooding, a girl may be injured or disabled and not be able to manage menstrual hygiene in her usual way. Particular challenges exist for girls living in seclusion or in societies where it is difficult for them to interact with or speak to men, as emergency-response teams are often mostly male.

Annex 3. Additional information about evidence-based interventions

Case Study A3.27.

Ethiopia's refugee camp distribution of menstrual hygiene kits to promote girls' school attendance

During the 1998–2000 border war between Eritrea and Ethiopia, approximately 4000 members of the pastoralist Kunama ethnic group fled Eritrea. Ethiopia settled the refugees in a camp where the population subsequently swelled to more than 13 000 Eritreans of different ethnicities. In 2001, after most children in the camp had been out of school for two years, the International Rescue Committee began working with local government officials, camp leaders and parents to launch an emergency education programme. Teachers and administrators were hired and trained, and within six months nearly 550 children were enrolled in formal schooling, vocational training, sports, and recreational activities and social clubs.

When the education programme started, girls' enrolment and attendance rate in the primary school was very low. Focus-group discussion with schoolgirls found that the lack of protection during their menstrual cycles was one of the main reasons for their low enrolment and high drop-out rates. To address this barrier, UNHCR donated fabrics for the production of sanitary napkin kits, and the International Rescue Committee worked with women graduates of their tailoring programme to design, produce and distribute sanitary napkin kits within the broader vocational training programme. Now each 13- to 49-year-old female in the camp is provided with four pairs of underwear, 12 re-usable pads, and 12 bars of soap per year. Distribution of these items has promoted greater enrolment and retention of girls in school.

Source: (123).
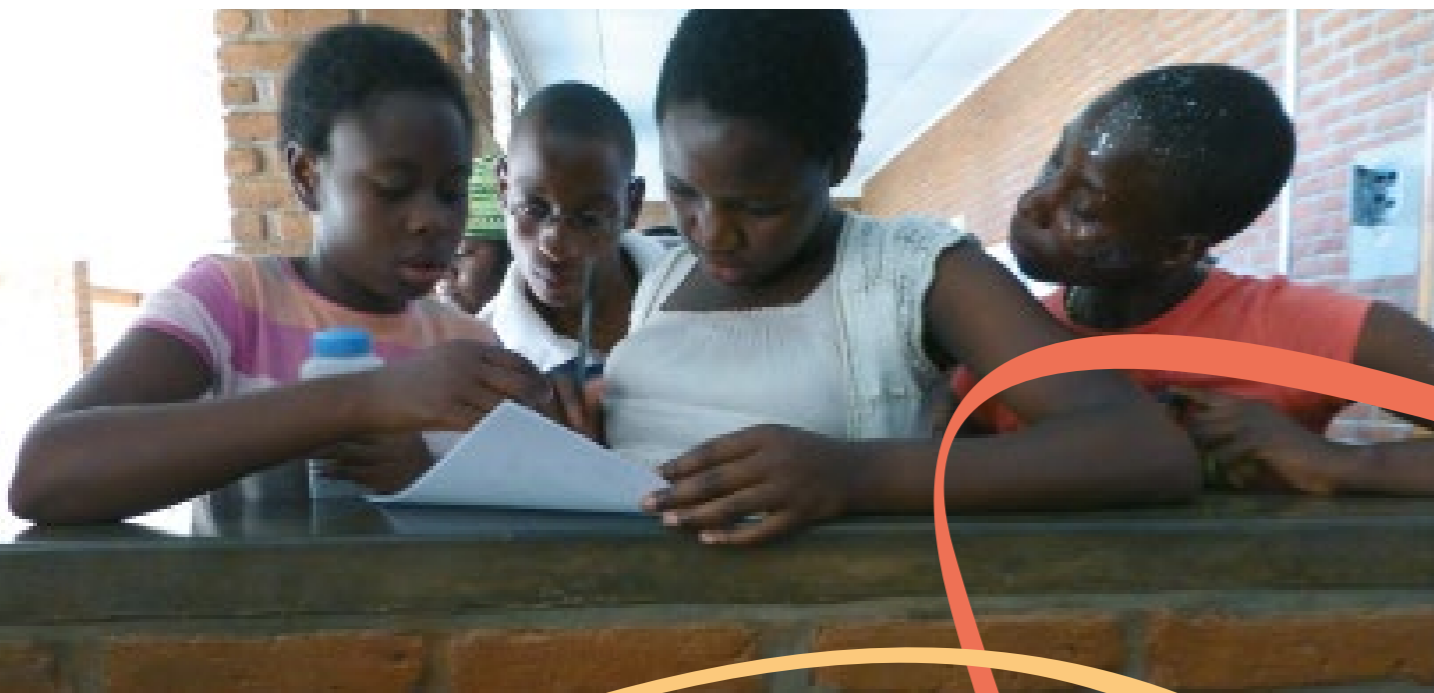
Box A3.6 summarizes good practice design for menstrual-hygiene-friendly water, sanitation and hygiene facilities in emergencies.

Box A3.6. Good practice design for menstrual-hygiene-friendly water, sanitation and hygiene facilities in emergencies

Water supply
- In a safe location, accessible to women and girls, including those with disabilities or limited mobility.
- Of adequate quantity on a daily basis, and ideally provided inside latrine and bathing cubicles – or if this is not possible, near to these facilities.
- With drainage, so water point is hygienic and so the users can collect the water with ease.

Latrines
- In a safe location and private (with internal locks and screens in front of the doors or separately fenced off with a female caretaker).
- Lit where possible (if latrines cannot be lit at night, wind-up torches or batteries and torches should be provided in each family's non-food items kit).
- Adequate numbers (in line with Sphere minimum standards, UNHCR standards, or the host government's standards) and segregated by sex (Sphere Project 2011).
- Accessible to women and girls, including those with limited mobility or disabilities; at least some larger units to allow for changing menstrual protection materials or supporting children.

Bathing units
- Bathing units should provide privacy, safety and dignity for women and girls bathing and managing their menses.
- In a safe location and always with locks on the inside of doors.
- Putting a fence around the unit with a single entrance provides an additional level of privacy and allows other facilities such as washing slabs and drying lines to also be incorporated.
- Include a seat for girls and women with limited mobility or disabilities.
- Include hooks for hanging clothes and drying towels while bathing.
- Discrete drainage, so any water with menstrual blood in it is not seen outside the unit.

Disposal facilities for menstrual hygiene materials
- Discrete and appropriate disposal facilities located inside the latrines. Can be a container with a lid or, for more established facilities during later emergency stages, a chute direct from the latrine unit to an incinerator outside.
- If containers are provided, a regular and sustained process for collection and disposal of contents in an incinerator or pit must be established. This requires appropriate training and the provision of protective equipment (gloves) for those managing collection and disposal.
- In cases where incinerators are available in medical facilities, collaboration is an option. Alternatively, separate facilities may need to be constructed.

Facilities for washing and drying sanitary cloths and underwear
- In a private, sex-segregated location; for example, the provision of a screened laundry area as part of integrated toilet and bathing facilities, ideally with a water supply also inside the unit.
- Discrete drainage, so waste water with menstrual blood in it is not seen outside of the washing unit.
- Drying facilities provided, such as sex-segregated private drying lines within a screened bathing and latrine unit, or a publicly available charcoal iron that can be used to dry cloths.

Operation, cleaning and maintenance of all facilities
- Appropriate operation, cleaning and maintenance routines should be established for all water, sanitation and hygiene facilities, which are appropriate to the context and expected length of the emergency.

Source: (123)

Annex 3. Additional information about evidence-based interventions

A3.8.6.
Mental health

During the acute emergency phase of a humanitarian crisis – when focus will generally be on acute needs such as the organization of food, shelter, clothing, primary health care and the control of communicable diseases – WHO advises conducting mostly social mental health interventions (259). Past the acute phase, stakeholders and communities should encourage the organization of normal recreational activities for adolescents, and encourage re-starting their schooling, even partially. If possible, both adults and adolescents should be involved in concrete, purposeful common-interest activities (e.g. constructing shelter; coordinating family tracing; distributing food; organizing vaccinations; teaching children).

Health-care providers and other field workers can advise parents of adolescents how to manage their stress, improve their well-being, and provide appropriate care for their children in humanitarian and fragile settings. For example, the WHO and colleagues (260) Psychological First Aid guide for field workers explains how they can give humane, supportive responses to people who may need them during an emergency, including guiding parents to:

• give adolescents their time and attention;

• help them to keep regular routines;

• provide facts about what happened and explain what is going on now;

• allow them to be sad, and not expect them to be tough;

• listen to their thoughts and fears without being judgmental;

• set clear rules and expectations;

• ask them about the dangers they face, support them and discuss how they can best avoid being harmed; and

• encourage and allow opportunities for them to be helpful. (260)

For adolescents aged 10–11 years, emotional reactions after a disaster may include fear and anxiety about danger and loss of possessions, as well as irritability, disobedience, depression and headaches (261). Other reactions include school avoidance, difficulty concentrating and grieving – which can include emotions such as shock, sadness, anger, fearfulness, anxiety or numbness – and difficulty engaging with social or other activities. Among adolescents aged 12–17 years, the impact of a disaster may depend on the degree of disruption of both family and community. Fear of loss of family may revive fears more typical of earlier development, such as being alone, darkness or separating from caregivers. Disasters may also cause families to pull together and become extraordinarily close, so that an older adolescent may lose, or not gain, the independence from family that is typical for their age. Common reactions in this age group are withdrawal and isolation, psychosomatic conditions (e.g. headaches and stomach aches), suicidal thoughts, antisocial behaviours (e.g. stealing or aggression), sadness, decline in school performance, and sleep problems (e.g. nightmares or night terrors). Other reactions relate to death (e.g. grieving), confusion, and isolation from peers (e.g. boredom). In some contexts, older adolescents may find themselves as head of a household after a humanitarian emergency, and may not allow themselves to grieve. Feelings of helplessness, hopelessness and worthlessness can be strong indicators of suicidal thoughts.

Some adolescents will need long-term, professional mental health care after a humanitarian crisis. Adolescent survivors of violence may suffer from a range of psychological consequences, both in the immediate period after the violence and over the longer term. For male and female survivors of sexual violence, this can include guilt; anger; anxiety; depression; post-traumatic stress disorder; sexual dysfunction; somatic complaints; sleep disturbances; withdrawal from relationships; and attempted suicide (247). Former child soldiers may also have mental and psychosocial health issues, including nightmares; intrusive memories; flashbacks (i.e. feeling as if the traumatic event were happening again); and hallucinations (i.e. seeing and hearing things that other people cannot – often sights or sounds of the traumatic event). They may experience poor concentration and memory; chronic anxiety; regression in behaviour; increased substance abuse as a coping mechanism; a sense of guilt and refusal to acknowledge the past; poor control of aggression; obsessive thoughts of revenge; and feelings of estrangement from others. The militarized behaviour of the children may lead to a low level of acceptance of the norms of civilian society. Their rehabilitation constitutes one of the major social and public health challenges in the aftermath of armed conflict.

In 2015, WHO and UNHCR published an mhGAP Humanitarian Intervention Guide, with first-line management recommendations for mental, neurological and substance-use conditions for non-specialist health-care providers in humanitarian emergencies (262). The guide outlines general principles for care of people in humanitarian settings, including those related to communication; assessment; management; reducing stress and strengthening social support; protection of human rights; and overall well-being. It also has modules focused on acute stress; grief; moderate to severe depressive disorder; post-traumatic stress disorder; psychosis; epilepsy/seizures; intellectual disability; harmful use of alcohol and drugs; suicide; and other significant mental health complaints (including, for adolescents, behavioural problems). Some content specifically addresses adolescents, e.g. if a potentially traumatic event has occurred within the last month, providers are advised to check for changes in adolescent risk-taking behaviours. If adolescents have lost their parents or other carers, providers should address any need for protection and ensure the adolescents receive consistent, supportive care. At a health-system level, emergencies – despite their tragic nature and adverse effects on mental health – are also unparalleled opportunities to improve the lives of large numbers of people through mental-health reform. In 2013, WHO published Building Back Better: Sustainable Mental Health Care After Emergencies. This has the goal of guiding individuals, societies and countries recovering from natural disasters, armed conflicts, or other hazards in how they might create mental health reform and system improvements in the aftermath of such crises (263). The document provides detailed accounts from 10 diverse emergency-affected areas, each of which built better-quality and more-sustainable mental health systems despite challenging circumstances.

The situation in Iraq provides one example. In recent decades many Iraqis suffered from intense psychological distress due to dictatorship; the war between the Islamic Republic of Iran and Iraq; economic sanctions; the Gulf wars; the invasion in 2003; and the subsequent violent insurgency. Prior to 2003, mental health services in Iraq were provided by fewer than 100 psychiatrists, basic services were often unavailable to the general population, and child and adolescent psychiatry was almost non-existent. However, mental health reform has been underway in Iraq since 2004. At that time, a National Mental Health Council was established, and a national mental health strategy and plan were drafted. Despite ongoing violence and instability, significant progress was made to create a community-based mental health system. By 2011, the country had successfully established 25 new mental health units, including new inpatient beds for children and adolescents in paediatric hospitals, and 34 new units offering outpatient-only services – including four units specifically for children and adolescents (263).

Annex 4. Additional information about setting national priorities

A4.1.
Additional resources to support national priority setting

Additional resources exist to support national governments conducting adolescent health needs assessments, landscape analyses and prioritization exercises. For example, the WHO Regional Office for the Western Pacific (WPRO) has published a manual for health planners and researchers conducting a rapid assessment of adolescent health needs (264). Similarly, the WHO Regional Office for the Eastern Mediterranean (EMRO) has

developed several tools to assist member countries in prioritizing adolescent-health interventions, including regional guides on: conducting an adolescent health situation analysis (265); core indicators for adolescent health (266); and adolescent health programme review (267). Box A4.1 outlines the needs assessment and landscape analysis content that EMRO recommends be covered in a country's adolescent health situation analysis report.

Box A4.1. Content of a country-level adolescent health situation analysis report

The WHO Regional Office for the Eastern Mediterranean recommends that Member States include the following sections in their adolescent health situation analysis reports, noting that additional sections can be added if relevant. Examples are provided under each section heading below; a more comprehensive list of desirable content is available in the regional guide.

Introduction
- Definition of adolescence; government commitment in policies, plans and agreements; issues related to current adolescent health policies and approaches (such as scattered activities or duplication of efforts); and rationale and main objectives of the situation analysis.

Geographical, political and administrative issues
- Distances and communications; nature of terrain and seasonal and climatic changes facilitating disease occurrence; administrative division of the health system; unstable or insecure situations.

Demographic indicators
- Structure of general and adolescent population by age and sex; population distribution and growth or projections for adolescents; existing population and development policies and strategies; vulnerable and at-risk groups of adolescents (e.g. by geographical region, or urban-rural residency).a

Economic indicators
- Poverty rate; gross national income and share of income; housing conditions; and employment, particularly as relevant to adolescents (such as impact of the economic situation on adolescent quality of life, diet, housing and health services; and the proportion of people who are unemployed in late adolescence, disaggregated by sex).

Sociocultural indicators
- Urbanization; literacy rate; school enrolment rate; level of education achieved; gender issues; social norms; and multicultural environment – ideally disaggregated by age, sex and geographical distribution and describing how they affect adolescent health, including vulnerable and at-risk groups of adolescents (e.g. sex workers).

Leisure time and recreational facilities
- Time spent watching television; playing computer games; talking with friends; and doing other sedentary activities – by sex and age group, and with consideration of related attitudes, behaviours and norms.

Health indicators
- Disaggregated by age group and sex, indicators related to morbidity and mortality; nutrition; physical activity; maternal and reproductive health; injuries and violence; mental health; immunization; oral health; communicable diseases; noncommunicable diseases; tobacco use; and substance use.

Programmatic response
- Description of the health system, including national standards; human and financial resources; adolescent health programming and related interventions and services; information, supervisory and referral systems; and linkages between the health system, community and adolescents.

Evaluation
- From the health information system, demographic and health systems, and multiple indicator cluster surveys.

Partners
- Ministries representing different sectors, as well as nongovernmental organizations, civil society organizations, United Nations organizations, communities and adolescents.

Main potential channels and sources of information
- Availability and impact of the internet, television and radio.

Attitudes and perceptions of adolescents
- Studies that describe the attitudes and perceptions of adolescents, and how governments, religious leaders, communities and parents think about adolescents.

Relevant laws and legislation affecting adolescent health
- All policies that specifically affect adolescent health either directly or indirectly, in all sectors.

Conclusions and recommended actions
- Recommended actions identified by the situation analysis and guided by priorities.

Source: (265).

Annex 4. Additional information about setting national priorities

The EMRO adolescent health situation analysis guide provides detailed questions and instructions for each of the categories in Box A4.1, to assist countries moving through the process. Taking the example of nutrition, the guide recommends that countries describe and analyse the underlying factors that influence adolescent nutrition (e.g. poverty; employment; food availability; dietary habits; physical activity; social behaviours; self-esteem; body image; dieting), as well as adolescent habits that have an impact on nutrition, including what they eat for breakfast, smoking and substance use. It further recommends analysis of the role of the media and other communication channels (e.g. the internet) in influencing adolescent nutrition. Finally, it details questions to guide a review and description of existing adolescent nutrition interventions in the country, and concludes with a prioritization process highlighting the most important issues that need to be focused on related to adolescent nutrition.

A meeting in 2011 of government representatives from nine of the 21 countries in the Eastern Mediterranean Region reviewed progress in implementing such country-level adolescent health situation analyses (267).

A4.2.
A theoretical example of country-specific prioritization

Figure A4.1 shows the leading 25 causes of adolescent death for the 50 most populous countries as estimated in the 2013 Global Burden of Disease Study (269). These data and those of the 2015 Global Health Estimates that were described in Section 2 can be used to illustrate the prioritization exercise described in Section 4.3 (143). The following description explains how individual

The meeting found that – although the countries differed in the structure of their adolescent health programmes within ministries and the legal frameworks designed to protect and promote adolescents – Member States had reached broadly similar conclusions about the major adolescent health concerns, including mental health, tobacco and substance abuse, injuries and NCDs.

An additional resource for reviewing national health programmes to ensure no adolescents are left behind is the Innov8 technical handbook, which identifies ways to take concrete, meaningful and evidence-based programmatic action to address in-country inequities (268). The Innov8 approach could be used better to understand the subpopulations of adolescents who may be missed in a particular context; the barriers they face; the reasons the barriers exist; and the role of other sectors and social participation in responding to them.

countries might use one variable – adolescent mortality rates – to prioritize conditions to target within their particular adolescent health programming. Importantly, however, this involves simple interpretation for illustrative purposes only. Numerous other variables and concerns would need to be taken into consideration in an actual national adolescent health prioritization exercise.

Figure A4.1. Leading 25 causes of adolescent death in the 2013 Global Burden of Disease Study, for the 50 most populous countries

Key: Colours correspond to the ranking of the leading causes of mortality, with dark red as the most common cause and dark green as the least common cause for the location indicated. The numbers inside each box indicate the ranking.

Location	Road Injuries	HIV/AIDS	Self-Harm	Drowning	Intestinal Infectious	Interpersonal Violence	Lower Respiratory Infe	Diarrheal Diseases	Malaria	Tuberculosis	Maternal Disorders	Hemoglobinopathies	Congenital Anomalies	Leukemia	Meningitis	Ischemic Heart Disease	Fire and Heat	Cerebrovascular Disea	Other Neoplasms	Falls	Mechanical Forces	Epilepsy	Other Unintentional	Chronic Kidney Diseas	Leishmaniasis
Global	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Developing	1	2	3	4	5	6	7	8	9	10	11	12	14	15	13	16	17	18	21	19	20	22	23	24	25
Afghanistan	1	102	13	3	9	5	4	14	10	7	6	15	8	19	16	23	22	18	29	11	12	17	2	20	91
Algeria	1	95	19	2	3	20	4	36	84	27	37	12	9	11	17	6	21	5	10	28	45	15	23	7	97
Angola	2	1	8	6	13	14	4	3	11	9	5	10	15	37	7	47	23	18	20	21	12	16	28	19	81
Argentina	1	38	2	4	59	3	9	51	124	36	17	29	10	6	21	13	24	11	8	31	5	23	12	19	127
Bangladesh	4	84	1	3	2	46	10	20	24	101	32	9	27	11	7	22	16	64	21	6	17	40	8	12	14
Brazil	2	31	4	3	9	1	5	42	94	37	13	27	8	6	14	12	36	10	7	16	17	23	15	18	82
Cameroon	2	1	12	10	9	14	6	7	3	11	4	8	15	46	5	26	35	22	31	17	24	23	30	16	127
China	1	48	3	2	46	10	16	57	108	28	39	23	5	4	29	9	33	8	11	6	7	15	14	17	124
Colombia	2	45	3	4	12	1	6	35	70	32	13	31	8	5	20	11	33	9	7	15	10	14	19	16	108
Cote d'Ivoire	2	1	13	10	8	61	5	7	3	9	6	11	14	44	4	26	31	18	27	16	21	19	32	17	127
Democratic Republic of the Congo	4	2	10	11	12	13	5	3	7	8	9	1	18	35	6	53	23	20	22	25	17	16	34	21	27
Egypt	1	105	11	3	6	25	7	34	108	46	44	18	5	9	38	4	35	2	14	17	23	22	16	13	85
Ethiopia	2	1	10	11	9	8	6	3	14	4	5	24	16	46	7	45	25	44	22	20	26	12	30	18	15
Ghana	2	1	10	17	8	19	6	11	4	15	7	3	14	36	5	18	34	20	29	21	24	26	40	13	126
India	3	14	1	5	2	19	8	4	9	6	10	33	18	28	26	11	7	20	22	17	16	35	25	50	21
Indonesia	1	64	17	2	5	25	6	4	24	3	11	21	7	8	9	35	40	18	34	19	33	12	23	14	124
Iran	1	110	2	3	5	9	12	41	103	43	37	15	6	7	26	8	4	14	21	18	11	24	10	22	109
Iraq	2	68	11	4	7	1	12	28	-	26	23	18	5	10	22	8	14	13	16	20	6	25	3	9	19
Kenya	3	1	12	10	8	11	6	2	7	4	13	16	15	23	5	49	21	33	19	18	24	9	27	17	47
Madagascar	5	8	18	14	10	25	4	3	2	13	7	22	19	38	6	58	37	11	24	35	32	15	53	26	1
Malaysia	1	32	5	2	8	6	4	43	91	37	40	17	9	7	19	15	35	10	11	29	16	23	36	22	124
Mexico	1	57	3	4	12	2	9	25	124	36	17	31	7	5	32	13	40	16	8	14	11	15	28	6	121
Morocco	1	81	4	3	6	14	7	31	104	19	24	29	12	10	17	5	27	8	9	21	13	16	32	15	88
Mozambique	3	1	14	13	11	10	6	5	2	7	8	19	17	38	9	46	20	43	18	22	23	12	28	16	4
Myanmar	2	16	14	3	6	11	5	13	1	9	12	18	7	4	10	55	19	25	15	8	17	20	34	23	123
Nepal	2	37	1	4	3	10	12	5	24	8	7	30	18	9	23	19	16	26	15	17	33	20	11	40	6
Niger	3	9	24	12	10	29	6	1	5	8	2	7	17	46	4	27	32	36	28	21	19	23	33	20	125
Nigeria	2	3	64	12	8	26	6	10	4	9	5	1	15	45	7	32	36	28	25	11	22	13	20	21	127
Pakistan	2	83	13	8	1	5	12	6	25	4	3	20	24	10	11	15	32	19	27	26	35	14	7	16	30
Peru	1	53	3	8	14	7	2	33	103	11	18	30	13	4	22	5	34	9	12	25	10	16	32	15	113
Philippines	2	34	12	3	4	5	1	18	61	9	24	23	7	8	11	10	53	14	15	25	40	22	20	16	125
Saudi Arabia	1	37	7	2	4	17	8	38	70	24	49	13	3	16	34	10	20	14	18	6	9	11	15	12	121
South Africa	3	1	4	10	14	2	5	8	57	6	19	34	20	24	13	32	18	23	17	27	7	9	33	22	103
Sudan	1	14	10	9	6	15	4	12	5	19	3	18	8	13	22	11	35	7	21	23	16	20	37	25	2
Tanzania	6	1	14	12	9	11	7	3	2	5	8	17	15	41	10	42	23	44	18	20	25	13	30	21	4
Thailand	1	27	4	2	12	3	6	36	55	46	43	26	11	8	18	13	37	7	15	17	10	20	9	14	124
Turkey	1	93	2	8	4	6	7	41	122	39	57	19	16	3	38	17	29	10	13	14	5	9	20	21	121
Uganda	2	1	104	11	10	9	4	7	3	5	8	16	17	23	6	42	45	37	19	86	20	13	110	18	41
Uzbekistan	3	77	2	1	56	12	4	46	-	23	40	31	17	5	15	21	18	30	14	9	19	6	10	7	113
Venezuela	2	44	3	4	10	1	9	27	88	36	12	25	7	6	20	16	30	15	8	17	5	14	13	11	115
Vietnam	1	47	5	2	9	6	8	33	25	15	24	19	4	3	27	71	43	22	12	14	16	10	7	28	123
Yemen	1	65	12	5	7	9	3	8	2	14	4	18	10	13	22	11	16	6	21	25	15	19	20	24	28
Developed	1	42	2	4	33	3	12	57	123	45	40	31	6	7	26	21	20	19	5	14	15	17	24	30	119
France	1	53	2	8	24	11	20	45	-	61	51	30	5	4	33	23	26	18	3	14	19	13	25	38	120
Germany	1	76	2	13	52	11	15	42	-	82	54	32	3	5	23	19	24	21	4	18	17	9	25	30	-
Italy	1	32	2	8	21	11	18	67	-	61	69	17	5	4	28	16	31	15	3	12	13	19	26	25	115
Japan	2	110	1	5	22	15	7	47	-	60	85	18	6	4	34	10	20	16	3	12	21	14	52	29	-
Russia	2	37	1	3	33	4	10	73	-	28	44	61	7	9	27	24	14	20	11	6	16	21	15	34	-
South Korea	2	96	1	3	27	7	15	53	122	26	55	22	8	4	36	14	16	13	5	12	17	10	33	21	-
United Kingdom	1	106	2	15	22	18	12	45	-	64	42	36	4	6	20	32	25	21	3	13	11	10	43	31	-
United States	1	40	2	5	42	3	15	49	-	83	32	27	6	8	29	18	16	19	7	20	12	23	37	30	-

Source: (269), (reproduced with permission).

National governments need to narrow down a list of dozens of adolescent-health concerns to a small number that they can target over a certain period of time. There are some conditions that universally cause major adolescent burdens in almost all countries, so their prioritization within adolescent health programming seems very likely. As noted in Section 2, for instance, in 2012 road injuries were the leading or second leading cause of adolescent mortality in all but the African LMICs, and in that region the rate of mortality was greater than in all other regions (143). These findings suggest that all regions and most countries will want to prioritize evidence-based road injury interventions within their adolescent health programming; WHO-recommended examples are detailed in Section 3.

Adolescent health education and services related to sexual and reproductive health and nutrition are other areas that are very important to the well-being of general adolescent populations in all countries, whether immediately or as an investment for health across the future life course. As a result, implementation of such evidence-based, multisectoral interventions should be prioritized in all country adolescent health programmes. However, in some settings ASRH problems may be particularly pronounced and thus require even more intensive interventions. One example is the need for large-scale adolescent HIV prevention, care and treatment interventions in the 10 African countries where HIV is estimated to be the leading cause of adolescent mortality (Figure A4.1). A second example is interventions to prevent and respond to early pregnancy in countries where adolescent maternal disorders are highly prevalent. For instance, in Niger, Pakistan, Sudan, Yemen and Cameroon, maternal disorders are ranked as the second, third or fourth leading cause of mortality among all adolescents, indicating that they have approximately double the rate of mortality among adolescent females alone (Figure A4.1).

Self-harm is also a leading cause of adolescent mortality in almost all WHO regions, so this is likely to be something that most countries will want to target within their national adolescent health programming (143). Self-harm is the second leading cause of adolescent mortality in LMICs in South-East Asia – including in Bangladesh, India, Nepal, and the Republic of Korea (Figure A4.1) – so those countries may especially prioritize implementing self-harm related interventions. However, this should not be prescriptive for all countries in South-East Asia. For example, self-harm is estimated to be only the fourteenth leading cause of adolescent mortality in Myanmar, where the leading five causes are malaria, road injuries, drowning, leukaemia and lower-respiratory infections (Figure A4.1). Therefore, the national government may wish to prioritize major interventions targeting those conditions and others, before those targeting self-harm. In addition, there are individual countries outside of South-East Asia where self-harm is also a great cause of adolescent mortality, e.g. it is the leading cause of adolescent mortality in Japan and Russia;

and the second leading cause in Argentina; France; Germany; Italy; the Islamic Republic of Iran; Turkey; the United Kingdom; the United States; and Uzbekistan (Figure A4.1).

There are many conditions that have a prominent role in specific countries and regions, but not in others. For example, drowning is the second leading cause of adolescent mortality in Western Pacific LMICs (143), including in China; Indonesia; the Philippines; and Viet nam (Figure A4.1); so those countries may prioritize drowning prevention and response interventions within their national adolescent health programmes. Drowning is also a leading cause of adolescent mortality in some countries outside of the Western Pacific, e.g. it is the leading cause in Uzbekistan, and the second leading cause in Algeria; Indonesia; Saudi Arabia; and Thailand; so those countries may also wish to prioritize it within their national adolescent health programming (Figure A4.1). The important consideration here is the ranking of a cause of adolescent mortality within a country, and not the absolute rate relative to other countries. For example, the rate of adolescent mortality due to drowning in African LMICs is almost twice that of Western Pacific LMICs (i.e. eight versus five deaths per 100 000 adolescents) (143), but other burdens have so much greater impact on adolescent mortality in African LMICs that drowning generally has a relatively low rank within countries (e.g. it is the tenth or eleventh leading cause of mortality in Cameroon; Cote d'Ivoire; the Democratic Republic of the Congo; Ethiopia; Kenya; South Africa; and Uganda). Clearly, national governments have very difficult decisions to make in prioritizing adolescent health interventions – especially countries that have such very high burdens and very limited resources.

As described in Section 2, interpersonal violence is a major cause of adolescent mortality in some American countries (143), and indeed it is among the leading three causes of adolescent mortality in Argentina; Brazil; Colombia; Mexico; Venezuela (Bolivarian Republic of); and the United States (Figure A4.1). This burden is ranked as highly in Iraq, South Africa, and Thailand. All of those countries thus might prioritize evidence-based interventions targeting interpersonal violence, including possibly tailored interventions to reduce youth violence between adolescent males, as well as those to reduce sexual and intimate partner violence, which is usually perpetuated by males against females.

WASH-related mortality is among the leading five causes of adolescent deaths in 19 populous countries in Africa (nine), the Eastern Mediterranean (two), South-East Asia (five), the Western Pacific (two), and Europe (one). Specific causes are: intestinal infectious diseases in Algeria; Bangladesh; India; the Islamic Republic of Iran; Iraq; Nepal; Pakistan; Saudi Arabia; South Africa; and Turkey; and diarrhoeal diseases in Angola; the Democratic Republic of the Congo; Ethiopia; Indonesia; Kenya; Madagascar; Mozambique; Myanmar; Niger; and the United

Republic of Tanzania (Figure A4.1). In contrast, leukaemia and/or other neoplasms rank relatively high as a cause of adolescent death in upper-middle-income and high-income countries (143), e.g. they are the third to fifth leading causes of adolescent deaths in China; France; Germany; Italy; Japan; Peru; the Republic of Korea; and Turkey (Figure A4.1), where national adolescent health programmes may wish to prioritize adolescent cancer prevention and/or treatment.

In concluding these examples of possible country-specific prioritization of interventions to target causes of adolescent mortality, it is important to re-emphasize that a country's ranking of such causes is only one of many important factors to consider when deciding how to prioritize interventions within national adolescent health programming.

A4.3.
Sources and data in the Ethiopian adolescent health needs assessment

Recently, the Government of Ethiopia conducted a needs assessment that drew on several sources to compile a rough overview of the key risk factors and burdens currently experienced by Ethiopian adolescents. Their main findings are summarized below. Unless otherwise indicated, the data source was the 2011 Ethiopian demographic and health survey (DHS) (270); (271):

- **Early sexual debut** – In Ethiopia, early sexual debut happens primarily in the context of marriage. The median age of first sexual intercourse is 16.6 years, and 7% of adolescent girls and 9% of adolescent boys report ever having had sex. 60% of unmarried sexually active and 76% of married girls report no contraceptive use, despite the majority of both married and unmarried adolescents saying they do not want a child within two years.
- **Child marriage and early pregnancy** – One in five girls marry before the age of 15 years, and 40% by the age of 18 years. The poorest, least educated girls living in rural areas are most affected. 22% of rural girls aged 15–19 years are married, compared with 8% of their urban peers. Early marriage is strongly associated with early childbearing. The proportion of older adolescent girls (aged 15–19 years) who are already mothers or pregnant with their first child declined from 16% in the 2005 DHS to 12% in the 2011 DHS.
- **Unsafe abortion** – Anecdotal evidence suggests that, among adolescents, there is a high rate of mortality due to unsafe abortions. However, there is no reporting system to quantify the magnitude of the problem systematically.
- **HIV** – The HIV prevalence among adolescents in Ethiopia is <1%. Among females, it rises from 0.2% (15–19 years), to 0.6% (20–24 years), to 2.9% (25–29 years). For males, the comparable rise is from <0.1%, to 0.2%, to 2.0%.

However, even such limited data illustrate how countries may vary in their priorities. For instance, in addition to general SRH and nutrition interventions, Egypt might choose to target road injury, cerebrovascular disease, drowning, ischaemic heart disease, and congenital anomalies, because those are estimated to be the five leading causes of adolescent death in Egypt, whereas HIV and malaria rank at numbers 105 and 108 respectively (Figure A4.1). In contrast, in addition to general SRH and nutrition interventions, Cameroon might choose to target HIV, road injuries, malaria, maternal disorders, and meningitis, as those are estimated to be the leading five causes of adolescent death in Cameroon, whereas cerebrovascular disease and ischaemic heart disease are ranked at numbers 22 and 26 respectively.

- **Malnutrition** – As many as 13% of girls and 18% of boys aged 15–19 years are anaemic. Moreover, in the same age group, nearly two fifths of girls (36%) and two thirds of boys (66%) are underweight (BMI<18.5kg/m2).
- **Substance use** – The most common addictive substances used by adolescents and youth in Ethiopia are tobacco, alcohol and khat. Nearly half (46%) of Ethiopian adolescents and youth report consuming alcohol more than six times in a month. Tobacco smoking is also practised by some male adolescents and youth, with a prevalence of 4%.
- **Mental health problems** – These often relate to alcohol and substance use, schizophrenia, seizure disorder and bipolar disorder, and affect an estimated 1–1.5% of the Ethiopian population (272).
- **Noncommunicable diseases** – in 2001, NCDs were estimated to account for 30% of all deaths in Ethiopia across all age groups. 9% of all deaths were attributed to cardiovascular diseases, 6% to cancers, and 3% to respiratory diseases (271).
- **Road traffic injuries** – In 2013, Ethiopia had 377 943 registered vehicles, and reported 2581 road traffic fatalities (43).
- **Gender-based violence** – In the 2005 Ethiopia DHS, 81% of married women agreed to a statement that a husband beating his wife is justified (273). This had only decreased to 68% in the 2011 Ethiopia DHS.
- **Female genital mutilation** – In the 2005 Ethiopia DHS, the prevalence of FGM in girls and women (aged 15–49 years) was 74%. This represented a 6% decline from a prevalence of 80% in the 2000 Ethiopia DHS.

These data, combined with the findings of a landscape analysis, were used to inform Ethiopia's Adolescent and Youth Health Strategic Plan (2016–2020).

Annex 5. Additional information about national programming

A5.1.
Data from the Global Maternal, Newborn, Child and Adolescent Health Policy Indicator Surveys (2009–10; 2011–12; 2013–14; 2016)

Figure A5.1. Number of Countries with Laws and regulations that allow minor adolescents to seek the following services without parental/spousal consent: Contraceptive services except sterilazation
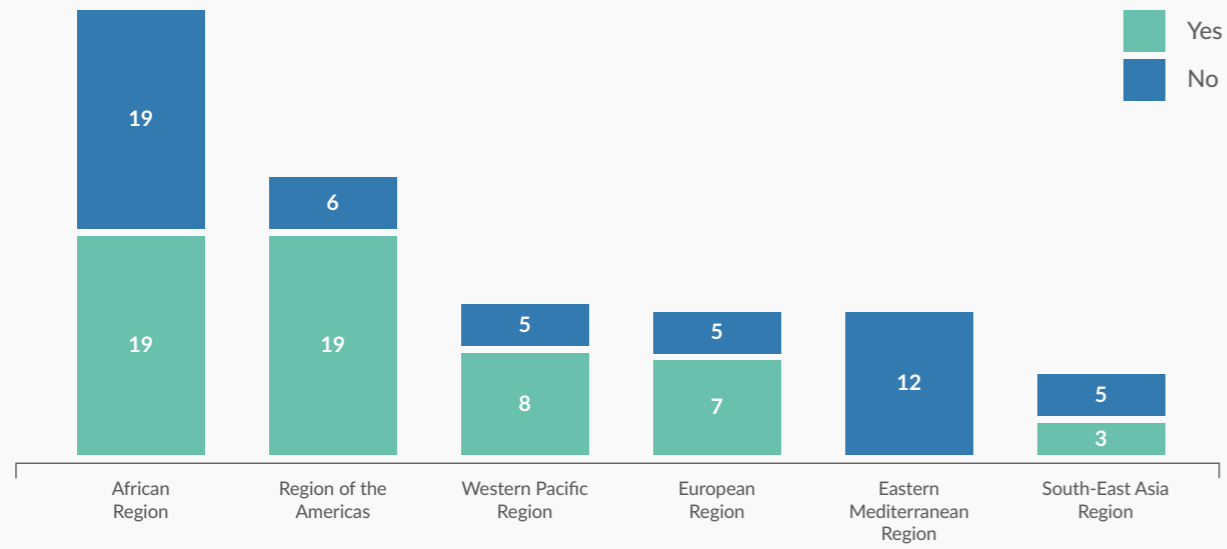
Source: Information from countries that responded to the Global Maternal, Newborn, Child and Adolescent Health Policy Indicator Surveys (2009–10; 2011–12; 2013–14; 2016) undertaken by the Department of Maternal, Newborn, Child and Adolescent Health; World Health Organization (274)

Figure A5.2. Number of countries with a national policy for a user fee waiver for adolescents in public health facilities

Source: Information from countries that responded to the Global Maternal, Newborn, Child and Adolescent Health Policy Indicator Surveys (2009–10 2011–12; 2013–14; 2016) undertaken by the Department of Maternal, Newborn, Child and Adolescent Health; World Health Organization (274)

Figure A5.3. Number of countries reporting having national standards for delivery of health services specifically for young people (ages 10–24)

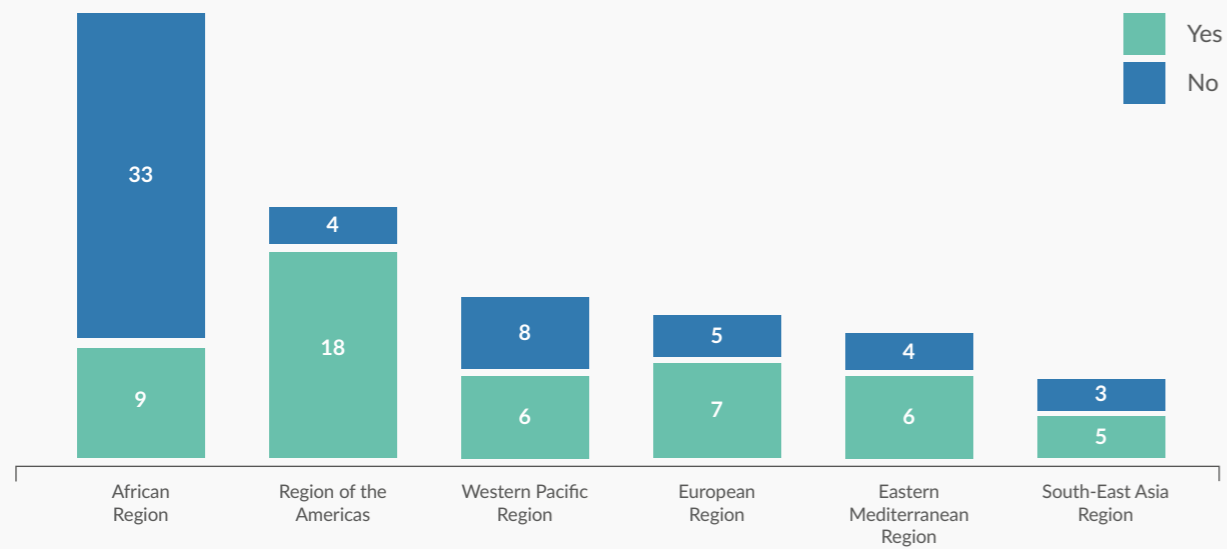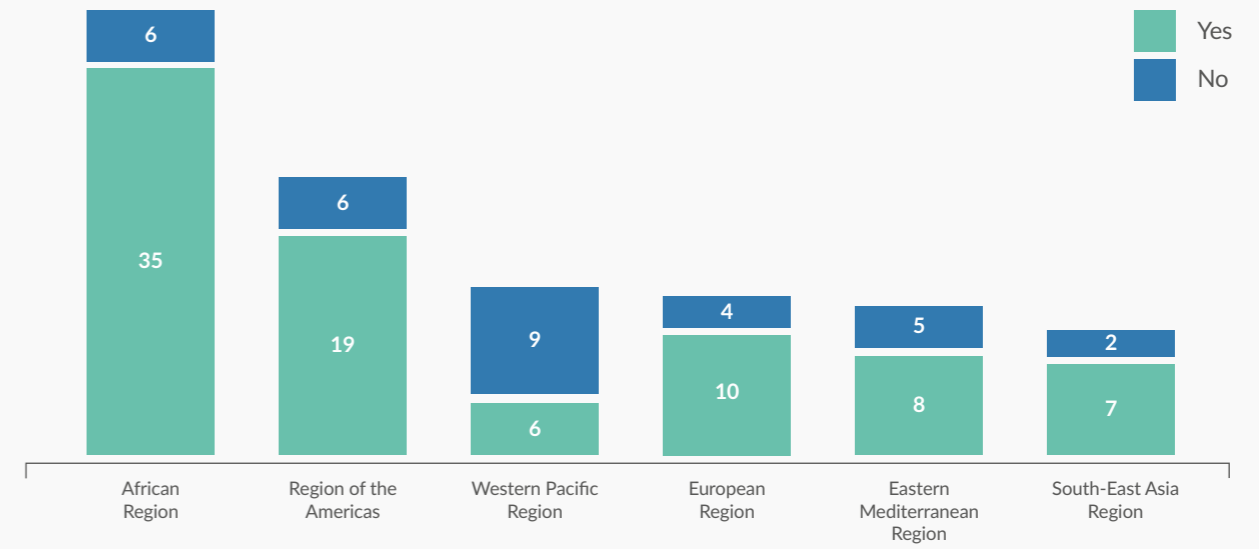Source: Information from countries that responded to the Global Maternal, Newborn, Child and Adolescent Health Policy Indicator Surveys (2009–10; 2011–12; 2013–14; 2016) undertaken by the Department of Maternal, Newborn, Child and Adolescent Health; World Health Organization (274)

Annex 5

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Annex 5. Additional information about national programming

A5.2.
Additional case studies of national programming

Case Study A5.1.

Nepal's transition from projects to a national adolescent sexual and reproductive health programme

The Nepal Health Sector Programme (NHSP) II (2010–2015) aimed to introduce 1000 adolescent-friendly services in Nepal by 2015. Towards this end, the Government of Nepal is implementing the National Adolescent Sexual and Reproductive Health (ASRH) Programme.

In 2008, the Family Health Division and Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ, previously GTZ) started to discuss possible government interventions to improve the ability of adolescents to protect their sexual and reproductive health (SRH). Up until then, adolescent-specific health services and information had mainly been provided by nongovernmental and private health-care providers. The Family Health Division conducted a pilot study for the introduction of adolescent-friendly services into the existing network of public health facilities, in line with a rights-based approach to health. The National Adolescent Sexual and Reproductive Health (ASRH) Programme was subsequently designed based on the findings of the pilot study. The Programme was conceptualized in line with the objectives of the National Adolescent Health and Development Strategy 2000, which are to:

- increase the availability of, and access to, information about adolescent health and development and provide opportunities to build the skills of adolescents, service providers and educators;
- increase the accessibility and utilization of adolescent health and counselling services; and
- create safe and supportive environments for adolescents in order to improve their legal, social and economic status.

Cooperating with other actors in the field of SRH (including schools) is one of the components of the programme, although the mid-term evaluation showed that this coordination needs to be strengthened in order to impart information about ASRH issues effectively, and to sensitize adolescents about the availability of adolescent-friendly services at health facilities.

The scaling-up process was funded directly by the Government of Nepal and different partner organizations working in the ASRH sector, such as GIZ, UNFPA, Save the Children, WHO and UNICEF. By November 2012, the National ASRH Programme had been scaled up to 516 health facilities in 36 districts. If the target of introducing 1000 adolescent-friendly services in the public health system by 2015 was to be achieved, coverage would reach about 25% of all government health facilities.

Source: (275)

Case Study A5.2.

The USA's school health services programme

The Centers for Disease Control and Prevention (CDC) Healthy Schools programme supports all 50 states and the District of Columbia (DC) in the USA. It aims to reduce the risk factors associated with childhood obesity, manage chronic conditions in schools, and promote the well-being and healthy development of all children and youth. The Healthy Schools programme supports the implementation of evidence-based school health strategies by funding state health departments, providing technical assistance, and developing specialized tools and resources to facilitate collaboration between state health and education agencies. This funding facilitates collaboration across sectors through memoranda of agreement between state public health and education agencies.

The programme funds two components: the basic component, which provides base-level funding to all 50 states and DC; and the enhanced component, which provides additional resources to 32 states for more intensive school-based interventions and improved health outcomes. For example, the school health services programme in the state of Colorado is run by the Department of Education and the Department of Health Care Policy and Financing. The programme contains many components, including the provision of psychology, counselling, audiology, nursing and physician services, as well as social support and targeted case management. Any educational institution with students in kindergarten through twelfth grade (up to the age of 20 years) may participate. Institutional participation in the programme is conditional on fulfilment of enrolment criteria, including:

- an assessment of the health needs of students in the district;
- community input into the health services to be delivered to students;
- an approved local services plan completed by the district; and
- a contract for reimbursement of health services by Medicaid, a programme that was created by the federal government but is administered by the state to provide payment for medical services for low-income citizens.

Sources: (276); (277)

Case Study A5.3.

Portugal's healthy schools programme

The Healthy Schools Programme of the General Directorate of Education (Ministry of Education and Science) in Portugal aims to facilitate the implementation of structural and integral health-promoting activities in schools. The work started in 1994 with 10 schools and four health centres in the national health service. By the end of 2000, the network had extended to 1957 health-promoting schools and 255 health centres. By 2002, the number had grown to 3407 schools.

The programme has a national coordinator, who is also responsible for the coordination and development of projects on health education and promotion in schools. The programme has dedicated funding that supports and finances school projects. To date, the vast majority of participating schools have developed projects in healthy eating and physical activity (99%), drug prevention (98%), sex education (98%), and mental health and violence prevention (94%).

It has been reported that part of the success of this programme is due to the partnership between the Ministry of Health and the Ministry of Education and Science. The partnership is structural and well established at all three levels: national, regional and local. The partnership between schools and health centres is particularly key. Both ministries have also developed, in partnership, two manuals with health-promoting school guidelines for teachers and health professionals.

Source: (278)

Annex 5. Additional information about national programming

Case Study A5.4.

Turkey's multisectoral action on drug dependence

In Turkey, children in educational institutions and out-of-school children are among key target groups for the national Anti-Drug Emergency Action Plan, which promotes strategies to address supply, demand, and communication policies in relation to substance use. Under the leadership of the Deputy Prime Minister and under the coordination of the Ministry of Health, a Higher Anti-Drug Board has been established to administer and implement anti-drug efforts within the scope of the Anti-Drug Emergency Action Plan. The Higher Anti-Drug Board coordinator is the Minister of Health, and the board is composed of the ministers of: justice, family and social policies; labour and social security; youth and sports; customs and trade; the interior; and national education;

as well as the head of the Commission on Health, Family, Labour and Social Affairs of the national assembly.

The Higher Anti-Drug Board determines the basic anti-drug policies, monitors activities at a high level, and gives instructions for these activities. An Anti-Drug Technical Board composed of experts from relevant ministries works on the technical implementation of anti-drug activities. Anti-Drug Provincial Coordination Boards follow anti-drug efforts to ensure that activities specified in the action plan are carried out in cooperation and coordination with the relevant institutions and organizations, and to monitor the whole process at provincial level.

Source: (278)

Case Study A5.5.

Sierra Leone's involvement of children in the truth and reconciliation commission

During 10 years of civil war, the children of Sierra Leone were deliberately and routinely targeted, and witnessed widespread and systematic acts of violence and abuse. Many were abducted and forcibly recruited as child soldiers and were the victims of rape, mutilation, forced prostitution and sexual exploitation. Child combatants, themselves victims, took part in atrocities. Many were threatened with death if they did not do this, or were desensitized with drugs and alcohol.

The Truth and Reconciliation Commission (TRC) for Sierra Leone originated from the peace agreement and was established by an Act of the Sierra Leonean Parliament in February 2000. The main objective of the Sierra Leonean

TRC was to create an impartial record of human rights violations. It was charged with recording those violations that occurred between 1991 and 1999 and making recommendations to the government to prevent future conflicts. What was unique about the mandate of the TRC in Sierra Leone was the attention it gave to the experiences of children affected by the armed conflict. It aimed to involve children throughout the process and adopted child-friendly procedures for children's participation. The TRC sought to build children's confidence and restore their sense of justice in the social and political order while, at the same time, establishing a mechanism of accountability for crimes committed against them.

Source: (278)

Case Study A5.6.

Argentina's municipal budgeting for youth participation

The Municipality of Rosario in Argentina undertakes an annual participatory process to decide on the allocation of the youth budget, engaging youth from across its six districts in democratic processes to select representatives and decide upon budget allocations for youth services. An initial pilot in 2004 was funded by the German Technical Cooperation Agency, but the necessary funds are now drawn from the municipal budget. Young people are able to have a say in the design of city youth services, and in the

allocation of resources to support them. A representative of the municipal government said, "Where local young people are involved in budgetary decisions there is the potential to develop creative solutions to issues that can result in cost savings and better value for money. Local young people are often very conscious of spending and allocating public money and can therefore be very careful about how they spend it."

Source: (6)

Case Study A5.7.

Youth violence reduction, Medellín, Colombia

The city of Medellín is now well recognized for its investments in improving safety and living conditions for the poor. A series of urban investments during the 2000s included constructing a metrocable and escalators to the poor hillside neighbourhoods; cultivating public spaces; building libraries and schools; and establishing social programmes to reduce violence and improve conditions for young people (280). For example, in the Montecristo neighbourhood, youth working with the local community-based organization, Corporación Vida para Todos (Corporation Life for All) or CoVida, managed to avoid violence, gang membership and crime (336). Residents living in neighbourhoods with both physical and

social improvement programmes reported increased trust in their neighbours to intervene to break up fights among children, and in asking the police for help (281). Moreover, the rate of homicide in Medellín was reduced markedly from 185 per 100 000 people in 2002 (281) to 26 per 100 000 just five years later (280). The innovations in Medellín suggest that city development focused on bringing inclusive public transport to the urban poor can not only improve environmental conditions and residents' access to jobs, but also help reduce levels of youth violence and build increased collective trust among residents, which can ultimately act to improve everyone's health.

Source: (6)

Annex 5. Additional information about national programming

Case Study A5.8.

Malawi's cash transfer scheme as a vehicle to achieve public health objectives

Cash transfers are direct transfers of money given to eligible households or individuals – most often the poorest households. They may be unconditional or conditional. They can improve health outcomes through, for example, enabling recipients to manage risk better, contributing to economic growth, building social cohesion, and supporting human capital development through greater use of health and education services.

Cash transfers have shown promising results across many outcomes such as HIV, dietary quality, education, health-care utilization, and parenting skills. Cash-transfer programmes can increase the use of health services and improve nutritional outcomes and preventive behaviours in situations where there is adequate health-service

provision. For example, in Zomba, Malawi, cash transfers to adolescent girls and their households were associated with a 60% reduction in recipients' risk of HIV infection, against a background HIV prevalence of 22%. A variety of mechanisms might have contributed, including a reduction in early marriage and transactional sex, improved nutrition and health care use and, notably, the increase in school attendance enabled by the cash transfers.

The effectiveness of cash transfer schemes is affected by factors such as conditionality, targeting and the relationship to other social-protection policies. It is important therefore to monitor closely the effect of these design features on the outcomes.

Source: (283); (151)

Case Study A5.9.

South Africa's national policy on informed consent for testing children for HIV

A child may give independent informed consent to an HIV test if he or she is:
• 12 years or older; or
• under 12 years of age but with sufficient maturity to understand the benefits, risks and social implications of a test.

If the child cannot give informed consent, it may be provided by:
• the parent or caregiver of the child;
• the provincial head of Social Development; or
• a designated child protection organization arranging placement for the child.

Where there is no parent, caregiver or designated child-protection organization, informed consent may be provided by:
• a superintendent or person in charge of a hospital.

Finally, where those listed above are unwilling or unable to consent, the Children's Court may consent to an HIV test where testing is in the best interests of the child.

Source: (283); (151)

Annex 5. Additional information about national programming

Case Study A5.10.

Kyrgyzstan's youth-centred care

In 2008, the Ministry of Health of Kyrgyzstan, with support from UNFPA and WHO, developed national standards for youth-friendly services with the long-term aim of improving the quality of existing primary and referral-level services across the country. To collect baseline data on the quality of care in facilities that expressed their willingness to apply the standards, a quality-measurement survey was conducted in 2009. Findings from 10 health facilities (seven public and three private) from five regions and are summarized below.

Most health-care organizations – despite the high level of professionals and their extensive training, as well as the recognition of the importance of caring for adolescent health in general – are not ready to provide services to adolescents and young people in line with standards, including the extended package of services and referrals.

Explanations for the low uptake of services by young people include low health literacy and level of confidence in the service due to lack of confidentiality and insufficient professional training in working with adolescents.

Information materials for young people in all institutions are either scarce or missing. There are no information materials for community members, parents and teachers on adolescent health. Health workers lack the skills to work with the community.

While community members acknowledged that adolescents' need for support is worthy of public action, they do not see it as their role to provide support – be it with additional funding from the local budget or with other forms of assistance.

Parents, teachers and representatives of religious communities recognize the need for high-quality adolescent-centred care and are willing to cooperate in promoting such services.

Many of the managers and providers of health care do not realize the importance of involving young people in promoting youth-friendly services, including promotion among vulnerable youth. Services for vulnerable youth and adolescents are usually provided by clinics operated by NGOs.

Health-care organizations need to implement additional interventions in order to become youth-friendly, such as creating friendly spaces; training health-care providers in adolescent counselling and principles of youth-friendly services; upgrading and supplementing equipment; and assuring a consistent supply of consumables.

A package of normative documents on youth-friendly services is needed to guide specialists and managers.

The survey identified areas for improvement against each standard, assisting facilities to move toward adolescent-centred care.

Source: (285)

Case Study A5.11.

Morocco's National Programme for School and University Health

In Morocco the National Programme for School and University Health covers a range of activities, including:
- routine medical check-ups
- screening for visual impairments
- control of communicable ophthalmia
- promotion of dental and oral health
- prevention of communicable and noncommunicable diseases
- inspection of hygiene conditions in educational establishments
- developing health education and promoting healthy lifestyles
- counselling and guidance
- helping people to stop smoking
- medical consultations on request
- management and monitoring of detected cases
- health surveillance of children's holiday camps.

The programme is managed by the Division of School and University Health. Services are planned and monitored by the regional health department and provincial/prefectural office through a unit, consisting of a physician and a nurse/facilitator, embedded in the Provincial Outpatient Infrastructure Action Service (SIAAP).

Frontline school health-care services are delivered by physicians and nurses on a full-time or a part-time basis.

These physicians must provide the following services:
- routine medical check-ups;
- health inspections of preschool establishments and schools and their immediate environment through a routine, twice-yearly visit to all educational establishments;
- physical education and sports;
- routine medical visits to children's summer camps;
- issuance of medical certificates;
- education for health; and
- counselling and guidance.

Nurses are in charge of control of communicable ophthalmia; control of visual impairments; routine visits to educational establishments; education for health; education in dental and oral health and promotion of mouth rinsing with fluorine-based solutions. In addition, there is the University Medical Centre, with a full-time staff of physicians and nurses.

Services include:
- a complete physical examination for the purpose of early detection of health conditions (the results of the examination and any observations are recorded in the medical booklet, which is a technical document that must accompany the student throughout the course of his or her university career);
- medical consultations upon request, nursing care and referrals;
- inspection of hygiene conditions at universities;
- counselling and guidance;
- health education; and
- immunizations.

Sources: (143)

Annex 5. Additional information about national programming

Case Study A5.12.

India's contracting out of reproductive and child health services through the Mother NGO Scheme

A review of practices of contracting NGOs for health, education and basic sanitation found that in the health sector NGOs have competitively bid for, and won, contracts for management and service delivery in Cambodia, Nicaragua, Costa Rica, Pakistan, and India, among other countries (286).

In India, the Mother NGO scheme was implemented to deliver reproductive and child health services in underserved areas (287). In 1997, the Ministry of Health and Family Welfare – in accordance with the Cairo International Conference on Population and Development, and in concurrence with the Ninth Five Year Plan (1997–2002) – initiated a Reproductive and Child Health (RCH) programme. This aimed to provide integrated health and family welfare services to meet the felt needs for health care for women and children. The programme included male involvement; an adolescent component; issues associated with reproductive tract infections and sexually transmitted infections; and gender in the context of reproductive rights. In the same year, the Ministry introduced the Mother NGO (MNGO) scheme under the RCH programme, in which selected NGOs were identified and designated as MNGOs. MNGOs were selected based on strong RCH programme and training experiences; understanding of gender issues and advocacy skills; strong networking ability; and credibility in programme management and national status. These MNGOs were given grants to strengthen RCH services in selected districts. They in turn award grants to smaller NGOs called Field NGOs, to strengthen services at the grass-root levels.

MNGOs needed considerable capacity strengthening. For this purpose, the Government of India decided to establish regional resource centres, with financial assistance from UNFPA, to provide technical and programmatic support towards capacity building of MNGOs. The Mother NGO scheme is now part of the National Rural Health Mission scheme implemented by Government of India.

To enable successful relationships between the government and contracted NGOs, certain conditions are necessary. There include (286):

The government department responsible for contracting has sufficient capacity to undertake the complex task of designing contracts and managing the process. The inclusion of the NGOs in programme design, contracting being conceived as part of a broader country strategy, with an emphasis on transparency and collaboration in the contract.

The autonomy of the NGO to decide on its operational strategy. Providers are granted maximum operational flexibility.

Government providing an enabling policy, a legal framework and a clear and fair regulatory environment. Long-term and predictable contracts.

Sources: (286); (287)

Case Study A5.13.

Multicountry mobile phone games to create HIV/AIDS awareness in Asia and Africa

Freedom HIV/AIDS is a large social initiative to fight HIV/AIDS using mobile phone games; it reaches more than 42 million users across the globe. The initiative aims to create awareness about HIV/AIDS to under-privileged communities of the world through the mobile games. Starting from four games – Safety Cricket, AIDS Messenger, Babu Quiz and Red Ribbon Chase – the initiative has developed 12 more games. Freedom HIV/AIDS teams works closely with local NGOs and knowledge organizations to develop new games and understand the social sensitivities of a region. The games and applications are designed and developed by a voluntary team of developers working on the project.

Games are disseminated through mobile networks and are deployed in the regions through local mobile operators and mobile content aggregators. Freedom HIV/AIDS management ensures that the games are pushed by the operators through regular viral SMS messages and marketing. The management also ensures that the users are either not charged or are charged nominally for game downloads.

In Africa, the project has reached Uganda; Kenya; the United Republic of Tanzania; Malawi; Mozambique; and Namibia. The initiative is in the process of rolling out new games for Latin America, South-East Asia and Eastern Europe. Some of its most popular games have been Safety Cricket, AIDS Messenger, Babu Quiz, AIDS Safety Shoot-out and Game of Life. For example in India, one Safety Cricket game available on mobile phones clocked 10.3 million game sessions in 15 months. The game addresses sexual attitudes and behaviours, drawing analogies between cricket and real life, e.g. the analogy between no helmet/no cricket and no condoms/no sex, or "a risky shot in cricket can bowl you out" while "risky sex can bowl you out in real life".

Sources: (288); (289)

Case Study A5.14.

Australia's HPV Vaccination Programme

The free National HPV Vaccination Programme was introduced in Australia in 2007 because large trials had found that vaccinating young women was likely to significantly reduce Pap test abnormalities, cervical cancer diagnoses, and deaths from the disease. The vaccine also protects girls from some cancers of the vagina, vulva and anus. The decision to introduce the programme in Australia was made by the Government of Australia after in-depth consultations with epidemiologists and public health experts. Since 2013, boys have also been included in the school-based programme.

The HPV vaccine is provided free in schools for girls and boys aged 12–13 years; those who are not in school can obtain the vaccine free from their local immunization provider or doctor. Almost all Australian schools have chosen to participate in the programme, and 77.4% of girls turning 15 years of age in 2015 had received all three doses of the vaccine. Research has shown early signs of the vaccine's success, including:

- a 77% reduction in the prevalence of the HPV types that are in the vaccine, which are responsible for about 75% of cervical cancers;
- almost a 50% reduction in the incidence of high-grade cervical abnormalities in girls in the state of Victoria under 18 years of age; and
- a 90% reduction in genital warts in heterosexual men and women under 21 years of age.

Sources: (290).

Case Study A5.15.

Chile's national programme for integrated adolescent and youth health

The Programa Nacional de Salud Integral de Adolescentes y Jóvenes seeks to improve health systems and the quality of comprehensive health services to meet the needs of adolescents, with an emphasis on the primary care level. The Minister of Health is the main person responsible for the implementation and development of the programme.

The responsibilities are shared between national, regional and local levels. Although the programme is focused on the health sector, nine strategic directions have been identified for the period 2012–2020 that emphasize the need for better advocacy and strengthening of intersectoral work; family, community and school-based interventions; adolescent participation; and the use of social media and networks.

Source: (291).

Case Study A5.17.

Australia's mental health and resilience curriculum for parents, teachers and students

The HeadStrong curriculum was developed by the Black Dog Institute in Australia to make it easier for teachers educating high school students about a tough topic. HeadStrong is linked to the Health and Physical Education curriculum for Years 9–10, and includes five modules that are split into a series of ready-to-use classroom activities and teacher-development notes. It links directly to curriculum learning outcomes, and includes topics on depression and bipolar disorder, seeking help, helping others, and building well-being and resilience.

A range of free educational resources was developed to support teachers, including a mini webinar series that introduces teachers to HeadStrong and helps them bring it alive in the classroom.

An evaluation of the impact of the HeadStrong curriculum in a comprehensive research trial demonstrated the potential of HeadStrong to improve mental health literacy and reduce stigma (295).

Sources: (295); (296)

Case Study A5.16.

The Cardiff Model of violence prevention

Violence prevention is an essential aspect of adolescent health, as violence is one of the leading causes of death among young people. The health sector has an important role to play in reducing violence among adolescents, as the Cardiff Model highlights.

The Cardiff Model (292), one of the leading programmes on violence prevention, was created by Jonathan Shepard, a professor at Cardiff University in Wales, United Kingdom. The Cardiff Model is an excellent example of cross-sectoral collaboration and the strategic use of information from the health sector to improve policing. This model has helped to reduce the incidence of violence by 40% in Wales since its full implementation in 2001. Shepard found a disconnect between, on one hand, the casualty data and violent acts known to police and, on the other hand, the violent acts recorded by hospital emergency room departments. For example, it was more likely that the police would know about an elderly person being attacked than about a young person presenting with injuries in the emergency room. This disconnect in information led to less efficient policing of areas of concentrated violence.

To address this gap, the core aspect of the Cardiff Model utilizes the sharing of anonymous health-sector information from emergency rooms with the police in real time. Crime and Disorder Reduction Partnerships have been created between the emergency room staffs and the police to share information about the location and time of violent acts, weapons used and other relevant demographic information. This information helps the police target violence prevention efforts. Police have new

information on where they should be patrolling and also which bars and nightclubs are hotspots for assault injuries. A TED Talk by Shepard provides a detailed explanation of the Cardiff Model and the use of emergency room information by the police (293).

The Cardiff Model exemplifies the strategic role that information from the health sector can play in reducing violence. As highlighted in Shepard's TED Talk, information-sharing with the police has led not only to more targeted policing of crime hotspots but also to changes in policy within the environments where violence is most likely. For example, it was emergency-room information that first identified drinking glasses as a weapon. As a result, the glasses used at bars in Cardiff were changed to a plastic material. The success of the Cardiff Model has led to its being transplanted to other settings within the United Kingdom and to South Africa and Latin America; it has proved cost-effective in the long term (294).

While the Cardiff Model highlights the potential for violence prevention for all the population, the model is particularly relevant for adolescents, since violence is a leading cause of their deaths. In order to prevent violence among adolescents, the information sharing between emergency room staff and police is a vital method to target hotspots for violence, analyse which weapons are resulting in injury in adolescents, and create appropriate policies to address the surrounding environment to reduce violence among youth.

Sources: (292); (294)

Annex 5

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Annex 5. Additional information about national programming

Case Study A5.18.

Scotland's youth pregnancy and parenthood strategy governance

The Pregnancy and Parenthood in Young People (PPYP) Strategy is the first strategy focused on pregnancy and parenthood among young people in Scotland, United Kingdom. It aims to drive actions that will decrease the cycle of deprivation associated with pregnancy in young people under 18.

In order to help achieve this, there will be cross-ministerial engagement for the strategy from the:
- Minister for Children and Young People
- Minister for Learning, Science and Scotland's Languages
- Minister for Public Health
- Minister for Sport, Health Improvement and Mental Health.

The Governance structure of the Strategy includes:

A national lead for Pregnancy and Parenthood in Young People

The Scottish Government's national lead for the Pregnancy and Parenthood in Young People Strategy will provide national strategic leadership in the implementation of the strategy. The national lead will be responsible for the overall delivery of the strategy, engaging with local and national organizations; ensuring the consideration of up-to-date evidence and policy; monitoring and reacting to progress; and enabling sharing of experience and best practice across Scotland. The lead will provide the national link across Scotland as well as providing advice and updates to ministers and an annual progress report to ministers, the Scottish Parliament and the independent advisory group on progress, both locally and nationally.

Community Planning Partnerships

The actions set out in the Pregnancy and Parenthood in Young People Strategy cover areas that can be most influenced by the Scottish Government in partnership with others from across the public sector. Community Planning Partnerships (CPP) in particular have a key role to play, with the Scottish Government providing support, advice and policy direction and linking with young people directly. CPPs will be expected to identify an accountable person to take on responsibility for ensuring the delivery of their responsibilities under this strategy.

Independent advisory group for the Pregnancy and Parenthood in Young People Strategy

In addition to the organizations and individuals involved within the governance structure for the strategy, there will also be an independent advisory group (IAG). This will consist of individuals from across sectors and organizations who may have a role in delivering the strategy, an academic interest, and/or an interest in decreasing inequality in young people. This group will the strategy and encourage work in this area. The group will also receive the annual progress report from the national lead on the progress of the strategy and may respond with their views on the implementation progress of the strategy, highlighting issues that they may feel requires ministerial attention. The Teenage Pregnancy Strategy for England had a similar group, which was described as a particular key strength of the English strategy.

Evaluation and monitoring

A national evaluation and monitoring group (EMG) has also been established to assess how well the strategy is being implemented and whether its outcomes are being met over time. Led by the national lead and Scottish Government's Health Analytical Service Division, the EMG will help to develop a monitoring and evaluation plan for the first five years of the strategy. It will take account of the recommendations of the assessment. Monitoring and evaluation outputs will support the formal annual process of reporting to ministers and the Scottish Parliament.

The strategy has several strands, including improving service provision by addressing delays in service provision, and barriers to access services. However, equally important in the strategy are interventions to create positive opportunities for young people by enabling and empowering them through:

- measures to maintain or re-engaging young people in education;
- flexible provision of learning that is tailored to the needs of the individual;
- developing self-esteem and self-confidence, and building toward a sense of equality of opportunity; and
- activities to improve social and emotional well-being: psychological well-being (self-efficacy; locus of control); confidence (self-concept; self-esteem); emotional well-being (anxiety, stress and depression; coping skills); and social well-being (good relations with others; emotional literacy; antisocial and prosocial behaviour; social skills).

Source: (297)

Case Study A5.19.

Mozambique's multisectoral adolescent sexual and reproductive health programme

The Programa Geracao Biz in Mozambique is a national multisectoral adolescent sexual and reproductive health programme. It started in 1999, aiming to improve sexual and reproductive health (SRH) and rights through the creation of enabling environments to improve knowledge, attitude and abilities of young people to adopt positive SRH behaviour and access services from youth-friendly clinics.

Geracao Biz involved three sectors: health, education, and youth and sports. Government staff from each of these sectors worked with community-based organizations, including youth organizations, and young people, to deliver three complementary but linked interventions: youth friendly clinical services; school-based education; and community-based outreach. To facilitate collaboration, a strong coordination mechanism was put in place at the national, provincial and district levels. Young people were active members of coordination committees at all three levels.

Between 1999 and 2009 the programme was funded by UNFPA and the Danish International Development Agency, with additional support from NORAD and SIDA. Pathfinder International provided ongoing on-the-ground technical support.

The results

The initiative was launched in 1999 in two pilot sites. Over the next 10 years it was scaled up to cover all the provinces of the country. According to an independent external evaluation of the initiative, since 2010 the programme has been implemented in 119 of the 128 districts of the country, reaches 56% of the country's youth (more than 4 million), and covers 54% (220) of the 408 administrative posts in the country.

Between 2005 and 2010 there was a decline in the number of reported pregnancies among students, while during the same period the number of participating schools increased from 283 to 710.

Lessons learned

Government leadership and support:
- There was support for the initiative from the highest level of the government. The availability of an enabling policy and a dedicated unit in the Ministry of Health meant that the initiative had the legitimacy to move ahead and had the leadership it needed.

Design:
- The initiative started with a good understanding of the epidemiologic situation and was well informed by a situation assessment, which demonstrated the need for multisectoral action.
- The objectives of the initiative were carefully thought through and set out clearly.
- The responsibilities of each sector were laid out clearly, and clear coordinating mechanisms were set up at the national, provincial and district levels.
- The brand was developed with through consultation with communities.

Pilot tests:
- Pilot projects were designed and implemented. There was substantial mentoring and coaching in the pilot phase. The pilot phase was externally evaluated, and the findings and lessons learned informed the planning of the subsequent phases.

Scale up and continuity:
- The initiative was designed from the outset for scaling-up. New partners were brought in to support expanded coverage of the programme.
- The initiative was designed for sustainability by being grounded within existing government structures (e.g. clinics and schools) and by institutionalizing activities such as training (e.g. by adding adolescent SRH content into existing training programmes), and including adolescent-specific indicators into the national health management information system).

Implementation:
- Serious attention was paid to implementation. Ongoing technical support was provided both on managerial and on technical issues. Capacity building was a major area of focus.
- There was considerable flexibility. The objectives of the initiative evolved with time as lessons were learned. The scope of the initiative was broadened in response to the needs and opportunities, and in response to evaluation findings. The key players involved in the initiative from the different sectors and the coordination mechanism also evolved over time.
- Adequate funds were generated to translate words into actions. Concerted efforts were made to bring new donors on board.

Challenges

The external evaluation of Geracao Biz recommended that, while building on its good work of providing adolescents with information, education and health services, the programme should also address the powerful social, economic and cultural factors that drive the decisions adolescents make, and which of their decisions they act upon.

Sources: (298-300).

Annex 5. Additional information about national programming

Case Study A5.20.

Ukraine's school-based substance-use-prevention curricula

In Ukraine, the State Standard for the Basic and Complete General Secondary Education stipulates that schools should deliver substance-use-prevention and healthy-lifestyle programmes through the mandatory subjects of Biology and Basics of Health. Introduced in 2000, the Basics of Health is a compulsory subject for grades 1–9 (one hour per week). It integrates topics related to healthy lifestyles and safe living, promotes responsible attitudes towards life and health, and develops essential social and psychological skills. In grade 2, children first learn about the harms of alcohol; in grade 3 they learn about the consequences of smoking; and in grade 4 they learn about the negative effects of drug use. Students in secondary school are given more information about substance use and its influence on human bodies. They also learn about health risks and the consequences of substance use for their health and well-being, and how to abstain from smoking and using alcohol and drugs. The course takes a positive approach, without intimidating students or spreading fear-based messages. Lessons to develop the skills for a healthy lifestyle are based on interactive learning techniques, and include exercises that model actual behaviours in various situations. The harmful effects of psychoactive substances on human bodies and future lives are also highlighted in the Biology course in grade 9. Special guidance materials have been developed for teachers and textbooks for students (for each grade from 1 to 9) to facilitate the delivery of the Basics of Health course. All materials are regularly updated and re-issued.

Substance-use prevention is also delivered in general and vocational schools as part of the optional component of the curriculum. Such optional prevention programmes include Young People for Healthy Lifestyle for grades 5–11; Preventing Bad Habits for grades 6–9; and Basics of Healthy Lifestyle for grades 8–9.

Research in 2004 and 2007 to assess the impact of school-based prevention on the rates of substance use demonstrated statistically valid changes in the behaviour and practices of young people. In particular, compared to 2004, in 2007 the proportion of 15- to 16-year-olds who had been drunk at least once in the previous month decreased by 26%; the proportion of boys aged 15–16 who smoked fell by 10%; and the proportion of girls aged 15–16 who smoked fell by 2%.

The Health Behaviour in School-Aged Children (HBSC) survey held in 2014 among students in grades 5–11 found a reduction in the prevalence of daily smoking in 2014, as compared to 2010, from 16% to 10% among boys and from 7% to 5% among girls. The proportion of non-smokers increased from 80% to 87.6%. According to studies of the European School Survey Project on Alcohol and Other Drugs from different years, alcohol use among 15- to 16-year-old students has been steadily decreasing since 2003.

More information: (301)

Source: (302)

Case Study A5.21.

Jordan's response to child marriage among Syrian refugees

As part of the Regional Response to the Syrian crisis, Save the Children is helping children in Syrian Arab Republic, Lebanon, Jordan, Iraq and Egypt to cope with the worst effects of the war. In Jordan, the organization runs community-awareness sessions on child marriage with children, adolescents and parents, with a focus on prevention of child marriage. Across the region, the organization's child-protection teams respond to issues related to child marriage and forced marriage, referring cases of gender-based violence to specialized agencies so that victims get specialist support. In Jordan, Save the Children has collaborated with other agencies to launch Amani, a campaign to raise awareness of the dangers of marriage and to spread the message "Our sense of safety is everyone's responsibility".

A taskforce on forced and early marriage was established in Jordan in 2014, co-chaired by the United Nations Refugee Agency (UNHCR) and the United Nations Population Fund (UNFPA). Its aims are to develop a joint action plan to reduce the risk and mitigate the consequence of child marriage and forced marriage in Jordan, and to build the capacity of local organizations to tackle this issue. A joined-up approach is critical to address the issue of child marriage. Proven strategies in these contexts include: empowering girls with information, skills and support networks; providing economic support and incentives to girls and their families; educating and rallying parents and community members; enhancing girls' access to a high-quality education; and encouraging supportive laws and policies.[1]

Source: (303)

> *"In the beginning, in Syria, they would make girls get married early, one way or another. But when events started to happen in Syria, parents were marrying their girls as soon as they turned 12 or 14. Families started doing it so quickly, especially when things happened and they started to worry about their daughters... Especially after war, this phenomenon has grown bigger in our society."*
>
> **Older adolescent girl in Syrian Arab Republic**

Save the Children (2015) Too Young to Wed, Ibid.

Annex 5. Additional information about national programming

Case Study A5.22.

South Africa's participatory, same-sex health education programme

Stepping Stones aims to reduce HIV transmission, improve sexual health and build gender-equitable relationships. It involves a series of training sessions in which facilitators work with same-sex peer groups to question and explore issues of love; contraception; sexually transmitted infections; sexual health; gender-based violence; and communication between partners. The programme has been adapted to many contexts worldwide, including in Africa, Asia, Europe, Latin America and North America. This case study discusses its application in South Africa, where Stepping Stones was implemented in the Eastern Cape Province between March 2003 and March 2004.

The main objectives of Stepping Stones include:

- to reduce the incidence of HIV transmission;
- to encourage men and women to explore gender issues, their emotional needs and their communication and behaviour towards each other;
- to address the vulnerability of women and young people in decision-making about sexual behaviour;
- to address and explore a range of behaviours that affect sexual health; and
- to improve sexual health by forming intimate partner relationships that involve gender equity and good communication.

The programme was conducted with young men and women aged 16–23 years. Thirteen sessions lasting three hours each were held with participants over several weeks. Participants were separated into all-male and all-female peer groups, creating a safe space for exploring and discussing sensitive issues. The issues discussed included sexual behaviour, unintended pregnancy and gender-based violence. Participatory methods such as activities involving drawing and role-play were used. Skills promoting assertiveness were taught. Participants also discussed the motivations behind sexual behaviour and the prospect of changing behaviour.

A cluster randomized controlled trial was conducted. Villages were randomized to receive the Stepping Stones intervention or an alternative intervention. The alternative intervention involved a single three-hour session promoting safer sex. The main outcome measured was the incidence of HIV infection. The incidence of herpes simplex virus infection, reported sexual behaviour, substance abuse, depression, and undesired pregnancies was also measured one and two years after the programme was implemented.

Two years after the programme was implemented, men reported less violent behaviour towards their intimate partners. Men also reported less transactional sex and less excessive drinking. The incidence of herpes simplex virus 2 infection was lower in the intervention arm during the two-year period, although the incidence of HIV infection was not significantly different in the intervention and control arms. Thus, while the programme did not reduce HIV incidence it did reduce self-reported risky behaviours that contribute to HIV transmission. Reported domestic violence, forced intercourse and transactional sex had all declined one to two years after Stepping Stones was implemented.

Sources: (304).

Case Study A5.23.

El Salvador's intersectoral experience in the empowerment of adolescent girls

The Interagency Program for the Empowerment of Adolescent Girls (IPEAG) was established through a group of United Nations agencies (UNDP, UNFPA, FAO, UNICEF and PAHO) to promote intersectoral work in addressing the needs of adolescent girls. The Ministry of Public Health and Social Assistance of El Salvador had a history of support for social participation and intersectoral action, and it supported the initiative through the Integrated Care Unit for Adolescent Health. Support for adolescent girls was identified as an important health equity issue, with the aim of preventing young women from becoming marginalized and victims of systemic discrimination. Health-promotion strategies were supported through innovative activities such as a mural contest on the topic of birth control.

Adolescents were also responsible for the production of a variety of educational and audio-visual materials on sexual and reproductive health. Specialized integrated care units for adolescent health were established in 13 targeted communities, and were staffed by multidisciplinary personnel who were trained in adolescent care. Eleven revenue-generating enterprises, managed by adolescent girls, were also created.

A lack of baseline data unfortunately limited the systematic evaluation of the programme, although there is widespread acceptance that it has succeeded in empowering adolescent girls and young women in the affected communities. Although the programme was national in scope, a report on the programme emphasized the need for more intensive and sustained participation by local government.

Source: (305).

Case Study A5.24.

Australia's government funding of positive development approaches in programming

The Victorian Health Promotion Foundation (VicHealth) is pioneering health promotion in Australia on behalf of the government. The organization aims to design evidence-based interventions; fund health-promotion programmes; conduct research; and produce and support public campaigns to promote a healthier Victoria. VicHealth receives core funding from the Australian Department of Health, and most of the members of the VicHealth board are appointed by the Minister for Health. Funds are provided to deliver on five strategic objectives: promoting healthy eating; encouraging regular physical activity; preventing tobacco use; preventing harm from alcohol; and improving mental well-being.

Positive development approaches are central to VicHealth's work. As the Foundation states, "pinpointing and preventing the negative influences of ill-health, and championing the positive influences on good health, is central to our work". For example, through its Bright Futures Challenge projects, VicHealth is providing substantial grants to projects that aim to support the resilience, social connection and mental well-being of young Victorians.

Source: (306).

Annex 5. Additional information about national programming

Case Study A5.25.

Liberia's secure funding for priority interventions for adolescent health

Liberia is among the second wave of countries supported by the Global Financing Facility in support of Every Woman Every Child (GFF) to strengthen its health system and improve the delivery of reproductive, maternal, newborn, child and adolescent health (RMNCAH) services. In 2016, the Ministry of Health developed its RMNCAH investment case in close collaboration with development partners such as WHO, UNFPA and the World Bank. The government wanted to strengthen the adolescent component within the existing investment case by selecting a few focused adolescent health priorities and outlining the specific interventions to address these priorities. A technical working group involving the Ministry of Health, WHO, UNFPA and the World Bank followed a systematic process to strengthen the adolescent focus in the country's RMNCAH investment case.

Building on the data provided in the investment case, Liberia selected four adolescent health problems to prioritize: pregnancy-related mortality and morbidity, and rapid-repeat pregnancy; unsafe abortion and mortality from unsafe abortion; early and unintended pregnancy and STIs, including HIV; and gender-based violence, including female genital mutilation/cutting. Through a step-wise approach of prioritization, the team detailed population-wide and adolescent-specific activities, and discussed costing assumptions for each activity.

Once the outputs of the working group were endorsed by the Ministry of Health, the content was incorporated into different sections of the overall investment case. As a result, US$ 16 million were allocated for the population as a whole and an additional US$ 1 million for the adolescent health component. Currently the government plans to identify five counties to start with phased implementation.

Sources: (307); (337).

Case Study A5.26.

The Adolescent and Youth Constituency of The Partnership for Maternal, Newborn and Child Health: outcomes and lessons learned from the first year of establishment

Prior to 2015, The Partnership for Maternal, Newborn & Child Health worked with youth-led organizations through informal processes such as the Partners' Forum in 2014. In 2016, the Adolescent and Youth (AY) constituency was established. It has provided a multistakeholder platform, enabling many organizations to engage with and support youth-led organizations in advocating to improve the health and well-being of adolescents and young people. Members of the AY constituency are representatives of youth-led organizations and/or networks (aged 10–30 years) working in the development agenda for the Sustainable Development Goals SDG in general, and sexual, reproductive, maternal, newborn, child and adolescent health (SRMNCAH) in particular.

Following the Board decision in October 2015 to establish the AY constituency, and the Board decision in May 2016 granting the AY constituency two Board seats, the constituency is now officially operational. It has developed:

- An 18-month workplan, in order to contribute meaningfully to The Partnership' overall strategic objectives. The constituency has also established individual strategic objectives working groups to oversee and lead on implementation of the constituency workplan.
- AY constituency operational guidelines.
- Partner engagement strategy and outreach.
- A mentoring programme for piloting and implementation.
- An advocacy and accountability strategy for global, regional and country action.

The 18-month adolescent and youth constituency workplan aims to:

- Increase political visibility, policy commitments and resources allocated for adolescent health and well-being, in alignment with the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) and the Global Accelerated Action for the Health of Adolescents (AA-HA!) Guidance to support country implementation.
- Increase meaningful engagement of adolescents and youth to influence policies and decision-making related to the SRMNCAH continuum of care.
- Improve monitoring of key indicators, analyse rate of progress, and act on evidence to accelerate results and deliver on accountability for the Global Strategy and the Sustainable Development Goals.

During its first year of establishment, the AY constituency members conducted an assessment of three areas: impact; lessons learned; leverage to advance adolescents' health and well-being.

Outcomes include:

- Reach – Increase in membership of youth-led organizations, including networks and communities, collaborating for collective and coordinated action to drive adolescent health and well-being.
- Capacity – Increase in knowledge and skills of young people, including advocacy, accountability, partner engagement, and public speaking, among others.
- Access to information/ services and sharing of best practices within the youth movement.
- Ripple effect – Given the nature of The Partnership, more young people are reached than ever before. Members are focal points of organizations or networks.
- Greater interaction – Between young people and other constituencies (i.e. donors, service providers, United Nations agencies).
- Branding – within a few months the AY constituency has become the preferred platform for youth engagement in health and development, i.e. delivering on youth engagement for the Global Accelerated Action for the Health of Adolescents (AA-HA!) initiative.
- Advocacy – Increase in dialogues with governments and young people, together identifying best practices and lessons for meaningful youth engagement for adolescent health and well-being. Increase in youth engagement in accountability platforms, including the Global Strategy Progress Report and the Independent Accountability Panel.
- Funding – The donor community's growing interest in supporting the AY constituency enables more investments to adolescent health and well-being, including support to youth-led organizations.

Lessons and actions moving forward:

- Partner engagement – The constituency is implementing a partner engagement strategy, which aims to attract more members and networks and increase the quality and depth of engagement. A mapping of stakeholders is currently underway that will define the communities underrepresented and to inform the partners engagement strategy.
- A coordinated AY platform – The AY constituency reached out to its peer AY platforms in other organizations and initiatives to ensure alignment and coordination for AY engagement.
- Constituency governance – A formal governance structure has been developed. In this context, the constituency will benefit from learning lessons on how best to organize itself and integrate into the work of the Partnership's other constituencies.
- Advocacy at all levels – The effectiveness of the constituency to influence important health issues for adolescents and other young people will enhance the advocacy capacity of its leadership and membership, with investments in youth-led organizations to deliver at country level

Source: (338).

Annex 5. Additional information about national programming

A5.3.
Useful examples for national programming.

Box A5.3. Learning from the first generation of scaled-up adolescent sexual and reproductive health (ASRH) programmes in low- and middle- income countries

In April 2016, WHO organized a global consultation to draw out lessons learned from the first generation of scaled-up adolescent sexual and reproductive health (ASRH) programmes. This brought together 14 low- and middle-income countries and four high-income ones with comprehensive sexuality education (CSE) programmes and/or adolescent-health friendly health services (AFHS) programmes. These programmes had been scaled-up over an entire country (or province/state in the case of large countries) and sustained for at least three years. WHO organized the meeting in conjunction with Implementing Best Practices; USAID; UNFPA; Evidence to Action Project; Pathfinder International; and the Bill & Melinda Gates Foundation. The objectives of the meeting were to draw out the lessons learned from their experiences, to identify possible options for disseminating the conclusions and recommendations of the meeting, and to support their application.

Five implications for action were identified, from the first generation of scaled-up ASRH programmes.

Firstly, ASRH scale-up must be placed on the national agenda. For this, strong political commitment needs to be built and sustained. Building this commitment requires internal and external change agents to work together, using windows of opportunity that arise or creating new opportunities through advocacy.

Secondly, careful planning for scale-up can ensure that it is effective and sustained, and also help avoid many pitfalls. Scaling-up requires attention to both vertical and horizontal factors, as well as securing national and local ownership of the programme. The time and effort needed to institutionalize policies and strategies should not be underestimated. The intervention to be scaled-up needs to be clearly defined. It must be made as simple as possible, with careful attention to resource needs (managerial, technical, funds and materials) at national and subnational levels in order to execute scale-up. Delivery should be integrated into existing systems for capacity building, supervision, monitoring etc., and used to strengthen them. Finally, regular monitoring and evaluation and strategic documentation of results are essential from early on in the scale-up process, and should be planned in advance.

Thirdly, effective and efficient management of scale-up requires ensuring that the right players are on board with clear responsibilities; that the resources needed for programme scale-up are secured; that there is a shared understanding of the level of quality to be achieved and sustained; and that there is a shared commitment to scaling-up with quality and equity. The success of ASRH scale-up relies on these efforts, and also requires gathering and using data to ensure that decisions are based on sound and up-to-date information.

In order to ensure that the right players are on board, effective multisectoral collaboration and buy-in are best achieved by bringing in all key players from the start in order to develop a common sense of commitment and ownership. In most countries, national government bodies with the authority to mandate actions from others are likely to play leading roles, with international NGOs, indigenous NGOs and academic institutions providing critical expertise. Organizations and networks of young people should also be involved in this. Ensuring adequate resources over an extended period of time – including staff, materials to provide CSE and AFHS, and funds – is central to programme scale-up.

In terms of quality, it is essential that programmes meet pre-set minimum quality standards as they scale up – both for CSE and for AFHS. This requires a sound understanding by all partners of the evidence-informed criteria to be achieved, and sustained commitment to achieving and measuring them. Programmatic inputs and outputs need to be monitored, and data should be used to inform the implementation effort. This is especially relevant when the scale-up effort is rapidly expanding into new geographic areas and new players at national and subnational levels are being brought on board. Programmes need to ensure that their scale-up objectives match the available resources, in order to implement all key aspects of programmes with sustained quality.

It is important to find a balance between meeting the needs of all adolescents and those who are most likely to face health and social problems, and least likely to benefit from health and development efforts. Without a deliberate effort, vulnerable and marginalized adolescents are likely to be passed over. Reaching these groups will take additional effort and expense, but is both important from the perspectives of human rights and public health.

As mentioned above, programmatic inputs and outputs need to be monitored and used to inform implementation. In addition, the health outcomes (knowledge, attitudes and practices) and impact (improved health status) that the programme is contributing to, need to be measured. The latter take considerable time to achieve and programmatic attribution can be a challenge.

Fourthly, adolescent sexual and reproductive health is a highly sensitive issue that almost inevitably leads to resistance from more conservative sectors of society. Proactive and ongoing efforts are needed to build support and to anticipate and address opposition. Building support and shared ownership for ASRH scale-up among a range of stakeholders is crucial. At the same time, one must be aware that political, cultural and religious conservatism may pose serious challenges that need to be anticipated and appropriately addressed. The ongoing effort needed to achieve and sustain normative change should not be underestimated.

Finally, ensuring sustainability is a challenge that all programmes face; the sensitivities associated with ASRH add to this challenge. This task requires deliberate investment of efforts in institutionalization, in building support, in assuring financial support, and in capacity development. Even well-established scaled-up programmes can collapse – for instance if they lose political or financial support – so ensuring their continuity should be an ongoing effort.

Source: (339).

Box A5.4 Characteristics of nutrition programmes targeting adolescent girls

Out of a total of 53 programmes identified through the literature and internet searches, 10 targeted adolescent girls specifically. The most common programmatic approaches among this group included community-based platforms for nutrition education and promotion; the direct distribution of micronutrients, food and/or cash; and the capacity building of health workers (or other service-delivery agents). The most common priority practice was intake of iron and folic acid followed by improved eating practices and the consumption of a diverse diet.

Activities that are unique to adolescent girls include sensitization of government and religious leaders surrounding the risks associated with early marriage, and the benefits associated with delaying pregnancy until early adulthood. Government leaders may impact legislation surrounding child and adolescent marriage, while religious leaders can provide education and counselling within their clergy and among the community. This can work to discourage early marriage and delay child bearing until the adolescent girl has completed puberty, optimizing the health potential for herself and her child.

Use of the interpersonal communication/nutrition education approach among adolescent girls is common, given the convenience of accessing girls within the academic setting. Most often, teachers and affiliated education professionals were trained to provide nutrition education and/or direct supplementation to adolescent girls attending school. To reach out-of-school girls, in-school girls receiving a nutrition education and iron and folic acid supplementation intervention were trained to provide similar services to their out-of-school female counterparts (313).

Other approaches involved mass-media campaigns targeting adolescents to improve their general nutritional intake and intake of iron and folic acid supplements, and to delay early marriage and pregnancy. Media campaigns took place during national Adolescent Health Weeks, in which adolescents were encouraged to attend health services. National/regional government strengthening approaches included mentoring government officials to adapt clinics to provide adolescent-friendly services.

Some programmes, such as the Adolescent Girls' Anaemia Control Programme in India (313), and the Nutrition Intervention Programme in Nicaragua (314), have demonstrated positive impact on nutritional outcomes. The Adolescent Girls' Anaemia Control Programme reached 27.6 million adolescent girls in India, of whom 16.3 million were school-going and 11.3 million were out-of-school (315) The authors reported a 21.5% reduction in anaemia prevalence (from 74.7% to 53.2%, $p<0.05$, total N=5826) and improvements in haemoglobin in 80% of girls (from 110.8 ± 14.2 to 117.2 ± 12.7, $p<0.05$, total N=5826 (313).

Sources: (209); (313); (314).

Box A5.5. Registries of evidence-based mental health and substance-use disorder programmes

Blueprints for Healthy Youth Development is a registry that identifies evidence-based programmes to help young people reach their full potential through interventions to reduce bullying in schools; youth violence; teen substance abuse; antisocial or aggressive behaviour; childhood obesity; school failure; delinquency; youth depression/anxiety; and in other areas (164).

The Substance Abuse and Mental Health Administration in the USA maintains the National Registry of Evidence-Based Programs and Practices. Its purpose is to help the public and professionals find methods and programmes that have been proven to be useful in the prevention and treatment of mental health and substance use disorders (128).

The Suicide Prevention Resource Center and the American Foundation for Suicide Prevention jointly created the Best Practice Registry. This registry provides information about suicide prevention and intervention programmes that have shown positive outcomes. It also provides summaries of current suicide prevention knowledge, and provides a listing of strategies that follow standards (316).

The European Monitoring Centre for Drugs and Drug Addiction provides details on a wide range of evaluated prevention, treatment and harm-reduction interventions, as well as interventions within the criminal justice system (317).

Box A5.6. Key areas for programming in humanitarian and fragile settings

Adolescent-protective laws and policies

1. Ensure that policies and practices in humanitarian and fragile settings promote, protect and support essential services and interventions for adolescents' health, education and social protection, based on context and need.
2. Ensure that policies are in place to protect girls and boys from child labour, in particular in circumstances related to or made worse by the emergency.
3. Put in place policies for free access to essential interventions and services across sectors (e.g. health services, learning and schooling) for all adolescents, and enact policies to promote inclusion.
4. Put in place policies that prevent family separation. For unaccompanied minors, orphans and other vulnerable children, put in place specific protection measures to ensure that their best interests are protected and that they are not subjected to unnecessary procedures.
5. For adolescents who have lost their parents or carers, establish policies as needed to ensure adolescents have consistent, supportive caregiving.
6. Ensure that policies and practices in humanitarian and fragile settings serve adolescents' best interests and respect their right to dignity, safety, autonomy and self-determination, in line with their evolving capacity. All considerations outlined in key areas for programming 19–32 fully apply, and should inform policies and procedures in humanitarian and fragile settings.
7. Establish standard operating procedures that clearly describe arrangements for maintaining an adolescent's confidentiality. Consult child rights, ethics or protection experts if needed during development of the procedure. For example, if immediate protection needs become apparent, it may not be possible to honour an adolescent's confidentiality and also serve his or her best interest; this possibility should be addressed within the standard operating procedures.
8. Ensure that policies and procedures for consent for services and data-gathering activities comply with existing local and national laws and policies, and take into account adolescents rights to autonomy and self-determination.
9. If adolescents are to be subject of information-gathering, ensure that additional safeguards are in place, in line with WHO recommendations (246).
10. Ensure that human-resource policies include measures to protect girls and boys from exploitation and abuse by humanitarian workers.

Build an adolescent-competent workforce

11. Build provider capacities in adolescent-centred approaches and the principles of confidentiality, safety and security, respect and non-discrimination. This should be done across all sectors (e.g. for police, child units, probation officers, health workers, social workers, lawyers and judges).
12. Build provider understanding of sexual violence issues and sensitivity to adolescent-specific gender and sexuality concerns.
13. Build health-provider capacity in line with WHO core competencies for adolescent health, i.e. adolescent development stages and implications for service delivery; age- and gender-sensitive interviewing; communication and counselling skills; adolescents' evolving capacity and autonomous decision-making
14. Ensure that teachers and other education personnel receive periodic, relevant and structured training according to need and circumstances.

Adolescent-responsive service delivery

15. Ensure that the basic package of health services for adolescents includes the interventions described in Section 3.8 and below, including:
a. Mental health;
b. Nutrition;
c. Sexual and reproductive health –see Figure A3.1 on minimal interventions to prepare for and respond to adolescent sexual and reproductive health needs during emergencies;
d. Disability and injury;
e. Violence;
f. Water, sanitation and hygiene;
g. Child protection – include child protection services in line with minimum standards for child protection in humanitarian action (318);
h. Education – In consultation with all relevant stakeholders including education authorities and community members, determine education options for children and youth and establish, as appropriate, temporary learning centres as a first response to children's and adolescents' right to education. Ensure that educational activities are planned to extend beyond the emergency context into the early recovery period and longer-term development. Ensure access to education for all adolescents is in line with the INEE Minimum Standards for Education: Preparedness, Response, Recovery (319). Examples of national contextualization of INEE Minimum Standards for Education from Afghanistan, Somalia, Viet Nam, South Sudan, Lebanon and other countries may be found at http://www.ineesite.org/en/minimum-standards/contextualization (320)

Annex 5. Additional information about national programming

16. For children associated with armed forces or armed groups, ensure that release and reintegration services are available in line with minimum standards for child protection in humanitarian action (318).
17. Ensure that goods and services deployed, including the minimum initial service package, are fairly distributed and reach all adolescents in need of such goods and services. Identify and address the causes and means of exclusion or inequitable distribution.
18. If needed, ensure that age-appropriate adaptations are made to interventions (e.g. providing adequate rations for adolescents based on age-specific requirements for caloric intake, as well as taking into consideration factors such as gender, weight, physical activity levels, pregnancy and lactation).
19. Establish procedures for making confidential referrals for follow-up care and support of adolescents, with their consent. Make sure that there is a referral system between all sectors, including education, protection, livelihood, health and psychosocial support providers
20. Establish, as appropriate, adolescent-friendly spaces as a first response to adolescent needs for protection, psychosocial well-being and non-formal education. See Case studies A3.25. from Nigeria and A3.26 from Malawi on establishing safe spaces for displaced adolescents and girls. Make sure that these spaces adhere to guidelines to ensure that recreational and learning environments are safe, secure and inclusive, and promote the protection and mental and emotional well-being of adolescents (321).
21. Ensure that strategies for scaling-up services after an acute crisis provide adolescents with access to services they need, both in terms of scope and coverage. It is important that the basic health packages that guide health service implementation in protracted crises and recovery adequately incorporate core services, and that they further include clear guidance on how adolescents will access them.
22. Ensure that economic recovery programmes have a focus on working-age boys and girls and that they have access to adequate support to strengthen their livelihoods.

Ensure supply, technology and infrastructure for service delivery

23. Ensure that medicine, supplies, medical equipment and technology are fairly distributed and equitably used, and particularly that adolescents are not denied access to medicine (e.g. contraceptives) or health technologies for non-medical reasons.
24. Ensure safe access to, use and maintenance of toilets, and materials and facilities for menstrual hygiene management. See Box A3.6. on Good practice design for menstrual hygiene-friendly water, sanitation and hygiene facilities in emergencies, and Case study A3.27 from Ethiopia.

Build management and information systems that make adolescents visible

25. Ensure that the humanitarian needs and risk assessments approach facilitates improved understanding of adolescents unique needs and strengths, and identifies priority needs across sectors (e.g. health, educational and social-protection needs).
26. Ensure that monitoring activities capture the evolving health, education, child protection and other needs of affected adolescents, and that they inform programme adjustments as communities transit from acute crisis to protracted and recovery phases.
27. Ensure that assessments of a programme's social, political and psychological consequences have an adolescent focus. Outcome indicators across sectors should be measured and analysed in age- and sex-disaggregated groups to enable analysis of adolescent subgroups.
28. Measure and record the unintended negative consequences of programmes on adolescents through monitoring and evaluation. Ensure that programmes do not put adolescents at risk due to excessive targeting leading to stigmatization; aggressive questioning; being "over-researched" by multiple partners; undermining of existing supports; or the use of stigmatizing labelling.
29. Because the evidence base regarding the effectiveness and sustainability of diverse interventions in humanitarian and fragile settings is weak in general, and with regards to adolescents in particular, ensure an adolescent focus in actions that aim to strengthen intervention research, evaluation and collaborative learning.

Engage community to build support for adolescent access to and use of services

30. Implement community-awareness actions to reduce stigma and promote adolescents' access to services.
31. Re-establish community-support networks and structures for orphans and vulnerable children, and ensure that adolescents who have lost their parents or carers have consistent, supportive caregiving.
32. Implement community-mobilization activities to provide adolescent-friendly spaces, to determine emergency education options for boys and girls, and to establish temporary learning centres.
33. Implement self-help and resilience initiatives, such as adolescent support groups, dialogue groups, and community education and advocacy.
34. Ensure that affected communities actively participate in assessing adolescents' educational needs, and that community resources are identified, mobilized and used to implement education programmes and other learning activities in schools or other settings.

35. As the situation stabilizes, develop programmes for adolescent socioeconomic empowerment, such as village savings and loan associations.

Promote adolescent participation in leadership and governance arrangements for accountability, implementation, and multisectoral action

36. Facilitate adolescent participation in governance arrangements for planning and implementation of humanitarian action, and their recognition as key agents for constructive social change, recovery, reconciliation, peace-building and development.
37. Ensure that adolescents are involved in establishing monitoring and evaluation systems, and mechanisms of accountability (see Case study A5.5 in Annex 5).
38. As the situation stabilizes, engage adolescents in community work, for example in assisting younger adolescents and the community in various activities, including health awareness and service provision. See Case study 9 on youth peer-to-peer counselling during a protracted crisis in the West Bank and Gaza Strip.

Sources: (91); (248); (251); (254); (318); (319); (321-327)

39. Establish a transparent coordination mechanism for emergency education activities, including effective information sharing between stakeholders.

Mobilize financing and build adolescent-mindful financial-protection systems

40. When health systems and service delivery are disrupted during a crisis, and contracting is used in response, make the terms of the contract conducive, and even explicitly designed, to assure adolescent access to key health, education and social-protection services.

Annex 6. Additional information about monitoring, evaluation and research

A6.1.
Global Strategy indicators related to adolescent health

Table A6.1 is a summary of the 12 key and 31 additional indicators that relate to adolescent health, plus the 17 indicators that require further development, that were proposed by the Indicator and Monitoring Framework for the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) (3).

KEY:
Bold text = key indicator;
normal text = additional indicator;
italic text = indicator for further development

Table A6.1. Global Strategy indicators related to adolescent health

INDICATOR (TYPE)		
Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
TARGET: **Reduce global maternal mortality to less than 70 per 100 000 live births**		
Proportion of women aged 15–49 who received four or more antenatal care visits (Outcome)	**Maternal mortality ratio (Impact)** Proportion of births attended by skilled health personnel (Outcome) Proportion of women who had a postpartum contact with a health provider within two days (Outcome) *Maternal cause of death (direct/indirect) (Impact)* *Proportion of women with obstetric complications due to abortion (Impact)*	
TARGET: **End epidemics of HIV, tuberculosis, malaria, neglected tropical diseases and other communicable diseases**		
Number of new HIV infections per 1000 uninfected population, disaggregated by age and sex (Impact) Percentage of people living with HIV who are currently receiving antiretroviral therapy (ART), by age and sex (Outcome) *Human papillomavirus (HPV) vaccine coverage among adolescents (Outcome)*		Malaria incident cases per 1000 persons per year (Impact) Proportion of households with at least one insecticide-treated net (ITN) for every two people and/or sprayed by indoor residual spray (IRS) within the last 12 months (Outcome)
TARGET: **Reduce by one third premature mortality from noncommunicable diseases and promote mental health and well-being**		
Adolescent mortality rate, by sex (Impact) Age standardized prevalence of current tobacco use among persons 15 years and older, disaggregated by age (Outcome) *Adolescent cause of death (Impact)* *Harmful use of alcohol among adolescents (Outcome)*	Suicide mortality rate, by age and sex (Impact) *Prevalence of depression, by age and sex (Impact)*	
TARGET: **End all forms of malnutrition, and address the nutritional needs of adolescent girls, pregnant and lactating women and children**		
Prevalence of insufficient physical activity among adolescents (Outcome) Prevalence of anaemia in women aged 15–49, disaggregated by age and pregnancy status (Impact)		
TARGET: **Ensure universal access to sexual and reproductive health-care services (including for family planning) and rights**		
Percentage of women of reproductive age (15–49) who have their need for family planning satisfied with modern methods (Outcome) **Adolescent birth rate (10–14, 15–19) per 1000 women in that age group (Impact)** Proportion of women aged 15–49 who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care (Outcome) **Number of countries with laws and regulations that guarantee women aged 15–49 access to sexual and reproductive health care, information and education (Output)** Proportion of men and women aged 15–24 with basic knowledge about sexual and reproductive health and rights (SRHR) (Impact) *Proportion of secondary schools that provide comprehensive sexuality education (CSE) (Outcome)*		

INDICATOR (TYPE)		
Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
TARGET: **Substantially reduce pollution-related deaths and illnesses**		
		Mortality rate attributed to household and ambient air pollution, by age and sex (Impact) **Proportion of population with primary reliance on clean fuels and technology (Outcome)**
TARGET: **Achieve universal health coverage, including financial risk protection and access to quality essential services, medicines and vaccines**		
		Coverage of essential health services, including reproductive, maternal, newborn, child and adolescent health (RMNCAH) (Outcome) Proportion of the population with financial protection (Output) **Current country health expenditure per capita (including specifically on RMNCAH) financed from domestic sources (Input/Process)** **Out-of-pocket expenditure as percentage of total health expenditure (Input/Process)**
TARGET: **Eradicate extreme poverty**		
		Proportion of population below international poverty line, by sex, age and employment (Impact)
TARGET: **Ensure that all girls and boys complete free, equitable and good-quality secondary education**		
Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex (Impact) *Indicator of youth disenfranchisement (Impact)*		
TARGET: **Eliminate all harmful practices and all discrimination and violence against women and girls**		
Percentage of women aged 20–24 who were married or in a union before age 15 and before age 18 (Impact) **Proportion of ever-partnered women and girls aged 15 and older subjected to physical, sexual or psychological violence by a current or former intimate partner, in the last 12 months, by form of violence and by age group (Impact)** Proportion of women and girls aged 15–49 who have undergone female genital mutilation/cutting (FGM/C), by age (Impact) Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex (Output) **Proportion of young women and men aged 18–29 who experienced sexual violence by age 18 (Impact)**	*Percentage of the population reporting having personally felt discriminated against or harassed within the last 12 months on the basis of a ground of discrimination prohibited under international human rights law, disaggregated by age and sex (Impact)*	Proportion of rape survivors who received HIV postexposure prophylaxis (PEP) within 72 hours of an incident occurring (Outcome) *Health-sector specific indicator on discrimination (Outcome)*
TARGET: **Achieve universal and equitable access to safe and affordable drinking water and to adequate sanitation and hygiene**		
		Percentage of population using safely managed sanitation services including a hand-washing facility with soap and water (Outcome) Percentage of population using safely managed drinking-water services (Outcome)
TARGET: **Enhance scientific research, upgrade technological capabilities and encourage innovation**		
		Research and development expenditure as a proportion of gross domestic product (GDP), disaggregated by health/RMNCAH (Input) *Proportion of countries that have systematic innovation registration mechanisms in place for women's, children's and adolescents' health and are reporting the leading three domestic innovations on an annual basis (Input/Process)* *Proportion of countries that have mechanisms to review innovations using effective Health Technology Assessment approaches (Input/Process)*

Annex 6. Additional information about monitoring, evaluation and research

INDICATOR (TYPE)		
Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
TARGET: **Provide legal identity for all, including birth registration**		
		Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100% birth registration and 80% death registration (Outcome)
TARGET: **Enhance the global partnership for sustainable development**		
		Number of countries reporting progress in multistakeholder development effectiveness monitoring frameworks that support the achievement of the SDGs (Input/Process) Governance Index (voice, accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption) (Impact) Does the national RMNCAH strategy/plan of action specify that there should be community participation in decision-making, delivery of health services and monitoring and evaluation? (Input/Process) *Proportion of countries that address young people's multisectoral needs within their national development plans and poverty reduction strategies (Input/Process) Participation measures- women's groups, youth, civil society etc. (Output)* Implementation rate of commitments to the Global Strategy (Output)
TARGET: **Equity, humanitarian and human rights as cross-cutting considerations**		
		Proportion of indicators at the national (regional, global) level with full disaggregation when relevant, for Global Strategy indicators (Input/Process) Ratification of human rights treaties related to women's, children's and adolescents' health (Output) Humanitarian Response Index (Outcome) *Health-sector specific indicators on anti-corruption and transparency (Outcome) Percentage of programmes in humanitarian settings based on health needs assessments of women, children and adolescents (Input/Process) Funding gap in the transition from humanitarian aid to sustainable development (Input/Process)*

Sources: (3)

A6.2.
Elements needed to monitor implementation of a programme to reduce adolescent pregnancies

In this section, one intervention recommended by the Global Strategy (1) (see Section 3) is used as an illustration of the indicators; their measurement; data sources; reporting frequency; baselines; targets; and results. These are important components of monitoring progress towards successful programme implementation. The example provided below in Table A6.2 shows suggested examples of potential indicators for each level of the IHP+ common monitoring and evaluation framework (impact, outcomes, outputs, inputs and processes) (328); (329).

KEY:
CRVS   Civil registration and vital statistics
DHS   Demographic and health surveys
MICS   Multiple indicator cluster surveys
NA   Not available

Table A6.2.
Elements needed to monitor implementation of a programme to reduce adolescent pregnancies

Global Strategy adolescent health intervention							
Information, counselling and services for comprehensive sexual and reproductive health, including contraception							
Indicator descriptors							
IMPACT	INDICATORS	MEASUREMENT	DATA SOURCE	REPORTING FREQUENCY	BASELINE	TARGET	RESULTS
Reduce the adolescent birth rate	Adolescent birth rate (10–14, 15–19 years) per 1000 women in that age group	**Numerator**: number of live births to women 10–14, 15–19 years **Denominator**: exposure to childbearing by women 10–14, 15–19 years	CRVS, census and household surveys	1–5 years	Specific for year of start of intervention	Contribution to global target	To be reported
Reduce obstetric complications in adolescents	Proportion of adolescent girls and young women with obstetric complications due to abortion	**Numerator**: number of women 15–19 years with obstetric complications due to abortion Denominator: total number of pregnant women 15–19 years	National health surveys and administrative records	1 year	Specific for year of start of intervention	National target	To be reported
Outcomes							
Contraceptive services available with modern methods	Percentage of adolescent women who have their need for family planning satisfied with modern methods	**Numerator**: number of women 15–19 years who report using modern contraceptive methods **Denominator**: number of women 15–19 years who report being sexually active	DHS, MICS and reproductive health surveys	3–5 years	Specific for year of start of intervention	National target	To be reported
	Proportion of adolescent women who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care	**Numerator**: number of women 15–19 years who report making their own informed decisions regarding sexual relations, contraceptive use and reproductive health care **Denominator**: number of women 15–19 years who report being sexually active	DHS and other national surveys	3–5 years	Specific for year of start of intervention	National target	To be reported
Sexuality education provided in secondary schools	Proportion of secondary schools that provide comprehensive sexuality education	Measurement of indicator is under development	Administrative data (survey of formal education) and household surveys	1–5 years	Specific for year of start of intervention	National target	To be reported
	Proportion of men and women 15–24 years with basic knowledge about sexual and reproductive health services and rights	Measurement of indicator is under development by Guttmacher Institute, UNFPA	NA	NA	Specific for year of start of intervention	National target	To be reported

Annex 6. Additional information about monitoring, evaluation and research

Global Strategy adolescent health intervention							
Information, counselling and services for comprehensive sexual and reproductive health, including contraception							
Indicator descriptors							
IMPACT	INDICATORS	MEASUREMENT	DATA SOURCE	REPORTING FREQUENCY	BASELINE	TARGET	RESULTS
Legal protection for adolescent girls and young women	Proportion of women 20–24 years who were married or in union before age 15 and before age 18	**Numerator:** number of women 20–24 years who were married or in union before age 15 and before age 18 **Denominator:** number of women 20–24 years	DHS, MICS, other nationally representative surveys and occasionally census	3–5 years	Specific for year of start of intervention	National target	To be reported
	Proportion of women 20–24 years who report sexual debut before age 15 and before age 18	**Numerator:** number of women 20–24 years who report sexual debut before age 15 and before age 18 **Denominator:** number of women 20–24 years	DHS, MICS, other nationally representative surveys	3–5 years	Specific for year of start of intervention	National target	To be reported
Outputs							
Laws and regulations	Number of countries with laws and regulations that guarantee adolescent girls and young women (15–19 years) access to sexual and reproductive health care, information and education	Measurement of indicator is under development by UNFPA, UN Women and WHO	Self-reporting by governments	NA	NA	NA	To be reported
Health-care providers provide information and services for comprehensive sexual and reproductive health, including contraception to adolescents	Number and percentage of health-care providers trained in the provision of health services to adolescents	**Numerator:** number of health-care providers trained in the provision of health services to adolescents **Denominator:** total number of health-care providers	1–5 years	1–5 years	Specific for year of start of intervention	National target	To be reported
	Proportion of target education and training institutions that have their faculty trained in recommended approaches to adolescent health education and training	**Numerator:** number of target education and training institutions that have their faculty trained in recommended approaches to adolescent health education and training **Denominator:** total number of target education and training institutions in the country	1–5 years	1–5 years	Specific for year of start of intervention	National target	To be reported
Pregnancy reduction messages shared	Proportion of target audiences for adolescent pregnancy reduction messages reached	**Numerator:** number of adolescents reached with pregnancy reduction messages (15–19 years) **Denominator:** total number of 15- to 19-year-olds	NA	NA	Specific for year of start of intervention	National target	To be reported
Inputs & Processes							
Programme funding for reducing adolescent pregnancy	Source of funding	Donor name, US$ amount	Administrative data from programme	1–5 years	Specific for year of start of intervention	National target	To be reported
	Number of health workers per 10 000 population by category, geographic area	**Numerator:** number of health workers **Denominator:** number of people in country	Self-reported by governments; UNFPA	1–5 years	Specific for year of start of intervention	National target	To be reported
Appropriate processes in place to support the programme	Mechanisms in place to ensure that health systems are adolescent-responsive (including provision of contraceptive services to adolescents)	Measurement of indicator to be developed by programme	Self-reported by governments	NA	NA	NA	To be reported
	Mechanisms in place for information, education and communication about reducing adolescent pregnancies	Measurement of indicator to be developed by programme	Self-reported by governments	NA	NA	NA	To be reported

A6.3.
Additional case studies of monitoring, evaluation and research

The potential value of institutionalized monitoring and periodic evaluations of adolescent health programmes is illustrated by the Teenage Pregnancy Strategy for England, which is summarized in Case study A6.2 (330); (331) and by the use of routinely collected data to monitor the effects of a Year of Sobriety in Lithuania in 2008 (332), summarized in Case study A6.1.

Case Study A6.1.

Lithuania's use of routine data to monitor the effect of a Year of Sobriety

Routine clinic-attendance data proved very useful in detecting the effects of a national Year of Sobriety that was implemented in 2008. The rate of clinic attendances for treatment of toxic effects of alcohol in 7- to 14-year-olds had increased consistently year-on-year from 2000 to 2007. However, there was a substantially lower rate in 2008. A similar pattern was seen for road traffic accidents, injuries and deaths.

Source: (332).

Case Study A6.2.

England's monitoring and evaluation of its national teenage pregnancy strategy

The 10-year Teenage Pregnancy Strategy for England, launched in 1999, was a nationally led, locally implemented, evidence-based programme developed by the United Kingdom Government. The main objective of the strategy was to halve the under-18 conception rate. An independent advisory group on teenage pregnancy was created to monitor progress and advise ministers. One hundred and fifty local governments received a supplementary grant to add to their existing funding to develop local plans aligned to the government's strategy. Progress was monitored through quarterly and annual conception data and through annual reports. The coverage of the programme was monitored through an annual tracking survey. In 2005, monitoring revealed that the under-18 conception rate had declined by 11% but that wide variation in progress across local authorities remained.

A mid-course evaluation showed that areas with lower under-18 conception rates had developed their strategies fully in line with the national guidance, involving all relevant agencies to create a whole-systems approach. The high-performing areas had strong senior leadership to prioritize the strategy and had continuous monitoring of their progress. Ten key factors for success were identified. These ranged from education and provision of products and services to training health professionals and supporting parents. These findings translated into new national guidance, which included strengthening local areas to improve on the 10 key factors for an effective local plan, and a self-assessment tool to help local areas identify and address gaps in their plans. The success of the strategy was shown by the achievement of a 51% reduction in the under-18 conception rate between 1998 and 2014.

Sources: (330); (331).

Annex 6. Additional information about monitoring, evaluation and research

An example of an evaluation of a reproductive and sexual health programme in Jharkhand State, India (333) is given in Case study A6.3.

Case study A6.4 gives an example of a review of previously published adolescent-friendly health services programme evaluations that had been conducted in India (328).

Case Study A6.3.

India's evaluation of an adolescent sexual and reproductive health services project

The Tarunya project in Jharkhand State, India, was launched in 2008 by EngenderHealth with support from the David and Lucile Packard Foundation. The main objective of the project was to improve the quality of adolescent sexual and reproductive health services (ASRH). The project aimed to provide ASRH training to government staff, to strengthen outreach activities to enhance community engagement, and to institutionalize necessary changes in state policies to achieve this. The project was initiated in 12 districts, and in 2011 it was scaled up to all 24 districts of the state.

After five years of implementation, internal and external evaluations were carried out. Three main components of the ASRH programme were evaluated:

- the project's strategy to improve and expand ASRH service provision to adolescents
- the quality of ARSH services for adolescents and whether this had improved
- utilization of health services by adolescents.

The evaluation was conducted in 34 health facilities in 19 of the 24 districts, using individual interviews and focus-group discussions, observations in the facilities, and household surveys. A composite index for the quality of service provision (including 20 indicators) was developed to measure the health facility and individual health-care worker performance in ASRH services. Each health facility was then assigned to one of the categories of performance (high, medium or low).

The evaluation reported that the project had carried out a number of activities to improve the quality of ASRH services to adolescents, including the development of problem-solving tools. A significant improvement in quality of ASRH services was noted to be linked to the intensity of the project's intervention. However, there was no consistent association between the facility's quality ranking and the client's perception of quality of health- service delivery. In addition, the team's assessment revealed that there was only a limited increase in service use by adolescents. These results were used to highlight the need for continued staff training, institutionalization of monitoring and data management and further research, better to understand adolescents' health-service needs.

Source: (333).

Case Study A6.4.

India's adolescent-friendly health services: a review of 15 years of evaluation research

A literature review was conducted of articles published in the 15 years from 2000 to 2014 that reported on evaluations of initiatives to improve health services for adolescents in India. Thirty such reports met the inclusion criteria and were reviewed in detail. The great majority of the evaluations were conducted either by nongovernmental agencies (14) or academic institutions (11), with only one each being conducted by the government or a multilateral agency. Eighteen evaluations used a cross-sectional (after-only) design with measurements only being collected after the implementation of the intervention and without there being any comparison group. Eight used a before-after (repeated cross-sectional) study design. In addition to quantitative methods, 15 evaluations used qualitative methods such as key informal interviews, in-depth interviews and focus-group discussions. Other methods such as facility checklists or attendance record reviews, or provider and/or client interviews were also used by a minority of studies.

Only one study used the powerful mystery-client approach in which a young person attended a clinic posing as a client requesting services and the quality and adolescent-friendliness of the service they received was assessed. Only four evaluations explicitly reported on the seven standards of quality provision of adolescent-friendly health services specified by the Ministry of Health and Family Welfare of India. The evaluations primarily measured programme outputs (such as service quality and utilization) and/or health behavioural outcomes (such as self-reported condom use).

The review concluded that most evaluations reported improvements in service quality and utilization.

The findings of the review have been shared with the Ministry of Health and Family Welfare and other partners, and will be discussed at a meeting to review progress within the national adolescent health programme, and to identify how best to scale-up the programme.

Source: (328).

Annex 6. Additional information about monitoring, evaluation and research

A6.4.
Priority areas for future research

Tables A6.3 and A6.4 show the five top-ranked SRH research questions in each of the seven domains of adolescent sexual and reproductive health (334) (Table A6.3), and the eight other areas of adolescent health (335) (Table A6.4) that were included in recent research priority-setting exercises coordinated by WHO.

Table A6.3. Research priorities related to adolescent sexual and reproductive health

HEALTH CATEGORY		TYPE OF QUESTION
Maternal health		
1	What strategies can improve the use of antenatal care, skilled birth attendants, prevention of mother-to-child transmission (PMTCT) and postnatal care by adolescents in resource-poor settings?	Development: operations research/scaling-up of existing interventions
2	What factors (including barriers and facilitators) are associated with the utilization of maternal health services (antenatal, intrapartum, postpartum) and neonatal care by adolescents in different settings?	Descriptive: epidemiological research/evaluation of existing interventions
3	What pregnancy outcomes (maternal and neonatal) among adolescents are related to mode of delivery, presence of a skilled birth attendant at delivery and care of infants up to 6 months of age?	Descriptive: epidemiological research/evaluation of existing interventions
4	Do programmes that promote postnatal family planning for adolescent mothers reduce subsequent unwanted pregnancies in this group?	Descriptive: epidemiological research/evaluation of existing interventions
5	Do adolescent girls and adult women receive different antenatal, delivery and postnatal care? If so, how and why?	Descriptive: epidemiological research/evaluation of existing interventions
Contraception		
1	What strategies can delay first births among married adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
2	Through what mechanisms can the provision of regular and emergency contraceptives to adolescents be financed or subsidized?	Development: operations research/scaling-up of existing interventions
3	What strategies can increase consistent and effective condom use among both male and female adolescents?	Development: operations research/scaling-up of existing interventions
4	What barriers do health-care providers face when trying to offer contraception services to unmarried adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
5	In settings with high rates of pregnancy in adolescence, what factors protect adolescents from unwanted and/or unsafe pregnancy?	Descriptive: epidemiological research/evaluation of existing interventions
Gender-based violence		
1	How do programmes that aim to keep girls in school longer through measures such as conditional cash transfers affect the prevalence of gender-based violence?	Descriptive: epidemiological research/evaluation of existing interventions
2	What interventions can be integrated into community settings (e.g. schools) to address gender-based violence and its related reproductive outcomes?	Development: operations research/scaling-up of existing interventions
3	What strategies might reduce gender-based violence among adolescent sex workers?	Development: operations research/scaling-up of existing interventions
4	How feasible, effective and sustainable is the training of community-based health workers on identification and referral of cases of gender-based violence?	Development: operations research/scaling-up of existing interventions
5	What is the impact of "healthy schools" initiatives on the reduction in gender-based violence?	Descriptive: epidemiological research/evaluation of existing interventions
HIV treatment and care		
1	What factors facilitate uptake, retention and adherence, and minimize treatment failure among adolescents?	Development: operations research/scaling-up of existing interventions
2	How do user fees affect access to, use of and retention in treatment among adolescents living with HIV?	Development: operations research/scaling-up of existing interventions
3	What factors influence the disclosure of HIV status to others among adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
4	What proportion of young women who test positive for HIV in antenatal or delivery care: (i) receive and take drugs for PMTCT; (ii) are assessed to determine if they need lifelong highly active antiretroviral therapy (HAART); (iii) are started on lifelong HAART if clinically indicated?	Descriptive: epidemiological research/evaluation of existing interventions
5	What aspects of the delivery of HIV testing and counselling services are most important from the perspective of adolescents: the speed of the results; confidentiality and anonymity; the social and health services offered; the counselling offered; whether or not they are integrated into the health system?	Development: operations research/scaling-up of existing interventions

HEALTH CATEGORY		TYPE OF QUESTION
Abortion		
1	How does the provision of contraceptive methods (especially long-acting, reversible methods) as part of postabortion care affect unintended pregnancy and repeat abortion rates among adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
2	What interventions are effective for informing adolescents about the availability and safe use of misoprostol?	Development: operations research/scaling-up of existing interventions
3	How does cost influence adolescents' abortion-seeking behaviour?	Development: operations research/scaling-up of existing interventions
4	How much awareness of abortion law, access to safe abortion services and postabortion care exists among adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
5	What do adolescents know about less-invasive procedures for pregnancy termination and postabortion care (e.g. misoprostol), and to what extent do they have access to them or use them?	Descriptive: epidemiological research/evaluation of existing interventions
Family planning and HIV service integration		
1	What modalities for delivering integrated HIV/family planning services to adolescent boys work best?	Development: operations research/scaling-up of existing interventions
2	Does the provision of comprehensive sex education at school: (i) reduce adolescent pregnancies, (ii) increase health-care seeking behaviour among adolescents, or (iii) reduce the incidence of STIs, including HIV infection?	Descriptive: epidemiological research/evaluation of existing interventions
3	What are the most effective and affordable models for delivering integrated contraception and HIV services and information to young married couples?	Development: operations research/scaling-up of existing interventions
4	What female-controlled methods for preventing both STIs and pregnancy can be developed and tested?	Discovery: new interventions
5	How much do young female sex workers and injecting drug users need and use contraceptives??	Descriptive: epidemiological research/evaluation of existing interventions
Sexually transmitted infections (STIs) and human papillomavirus (HPV) infection		
1	What alternative dosing schedules can facilitate HPV vaccine delivery in low-resource settings?	Discovery: new interventions
2	How can school-based and community-based programmes for STI counselling and testing, HPV vaccination and sex education be scaled-up?	Development: operations research/scaling-up of existing interventions
3	What are the most effective, efficient and sustainable ways to deliver vaccination against HPV?	Development: operations research/scaling-up of existing interventions
4	How can adolescents who do not use available STI services (e.g. conditional cash transfers, mobile clinics) be reached?	Development: operations research/scaling-up of existing interventions
5=[2]	What is the cost-effectiveness of HIV/STI screening programmes among adolescents at highest risk?	Development: operations research/scaling-up of existing interventions
5=	How can the incorporation of syphilis testing in SRH and maternal health services be optimized to ensure that all adolescents, including pregnant girls, get screened and treated?	Development: operations research/scaling-up of existing interventions

Source: (334).

[2]Two questions received exactly the same score and so were ranked 5=.

Annex 6. Additional information about monitoring, evaluation and research

Table A6.4. Research priorities in eight areas of adolescent health

HEALTH CATEGORY	TYPE OF QUESTION
Communicable diseases prevention and management	
1	What are the key barriers faced by adolescents to access TB and TB/HIV diagnostic and treatment services in high- and low-income countries, and how can these be overcome?	Intervention: Delivery/implementation
2	What are treatment adherence rates, and what are the risk factors for non-adherence or default, among adolescents on long-term treatment for TB?	Descriptive epidemiology
3	What is the potential contribution of peer-led interventions for improving retention in care among adolescents with TB and/or HIV?	Intervention: Delivery/implementation
4	Which programmatic interventions developed to improve adolescent retention in care and treatment adherence for other communicable diseases (i.e. HIV) would be useful for application in TB programmes?	Intervention: Delivery/implementation
5	What is the incidence and burden of TB among young (10–14 years) and older (15–19 years) adolescents in the world by sex, particularly among adolescents with HIV, and what proportion of the adolescents have drug-resistant TB?	Descriptive epidemiology
Injuries and violence	
1	What are the barriers and facilitators to increasing compliance with motorcycle helmet legislation?	Intervention: Delivery/implementation
2	What are the risk and protective factors at various levels (individual, family, peer/social, community) for injuries and violence among adolescents in low- and middle-income countries (LMICs)?	Descriptive epidemiology
3	How best can school-based "safe routes to school" initiatives be scaled-up to include larger numbers of schools and to be incorporated with community-based initiatives?	Intervention: Delivery/implementation
4	To what extent do strategies that have been shown to reduce one form of violence (e.g. bullying) effectively prevent other forms of violence that youth experience (e.g. partner violence, sexual violence, suicidal behaviour)?	Intervention: Development/testing
5	What types of communication strategies work best to actually change the key behaviours that put adolescents at increased risk of injuries?	Intervention: Delivery/implementation
Mental health	
1	What would be the most cost-effective, affordable and feasible package of interventions for promotion of mental health and prevention of mental health disorders among adolescents?	Intervention: Development/testing
2	What are effective interventions to prevent and treat mental health problems of adolescents that can be delivered at primary care level in LMICs?	Intervention: Development/testing
3	What are effective interventions addressing self-harm/suicide in adolescent girls in LMICs?	Intervention: Development/testing
4	What are the costs and benefits of integrating management of child and adolescent mental disorders with other child and adolescent health-care delivery platforms?	Intervention: Delivery/implementation
5	How can mental health and psychosocial support (including identification, support and basic management of relevant conditions) be integrated with adolescent-friendly services, general health, reproductive health etc.?	Intervention: Delivery/Implementation
Noncommunicable disease management	
1	Can a low-cost rapid antigen test for diagnosis of streptococcal pharyngitis (which can lead to rheumatic heart disease) be developed that is suitable for use in low-resource settings?	Intervention: discovery
2	Can interventions for the management of noncommunicable diseases (NCDs) that have been shown to be effective in adults be used directly in adolescents?	Intervention: Development/testing
3	How do interventions devised for the management of NCDs in high-income countries be used for adolescents in LMICs translate globally?	Intervention: Delivery/implementation
4	What are the mortality and morbidity rates and their causes among adolescents with diabetes in LMICs?	Descriptive epidemiology
5	What proportion of children born with sickle-cell disease survive into and through adolescence?	Descriptive epidemiology
Nutrition	
1	What are the causes of anaemia among adolescent girls and how does this vary by region?	Descriptive epidemiology
2	What are the relationships between early pregnancy and stunting, anaemia, and NCD risk (overweight, diabetes, hypertension)?	Descriptive epidemiology
3	What social and behaviour change communication platforms are the most effective to reach adolescents to help them to improve their diet?	Intervention: Development/testing

HEALTH CATEGORY	TYPE OF QUESTION
4	How does the burden of disease from nutritional causes for adolescent boys and girls vary by country and within countries, and by socioeconomic status?	Descriptive epidemiology
5	What is the prevalence of adolescent undernutrition and overnutrition by risk/protective factors such as sex, urban/rural residence, schooling, access to green spaces, access to food and socioeconomic strata in different world regions?	Descriptive epidemiology
Physical activity	
1	Considering comprehensive theoretical models and variables from different levels/systems/contexts (e.g. Socioecological Model), which variables predict, at an individual or population level, the different patterns of physical activity in adolescents living in LMICs?	Descriptive epidemiology
2	What is the best (feasibility, cost, acceptability, effectiveness, sustainability) design of a school-based intervention that aims to engage and gain the support of students, parents and teachers for young people to take the recommended 60 minutes of physical activity daily, and to ensure that there are at least two physical education (PE) classes within schools per week, with at least 50% of the time for PE classes spent in moderate-to-vigorous-intensity physical activity)?	Intervention: discovery
3	What are the policy and/or environmental changes that influence physical activity among adolescents in LMICs?	Intervention: Delivery/implementation
4	How best can the capacity of the education sector be improved to deliver high-quality physical education programmes within schools?	Intervention: Delivery/implementation
5	How does one best implement a sustainable, structured physical activity programme for adolescents in schools and out of schools in LMICs?	Intervention: Delivery/implementation
Substance use	
1	Considering comprehensive theoretical models and variables from different levels/systems/contexts (e.g. Socioecological Model), which variables predict, at an individual or population level, the different patterns of physical activity in adolescents living in LMICs?	Descriptive epidemiology
2	What is the best (feasibility, cost, acceptability, effectiveness, sustainability) design of a school-based intervention that aims to engage and gain the support of students, parents and teachers for young people to take the recommended 60 minutes of physical activity daily, and to ensure that there are at least two physical education (PE) classes within schools per week, with at least 50% of the time for PE classes spent in moderate-to-vigorous-intensity physical activity)?	Intervention: discovery
3	What are the policy and/or environmental changes that influence physical activity among adolescents in LMICs?	Intervention: Delivery/implementation
4	How best can the capacity of the education sector be improved to deliver high-quality physical education programmes within schools?	Intervention: Delivery/implementation
5	How does one best implement a sustainable, structured physical activity programme for adolescents in schools and out of schools in LMICs?	Intervention: Delivery/implementation
Adolescent health: policy, health and social systems	
1	What platforms and strategies are most effective to reach and help the most vulnerable adolescents (e.g. those not in school, slum dwellers and/or those in poor families)?	Intervention: Delivery/implementation
2	What are the most cost-effective interventions to decrease multiple health-risk behaviours and conditions and promote healthy behaviours?	Intervention: Development/testing
3	How can primary health care services be designed to most effectively meet the unique health needs of adolescents?	Intervention: Delivery/implementation
4	How can new technologies such as cell phones and the internet be used effectively to provide information, referral and treatment for adolescents?	Intervention: Delivery/implementation
5	What is the coverage of primary health care services for adolescents?	Descriptive epidemiology

Source: (335).

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Appendices

Appendix I.
The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030) – action areas, and its operational framework's ingredients for action and implementation objectives.

Sources: (1); (3).

Action area 1. Country leadership
Reinforce leadership and management links and capacities at all levels; promote collective action.
Ingredient for action 1. Country leadership.
Implementation objectives:
1. a strong multistakeholder country platform for women's, children's and adolescents' health;
2. national and subnational SDG targets;
3. a single prioritized, costed, national plan for women's, children's and adolescents' health; and
4. effective stewardship and monitoring of implementation across sectors.

Action area 2. Financing for health
Mobilize resources; ensure value for money; adopt integrative and innovative approaches.
Ingredient for action 2. Aligning and mobilizing financing.
Implementation objectives:
1. identification of funding requirements and mobilization of all potential sources and support for funding;
2. coordination of funding flows; and
3. strengthened financing capacity at decentralized level.

Action area 3. Health system resilience
Provide good-quality care in all settings; prepare for emergencies; ensure universal health coverage.
Ingredient for action 5. Strengthening health systems.
Implementation objectives:
1. a strong health workforce;
2. reliable supply, access and availability of commodities;
3. effective health management information systems; and
4. quality health services delivered at scale with resilience.

Action area 4. Individual potential
Invest in individuals' development, support people as agents of change; address barriers with legal frameworks.
Ingredient for action 7. Establishing priorities for realizing individual potential.
Implementation objectives:
1. an evidence and planning base for programming;
2. participation of adolescents;
3. priorities for adolescent programming; and
4. priorities for early childhood development programming.

Action area 5. Community engagement
Promote enabling laws, policies and norms; strengthen community action; ensure inclusive participation.
Ingredient for action 3. Supporting community engagement, participation and advocacy.

Implementation objectives:
1. a supportive environment for community engagement, participation and social accountability;
2. strong advocacy and communication platforms; and
3. integration of service delivery by communities into national systems.

Action area 6. Multisector action
Adopt a multisector approach; facilitate cross-sector collaboration; monitor impact.
Ingredient for action 6. Enhancing mechanisms for multisectoral action.
Implementation objectives:
1. governance to enable multisectoral action; and
2. structures to support multisectoral collaboration.

Action area 7. Humanitarian and fragile settings
Assess risks, human rights and gender needs; integrate emergency response; address gaps in the transition to sustainable development.
Ingredient for action 8. Strengthening capacity for action in humanitarian and fragile settings.
Implementation objectives:
1. humanitarian and fragile settings as core business of national health and social systems;
2. a core emphasis on neonatal survival and sexual and reproductive health in humanitarian and fragile settings; and
3. emphasis on human rights.

Action area 8. Research and innovation
Invest in a range of research and build country capacity; link evidence to policy and practice; test and scale-up innovations.
Ingredient for action 9. Fostering research and innovation.
Implementation objectives:
1. strengthened implementation research capacity; and
2. an effective global innovation marketplace.

Action area 9. Accountability
Harmonize monitoring and reporting; improve civil registration and vital statistics; promote independent review and multistakeholder engagement.
Ingredient for action 4. Reinforcing global, regional and national accountability mechanisms.
Implementation objectives:
1. robust accountability processes; and
2. effective civil registration and vital statistics systems.

Appendix II.
The Global Strategy's broader interventions that are important to adolescent health

Source: (1).

This list summarizes additional, essential, evidence-based policies and interventions, which should be included within national strategies for adolescent health and which relate to multiple sectors, as identified in the Global Strategy for Women's, Children's, and Adolescents' Health (2016–2030).

A. Special needs in humanitarian and fragile settings

1. In the event of humanitarian emergency, ensure deployment of essential health interventions, such as sexual and gender-based violence prevention; contraceptives (short-acting and long-acting emergency contraceptives); postexposure prophylaxis.
2. In the event of humanitarian emergency, ensure that policies and practices promote, protect and support breastfeeding and other essential interventions for women's, children's and adolescents' health, based on context and need.

B. Broader health systems

Health systems policies and interventions [all 58 essential recommendations], as relevant to adolescents. These fall under 10 broad categories:
1. Constitutional and legal entitlements; human rights-, equity- and gender-based approaches – e.g. universal access to health care and services, including sexual and reproductive health information, services, goods and rights.
2. Strategies and plans – e.g. prioritized and well-defined health targets and indicators for adolescents.
3. Financing – e.g. sustainable financing of adolescents' health with effective and efficient use of domestic and external resources.
4. Human resources – e.g. adequate recruitment, training, deployment and retention of health personnel.
5. Essential health infrastructure – e.g. functional health facilities well-equipped to deliver anticipated services.
6. Essential medicines and commodities – e.g. quality assurance and measures to maintain supplies at required levels.
7. Service equity, accessibility and quality – e.g. adolescents' health services defined by level of health service delivery (primary, secondary, tertiary).
8. Community capacity and engagement – e.g. community engagement in learning programmes to increase health literacy and careseeking behaviours.
9. Accountability – e.g. annual independent national and subnational adolescents' health / health sector review.
10. Emergency leadership and governance; health workforce; medical products, vaccines and technology; health information; health financing; and service delivery – e.g. emergency medical services system and mass-casualty management.

C. Multisectoral interventions
Finance and social protection
1. Reduce poverty, including through the use of gender- and child-sensitive cash transfer programmes designed to improve health.
2. Implement social protection and assistance measures ensuring access for adolescents.
3. Strengthen access to health insurance to decrease the impact of catastrophic out-of-pocket health spending, and to insurance related to other essential services and goods.

Education
4. Enable girls and boys to complete quality primary and secondary education, including by removing barriers that suppress demand for education.
5. Ensure access to education in humanitarian settings and in marginalized and hard-to-reach areas, including for individuals with disabilities.

Gender
6. Promote women's social, economic and political participation.
7. Enforce legislation to prevent violence against women and girls and ensure an appropriate response when it occurs.
8. Promote gender equality in decision-making in households, workplaces and communities and at national level.
9. Prevent discrimination against women in communities, education, political, economic and public life.

Protection: registration, law and justice
10. Strengthen systems to register every birth, death and cause of death and to conduct death audits.
11. Provide protection services for adolescents that are age- and gender-appropriate.
12. Establish and enact a legal framework for protection, ensuring universal access to legal services (including to register human rights violations and have recourse to remedial action against them).

Water and sanitation
13. Provide universal access to safely managed, affordable and sustainable drinking water.
14. Invest in education on the importance of safely managed water use and infrastructure in households, communities, schools and health facilities.
15. Provide universal access to improved sanitation facilities and hygiene measures and end open defecation.
16. Encourage implementation of sanitation safety plans.

Agriculture and nutrition
17. Enhance food security, especially in communities with a high poverty and mortality burden.
18. Protect, promote and support optimal nutrition, including legislation on marketing of breast milk substitutes and of foods high in saturated fats, trans-fatty acids, sugars or salt.

Appendices

Appendix II. (continued)
The Global Strategy's broader interventions that are important to adolescent health

Environment and energy

19. Reduce household and ambient air pollution through the increased use of clean energy fuels and technologies in the home (for cooking, heating, lighting).
20. Take steps to mitigate and adapt to climate changes that affect the health of adolescents.
21. Eliminate non-essential uses of lead (e.g. in paint) and mercury (e.g. in health care and artisanal mining) and ensure the safe recycling of lead- or mercury-containing waste.
22. Reduce air pollution and climate emissions and improve green spaces by using low-emissions technology and renewable energy.

Labour and trade

23. Expand opportunities for productive employment.
24. Ensure gender equality.
25. Enforce decent working conditions.
26. Provide entitlements for parental leave and for childcare for working parents, and promote incentives for flexible work arrangements for men and women.
27. Detect and systematically eliminate child labour.
28. Create a positive environment for business and trade with regulations to protect and promote the health and well-being of individuals and populations.

Infrastructure, information and communication technologies and transport

29. Build health-enabling urban environments for adolescents, through improved access to green spaces and walking and cycling networks that offer dedicated transit, safe mobility and physical activity.
30. Develop healthy, energy-efficient and durable housing that is resilient to extremes of heat and cold, storms, natural disasters and climate change.
31. Ensure that home, work and leisure spaces are accessible to adolescents with disabilities.
32. Ensure adequate health, education and work facilities and improve access by building roads.
33. Provide safe transportation to health, education and work facilities, including during emergencies.
34. Improve access to information and communication technologies, including mobile phones.
35. Improve road safety, including through mandatory wearing of seat-belts and cycle and motorcycle helmets.
36. Improve regulation and compliance of drivers, including introduction of a graduated driving licence that restricts driving options for inexperienced drivers.

Appendix III.
WHO region and country income status as used in the 2015 Global Health Estimates

WHO AFRICAN REGION LMICS	
Algeria	
Angola	
Benin	
Botswana	
Burkina Faso	
Burundi	
Cabo Verde	
Cameroon	
Central African Republic	
Chad	
Comoros	
Congo	
Côte d'Ivoire	
Democratic Republic of the Congo	
Eritrea	
Ethiopia	
Gabon	
Gambia	
Ghana	
Guinea	
Guinea-Bissau	
Kenya	
Lesotho	
Liberia	
Madagascar	
Malawi	
Mali	
Mauritania	
Mauritius	
Mozambique	
Namibia	
Niger	
Nigeria	
Rwanda	
Sao Tome and Principe	
Senegal	
Seychelles	
Sierra Leone	
South Africa	
South Sudan	
Swaziland	
Togo	
Uganda	
United Republic of Tanzania	
Zambia	
Zimbabwe	

WHO AMERICAS REGION LMICS	
Argentina	
Belize	
Bolivia (Plurinational State of)	
Brazil	
Colombia	
Costa Rica	
Cuba	
Dominica	
Dominican Republic	
Ecuador	
El Salvador	
Grenada	
Guatemala	
Guyana	
Haiti	
Honduras	
Jamaica	
Mexico	
Nicaragua	
Panama	
Paraguay	
Peru	
Saint Lucia	
Saint Vincent and the Grenadines	
Suriname	
Venezuela (Bolivarian Republic of)	

Appendices

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Appendices

Appendix III. (continued)
WHO region and country income status as used in the 2015 Global Health Estimates

WHO EASTERN MEDITERRANEAN REGION LMICS	
Afghanistan	
Djibouti	
Egypt	
Iran (Islamic Republic of)	
Iraq	
Jordan	
Lebanon	
Libya	
Morocco	
Pakistan	
Somalia	
Sudan	
Syrian Arab Republic	
Tunisia	
West Bank and Gaza Strip	
Yemen	

WHO EUROPEAN REGION LMICS	
Albania	
Armenia	
Azerbaijan	
Belarus	
Bosnia and Herzegovina	
Bulgaria	
Georgia	
Hungary	
Kazakhstan	
Kyrgyzstan	
Montenegro	
Republic of Moldova	
Romania	
Serbia	
Tajikistan	
The former Yugoslav Republic of Macedonia	
Turkey	
Turkmenistan	
Ukraine	
Uzbekistan	

WHO SOUTH-EAST ASIA REGION LMICS	
Bangladesh	
Bhutan	
Democratic People's Republic of Korea	
India	
Indonesia	
Maldives	
Myanmar	
Nepal	
Sri Lanka	
Thailand	
Timor-Leste	

WHO WESTERN PACIFIC REGION LMICS	
Cambodia	
China	
Cook Islands	
Fiji	
Kiribati	
Lao People's Democratic Republic	
Malaysia	
Marshall Islands	
Micronesia (Federated States of)	
Mongolia	
Nauru	
Niue	
Palau	
Papua New Guinea	
Philippines	
Samoa	
Solomon Islands	
Tonga	
Tuvalu	
Vanuatu	
Viet Nam	

ALL HICS	WHO REGION
Andorra	European
Antigua and Barbuda	Americas
Australia	Western Pacific
Austria	European
Bahamas	Americas
Bahrain	Eastern Mediterranean
Barbados	Americas
Belgium	European
Brunei Darussalam	Western Pacific
Canada	Americas
Chile	Americas
Croatia	European
Cyprus	European
Czech Republic	European
Denmark	European
Equatorial Guinea	African
Estonia	European
Finland	European
France	European
Germany	European
Greece	European
Iceland	European
Ireland	European
Israel	European
Italy	European
Japan	Western Pacific
Kuwait	Eastern Mediterranean
Latvia	European

ALL HICS	WHO REGION
Lithuania	European
Luxembourg	European
Malta	European
Monaco	European
Netherlands	European
New Zealand	Western Pacific
Norway	European
Oman	Eastern Mediterranean
Poland	European
Portugal	European
Puerto Rico	Americas
Qatar	Eastern Mediterranean
Republic of Korea	Western Pacific
Russian Federation	European
Saint Kitts and Nevis	Americas
San Marino	European
Saudi Arabia	Eastern Mediterranean
Singapore	Western Pacific
Slovakia	European
Slovenia	European
Spain	European
Sweden	European
Switzerland	European
Trinidad and Tobago	Americas
United Arab Emirates	Eastern Mediterranean
United Kingdom	European
United States of America	Americas
Uruguay	Americas

Appendices

Appendix IV.
List of country case studies of adolescent health interventions or programmes

Section 3:
Case study 1. India's national menstrual hygiene management programme for rural adolescent girls
Case study 2. Thailand's driving education and training programmes for young novice motorcycle drivers
Case study 3. Brazil's programme to reduce alcohol-related violence among high-risk youth
Case study 4. Nicaragua's voucher programme to increase access to sexual and reproductive health care among underserved adolescents
Case study 5. Mozambique's peer support groups to promote treatment adherence among adolescents living with HIV
Case study 6. Bangladesh's community initiatives to stop open defecation
Case study 7. The Republic of Korea's promotion of healthy diets through schools
Case study 8. Bhutan's project to enhance skills and capacities of parents of adolescents
Case study 9. Youth mentoring and counselling during a protracted crisis in the West Bank and Gaza Strip

Section 4:
Case study 10. Zambia's adolescent health situation analysis and strategic plan
Case study 11. Scotland's action framework and policy landscape analysis to improve young people's health
Case study 12. Mongolia's adolescent health situation analysis and programme priority setting
Case study 13. Bhutan's comprehensive national adolescent health programming

Section 5:
Case study 14. England's teenage pregnancy strategy
Case study 15. The USA's expansion of minors' access to STI services
Case study 16. The Republic of Moldova's addressing of adolescent health and development in state medical university curricula
Case study 17. Argentina's national programme for integrated adolescent health
Case study 18. Rwanda's comprehensive school health policy
Case study 19. The Sahel region's initiatives to empower girls

Section 6:
Case study 20. South Africa's evaluation of standards to improve the quality of adolescent services in clinics

Annex 3:
Case study A3.1. Egypt's youth-friendly health services and health education in schools
Case study A3.2. Zimbabwe's youth-friendly health services to reduce unintended pregnancies
Case study A3.3. The Islamic Republic of Iran's school mental health promotion project
Case study A3.4. Sweden's national programme to provide school meals to all students
Case study A3.5. Brazil's experience with curriculum-based sex education in schools
Case study A3.6. Brazil's improvement of road safety legislation
Case study A3.7. Iraq's post-conflict innovative emergency medical services
Case study A3.8. Viet Nam's promotion of child motorcycle helmet use
Case study A3.9. Colombia's upgrading of low-income urban neighbourhoods
Case study A3.10. The Russian Federation's mentoring programme
Case study A3.11. The former USSR's strict alcohol regulation
Case study A3.12. The USA's home visits to prevent rapid repeat adolescent pregnancies
Case study A3.13. South Africa's reduced age of consent for HIV testing
Case study A3.14. Namibia's strengthened linkage of testing and support services for adolescents living with HIV
Case study A3.15. The United Republic of Tanzania's drop-in centre for young people who sell sex or inject drugs
Case study A3.16. Nepal's approach to improved food hygiene
Case study A3.17. Mauritania's improvement of water quality, sanitation and hygiene in vulnerable schools
Case study A3.18. Papua New Guinea's school WASH facilities designed by adolescent girls
Case study A3.19. Samoa's family programme to improve health and combat noncommunicable diseases
Case study A3.20. Pakistan's promotion of physical activity for girls
Case study A3.21. Costa Rica's life-skills programme to prevent adolescent alcohol and tobacco use Case study A3.22. New Zealand's multisectoral programmes to reduce suicide among Māori youth
Case study A3.23. Sri Lanka's targeted pesticide bans
Case study A3.24. Hong Kong's (China SAR) initiatives to prevent suicide among youth and adults
Case study A3.25. Nigeria's safe spaces for girls and women displaced by the militant group Boko Haram
Case study A3.26. Malawi's youth clubs for adolescent girls and boys displaced by floods
Case study A3.27. Ethiopia's refugee camp distribution of menstrual hygiene kits to promote girls' school attendance

Annex 5:
Case study A5.1. Nepal's transition from projects to a national adolescent sexual and reproductive health programme
Case study A5.2. The USA's school health services programme
Case study A5.3. Portugal's healthy schools programme
Case study A5.4. Turkey's multi-sectoral action on drug dependence
Case study A5.5. Sierra Leone's involvement of children in a truth and reconciliation commission
Case study A5.6. Argentina's municipal budgeting for youth participation
Case study A5.7. Youth violence reduction, Medellín, Colombia
Case study A5.8. Malawi's cash transfer scheme as a vehicle to achieve public health objectives
Case study A5.9. South Africa's national policy on informed consent for testing children for HIV
Case study A5.10. Kyrgyzstan's youth-centred care
Case study A5.11. Morocco's national programme for school and university health
Case study A5.12. India's contracting out of reproductive and child health services through the Mother NGO Scheme
Case study A5.13. Multicountry mobile phone games to create HIV/AIDS awareness in Asia and Africa
Case study A5.14. Australia's HPV vaccination programme
Case study A5.15. Chile's national programme for integrated adolescent and youth health
Case study A5.16. The Cardiff Model of violence prevention
Case study A5.17. Australia's mental health and resilience curriculum for parents, teachers, and students
Case study A5.18. Scotland's youth pregnancy and parenthood strategy governance
Case study A5.19. Mozambique's multisectoral adolescent sexual and reproductive health programme
Case study A5.20. Ukraine's school-based substance-use-prevention curricula
Case study A5.21. Jordan's response to child marriage among Syrian refugees
Case study A5.22. South Africa's participatory, same-sex health education programme
Case study A5.23. El Salvador's intersectoral experience in the empowerment of adolescent girls
Case study A5.24. Australia's government funding of positive development approaches in programming
Case study A5.25. Liberia's secure funding for priority interventions for adolescent health

Annex 6:
Case study A6.1. Lithuania's use of routine data to monitor the effect of a Year of Sobriety
Case study A6.2. England's monitoring and evaluation of its national teenage pregnancy strategy
Case study A6.3. India's evaluation of an adolescent sexual and reproductive health services project
Case Study A6.4. India's adolescent-friendly health services: a review of 15 years of evaluation research

References

1. EWEC. The global strategy for women's, children's and adolescents' health (2016–2030). New York; 2015. (http://www.who.int/pmnch/media/events/2015/gs_2016_30.pdf).

2. EWEC, WHO. Operational framework for the global strategy for women's, children's and adolescents' health. New York; 2016. (http://www.who.int/life-course/partners/global-strategy/ewec-operational-framework/en/).

3. EWEC. Indicator and monitoring framework for the global strategy for women's, children's and adolescents' health. New York; 2016. (http://www.who.int/life-course/publications/gs-Indicator-and-monitoring-framework.pdf).

4. Upadhyay J. Ensuring meaningful child and youth participation in the fight against commercial sexual exploitation of children: The ECPAT experience; 2007 (http://www.ecpat.org/wp-content/uploads/2016/10/cyp-report-ensuring-meaningful-_eng.pdf).

5. YouthNet, Family Health International, Advocates for Youth. Youth participation guide: assessment, planning, and implementation. Arlington; 2005. (https://www.advocatesforyouth.org/publications/publications-a-z/1652-youth-participation-guide-assessment-planning-and-implementation).

6. DFID–CSO Youth Working Group. Youth participation in development: a guide for development agencies and policy makers. London; 2010 (http://restlessdevelopment.org/file/youth-participation-in-development-pdf).

7. French M, Bhattacharya S, Olenik C. Youth engagement in development: effective approaches and action-oriented recommendations for the field. USAID: Washington DC; 2014. (http://pdf.usaid.gov/pdf_docs/pa00jp6s.pdf).

8. WHO, UNAIDS. Global standards for quality health-care services for adolescents. A guide to implement a standards-driven approach to improve the quality of health-care services for adolescents. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/183935/1/9789241549332_vol1_eng.pdf).

9. WHO. Global framework for accelerated action for the health of adolescents (AA-HA! framework): results of the first round of consultations – executive summary. Geneva; 2016. (http://www.who.int/maternal_child_adolescent/topics/adolescence/framework-consultation-report/en/).

10. OHCHR. Convention on the rights of the child. New York; 1989. (http://www.ohchr.org/en/professionalinterest/pages/crc.aspx).

11. United Nations Economic and Social Council. General comment No. 22 (2016) on the right to sexual and reproductive health, (article 12 of the International Covenant on Economic, Social and Cultural Rights). Committee on Economic, Social and Cultural Rights. (E/C.12/GC/22; http://tbinternet.ohchr.org/_layouts/treatybodyexternal/download.aspx?symbolno=e/c.12/gc/22&lang=en).

12. United Nations Committee on the Rights of the Child. General comment No. 20 (2016) on the implementation of the rights of the child during adolescence. (CRC/C/GC/20; http://www.refworld.org/docid/589dad3d4.html).

13. United Nations Committee on the Rights of the Child. General comment No. 15 (2013), on the right of the child to the enjoyment of the highest attainable standard of health. (CRC/C/GC/15; https://www.each-for-sick-children.org/images/2013/general_comment_no_15_right_of_child_to_health_-_17_april-1.pdf).

14. United Nations Committee on the Rights of the Child. General comment No. 14 (2013) on the right of the child to have his or her best interests taken as a primary consideration. (CRC/C/GC/14; http://www2.ohchr.org/english/bodies/crc/docs/gc/crc_c_gc_14_eng.pdf).

15. United Nations Committee on the Rights of the Child. General Comment No. 12 (2009), on the right of the child to be heard. (CRC/C/GC/12; http://tbinternet.ohchr.org/_layouts/treatybodyexternal/download.aspx?symbolno=crc%2fc%2fgc%2f12&lang=en).

16. United Nations Committee on the Rights of the Child. General comment No. 4 (2003) on adolescent health and development in the context of the Convention on the Rights of the Child. (CRC/GC/2003/4; http://www.refworld.org/docid/4538834f0.html).

17. United Nations General Assembly. International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families. New York; 1990. (A/RES/45/158; http://www.refworld.org/docid/3ae6b3980.html).

18. United Nations General Assembly. Universal Declaration of Human Rights. New York; 1948. (http://www.ohchr.org/en/udhr/documents/udhr_translations/eng.pdf).

19. Convention on the Rights of Persons with Disabilities. In: United Nations Division for Social Policy and Development Disabilities CRPD [website]. (https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html).

20. United Nations General Assembly. Convention on the Elimination of all Forms of Discrimination Against Women. New York; 1979. (http://www.ohchr.org/documents/professionalinterest/cedaw.pdf).

21. WHO. Gender. In: WHO gender, equity and human rights [website]. (http://www.who.int/gender-equity-rights/understanding/gender-definition/en/).

22. The United Nations Interagency Task Force on Adolescent Girls. Girl power and potential: a joint programming framework for fulfilling the rights of marginalized adolescent girls. ILO, UNESCO, UNFPA, UNICEF, UNIFEM, WHO; 2009. (http://www.unfpa.org/sites/default/files/pub-pdf/ungirlsjointframeworkpdf.pdf).

23. UNFPA. The case for investing in young people as part of a national poverty reduction strategy. New York; 2010. (http://www.unfpa.org/publications/case-investing-young-people).

24. Barker G. What about boys? A literature review on the health and development of adolescent boys. Geneva: WHO; 2000. (http://whqlibdoc.who.int/hq/2000/who_fch_cah_00.7.pdf).

25. Boyar R, Levine D, Zensius N. TECHsex USA: youth sexuality and reproductive health in the digital age. Oakland: ISIS, Inc; 2011. (https://yth.org/wp-content/uploads/yth-youth-health-digital-age.pdf).

26. Parker I. Young people, sex and relationships: the new norms. London: Institute for Public Policy Research; 2014. (http://www.ippr.org/files/publications/pdf/young-people-sex-relationships_aug2014.pdf?noredirect=1).

27. Third A, Bellerose D, Dawkins U, Keltie E, Pihl K. Children's rights in the digital age: a download from children around the world. Melbourne: Young and Well Cooperative Research Centre; 2014. (https://www.unicef.org/publications/index_76268.html).

28. American College of Obstetricians and Gynecologists' Committee on Adolescent Health Care. Committee opinion No. 653 summary: concerns regarding social media and health issues in adolescents and young adults. Obstet Gynecol. 2016 Feb;127(2):414. (https://www.ncbi.nlm.nih.gov/pubmed/26942381).

29. Hamm M, Newton A, Chisholm A, Shulhan J, Milne A, Sundar P et al. Prevalence and effect of cyberbullying on children and young people: a scoping review of social media studies. JAMA Pediatrics. 2015;169(8):770-7. (http://jamanetwork.com/journals/jamapediatrics/article-abstract/2337786).

30. Bueti C, Pandi S, Carr J, Chiesa R, Bosco F, Cummings C et al. Guidlines for policy makers on child protection. Geneva: International Telecommunication Union; 2009. (https://www.itu.int/en/cop/documents/guidelines-policy%20makers-e.pdf).

31. Kuss DJ, Griffiths MD. Online gaming addiction in children and adolescents: a review of empirical research. J Behav Addict. 2012 Mar;1(1):3-22. (https://www.ncbi.nlm.nih.gov/pubmed/26166826).

32. Jonathan S, Porter-Armstrong A. Impact of multiplayer online role-playing games upon the psychosocial well-being of adolescents and young adults: reviewing the evidence. Psychiatry Journal. 2013;2013:464685. (http://dx.doi.org/10.1155/2013/464685).

33. Bailin A, Milanaik R, Adesman A. Health implications of new age technologies for adolescents: a review of the research. Current Opinion in Pediatrics. 2014;26(5):605-19. (http://www.medscape.com/medline/abstract/25160783).

34. Lam LT. Risk factors of internet addiction and the health effect of internet addiction on adolescents: a systematic review of longitudinal and prospective studies. Current Psychiatry Reports. 2014;16(11):1-9. (https://link.springer.com/article/10.1007/s11920-014-0508-2).

35. Moreno MA, Whitehill JM. Influence of social media on alcohol use in adolescents and young adults. Alcohol Research: current reviews. 2014;36(1):91. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc4432862/).

36. Smith PK, Thompson F, Davidson J. Cyber safety for adolescent girls: bullying, harassment, sexting, pornography, and solicitation. Current Opinion in Obstetrics and Gynecology. 2014;26(5):360-5. (http://journals.lww.com/co-obgyn/abstract/2014/10000/cyber_safety_for_adolescent_girls___bullying,.7.aspx).

37. WHO Regional Office for Africa. The health of the people: what works – the African regional health report 2014. Brazzaville; 2014. (http://apps.who.int/iris/bitstream/10665/137377/4/9789290232612.pdf).

38. Calado F, Alexandre J, Griffiths MD. Prevalence of adolescent problem gambling: a systematic review of recent research. Journal of Gambling Studies. 2016:1-28. (https://link.springer.com/article/10.1007/s10899-016-9627-5).

39. Aboujaoude E, Savage MW, Starcevic V, Salame WO. Cyberbullying: review of an old problem gone viral. J Adolesc Health. 2015;57(1):10-8. (http://www.sciencedirect.com/science/article/pii/s1054139x15001664).

40. Shek DT, Ma CM. A six-year longitudinal study of consumption of pornographic materials in Chinese adolescents in Hong Kong. J Pediatr Adolesc Gynecol. 2016;29(1):S12-S21. (http://www.jpagonline.org/article/S1083-3188(15)00325-3/abstract).

41. Svedin CG, Åkerman I, Priebe G. Frequent users of pornography. A population based epidemiological study of Swedish male adolescents. Journal of Adolescence. 2011;34(4):779-88. (http://www.sciencedirect.com/science/article/pii/S0140197110001387).

42. Peden M, Scurfield R, Sleet D, Mohan D, Hyder AA, Jarawan E et al. World report on road traffic injury prevention. Geneva: WHO; 2004. (http://cdrwww.who.int/violence_injury_prevention/publications/road_traffic/world_report/intro.pdf).

43. WHO. Global status report on road safety 2013: supporting a decade of action. Geneva; 2013. (http://www.who.int/iris/bitstream/10665/78256/1/9789241564564_eng.pdf?ua=1).

44. WHO, UNICEF. World report on child injury prevention: Geneva; 2008. (http://www.who.int/violence_injury_prevention/child/injury/world_report/en/).

45. WHO. Global report on drowning: preventing a leading killer. Geneva; 2014. (http://www.who.int/violence_injury_prevention/global_report_drowning/final_report_full_web.pdf).

46. WHO. Drowning prevention in the South-East Asia Region–2014. New Delhi: WHO Regional Office for South-East Asia; 2014. (http://www.searo.who.int/entity/disabilities_injury_rehabilitation/documents/infosheetdrowningprevention-sear2014.pdf?ua=1).

47. WHO. A WHO plan for burn prevention and care. Geneva; 2008. (http://apps.who.int/iris/bitstream/10665/97852/1/9789241596299_eng.pdf).

48. WHO. Preventing youth violence: an overview of the evidence. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/181008/1/9789241509251_eng.pdf?ua=1&ua=1&ua=1).

References

49. WHO, London School of Hygiene and Tropical Medicine. Preventing intimate partner and sexual violence against women: taking action and generating evidence. Geneva: WHO; 2010. (http://www.who.int/violence_injury_prevention/publications/violence/9789241564007_eng.pdf).

50. Child maltreatment fact sheet (reviewed September 2016). In: WHO media centre [website]. (http://www.who.int/entity/mediacentre/factsheets/fs150/en/).

51. Suicide fact sheet (updated March 2017). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs398/en/).

52. WHO. INSPIRE: seven strategies for ending violence against children. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/207717/1/9789241565356-eng.pdf).

53. WHO. Risk and protective factors affecting adolescent reproductive health in developing countries. Geneva; 2004. (http://158.132.116.146/adh/2_ad_sexual_reproductiveh/who%20-%20risk%20and%20protective%20factors%20affecting%20asrh%20in%20developi.pdf).

54. WHO. HIV and adolescents: guidance for HIV testing and counselling and care for adolescents living with HIV. Recommendations for a public health approach and considerations for policy-makers and managers. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/94334/1/9789241506168_eng.pdf).

55. WHO. Technical brief: HIV and young people who inject drugs. Geneva; 2015. (http://www.unaids.org/sites/default/files/media_asset/2015_young_people_drugs_en.pdf).

56. Wamoyi J, Stobeanau K, Bobrova N, Abramsky T, Watts C. Transactional sex and risk for HIV infection in sub-Saharan Africa: a systematic review and meta-analysis. Journal of the International AIDS Society. 2016;19(1). (http://www.jiasociety.org/index.php/jias/article/view/20992).

57. WHO. WHO guidelines on preventing early pregnancy and poor reproductive health outcomes among adolescents in developing countries. Geneva; 2011. (http://www.who.int/immunization/hpv/target/preventing_early_pregnancy_and_poor_reproductive_outcomes_who_2006.pdf).

58. WHO. Adolescent pregnancy: issues in adolescent health and development. WHO discussion papers on adolescence. Geneva; 2004. (http://apps.who.int/iris/bitstream/10665/42903/1/9241591455_eng.pdf).

59. Rah JH, Christian P, Shamim AA, Arju UT, Labrique AB, Rashid M. Pregnancy and lactation hinder growth and nutritional status of adolescent girls in rural Bangladesh. The Journal of Nutrition. 2008;138(8):1505-11. (http://jn.nutrition.org/content/138/8/1505.full.pdf+html).

60. Rah JH. Opinion: Adolesent pregnancy – its impact on the growth and nutritional status of young mothers: what does evidence say. Sight and Life. 2013;27(3):37-8. (http://www.sightandlife.org/fileadmin/data/Magazine/2013/27_3_2013/opinion_adolescent_pregnancy.pdf).

61. Prüss-Üstün A, Corvalán C. Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks. Geneva: WHO; 2016. (http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf).

62. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the global burden of disease study 2010. Lancet. 2012;380(9859):2224-60. (http://www.thelancet.com/pdfs/journals/lancet/piis0140-6736%2812%2961766-8.pdf).

63. WHO. Toolkit for delivering the 5A's and 5R's brief tobacco interventions to TB patients in primary care. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/112835/1/9789241506953_eng.pdf).

64. Helath Protection Surveillance Center. Infectious intestinal disease: public health and clinical guidance. Dublin; 2012. (http://www.hpsc.ie/a-z/gastroenteric/gastroenteritisoriid/guidance/file,13492,en.pdf).

65. WHO. Control of epidemic meningococcal disease. WHO practical guidelines. 2nd edition. Emerging and other communicable diseases, surveillance and control. Geneva; 1998. (WHO/EMC/BAC/98.3; http://www.who.int/csr/resources/publications/meningitis/whoemcbac983.pdf).

66. WHO. Meningococcal vaccines: WHO position paper. Geneva; 2011. (http://www.who.int/wer/2011/wer8647.pdf?ua=1).

67. Meningococcal meningitis fact sheet (updated November 2015). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs141/en/).

68. WHO, Roll Back Malaria Partnership. Disease surveillance for malaria control: an operational manual. Geneva; 2012. (http://apps.who.int/iris/bitstream/10665/44851/1/9789241503341_eng.pdf).

69. WHO. Roadmap for childhood tuberculosis: towards zero deaths. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/89506/1/9789241506137_eng.pdf).

70. WHO end TB strategy: global strategy and targets for tuberculosis prevention, care and control after 2015. In: WHO programmes/tuberclulosis (TB) [website]. (http://www.who.int/tb/post2015_strategy/en/).

71. Health systems strengthening glossary. In: WHO programmes/health systems [website]. (http://www.who.int/healthsystems/hss_glossary/en/index8.html).

72. Congenital anomalies fact sheet (updated September 2016). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs370/en/).

73. Belson M, Kingsley B, Holmes A. Risk factors for acute leukemia in children: a review. Environmental Health Perspectives. 2006;115(1):138-45. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc1817663/pdf/ehp0115-000138.pdf).

74. WHO, World Heart Federation, World Stroke Organization. Global atlas on cardiovascular disease prevention and control. Geneva; 2011. (http://www.who.int/cardiovascular_diseases/publications/atlas_cvd/en/).

75. Agirbasli M, Tanrikulu AM, Berenson GS. Metabolic syndrome: bridging the gap from childhood to adulthood. Cardiovasc Ther. 2016;34(1):30-6. (http://onlinelibrary.wiley.com/doi/10.1111/1755-5922.12165/epdf).

76. WHO. Global surveillance, prevention and control of chronic respiratory diseases: a comprehensive approach. Geneva; 2007. (http://www.who.int/gard/publications/gard_manual/en/).

77. Asthma fact sheet (updated November 2013). In: WHO media centre [website]. (http://www.who.int/mediacentre/factsheets/fs307/en/).

78. Ezzati M, Lopez A, Rodgers A, Murray C, editors. Comparative quantification of health risks:. global and regional burden of disease attributable to selected major risk factors. Geneva: WHO; 2004;1:1987-97. (http://apps.who.int/iris/bitstream/10665/42792/1/9241580348_eng_volume1.pdf).

79. WHO. Nutrition in adolescence – issues and challenges for the health sector. Issues in adolescent health and development. WHO discussion papers on adolescence. Geneva; 2005. (http://apps.who.int/iris/bitstream/10665/43342/1/9241593660_eng.pdf).

80. WHO. Epidemiology and management of common skin diseases in children in developing countries. Discussion papers on child health. Geneva; 2005. (WHO/FCH/CAH/05.12; http://apps.who.int/iris/bitstream/10665/69229/1/who_fch_cah_05.12_eng.pdf).

81. Jans T, Taneli Y, Warnke A. Suicide and self-harming behaviour. In: Rey JM, editor. IACAPAP e-textbook of child and adolescent mental health. Geneva: International Association for Child and Adolescent Psychiatry and Allied Professions; 2012:1-35. (http://iacapap.org/wp-content/uploads/e.4-suicide-072012.pdf).

82. Kowalski RM, Giumetti GW, Schroeder AN, Lattanner MR. Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth. American Psychological Association; 2014. 140(4);1073-1137. (http://dx.doi.org/10.1037/a0035618).

83. WHO. Preventing suicide: a global imperative. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/131056/1/9789241564779_eng.pdf?ua).

84. Van Geel M, Vedder P, Tanilon J. Relationship between peer victimization, cyberbullying, and suicide in children and adolescents: a meta-analysis. JAMA Pediatrics. 2014;168(5):435-42. (http://jamanetwork.com/journals/jamapediatrics/fullarticle/1840250).

85. WHO. Prevention of mental disorders: effective interventions and policy options. Summary report. Geneva; 2004. (http://apps.who.int/iris/handle/10665/43027).

86. Thapar A, Collishaw S, Pine D, Thapar AK. Depression in adolescence. Lancet. 2012;379(9820):1056-67. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3488279/pdf/nihms415614.pdf).

87. Beesdo K, Knappe S, Pine DS. Anxiety and anxiety disorders in children and adolescents: developmental issues and implications for DSM-V. Psychiatric Clinics of North America. 2009;32(3):483-524. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3018839/pdf/nihms258242.pdf).

88. Marshall EJ. Adolescent alcohol use: risks and consequences. Alcohol and Alcoholism. 2014;49(2):160-4. (https://academic.oup.com/alcalc/article/49/2/160/205895/adolescent-alcohol-use-risks-and-consequences).

89. WHO. Prevention of psychoactive substance use. A selected review of what works in the area of prevention. Geneva; 2002. (http://www.who.int/mental_health/evidence/en/prevention_intro.pdf).

90. WHO. World Report on violence and health. Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, editors. Geneva; 2002. (http://apps.who.int/iris/bitstream/10665/42495/1/9241545615_eng.pdf).

91. EWEC. A global strategy for every woman every child in every setting. EWEC Technical Content Workstream Working Group on Humanitarian Challenges (21/03/2015). (http://www.everywomaneverychild.org/wp-content/uploads/2015/02/15__revised_ewec_humanitarian150322rkmt-hd_11__2015-03-24.pdf).

92. WHO. WHO's six-year strategic plan to minimize the health impact of emergencies and disasters; 2014–2019. Geneva; 2015. (http://www.who.int/hac/ercm_strategic_plan_web.pdf?ua=1).

93. WHO. Adolescent friendly health services: an agenda for change. Geneva; 2002. (http://apps.who.int/iris/bitstream/10665/67923/1/who_fch_cah_02.14.pdf).

94. WHO. Making health services adolescent friendly: developing national quality standards for adolescent friendly health services. Geneva; 2012 (http://apps.who.int/iris/bitstream/10665/75217/1/9789241503594_eng.pdf?ua=1).

95. WHO. Adolescent job aid: a handy desk reference tool for primary level health workers. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44387/1/9789241599962_eng.pdf).

96. Wahba M, Roudi-Fahimi F. The need for reproductive health education in schools in Egypt. Policy brief. Washington DC: Population Reference Bureau; 2012. (http://www.prb.org/pdf12/reproductivehealth-education-egypt.pdf).

97. Abdel-Tawab N, Saher S, El Nawawi N, editors. Breaking the silence: learning about youth sexual and reproductive health in Egypt. Cairo: Population Council; 2013. (https://www.popcouncil.org/uploads/pdfs/2013pgy_youthsrhegypt.pdf).

98. UNESCO. Puberty education & menstrual hygiene management. Paris; 2014. (http://unesdoc.unesco.org/images/0022/002267/226792e.pdf).

References

99. WHO. Brief sexuality-related communication: recommendations for a public health approach. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/170251/1/9789241549004_eng.pdf).

100. UNESCO, WHO, UNICEF, UNODC, EDC, PDCP et al. World education forum 2000, final report: focusing resources on effective school health – a fresh start to enhancing the quality and equity of education. New York: FRESH; 2000. (https://www.unicef.org/lifeskills/files/freshdocument.pdf).

101. WHO. Healthy nutrition: an essential element of a health-promoting school. Geneva; 1998. (http://apps.who.int/iris/handle/10665/63907?mode=full).

102. WHO. Creating an environment for emotional and social well-being: an important responsibility of a health promoting and child-friendly school. Information series on school health document 10. Geneva; 2003. (http://apps.who.int/iris/handle/10665/42819).

103. WHO. Skills for health. Skills-based health education including life skills: an important component of a child-friendly/health-promoting school. Information series on school health document 9. Geneva; 2003. (http://www.who.int/school_youth_health/media/en/sch_skills4health_03.pdf).

104. WHO. Violence prevention: an important element of a health-promoting school. Information series on school health document 3. Geneva; 1998. (http://apps.who.int/iris/handle/10665/64327).

105. WHO. Family life, reproductive health, and population education: key elements of a health-promoting school. Information series on school health document 8. Geneva; 2003. (http://www.who.int/school_youth_health/media/en/family_life.pdf).

106. WHO. Preventing HIV/AIDS/STI and related discrimination: an important responsibility of health promoting schools. Information series on school health document 6. Geneva; 1998. (http://www.who.int/school_youth_health/media/en/90.pdf).

107. WHO. Promoting physical activity in schools: an important element of a health-promoting school. Information series on school health document 12. Geneva; 2007. (http://apps.who.int/iris/bitstream/10665/43733/1/9789241595995_eng.pdf).

108. WHO. Strengthening interventions to reduce helminth infections. information series on school health document 1. Geneva; 1997. (http://www.who.int/school_youth_health/media/en/95.pdf).

109. WHO. Tobacco use prevention: an important entry point for the development of health-promoting schools. Information series on school health document 5. Geneva; 1998. (http://apps.who.int/iris/handle/10665/65608).

110. WHO. Sun protection: an essential element of health-promoting schools. Information series on school health document 7. Geneva; 2002. (http://apps.who.int/iris/bitstream/10665/67400/1/who_nph_02.6.pdf).

111. WHO. Oral health promotion: an essential element of a health-promoting school. WHO information series on school health document 11. Geneva; 2003. (http://www.who.int/oral_health/media/en/orh_school_doc11.pdf).

112. WHO. The physical school environment: an essential component of a health-promoting school. Information series on school health document 2. Geneva; 2004. (http://www.who.int/school_youth_health/media/en/physical_sch_environment.pdf?ua=1).

113. WHO. Mental health policy and service guidance package: child and adolescent mental health policies and plans. Geneva; 2005. (http://www.who.int/mental_health/policy/childado_mh_module.pdf).

114. WHO. Report of the commission on ending childhood obesity. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/204176/1/9789241510066_eng.pdf).

115. WHO Regional Office for Europe. Improving the lives of children and young people: case studies from Europe. Volume I, early years. Copenhagen; 2013. (http://www.euro.who.int/__data/assets/pdf_file/0006/232485/e96924.pdf).

116. WHO Regional Office for the Western Pacific. Be smart drink water: a guide for school principals in restricting the sale and marketing of sugary drinks in and around schools. Manila; 2016. (http://iris.wpro.who.int/handle/10665.1/13218).

117. UNESCO. International technical guidance on sexuality education: an evidence-informed approach for schools, teachers and health educators. Paris; 2009. (http://unesdoc.unesco.org/images/0018/001832/183281e.pdf).

118. UNFPA. UNFPA Operational guidance for comprehensive sexuality education: a focus on human rights and gender. New York; 2014. (http://www.unfpa.org/sites/default/files/pub-pdf/unfpa_operationalguidance_web3.pdf).

119. Andrade HH, Mello MB, Sousa MH, Makuch MY, Bertoni N, Faúndes A. Changes in sexual behavior following a sex education program in Brazilian public schools. Cadernos de Saúde Pública. 2009;25:1168-76. (http://www.scielo.br/pdf/csp/v25n5/23.pdf).

120. WHO. WHO guidelines on preventing early pregnancy and poor reproductive health outcomes among adolescents in developing countries. Geneva; 2011. (http://www.who.int/immunization/hpv/target/preventing_early_pregnancy_and_poor_reproductive_outcomes_who_2006.pdf).

121. WHO. Promoting adolescent sexual and reproductive health through schools in low income countries: an information brief. Geneva; 2008. (http://apps.who.int/iris/bitstream/10665/70102/1/who_fch_cah_adh_09.03_eng.pdf?ua=1&ua=1).

122. UNESCO. Emerging evidence, lessons and practice in comprehensive sexuality education a global review 2015. Paris; 2015. (https://www.unfpa.org/sites/default/files/pub-pdf/cse_global_review_2015.pdf).

123. House S, Mahon T, Cavill S. Menstrual hygiene matters; a resource for improving menstrual hygiene around the world. WaterAid: 2012. (http://www.wateraid.org/what-we-do/our-approach/research-and-publications/view-publication?id=02309d73-8e41-4d04-b2ef-6641f6616a4f).

124. Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. PLoS One. 2013;8(4):e62004. (https://www.ncbi.nlm.nih.gov/pubmed/23637945).

125. Sommer M, Caruso BA, Sahin M, Calderon T, Cavill S, Mahon T et al. A time for global action: addressing girls' menstrual hygiene management needs in schools. PLoS Med. 2016;13(2):e1001962. (http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001962).

126. The Partnership for Maternal, Newborn & Child Health. PMNCH knowledge summary No. 30. Water, sanitation and hygiene – the impact on RMNCH. Geneva; 2014. (http://www.who.int/pmnch/knowledge/publications/summaries/ks30.pdf?ua=1).

127. Lerner RM, Lerner JV. The positive development of youth. Report of the findings from the first seven years of the 4-H study of positive youth development. Chevy Chase: Tufts University; 2011. (https://ase.tufts.edu/iaryd/documents/4hpydstudywave7.pdf).

128. National Registry of Evidence-Based Programs and Practices (NREPP). Learning center literature review: positive youth development. Rockville: Substance Abuse and Mental Health Services Administration (SAMHSA); 2015. (http://www.nrepp.samhsa.gov/docs/literatures/nrepp%20lit%20review_positive%20youth%20development.pdf).

129. Catalano RF, Berglund ML, Ryan JAM, Lonczak HS, Hawkins JD. Positive youth development in the United States: research findings on evaluations of positive youth development programs. The Annals of the American Academy of Political and Social Science. 2004;591(1):98-124. (http://journals.sagepub.com/doi/abs/10.1177/0002716203260102).

130. Cook P. Understanding the effects of adolescent participation in health programmes. The International Journal of Children's Rights. 2008;16(1):121-39. (http://booksandjournals.brillonline.com/content/journals/10.1163/092755608x267139).

131. Villa-Torres L, Svanemyr J. Ensuring youth's right to participation and promotion of youth leadership in the development of sexual and reproductive health policies and programs. J Adolesc Health. 2015;56(1):51-7. (https://www.ncbi.nlm.nih.gov/pubmed/25528979).

132. Save the Children, UNICEF. Every child's right to be heard: a resource guide on the UN committee on the rights of the child general comment no.12. London; 2011. (https://www.unicef.org/french/adolescence/files/every_childs_right_to_be_heard.pdf).

133. UNFPA. UNFPA framework for action on adolescents & youth. Opening doors with young people: 4 keys. New York; 2007. (https://www.unfpa.org/sites/default/files/pub-pdf/framework_youth.pdf).

134. ITU. Guidelines for children on child online protection. Geneva; second edition 2016. (https://www.itu.int/en/cop/documents/s-gen-cop.child-2016-pdf-e%5b1%5d.pdf).

135. ITU, UNICEF. Guidelines for industry on child online protection. Geneva; 2015. (https://www.unicef.org/csr/files/cop_guidelines_english.pdf).

136. WHO. eHealth and innovation in women's and children's health: a baseline review. Based on the findings of the 2013 survey of CoIA countries by the WHO Global Observatory for eHealth. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/111922/1/9789241564724_eng.pdf).

137. WHO. MPOWER: a policy package to reverse the tobacco epidemic. 2008. (http://www.who.int/tobacco/mpower/mpower_english.pdf).

138. ITU. Guidelines for parents, guardians and educators on child online protection. Geneva; 2016. (http://www.itu.int/pub/s-gen-cop.educ-2016).

139. WHO. mHealth: new horizons for health through mobile technologies. Based on the findings of the second global survey on eHealth. Geneva; 2011. (http://www.who.int/goe/publications/goe_mhealth_web.pdf).

140. Guse K, Levine D, Martins S, Lira A, Gaarde J, Westmorland W et al. Interventions using new digital media to improve adolescent sexual health: a systematic review. J Adolesc Health. 2012;51(6):535-43. (https://www.ncbi.nlm.nih.gov/pubmed/23174462).

141. Chen JL, Wilkosz ME. Efficacy of technology-based interventions for obesity prevention in adolescents: a systematic review. Adolesc Health Med Ther. 2014;5:159-70. (https://dx.doi.org/10.2147/ahmt.s39969).

142. Jones K, Eathington P, Baldwin K, Sipsma H. The impact of health education transmitted via social media or text messaging on adolescent and young adult risky sexual behavior: a systematic review of the literature. Sexually Transmitted Diseases. 2014;41(7):413-9. (http://journals.lww.com/stdjournal/abstract/2014/07000/the_impact_of_health_education_transmitted_via.1.aspx).

143. WHO. Health for the world's adolescents: a second chance in the second decade: Global Health Observatory visualizations [website]. (http://apps.who.int/gho/data/view.wrapper.mortadov?lang=en&menu=hide) accessed 14 March 2017).

144. Majeed-Ariss R, Baildam E, Campbell M, Chieng A, Fallon D, Hall A et al. Apps and adolescents: a systematic review of adolescents' use of mobile phone and tablet apps that support personal management of their chronic or long-term physical conditions. Journal of Medical Internet Research. 2014;17(12):e287. (http://www.jmir.org/2015/12/e287/?utm_source=trendmd&utm_medium=cpc&utm_campaign=jmir_trendmd_%25sponsored%25).

References

145. WHO. Youth and road safety. Geneva; 2007. (http://www.who.int/management/programme/ncd/youth%20and%20road%20safety.pdf).

146. WHO. Global plan for the decade of action for road safety 2011-2020. Geneva; 2011. (http://www.who.int/roadsafety/decade_of_action/plan/plan_english.pdf).

147. WHO. Preventing injuries and violence: a guide for ministries of health. Geneva; 2007. (http://apps.who.int/iris/bitstream/10665/43628/1/9789241595254_eng.pdf).

148. WHO. Strengthening care for the injured: success stories and lessons learned from around the world. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44361/1/9789241563963_eng.pdf).

149. WHO. Child development and motorcycle safety. New Delhi: WHO Regional Office for South-East Asia; 2015. (http://www.searo.who.int/entity/disabilities_injury_rehabilitation/documents/childdevandmcsafety2015.pdf?ua=1).

150. WHO, UNODC, UNDP. Global status report on violence prevention 2014. Geneva; 2014. (http://www.who.int/violence_injury_prevention/violence/status_report/2014/en/).

151. Baird S, McIntosh C, Ozler B. Cash or condition? Evidence from a cash transfer experiment. New York: World Bank; 2010. (http://siteresources.worldbank.org/exthdoffice/).rces/5485726-1334870720628/8597105-1334870813980/malawi_evaluation_report.pdf).

153. WHO. Global plan of action to strengthen the role of the health system within a national multisectoral response to address interpersonal violence, in particular against women and girls, and against children. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/252276/1/9789241511537-eng.pdf?ua=1).

154. WHO. Guidelines for essential trauma care. Geneva; 2004. (http://apps.who.int/iris bitstream/10665/42565/1/9241546409_eng.pdf)

155. WHO. Prehospital trauma care systems. Geneva; 2005 (http://www.who.int/violence_injury_prevention/publications services/39162_oms_new.pdf).

156. WHO. Guidelines for trauma quality improvement programmes. Geneva; 2009.(http://apps.who.int/iris/bitstream/10665/44061/1/9789241597746_eng.pdf).

157. US Department of Health and Human Services Centers for Disease Control and Prevention. HPV vaccine for preteens and teens. Diseases and the vaccines that prevent them: information for parents. Atlanta; 2015. (https://www.cdc.gov/vaccines/parents/diseases/teen/hpv-indepth-color.pdf).

158. Blanc AK, Winfrey W, Ross J. New findings for maternal mortality age patterns: aggregated results for 38 countries. PLoS One. 2013;8(4):e59864. (https://www.ncbi.nlm.nih.gov/pubmed/23613716).

159. Nove A, Matthews Z, Neal S, Camacho AV. Maternal mortality in adolescents compared with women of other ages: evidence from 144 countries. Lancet Global Health. 2014;2(3):155-64. (http://www.sciencedirect.com/science/article/pii/S2214109X13701797).

160. WHO. 2015 Every woman, every child, every adolescent: achievements and prospects. The final report of the independent expert review group on information and accountability for women's and children's health. Geneva; 2015. (http://www.who.int/woman_child_accountability/ierg/reports/2015/ierg2015-executivesummary-en.pdf).

161. WHO. From evidence to policy: expanding access to family planning – improving contraceptive services for adolescents. Geneva; 2012. (http://apps.who.int/iris/bitstream/10665/75160/1/who_rhr_hrp_12.21_eng.pdf).

162. WHO. Framework for ensuring human rights in the provision of contraceptive information and services. Geneva; 2014.(http://apps.who.int/iris/bitstream/10665/133327/1/9789241507745_eng.pdf?ua=1).

163. WHO and UNFPA. Ensuring human rights within contraceptive service delivery: implementation guide. Copenhagen; 2015. (http://apps.who.int/iris/bitstream/10665/158866/1/9789241549103_eng.pdf).

164. Blueprints for Healthy Youth Development. In: Blueprints programs [website]. (http://www.blueprintsprograms.com/).

165. WHO. From evidence to policy: expanding access to family planning. Strategies to increase use of long-acting and permanent contraception. Geneva; 2012.(http://apps.who.int/iris/bitstream/10665/75161/1/who_rhr_hrp_12.20_eng.pdf).

166. YouthNet, Family Health International , Advocates for Youth. Youth participation guide: assessment, planning, and implementation. Arlington; 2005. (https://www.advocatesforyouth.org/publications/publications-a-z/1652-youth-participation-guide-assessment-planning-and-implementation).

167. UNICEF. Ending child marriage: progress and prospects. New York; 2014. (https://www.unicef.org/media/files/child_marriage_report_7_17_lr..pdf).

168. WHO. MPOWER: WHO framework convention on tobacco control. 2003. (http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf).

169. Black MM, Bentley ME, Papas MA, Oberlander S, Teti LO, McNary S et al. Delaying second births among adolescent mothers: a randomized, controlled trial of a home-based mentoring program. Pediatrics. 2006; 118(4): e1087-e99. (http://pediatrics.aappublications.org/content/118/4/e1087).

170. Lopez LM, Hiller JE, Grimes DA. Education for contraceptive use by women after childbirth. The Cochrane Collaborative; 2010. (http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001863.pub2/pdf).

171. Guttmacher Institute. Adolescents' need for and use of abortion services in developing countries. New York; 2016. (https://www.guttmacher.org/fact-sheet/adolescents-need-and-use-abortion-services-developing-countries).

172. WHO. Global health sector strategy on HIV, 2016–2021. Geneva; 2016. (http://www.who.int/hiv/strategy2016-2021/ghss-hiv/en/).

173. WHO. Global health sector response to HIV, 2000 2015. Focus on innovations in Africa: progress report. Geneva; 2015. (http://www.who.int/hiv/pub/progressreports/2015-progress-report/en/).

174. WHO. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva; 2013. (http://www.who.int/hiv/pub/guidelines/arv2013/en/).

175. WHO. WHO policy on collaborative TB/HIV activities: guidelines for national programmes and other stakeholders. Geneva; 2012. (http://www.who.int/tb/publications/2012/tb_hiv_policy_9789241503006/en/).

176. WHO. Technical brief: HIV and young people who sell sex. Geneva; 2015. (http://www.unaids.org/sites/default/files/media_asset/2015_young_people_who_sell_sex_en.pdf).

177. WHO. Adolescent HIV testing, counselling and care: implementation guidance for health providers and planners. Geneva; 2014. (http://www.who.int/maternal_child_adolescent/documents/hiv-testing-counselling/en/).

178. UN. Population 2030: Demographic challenges and opportunities for sustainable development planning. New York; 2015. (ST/ESA/SER.A/389; http://www.un.org/en/development/desa/population/publications/pdf/trends/Population2030.pdf).

179. WHO. Preventing diarrhoea through better water, sanitation and hygiene: exposures and impacts in low- and middle-income countries. Geneva; 2014. (http://apps.who.int/iris/bitstream/10665/150112/1/9789241564823_eng.pdf).

180. UNICEF, WHO. Progress on sanitation and drinking water – 2015 update and MDG assessment. New York; 2015. (https://www.unicef.org/publications/index_82419.html).

181. WHO, UNICEF, USAID. Improving nutrition outcomes with better water, sanitation and hygiene: practical solutions for policies and programmes. Geneva; 2015. (http://www.who.int/water_sanitation_health/publications/washandnutrition/en/).

182. Rickert B. Water safety plan: a field guide to improving drinking-water safety in small communities. Copenhagen: WHO Regional Office for Europe; 2014. (http://www.euro.who.int/__data/assets/pdf_file/0004/243787/water-safety-plan-eng.pdf).

183. WHO, UNICEF. Water, sanitation and hygiene in health care facilities: status in low and middle income countries and way forward. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/154588/1/9789241508476_eng.pdf?ua=1).

184. WHO. Sanitation safety planning: manual for safe use and disposal of wastewater, greywater and excreta. Geneva; 2016. (http://www.susana.org/es/recursos/biblioteca/details/2443).

185. WHO. Investing in water and sanitation: increasing access, reducing inequalities. Special report for the sanitation and water for all (SWA) high-level meeting (HLM) 2014. GLAAS team in the water sanitation, hygiene and health (WSH). Geneva; 2014. (http://www.who.int/water_sanitation_health/glaas/2013/14063_swa_glaas_highlights.pdf).

186. WHO. Environmental health challenges in Mauritania. Geneva; 2013. (http://www.who.int/features/2013/mauritania_environmental_health/en/) accessed 5 April 2017.

187. WHO. Conducting a school deworming day: a manual for teachers. Geneva; 2013. (http://apps.who.int/iris/handle/10665/84742).

188. WHO. The physical school environment: An essential component of a health-promoting school. WHO Information Series on School Health, Document 2. 1998. (http://www.who.int/school_youth_health/media/en/physical_sch_environment.pdf).

189. WHO. Local action: creating health promoting schools. Geneva; 2000. (http://www.who.int/school_youth_health/media/en/sch_local_action_en.pdf).

190. Brocklehurst C, Bartram J. Swimming upstream: why sanitation, hygiene and water are so important to mothers and their daughters. Bull World Health Organ. 2010;88(7):482. (https://www.ncbi.nlm.nih.gov/pubmed/20616962).

191. NCD Alliance. NCD Alliance briefing paper on children and NCDs. Children in every policy: recommendations for a lifecourse approach to NCDs. May 2011. (https://ncdalliance.org/sites/default/files/resource_files/ncd%20alliance%20briefing%20paper%20on%20children%20and%20ncds.pdf).

192. WHO. Global action plan for the prevention and control of noncommunicable diseases, 2013-2020. Geneva; 2013. (http://www.who.int/nmh/events/ncd_action_plan/en/).

193. WHO. Taking measures to implement the WHO set of recommendations to reduce the impact of the marketing of unhealthy food and non-alcoholic beverages to children. Policy brief. Geneva; 2014. (http://www.who.int/nmh/ncd-coordination-mechanism/policybrief31.pdf?ua=1).

194. Cho HJ, Khang YH, Yang S, Harper S, Lynch JW. Socioeconomic differentials in cause-specific mortality among South Korean adolescents. Int J Epidemiol. 2007;36(1):50-7. (https://www.ncbi.nlm.nih.gov/pubmed/17085457).

195. WHO. Global report on diabetes. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257_eng.pdf).

196. WHO. School policy framework: implementation of the WHO global strategy on diet, physical activity and health. Geneva; 2008. (http://www.who.int/dietphysicalactivity/schools/en/).

197. WHO. Fa'a Samoa – island families come together to combat NCDs: Geneva; 2015. (http://www.who.int/features/2015/samoa-ncds/en/).

198. de Onis M. Development of a WHO growth reference for school-aged children and adolescents. Bull World Health Organ. 2007; 85(09):660-7. (http://www.nutricion.org/publicaciones/pdf/antropometria/standards%20oms%202007.%205-19%20a%f1os.pdf).

199. Growth reference data for 5–19 years. In: WHO programmes [website]. (http://www.who.int/growthref/en/).

200. WHO Regional Office for South-East Asia. Strategic action plan to reduce the double burden of malnutrition in the South-East Asia Region 2016–2025. New Delhi; 2016. (http://www.searo.who.int/mediacentre/events/governance/rc/sea-rc69-16rev3_9.8.pdf?ua=1).

201. WHO. Global recommendations on physical activity for health. Geneva; 2010. (http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf).

202. UNESCO. Quality physical education (QPE) guidelines for policy-makers. Paris; 2015. (http://unesdoc.unesco.org/images/0023/002311/231101E.pdf).

203. WHO. WHO global report on trends in prevalence of tobacco smoking 2015. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/156262/1/9789241564922_eng.pdf).

204. WHO. Smoke-free movies: from evidence to action. Geneva; 2015. (http://www.who.int/tobacco/publications/marketing/smoke-free-movies-third-edition/en/).

205. Pan American Health Organization, WHO. Tobacco-free youth: a "life-skills" primer. Washington DC; 2000. (http://iris.paho.org/xmlui/bitstream/handle/123456789/734/9275115796.pdf?sequence=1&isallowed=y).

206. United Nationas General Assembly. International Covenant on Economic, Social and Cultural Rights (1966). United Nations, treaty series.993:3. (https://treaties.un.org/doc/publication/cumulative%20index/unts%20volume%20no%201001-1050/cumindex.chrono.en.pdf).

207. Singhal AB, Biller J, Elkind MS, Fullerton HJ, Jauch EC, Kittner SJ et al. Recognition and management of stroke in young adults and adolescents. Neurology. 2013; 81(12):1089-97. (https://www.ncbi.nlm.nih.gov/pubmed/23946297).

208. Roach ES, Golomb MR, Adams R, Biller J, Daniels S, Deveber G et al. Management of stroke in infants and children: a scientific statement from a special writing group of the American Heart Association Stroke Council and the Council on Cardiovascular Disease in the Young. Stroke. 2008; 39(9):2644-91. (https://www.ncbi.nlm.nih.gov/pubmed/18635845).

209. USAID. Review of programmatic responses to adolescent and women's nutritional needs in low and middle income countries. Washington DC; 2015. (https://www.spring-nutrition.org/sites/default/files/publications/reports/spring_review_programmatic_responses.pdf).

210. Briend A, Prinzo ZW. Dietary management of moderate malnutrition: time for a change. Food & Nutrition Bulletin. 2009; 30(3):S265. (http://www.who.int/nutrition/publications/moderate_malnutrition/FNBv30n3_suppl_introduction.pdf).

211. WHO. Childhood lead poisoning. Geneva; 2010. (http://www.who.int/ceh/publications/leadguidance.pdf).

212. International Food Policy Research Institute. Global nutrition report actions and accountability to accelerate the world's progress on nutrition. Washington DC; 2014. (http://www.ifpri.org/publication/global-nutrition-report-2014-actions-and-accountability-accelerate-worlds-progress).

213. Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet. 2013; 382(9890):427-51. (http://www.thelancet.com/journals/lancet/article/piis0140-6736(13)60937-x/abstract).

214. Prentice AM, Ward KA, Goldberg GR, Jarjou LM, Moore SE, Fulford AJ et al. Critical windows for nutritional interventions against stunting. American Journal of Clinical Nutrition. 2013; 97(5):911-8. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3628381/).

215. Government of Malawi, Ministry of Health. Interim guidelines for the management of acute malnutrition in adolescents and adults. Lilongwe; 2006. (http://motherchildnutrition.org/malnutrition-management/pdf/mcn-interim-guidelines-for-the-management-of-acute-malnutrition-malawi.pdf).

216. Republic of Kenya, Ministry of Health. National guideline for integrated management of acute nutrition. Nairobi; 2009.

217. WHO. Management of severe malnutrition: a manual for physicians and other senior health workers. Geneva; 1999. (http://apps.who.int/iris/bitstream/10665/41999/1/a57361.pdf).

218. WHO. Guideline: updates on the management of severe acute malnutrition in infants and children. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf).

219. WHO. Global nutrition policy review: what does it take to scale up nutrition Action? Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/84408/1/9789241505529_eng.pdf).

220. WHO. Global nutrition targets 2025. Policy brief series. Geneva; 2014.

221. WHO, UNHCR. Clinical management of rape survivors: developing protocols for use with refugees and internally displaced persons. Geneva; 2004. (http://www.who.int/reproductivehealth/publications/emergencies/924159263X/en/).

222. O'Dea JA, Abraham S. Improving the body image, eating attitudes, and behaviors of young male and female adolescents: a new educational approach that focuses on self-esteem. International Journal of Eating Disorders. 2000;28(1):43-57. (http://onlinelibrary.wiley.com/doi/10.1002/(sici)1098-108x(200007)28:1%3c43::aid-eat6%3e3.0.co;2-d/abstract).

223. WHO. mhGAP intervention guide – for mental, neurological and substance use disorders in non-specialized health settings. Version 2.0. Geneva; 2016. (http://apps.who.int/iris/bitstream/10665/250239/1/9789241549790-eng.pdf?ua=1).

224. Fliege H, Lee J-R, Grimm A, Klapp BF. Risk factors and correlates of deliberate self-harm behavior: a systematic review. Journal of Psychosomatic Research. 2009; 66(6):477-93. (http://ac.els-cdn.com/s0022399908004935/1-s2.0-s0022399908004935-main.pdf?_tid=0928d558-1552-11e7-9a3b-00000aab0f6c&acdnat=1490882954_434ca1f0d9092a5a68af2a39fa41a600).

225. Hawton K, Saunders KEA, O'Connor RC. Self-harm and suicide in adolescents. Lancet. 2012; 379(9834):2373-82. (https://www.ncbi.nlm.nih.gov/pubmed/22726518).

226. Daine K, Hawton K, Singaravelu V, Stewart A, Simkin S, Montgomery P. The power of the web: a systematic review of studies of the influence of the internet on self-harm and suicide in young people. PLoS One. 2013;8(10):e77555. (https://www.ncbi.nlm.nih.gov/pubmed/24204868).

227. WHO. Early marriages, adolescent and young pregnancies. Report by the Secretariat A65/13 – sixty-fifth World Health Assembly. Geneva; 2012. (http://apps.who.int/gb/ebwha/pdf_files/wha65/a65_13-en.pdf).

228. WHO. Practice manual for establishing and maintaining surveillance systems for suicide attempts and self-harm. Geneva; 2016. (http://www.who.int/mental_health/suicide-prevention/attempts_surveillance_systems/en/).

229. WHO. Public health action for the prevention of suicide: a framework. Geneva; 2012. (http://www.who.int/mental_health/publications/prevention_suicide_2012/en/).

230. Pan American Health Organization, WHO. Framework for the implementation of the regional strategy for mental health. Washington DC; 2011. (http://iris.paho.org/xmlui/handle/123456789/3535).

231. WHO. Suicide and suicide prevention in Asia. Geneva; 2008. (http://www.who.int/mental_health/resources/suicide_prevention_asia.pdf).

232. Vogl G, Ratnaike D, Ivanic L, Rowley A, Chandy V. One click away? Insights into mental health digital self-help by young Australians. Sydney: EY and ReachOut Australia; 2016. (http://www.ey.com/publication/vwluassets/reachout-insights-into-mental-health-digital-self-help/$file/ey-reachout-insights-into-mental-health-digital-self-help.pdf).

233. WHO. Guns, knives, and pesticides: reducing access to lethal means. Geneva; 2009. (http://www.who.int/mental_health/prevention/suicide/vip_pesticides.pdf).

234. WHO. mhGAP school based interventions in reducing deaths from suicide and suicide attempts among young people. Geneva; 2015.

235. WHO. Preventing suicide: a resource for teachers and other school staff. Geneva; 2000. (http://apps.who.int/iris/handle/10665/66801).

236. WHO. Self harm and suicide. (http://www.who.int/mental_health/mhgap/evidence/suicide/en/).

237. Wisner B, Adams J. Environmental health in emergencies and disasters: a practical guide: Geneva: WHO; 2002.

238. WHO. Food safety in natural disasters. Geneva; 2005. (http://www.who.int/foodsafety/fs_management/no_05_naturaldisasters_sept05_en.pdf).

239. WHO. Emergency sanitation – planning. Technical note No. 13. Geneva; 2005. (http://www.who.int/emergencies/documents/guidelines_for_health_emergency_sanitation_planning.pdf?ua=1).

240. WHO. Communicable diseases following natural disasters: risk assessment and priority interventions. Geneva; 2006. (http://www.who.int/diseasecontrol_emergencies/guideline).

241. The Sphere Project. The Sphere handbook: humanitarian charter and minimum standards in humanitarian response. Bourton on Dunsmore: Practical Action Publishing; 2011. (http://www.sphereproject.org).

242. WHO. Guidance note on disability and emergency risk management for health. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/90369/1/9789241506243_eng.pdf).

243. WHO. Humanitarian health action, technical guidelines and guidance notes. (http://www.who.int/hac/techguidance/en/).

244. UNHCR, WHO. Food and nutrition needs in emergencies. Geneva; 2004. (http://www.who.int/nutrition/publications/emergencies/a83743/en/).

245. WHO. Emergency surgical care in disaster situations. Geneva; 2005. (http://www.who.int/surgery/publications/s16368e.pdf).

246. WHO. WHO ethical and safety recommendations for researching, documenting and monitoring sexual violence in emergencies. Geneva; 2007. (http://apps.who.int/iris/handle/10665/43709).

247. WHO. World Report on violence and health. Geneva; 2002. (http://apps.who.int/iris/bitstream/10665/42495/1/9241545615_eng.pdf).

248. WHO. Do's and don'ts in community-based psychosocial support for sexual violence survivors in conflict-affected settings. Geneva; 2012. (http://www.unhcr.org/protection/health/50b48c4f6/dos-donts-community-based-psychosocial-support-sexual-violence-survivors.html).

249. Inter-Agency Standing Committee. Sexual and reproductive health (SRH) including HIV: from minimum initial response to comprehensive services. Geneva; 2010. (http://apps.who.int/hac/techguidance/pht/womenshealth/granada_srh_matrix_july2010.pdf).

250. Inter-Agency Working Group on Reproductive Health in Crises. Inter-agency field manual on reproductive health in humanitarian settings. 2010 revision for field review. Geneva; 2010. (http://www.who.int/reproductivehealth/publications/emergencies/field_manual_rh_humanitarian_settings.pdf).

251. WHO, UNFPA, Escuela Andaluza de Salud Publica. Sexual and reproductive health during protracted crises and recovery. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/70762/1/who_hac_bro_2011.2_eng.pdf).

References

252. Women's Refugee Commission. Minimum initial service package (MISP) for reproductive health in crisis situations: a distance learning module. New York; 2011. (http://www.unhcr.org/4e8d6b3b14.pdf).

253. UNFPA.Women and girls safe spaces. A guidance note based on lessons learned from the Syrian crisis. Amman: UNFPA Regional Syria Response Hub; 2015. (http://www.unfpa.org/sites/default/files/resource-pdf/unfpa%20 unfpa%20women%20and%20girls%20safe%20spaces%20 guidance%20%5b1%5d.pdf).

254. UNICEF. Adolescent programming experiences during conflict and post-conflict: case studies. New York; 2004. (https://www.unicef.org/adolescent_conflict(1).pdf).

255. Save the Children and UNFPA. Adolescent sexual and reproductive health toolkit for humanitarian settings: a companion to the inter-agency field manual on reproductive health in humanitarian settings. New York; 2009.(https:// www.unfpa.org/sites/default/files/pub-pdf/unfpa_ asrhtoolkit_english.pdf).

256. Women's Refugee Commission, Save the Children, UNHCR, UNFPA. Adolescent sexual and reproductive health programs in humanitarian settings: an in-depth look at family planning services. Geneva; 2012.(https://www.unfpa.org/ sites/default/files/resource-pdf/aaasrh_good_practice_ documentation_english_final.pdf).

257. UNFPA. Adolescent girls in disaster & conflict: interventions for improving access to sexual and reproductive health services. New York; 2016.(http://www.unfpa.org/sites/ default/files/pub-pdf/unfpa-adolescent_girls_in_disaster_ conflict-web.pdf).

258. Sommer M. Menstrual hygiene management in humanitarian emergencies: gaps and recommendations. Waterlines. 2012;31(1-2):83-104.

259. WHO. Mental health in emergencies: mental and social aspects of health of populations exposed to extreme stressors. Geneva; 2003. (http://apps.who.int/iris/ handle/10665/67866).

260. WHO, War Trauma Foundation, World Vision International. Psychological First Aid: Guide for Field Workers. Geneva; 2011.http://www.searo.who.int/srilanka/documents/ psychological_first_aid_guide_for_field_workers.pdf

261. WHO. Training module IV. Special groups: children and adolescents. WHO/MNH/MHP 99.1.A.B. Geneva; 1999. (http://apps.who.int/maternal_child_adolescent/documents/ pdfs/psychosocial_support.pdf).

262. WHO. Update of the mental health gap action programme (mhGAP) guidelines for mental, neurological and substance use disorders, 2015. Geneva; 2015. (http://apps.who.int/ iris/bitstream/10665/204132/1/9789241549417_eng. pdf?ua=1).

263. WHO. Building back better: sustainable mental health care after emergencies. Geneva; 2013.(http://apps.who.int/iris/ bitstream/10665/96378/8/who_msd_mer_13.1_eng.pdf).

264. WHO Regional Office for the Western Pacific. Giving adolescents a voice. Conducting a rapid assessment of adolescent health needs: a manual for health planners and researchers; 2001. (http://apps.who.int/iris/ bitstream/10665/207047/1/9290611596_eng.pdf).

265. WHO Regional Office for the Eastern Mediterranean. A regional guide to conducting an adolescent health situation analysis. Cairo; 2011. (http://applications.emro.who.int/dsaf/ emropub_2011_1268.pdf).

266. WHO Regional Office for the Eastern Mediterranean. Core indicators for adolescent health: a regional guide. Cairo; 2014. (http://applications.emro.who.int/dsaf/emropub_2014_ en_1694.pdf).

267. WHO Regional Office for the Eastern Mediterranean. Summary report on the regional workshop on adolescent health situation analysis and core indicators. Cairo; 2012. (http://applications.emro.who.int/docs/ic_meet_rep_2012_ en_14636.pdf).

268. WHO. Innov8 approach for reviewing national health programmes to leave no one behind: technical handbook. Geneva; 2016. (http://apps.who.int/iris/bitstre am/10665/250442/1/9789241511391-eng.pdf).

269. Kyu HH, Pinho C, Wagner JA, Brown JC, Bertozzi-Villa A, Charlson FJ et al. Global and national burden of diseases and injuries among children and adolescents between 1990 and 2013: findings from the global burden of disease 2013 study. JAMA Pediatrics. 2016;170(3):267-87. (http://jamanetwork. com/journals/jamapediatrics/fullarticle/2481809).

270. Central Statistical Agency [Ethiopia] and ICF International. Ethiopia demographic and health survey 2011. Addis Ababa and Calverton; 2012. (https://dhsprogram.com/pubs/pdf/ fr255/fr255.pdf).

271. WHO. Noncommunicable diseases country profiles 2014. Geneva; 2014. (http://apps.who.int/iris/ bitstream/10665/128038/1/9789241507509_eng. pdf?ua=1).

272. Federal Democratic Republic of Ethiopia, Ministry of Health. Health sector transformation plan 2016/2016– 2019/2020. Addis Ababa; 2015. (http://www.moh.gov.et/ documents/26765/0/health+sector+transformation+plan/5 542a23a-9bc7-46a2-8c1f-8b32c2603208?version=1.0).

273. Central Statistical Agency [Ethiopia] and ORC Macro. Ethiopia demographic and health survey 2005. Addis Ababa and Calverton; 2006. (https://www.dhsprogram.com/pubs/ pdf/fr179/fr179%5b23june2011%5d.pdf).

274. Maternal, newborn, child and adolescent health policy indicators: 2009–2010, 2011–2012, 2013–2014, 2016. In: WHO programmes [website]. (http://www.who.int/maternal_ child_adolescent/epidemiology/policy-indicators/en/).

275. Baral SC, Khatri R, Schildbach E, Schmitz K, Silwal PR, Van Teijlingen E. National adolescent sexual and reproductive health programme: mid-term evaluation report. Kathmandu: GIZ; 2013. (http://eprints.bournemouth.ac.uk/20919/1/ national%20asrh%20programme%20-%20mid-term%20 evaluation%20report%20-%20giz-funded%20districts.pdf).

276. The Colorado school health services program. In: Department of Health Care Policy and Financing and the Colorado Department of Education [website] 2017. (https:// www.colorado.gov/pacific/hcpf/school-health-services-program).

277. CDC's healthy schools program. In: Centers for Disease Control and Prevention, healthy schools [website]. (https:// www.cdc.gov/healthyschools/stateprograms.htm).

278. Health promoting school programme in Portugal. In: schools for health in Europe [website]. (http://www.schools-for-health.eu/she-network/member-countries/36/portugal.html).

279. WHO Regional Office for Europe. Multisectorial action on drug dependence in Turkey: applying a whole-of-government approach. Copenhagen; 2016. (http://www.euro.who.int/__ data/assets/pdf_file/0009/307647/multisectoral-action-on-drug-dependence-in-turkey.pdf?ua=1).

280. UN Habitat. Building urban safety through slum upgrading. Nairobi; 2011. (https://unhabitat.org/books/building-urban-safety-through-slum-upgrading-2/).

281. Cerdá M, Morenoff JD, Hansen BB, Hicks KJT, Duque LF, Restrepo A et al. Reducing violence by transforming neighborhoods: a natural experiment in Medellín, Colombia. American Journal Of Epidemiology. 2012;175(10):1045-53. (https://academic.oup.com/aje/article/175/10/1045/89012/ reducing-violence-by-transforming-neighborhoods-a).

282. WHO. Inheriting a sustainable world? Atlas on children's health and the environment. Geneva; 2017. (http://apps.who. int/iris/bitstream/10665/254677/1/9789241511773-eng. pdf?ua=1).

283. Forde I, Rasanathan K, Krech R. Public health agencies and cash transfer programmes: making the case for greater involvement. Social determinants of health discussion paper 4 (policy and practice). Geneva: WHO; 2011. (http://www. who.int/sdhconference/resources/cash_transfers_discussion_ paper_final.pdf).

284. Human Sciences Research Council. HIV testing of children: legal guidelines for implementers. Msunduzi; 2012. (http://www.hsrc.ac.za/uploads/pagecontent/3181/ legalguidelinesforhivtestingofchildrenweb.pdf).

285. Issyk-Kul, Talas, Jalal-Abad, Batken and Chuy regions of Kyrgyzstan. In: United Nations Population Fund; 2010 [website]. (http://apps.who.int/adolescent/second-decade/ section/section_6/level6_9.php) accesed 15 March 2017.

286. McLoughlin C. Contracting NGOs to deliver basic services. Birmingham: International Development Department, University of Birmingham; 2008. (http://www.birmingham. ac.uk/documents/college-social-sciences/government-society/idd/research/non-state-providers/basic-services.pdf).

287. Bhat R, Maheshwari SK, Saha S. Contracting-out of reproductive and child health (RCH) services through Mother NGO scheme in India: experiences and implications. Ahmedabad: Indian Institute of Management; 2007. (http:// www.iimahd.ernet.in/publications/data/2007-01-05_rbhat. pdf).

288. Quraishi S, Quraishi H. Freedom HIV/AIDS: Mobile phone games for health communication and behavior change. Donner J MP, editor. London: Bloomsbury; 2013.

289. Quraishi H. Freedom HIV/AIDS – mobile phone games to create HIV/AIDS awareness in Asia and Africa. In: Changemakers [website]. (https://www.changemakers.com/ competition/healthgames/entries/freedom-hivaids-mobile-phone-games-create-hivaids) accessed 16 March 2017.

290. National HPV Vaccination Program register. Coverage data. In: research and data. [website]. (http://www.hpvregister.org. au/research/coverage-data) accessed 26 November 2016.

291. Government of Chile, Ministry of Health. Programa nacional de salud integral de adolescents y jóvenes: plan de acción 2012-2020. Santiago; 2013. (http://web.minsal.cl/portal/url/ item/d263acb5826c2826e04001016401271e.pdf).

292. Shepard J. Effective NHS contributions to violence prevention: the Cardiff Model. Cardiff: University of Cardiff; 2007. (https://www.alcohollearningcentre.org. uk/_assets/projects/files/the_cardiff_model_effective_nhs_ contributions_to_violence_prevention_260.pdf).

293. Professor Jonathan Shepard at TEDxCardiff 2012 [online video]. (https://www.noodle.com/learn/details/121592/prof-jonathan-shepherd-at-tedxcardiff-2012) accessed 16 March 2017.

294. Florence C, Shepherd J, Brennan I, Simon T. Effectiveness of anonymised information sharing and use in health service, police, and local government partnership for preventing violence related injury: experimental study and time series analysis. BMJ. 2011;342:d3313. (http://www.bmj.com/ content/342/bmj.d3313.long).

295. Perry Y, Petrie K, Buckley H, Cavanagh L, Clarke D, Winslade M et al. Effects of a classroom-based educational resource on adolescent mental health literacy: a cluster randomised controlled trial. Journal of Adolescence. 2014;37(7):1143-51. (http://ac.els-cdn.com/s0140197114001365/1-s2.0-s0140197114001365-main.pdf?_tid=a92438c6-1869-11e7-b8df-00000aab0f26&acdnat=1491222954_2904f2fd 5c50d26bec9873e21f81cc25).

296. Black Dog Institute. Education & training. In: Black Dog Institute [website] (http://www.blackdoginstitute.org.au/ public/education/headstrong.cfm) accessed 15 March 2017.

297. Government of Scotland. Pregnancy and parenthood in young people strategy 2016–2026. Edinburgh; 2016. (http:// www.gov.scot/publications/2016/03/5858/0).

298. WHO. From inception to large scale: the Geracao Biz Programme in Mozambique. Geneva; 2009. (http://apps.who. int/iris/bitstream/10665/44155/1/9789241598347_eng. pdf).

299. UNFPA. Investing in youth: the story of a national sexual and reproductive health programme for adolescents and youth in Mozambique. New York; 2011. (http://mozambique. unfpa.org/sites/default/files/pub-pdf/investing_in_ youth__17_10_2011web.pdf).

References

300. Sanchez M TK, Pateguana P, Singano C. In-depth review of the Geracao Biz Programme in Mozambique. Oslo: Scanteam; 2012. (http://scanteam.no/).

301. UNESCO. Substance use prevention in educational settings in eastern Europe and central Asia: a review of policies and practices. UNESCO office in Moscow; 2015. (http://iite.unesco.org/pics/publications/en/files/3214742.pdf).

302. UNESCO, UNODC, WHO. Education sector responses to the use of alcohol, tobacco and drugs: good policy and practice in health education. Paris; 2017. (http://unesdoc.unesco.org/images/0024/002475/247509e.pdf)

303. Save the Children. Too young to wed – the growing problem of child marriage among Syrian girls in Jordan. London; 2014. (http://www.savethechildren.org/atf/cf/%7b9def2ebe-10ae-432c-9bd0-df91d2eba74a%7d/too_young_to_wed_report_0714.pdf).

304. WHO. Gender mainstreaming for health managers: a practical approach. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44516/1/9789241501071_eng.pdf).

305. WHO, Public Health Agency of Canada. Health equity through intersectoral action: an analysis of 18 country case studies. Ottawa; 2008. (http://www.who.int/social_determinants/resources/health_equity_isa_2008_en.pdf).

306. Bright futures challenge projects. In: VicHealth programs and projects [website]. (https://www.vichealth.vic.gov.au/programs-and-projects/bright-futures-projects) accessed 15 March 2017.

307. EWEC. Technical guidance for priortizing adolescent health. New York: UNFPA; 2017. (http://www.unfpa.org/publications/technical-guidance-prioritizing-adolescent-health).

308. Cottingham J, Kismodi E, Hilber AM, Lincetto O, Stahlhofer M, Gruskin S. Using human rights for sexual and reproductive health: improving legal and regulatory frameworks. Bull World Health Organ. 2010;88(7):551-5. (http://www.who.int/bulletin/volumes/88/7/09-063412/en/).

309. WHO. Practising a health in all policies approach: lessons for universal health coverage and health equity. A policy briefing for ministries of health based on experiences from Africa, South-East Asia and the Western Pacific. Geneva; 2013. (http://apps.who.int/iris/bitstream/10665/105529/1/9789241506632_eng.pdf?ua=1&ua=1).

310. WHO. Demonstrating a health in all policies analytic framework for learning from experiences: based on literature reviews from Africa, South-East Asia and the Western Pacific; 2013. (http://apps.who.int/iris/bitstream/10665/104083/1/9789241506274_eng.pdf).

311. Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Social determinants of health discussion paper 2 (policy and practice). Geneva: WHO; 2010. (http://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf).

312. Public Health Agency of Canada. Toward health equity: Canadian approaches to the health sector role; 2014. (http://www.who.int/social_determinants/publications/64-03-towards-health-equity-en-final.pdf)

313. Kotecha P, Nirupam S, Karkar P. Adolescent girls' anaemia control programme, Gujarat, India. Indian J Med Res. 2009;130(5):584-9. (https://www.researchgate.net/publication/41102480_adolescent_girls%27_anaemia_control_programme_gujarat_india).

314. Pawloski LR, Burley Moore J. Impact of a nutrition intervention program on the growth and nutritional status of Nicaraguan adolescent girls. Coll Antropol. 2007;31(2):403-11. (http://hrcak.srce.hr/file/43283).

315. Aguayo VM, Paintal K, Singh G. The adolescent girls' anaemia control programme: a decade of programming experience to break the inter-generational cycle of malnutrition in India. Public Health Nutrition. 2013;16(09):1667-76. (https://www.cambridge.org/core/journals/public-health-nutrition/article/adolescent-girls-anaemia-control-programme-a-decade-of-programming-experience-to-break-the-intergenerational-cycle-of-malnutrition-in-india/baa57fd5706e59529ae7b748e25185a5).

316. Suicide Prevention Resource Centre. In: resources and programs: [website]. (http://www.sprc.org/resources-program) accessed 16 March 2017.

317. European Monitoring Centre for Drugs and Drug Addiction. International resources on evidence base, evaluation frameworks and good practice (last updated 9 August 2011). In: EDDRA resources[website]. (http://www.emcdda.europa.eu/themes/best-practice/examples/resources) accessed 16 March 2017.

318. Child Protection Working Group. Minimum standards for child protection in humanitarian action. Geneva; 2012. (https://www.unicef.org/iran/minimum_standards_for_child_protection_in_humanitarian_action.pdf).

319. International Network for Education in Emergencies. INEE minimum standards for education: preparedness, response, recovery. New York; 2010. (http://toolkit.ineesite.org/toolkit/ineecms/uploads/1012/inee_guidebook_en_2012%20lores.pdf).

320. International Network for Education in Emergencies. Inter-Agency network for education in emergencies. In: contextualizing the INEE minimum standards [website]. (http://www.ineesite.org/en/minimum-standards/contextualization).

321. International Network for Education in Emergencies. Guidelines for child friendly spaces in emergencies. New York; 2011 (https://www.unicef.org/protection/child_friendly_spaces_guidelines_for_field_testing.pdf).

322. Save the Children. Delivering education for children in emergencies: a key building block for the future. London; 2008. (http://www.savethechildren.org/atf/cf/%7b9def2ebe-10ae-432c-9bd0-df91d2eba74a%7d/delivering_education_emergencies.pdf).

323. WHO. Mental health and psychosocial support for conflict-related sexual violence: 10 myths. Geneva; 2012. (https://www.unicef.org/protection/files/policy_brief_10_myths_english_19-7.pdf).

324. WHO. Mental health and psychosocial support for conflict-related sexual violence: principles and interventions. Geneva; 2012. (https://www.unicef.org/protection/files/summary_en_.pdf).

325. WHO. Core competencies in adolescent health and development for primary care providers: including a tool to assess the adolescent health and development component in pre-service education of health-care providers. Geneva; 2015. (http://apps.who.int/iris/bitstream/10665/148354/1/9789241508315_eng.pdf?ua=1&ua=1).

326. Inter-Agency Task Team on HIV and Young People. Guidance brief. New York; 2008.(http://www.who.int/maternal_child_adolescent/documents/iatt_hivandyoungpeople/en/).

327. Inter-Agency Standing Committee. Guidelines for HIV/AIDS interventions in emergency settings. Geneva; 2003. (http://data.unaids.org/publications/external-documents/iasc_guidelines-emergency-settings_en.pdf).

328. Hoopes A, Agarwal P, Bull S, Chandra-Mouli V. Measuring adolescent friendly health services in India: a scoping review of evaluations. Reproductive Health. 2016;13(1):137. (https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-016-0251-8).

329. International Health Partnership and related initiatives (IHP+). Aligning for better results. Geneva; 2014. (https://sustainabledevelopment.un.org/partnership/?p=11941).

330. Hadley A, Chandra-Mouli V, Ingham R. Implementing the United Kingdom Government's 10-year teenage pregnancy strategy for England (1999–2010): applicable lessons for other countries. J Adolesc Health. 2016;59(1):68-74. (http://ac.els-cdn.com/s1054139x16001026/1-s2.0-s1054139x16001026-main.pdf?_tid=2c455f7a-1953-11e7-bf38-00000aab0f6b&acdnat=1491323247_5dba22d112ffc975d6bb72faaad82ce4).

331. Hadley A, Ingham R, Chandra-Mouli V. Implementing the United Kingdom's ten-year teenage pregnancy strategy for England (1999-2010): how was this done and what did it achieve? Reproductive Health. 2016;13(1):139. DOI 10.1186/s12978-016-0255-4. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc5120422/pdf/12978_2016_article_255.pdf)

332. Zaborskis A, Veryga A, Zemaitiene N, Zuoza R, Gaizauskiene A, Petkevicius R, Laukaitiene A. Lithuania:mediating the effects of alcohol and traffic safety control and policies. In: WHO 2010. Socio-environmentally determined health inequities among children and adolescents: summary of outcomes, background papers and country case studies. Copenhagen: WHO Regional Office for Europe; 2010. (http://www.euro.who.int/__data/assets/pdf_file/0009/135891/e94866.pdf).

333. Barua A, Chandra-Mouli V. The Tarunya project's efforts to improve the quality of adolescent reproductive and sexual health services in Jharkhand state, India: a post-hoc evaluation. Int J Adoles Med Health. 2016. (https://www.degruyter.com/downloadpdf/j/ijamh.ahead-of-print/ijamh-2016-0024/ijamh-2016-0024.pdf).

334. Hindin M, Christiansen C, Ferguson B. Setting research priorities for adolescent sexual and reproductive health in low-and middle-income countries. Bull World Health Organ. 2013;91(1):10-8. (https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3537249/pdf/blt.12.107565.pdf).

335. Nagata J, Ferguson B, Ross D. Research priorities for eight areas of adolescent health in low-and middle-income countries. J Adoesc Health. 2016;59(1):50-60. (http://www.sciencedirect.com/science/article/pii/S1054139X16000951).

336. WHO. Family planning: a global handbook for providers: 2011 update: evidence-based guidance developed through worldwide collaboration. Geneva; 2011. (http://apps.who.int/iris/bitstream/10665/44028/1/9780978856373_eng.pdf)

337. WHO. Strengthening the adolescent component of Liberia's RMNCAH Investment Case. Personal communication to the author, 20 February 2017.

338. Partnership for Maternal, Newborn & Child Health. Outcomes and lessons learned from the first year of establishment of the Adolescent and Youth Constituency. Personal communication to the author, 04 February 2017.

339. WHO. Learning from the first generation of scaled-up adolescent sexual and reproductive health (ASRH) programmes in low- and middle- income countries. Personal communication to the author, 10 February 2017.rces/5485726-1334870720628/8597105-1334870813980/malawi_evaluation_report.pdf).

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