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

Guidance to Support Country Implementation

The Partnership for Maternal, Newborn & Child Health

WE SUPPORT EVERY WOMAN EVERY CHILD

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

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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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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 avoidab
le, 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).

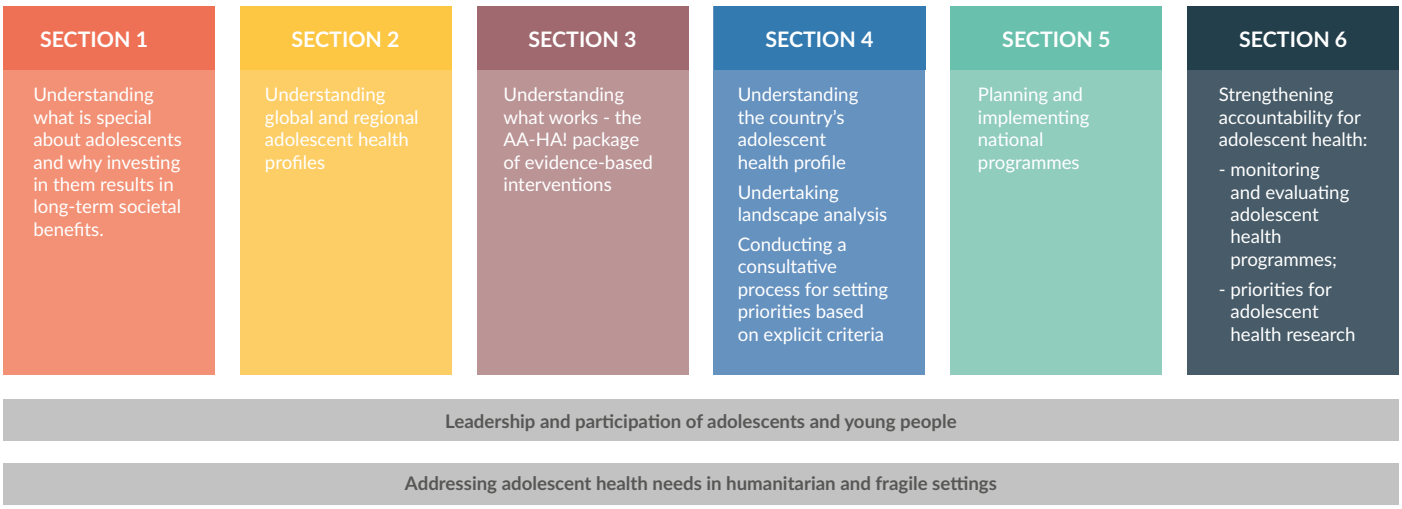
Executive summary

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!)



[1]See summary record of the Sixty-eighth World Health Assembly, Committee A, tenth meeting and eleventh meeting, section 3 (document WHA68/2015/REC/3)

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.

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.

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.

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.

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.

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

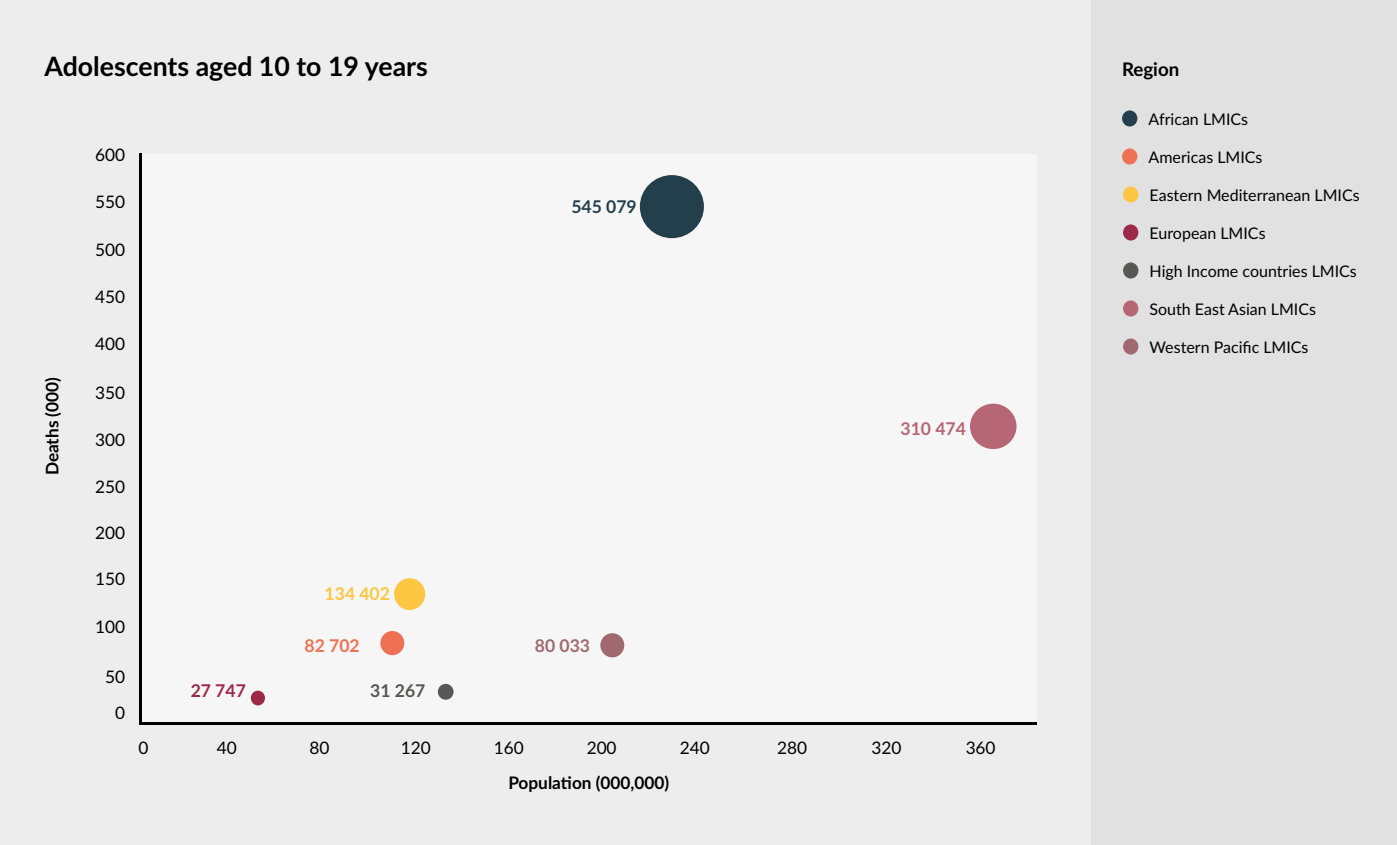
Many adolescent disease and injury burdens are preventable or treatable, but are often neglected. They require a sustained focus and investment. In 2015, more than 1.2 million adolescents died.

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.



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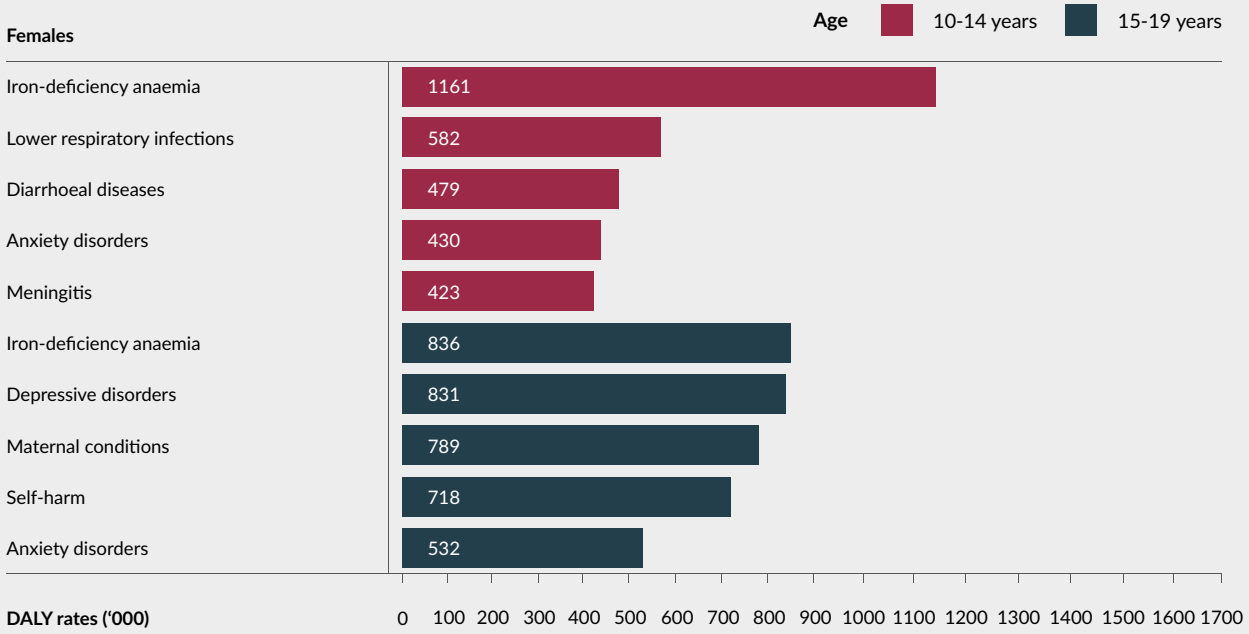
The disability-adjusted life years (DALYs) lost, a summary measure combining the burden from mortality and morbidity, are shown by age and sex in Figure E, and by modified WHO region in Figure F.

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



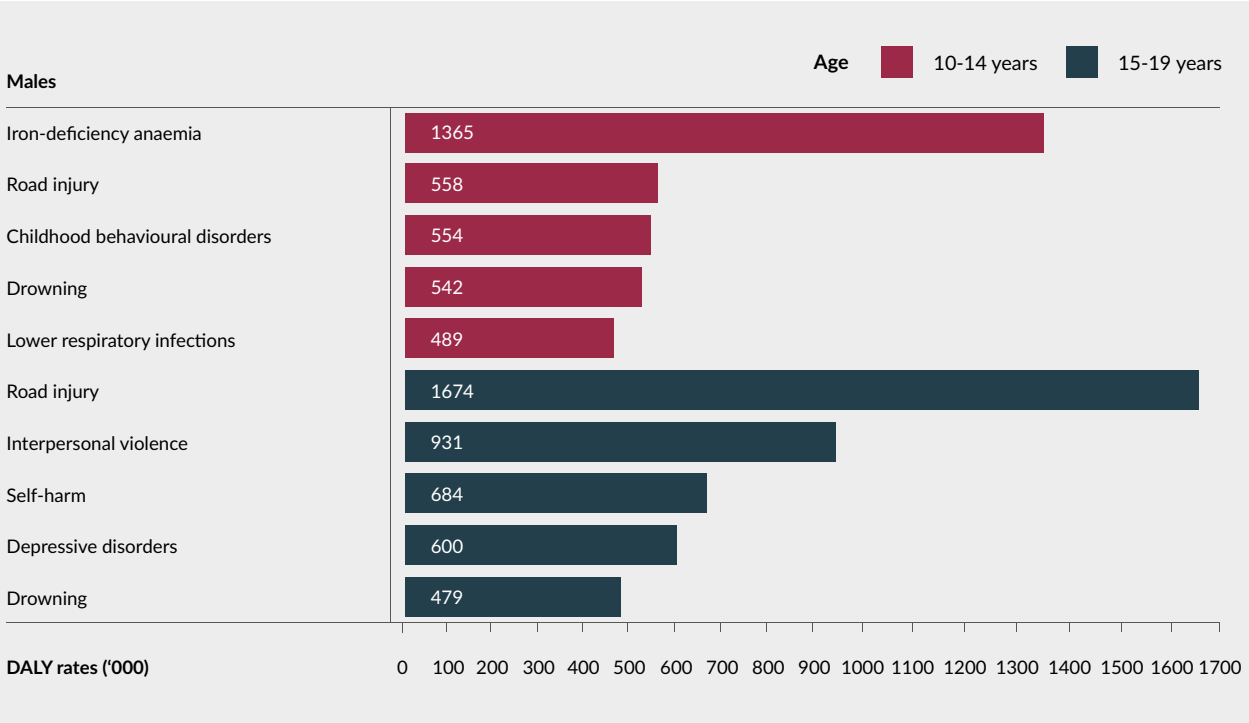
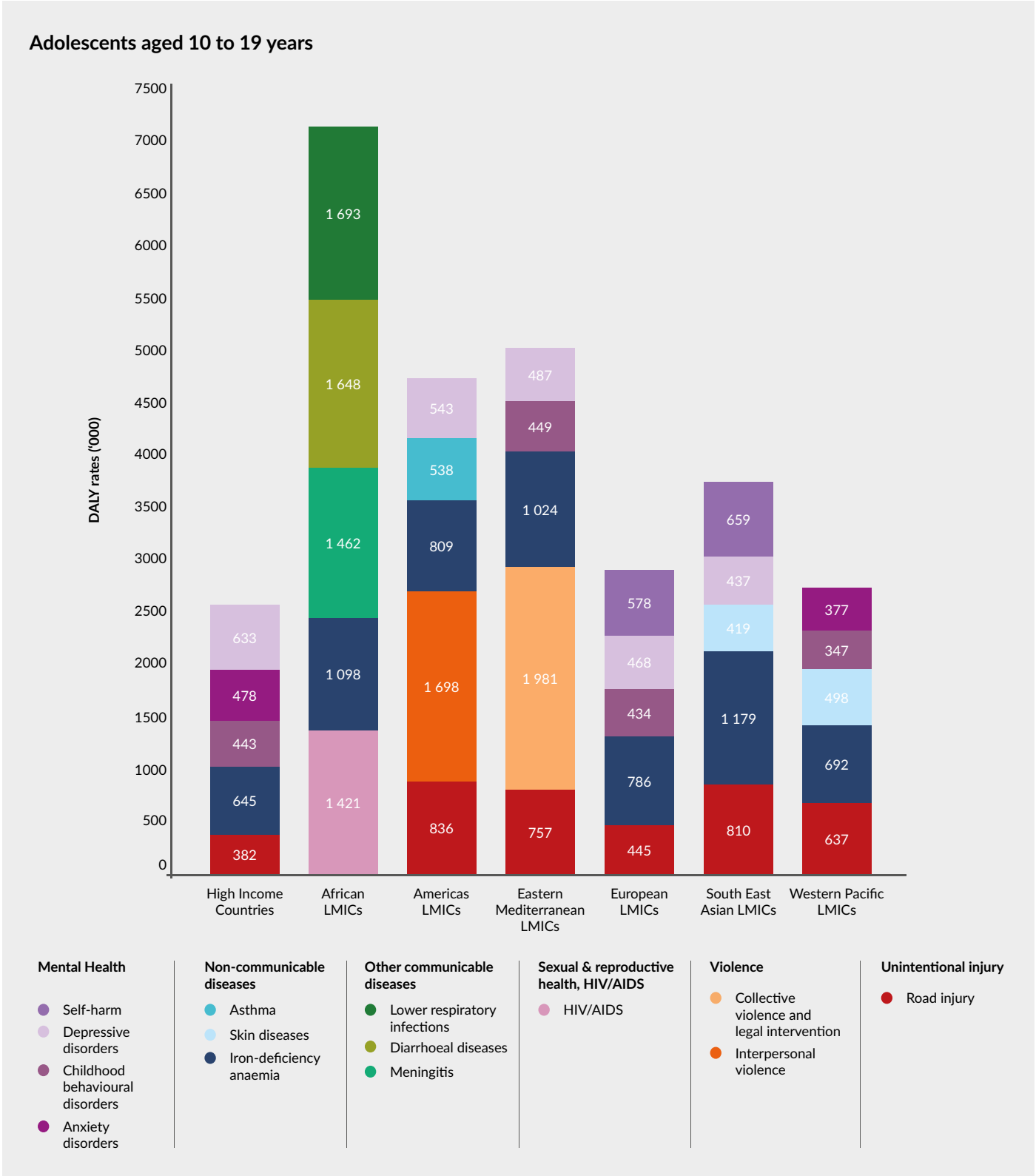


Figure F. Estimated top five causes of adolescent disability-adjusted life years (DALYs) lost by modified WHO region, 2015 .



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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.

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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.

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

Executive summary

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.

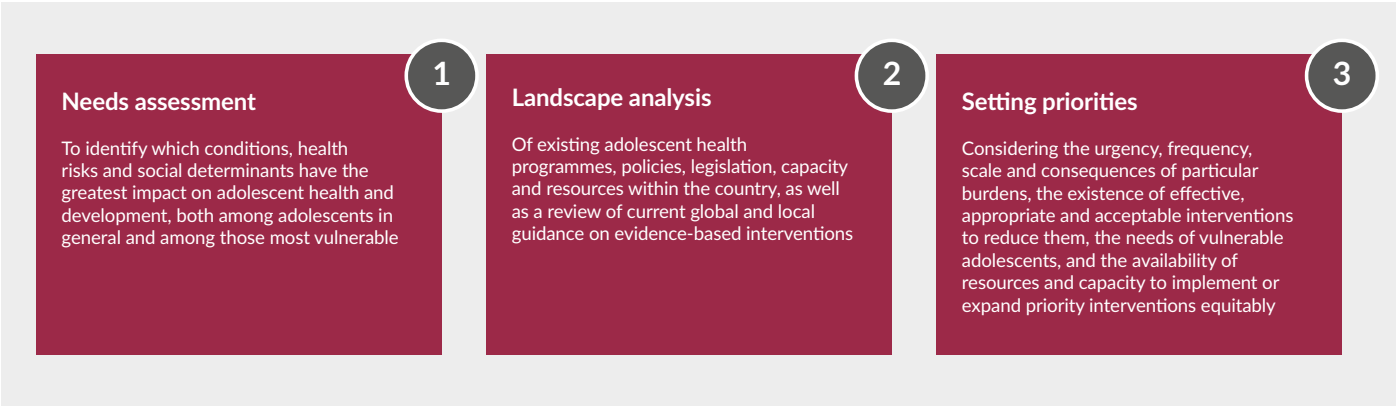
To reduce other major adolescent burdens and risk factors, it is also important to ensure that interventions that serve all age groups are delivered with quality and universal coverage. These include the enforcement of traffic laws and policies; the provision of adequate water and sanitation infrastructure;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



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.

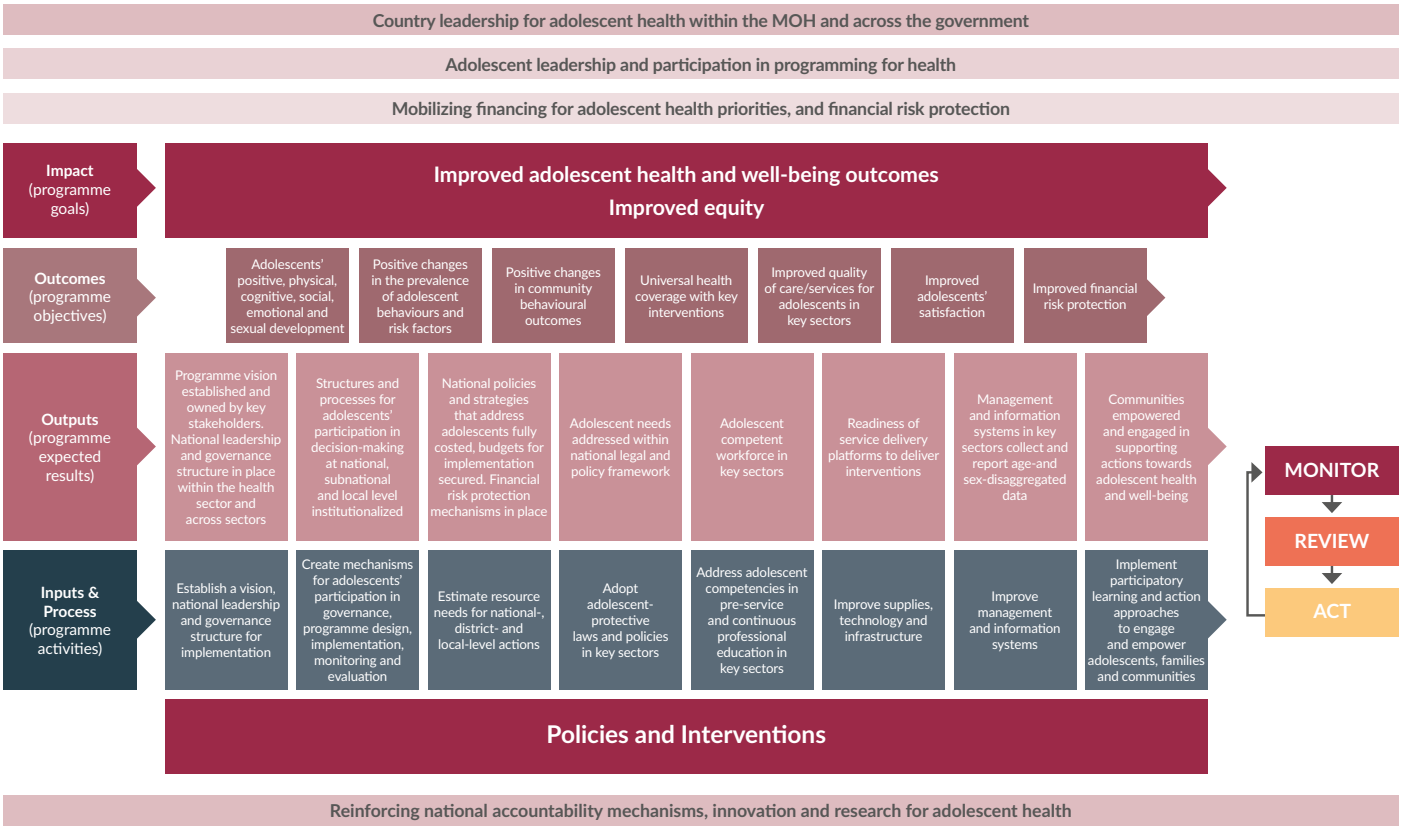
Although not the only sector that needs to be involved, the health sector will play a key role in achieving universal health coverage.

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



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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.

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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 everywhere (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.

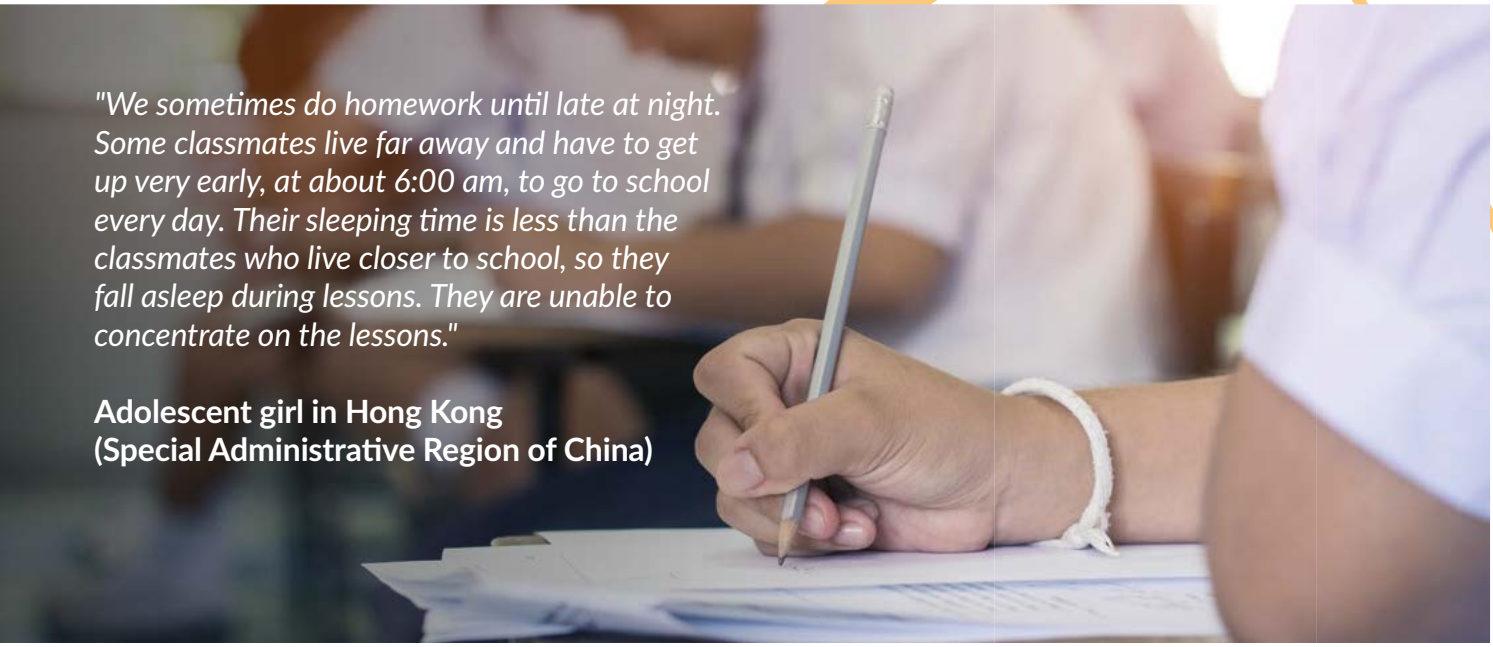
1. AA-HA! – A never-before moment for adolescent health

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

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 strengthened – 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.

[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).

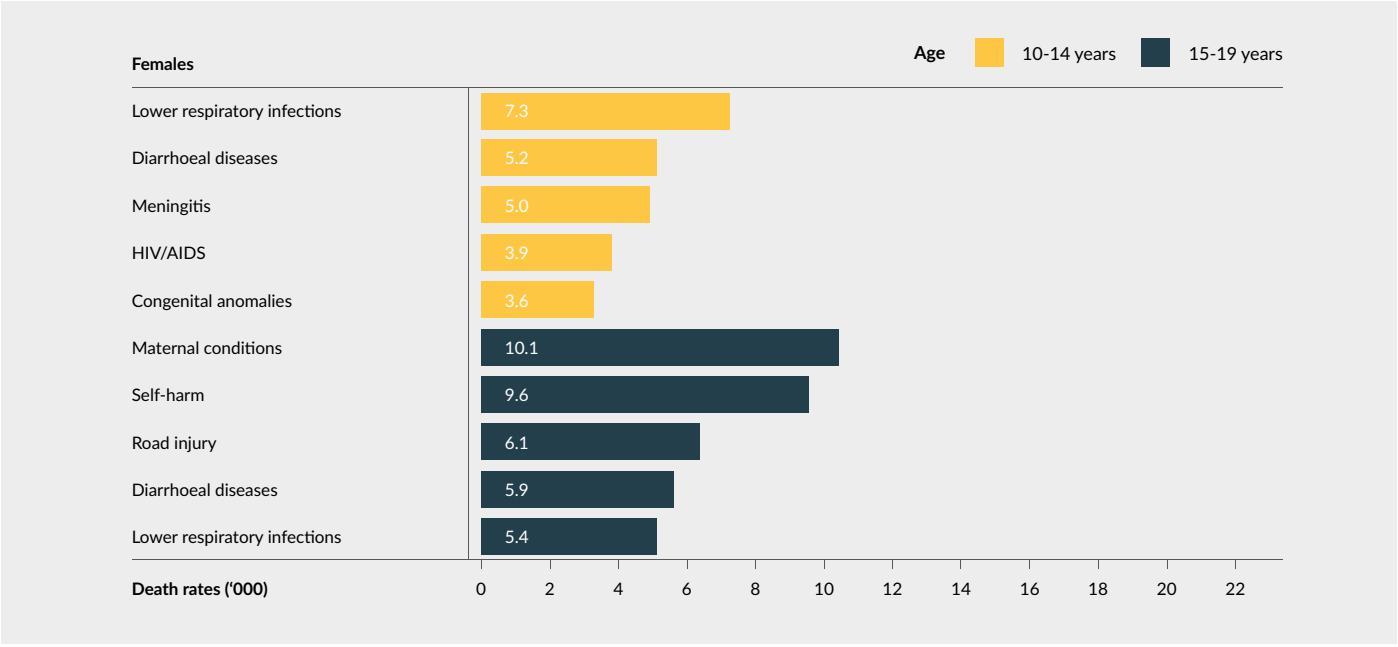
Table 2.1. Leading causes of adolescent deaths globally by sex and age group

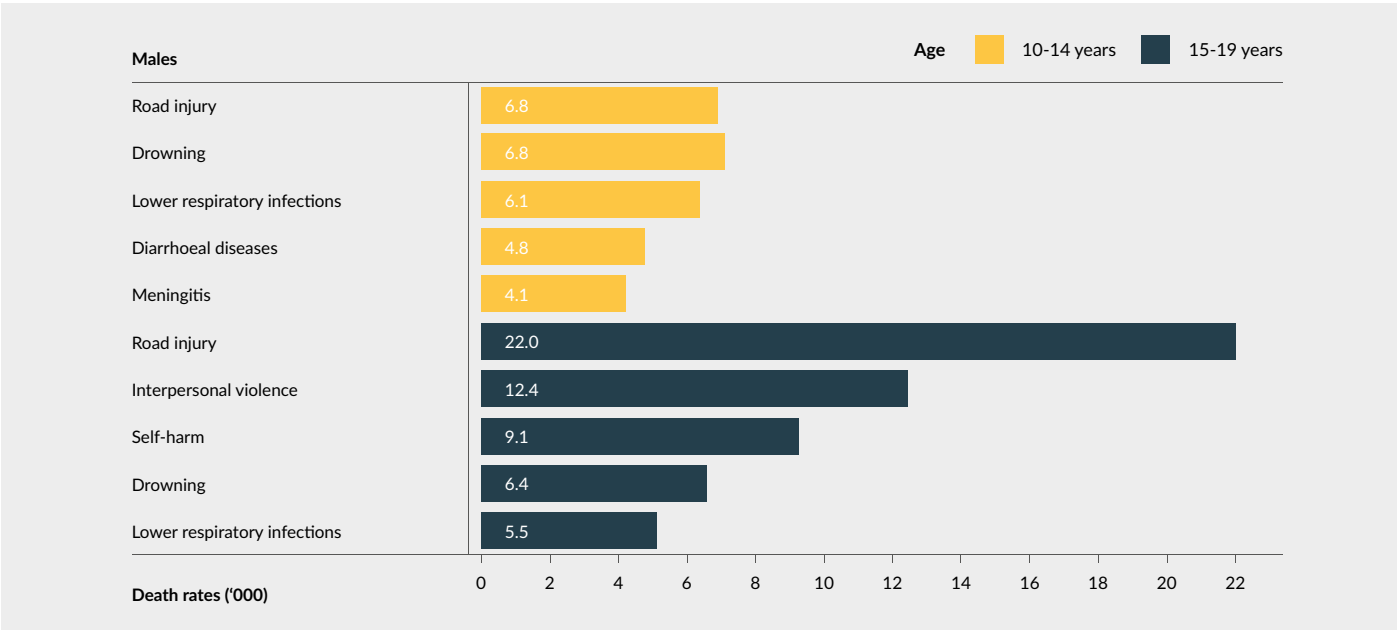
Global Causes of Death (death rate per 100,000 population)									
Rank	10–14 year olds			15–19 year olds			10–19 year olds		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Road injury (6.8)	Lower respiratory infections (7.3)	Lower respiratory infections (6.7)	Road injury (22.0)	Maternal conditions (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





[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.

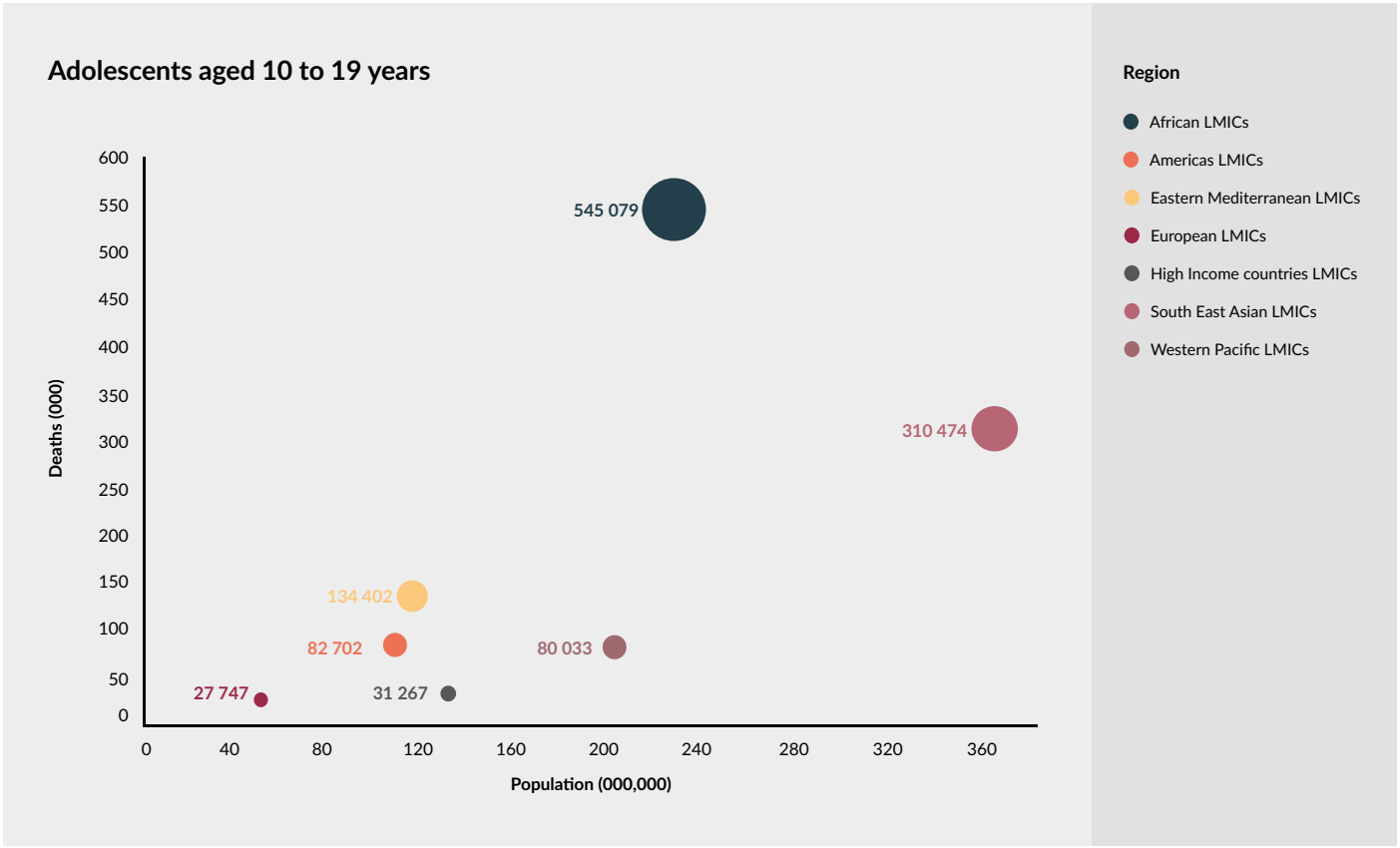
The highest regional rate of adolescent mortality was in African LMICs (243 deaths per 100 000), followed by Eastern Mediterranean LMICs (115 deaths per 100 000). The lowest rates were one sixth to one tenth of those in African LMICs, i.e. 40 per 100 000 in Western Pacific LMICs and 24 per 100 000 in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

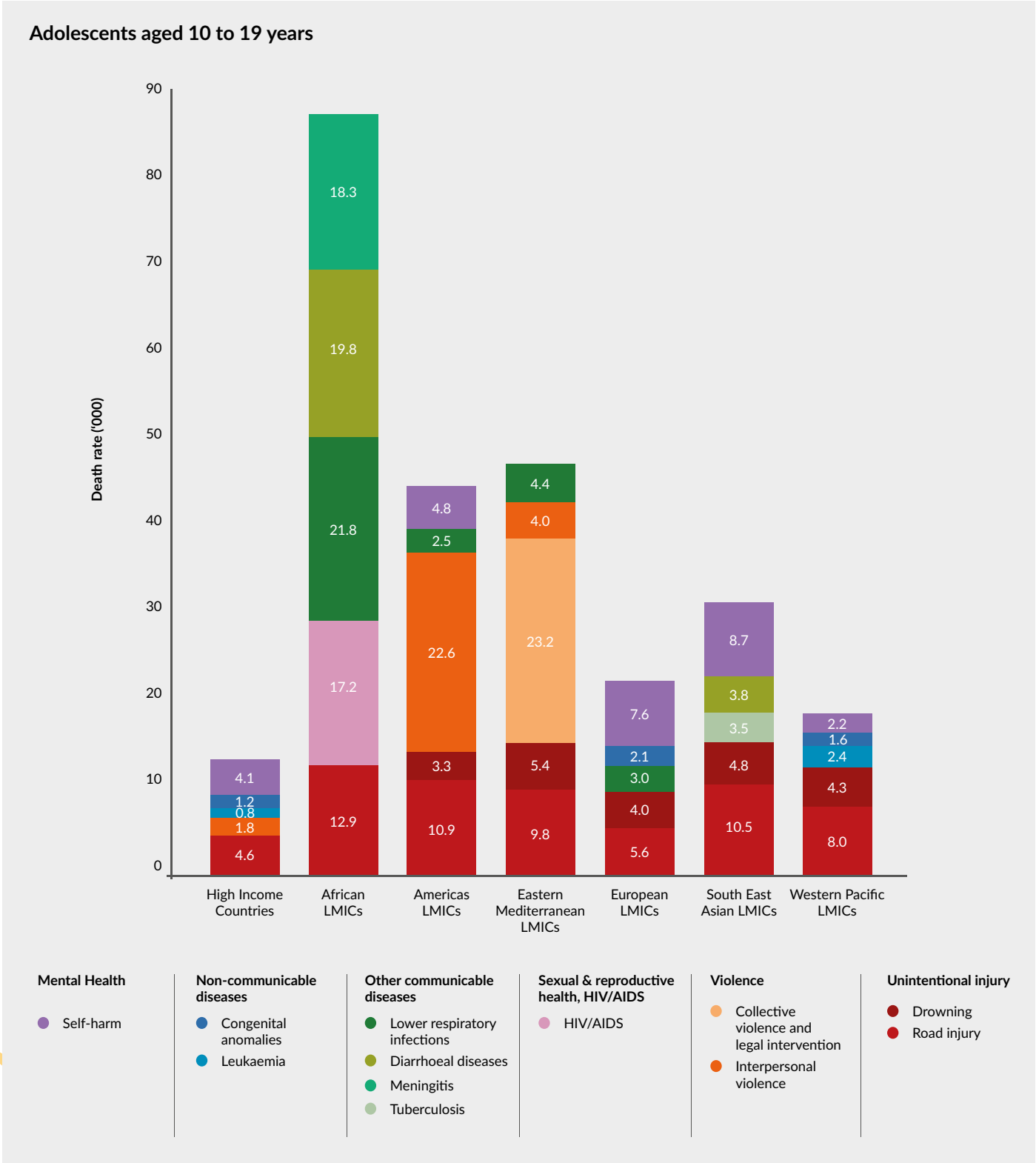
Table 2.3 illustrates that some conditions are major causes of death across most or all regions, e.g. road injury, self-harm and drowning. The table also shows conditions that are only high-ranking burdens in specific modified WHO regions, i.e. meningitis and AIDS in African LMICs; diarrhoeal diseases 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.



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.

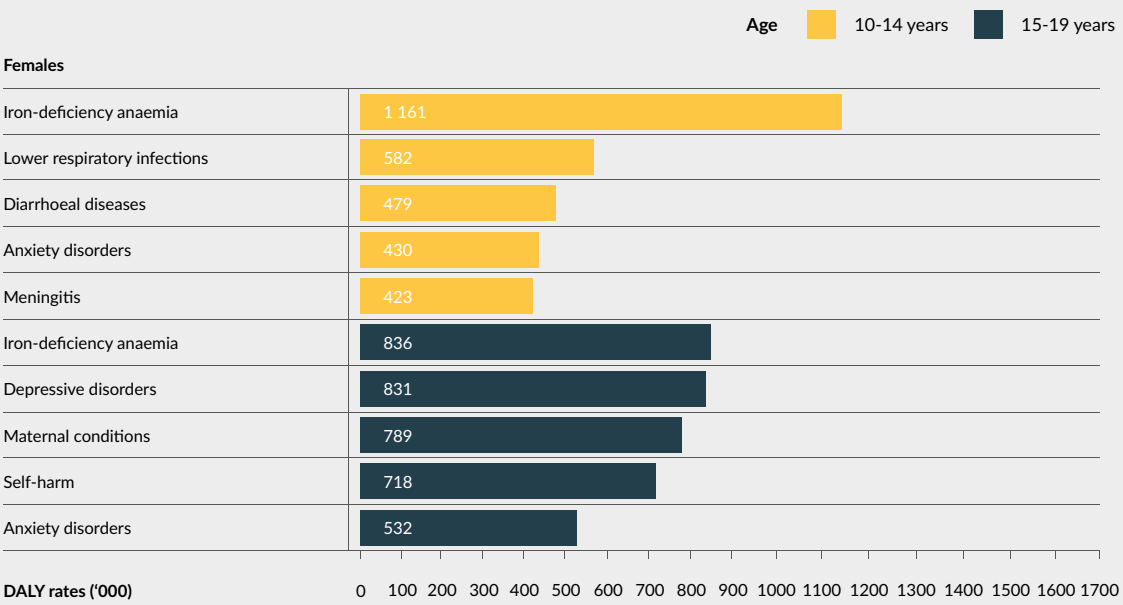
Some causes of DALYs lost only have a particularly high ranking among males (e.g. road injury and drowning) or females (e.g. anxiety and maternal conditions), or among younger (e.g. lower respiratory infections) or older adolescents (self-harm and depressive disorders).

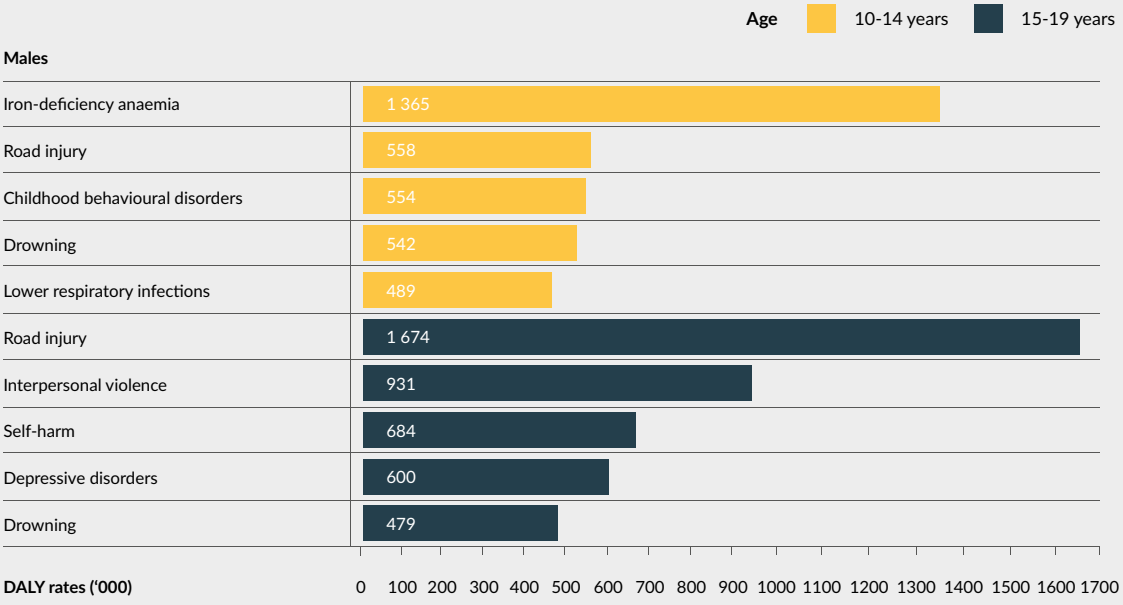
Table 2.4. Leading causes of adolescent DALYs lost globally and by sex and age group

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.





2. Disease and injury burdens, and risk factors

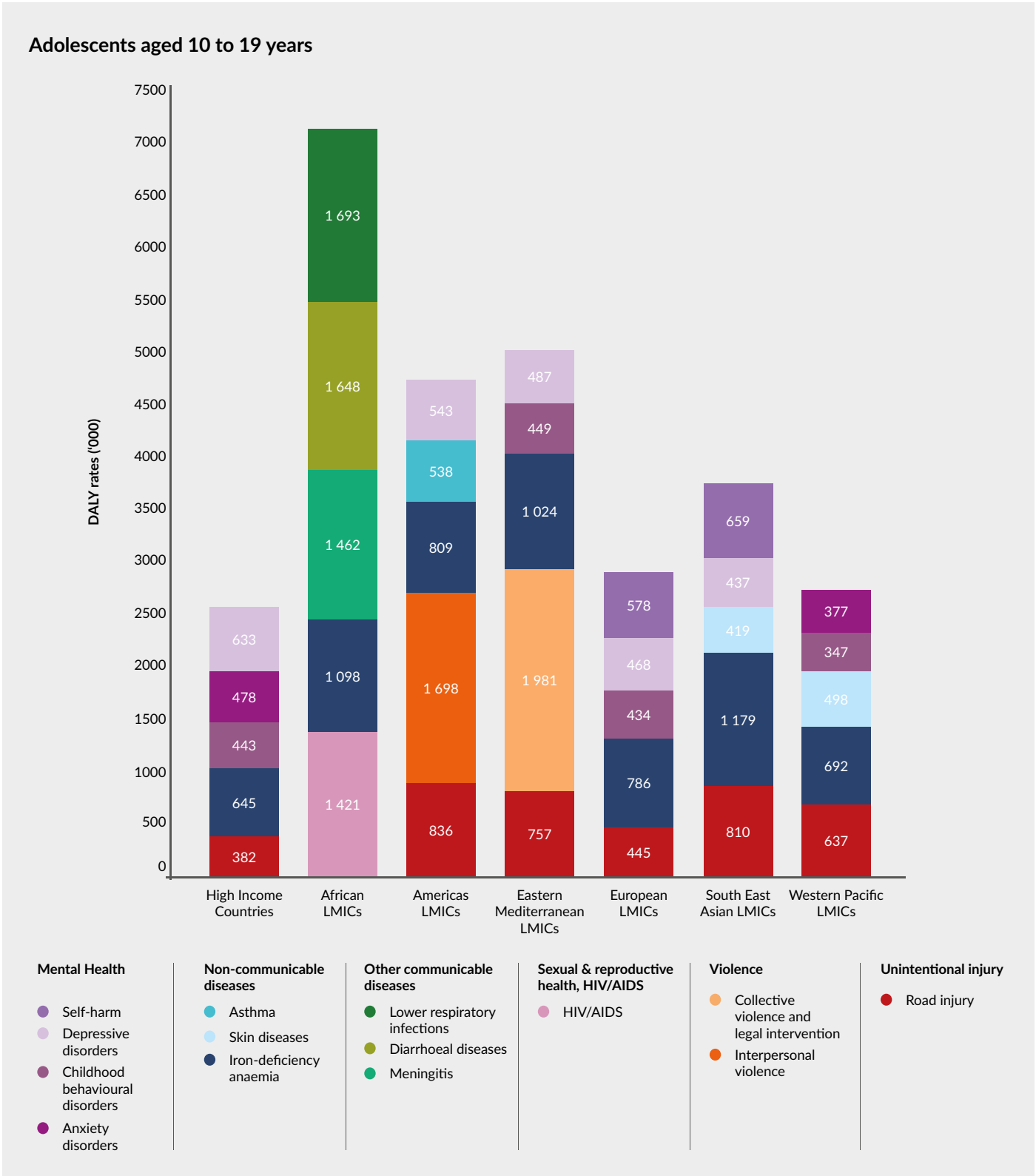
Table 2.5 and Figure 2.5 show the leading five causes of adolescent DALYs lost for the seven modified WHO regions. Again, this table highlights that some causes of DALYs lost rank in the top five causes in most or all modified regions (i.e. iron-deficiency anaemia, depressive disorders and road injury). 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.



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

Global risk factors associated with adolescent DALYs lost						
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

2.5. 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 suicide 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 generalized 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 prevalence 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 aggressive, 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 important 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.

[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.

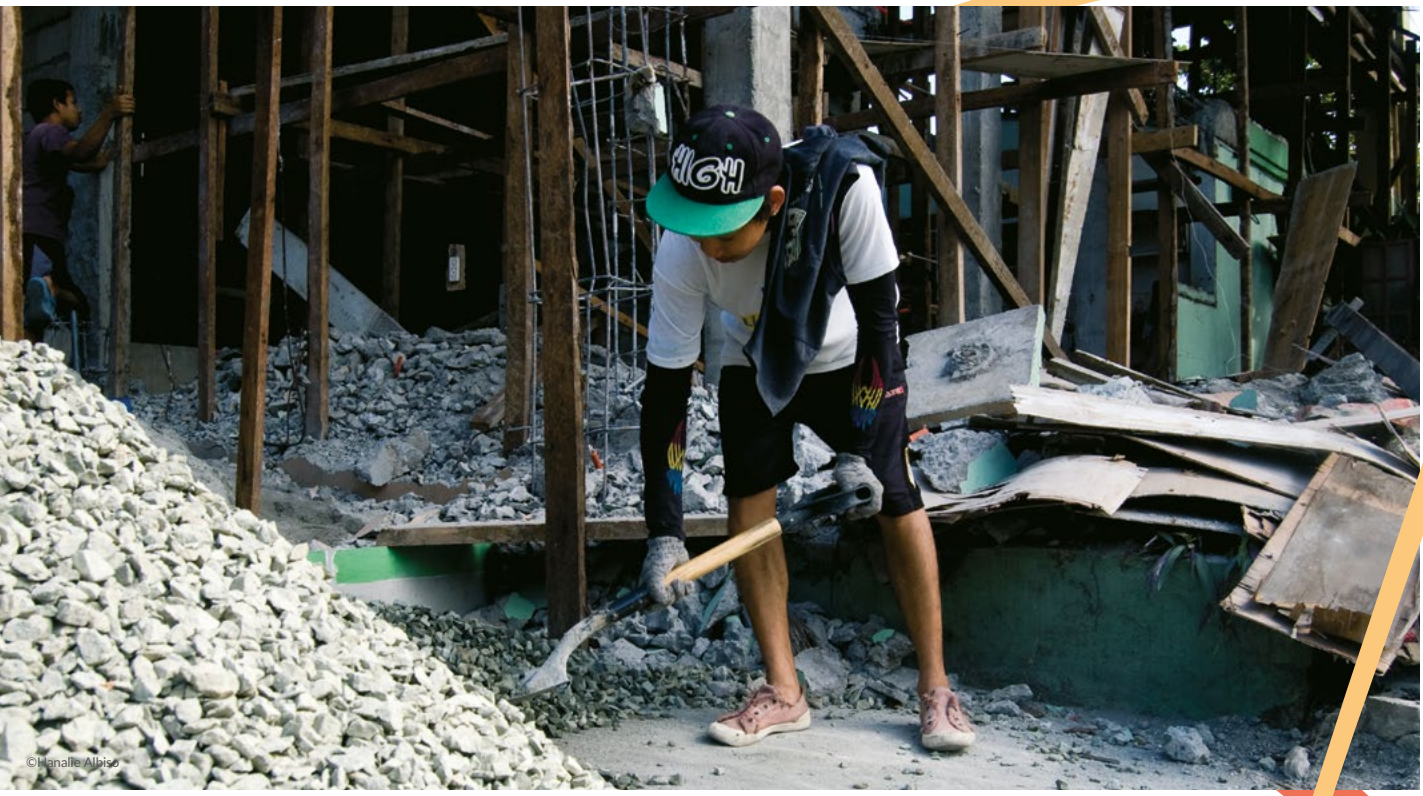

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Table 3.3. Interventions to prevent and mitigate road traffic injuries among adolescents

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).

3. Evidence-based interventions

Case Study 2

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.

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.

3. Evidence-based interventions

Global Strategy adolescent health intervention

No. 4: Prevention and response to child maltreatment

Examples: abuse of adolescents

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

Global Strategy adolescent health intervention

No. 6: Comprehensive sexuality education

Examples: unsafe sex

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."*

[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."*

Older adolescent girls in Colombia

3. Evidence-based interventions

Global Strategy adolescent health intervention

No. 8: Prevention of and response to harmful practices, such as female genital mutilation and early and forced marriage

Examples: female genital mutilation and early and/or forced marriage

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

Global Strategy adolescent health intervention

No. 11: Voluntary medical male circumcision (VMMC) in countries with generalized HIV epidemics

Examples: HIV and other STIs

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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Global Strategy adolescent health intervention

No. 12: Comprehensive care of children (including adolescents) living with, or exposed to, HIV

Examples: HIV and AIDS

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

Global Strategy adolescent health intervention

No. 14: Routine vaccinations, e.g. human papillomavirus, hepatitis B, diphtheria-tetanus, rubella, measles

Examples: multiple infectious diseases (e.g. diarrhoeal diseases and sexually transmitted infections)

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

©Camila Eugenia Vargas

3. Evidence-based interventions

Global Strategy adolescent health intervention

No. 16: Case management of meningitis

Examples: meningitis

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

Global Strategy adolescent health intervention

No. 18: Prevention, detection and treatment of non-communicable diseases

Examples: leukaemia, asthma and skin diseases

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

Global Strategy adolescent health intervention

No. 23: Psychosocial support and related services for adolescent mental health and well-being

Examples: unipolar depressive disorders and anxiety disorders

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

Global Strategy adolescent health intervention

No. 26: Detection and management of hazardous and harmful substance use

Examples: alcohol and drug use disorders

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).

Global Strategy adolescent health intervention

No. 27: Prevention of suicide and management of self-harm and suicide risks

Examples: suicide

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**

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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).

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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

Case Study 11

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

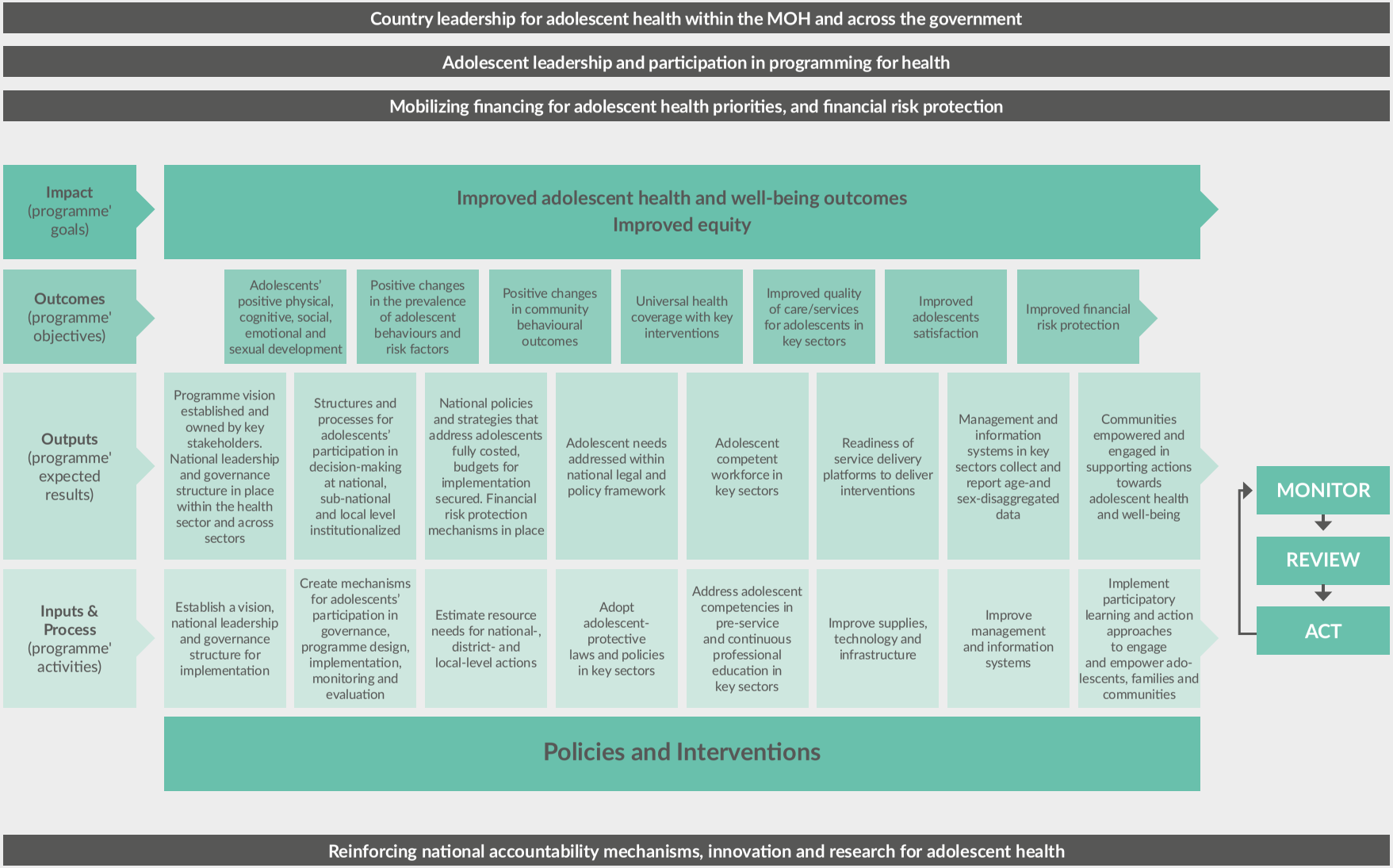

Figure 5.2. An overview of health and other sectors roles in programming for adolescent health

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.

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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).

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 decision-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 meaningful 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).

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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.

5. National programming

Key areas for programming (continued):
Consent and assent to health treatment or services

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:

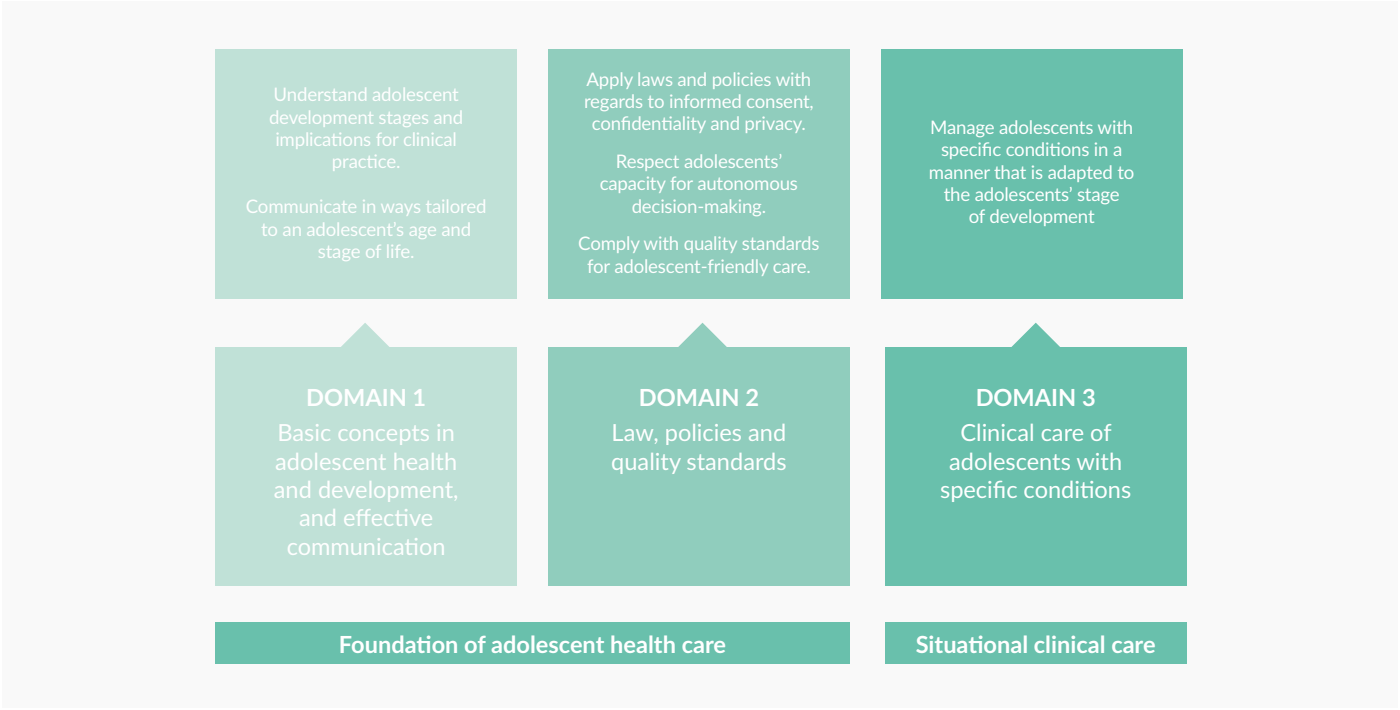
- All 50 states and the District of Columbia explicitly allow minors to consent to STI services, although 11 states require that a minor be of a certain age (generally 12 or 14) before being allowed to consent.
- Thirty-two states explicitly include HIV testing and treatment in the package of STI services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

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



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.

Source: (320)

5. National programming

Key areas for programming (continued):
An adolescent-competent workforce

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).

5. National programming

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. National programming

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.

5. National programming

Key areas for programming (continued):
The education sector (19); (310); (326); (333); (334).

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

5. National programming

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.

5. National programming

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.

Box 5.4. Practical considerations in planning and managing an intersectoral programme (continued)

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.

5. National programming

Case Study 18

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.

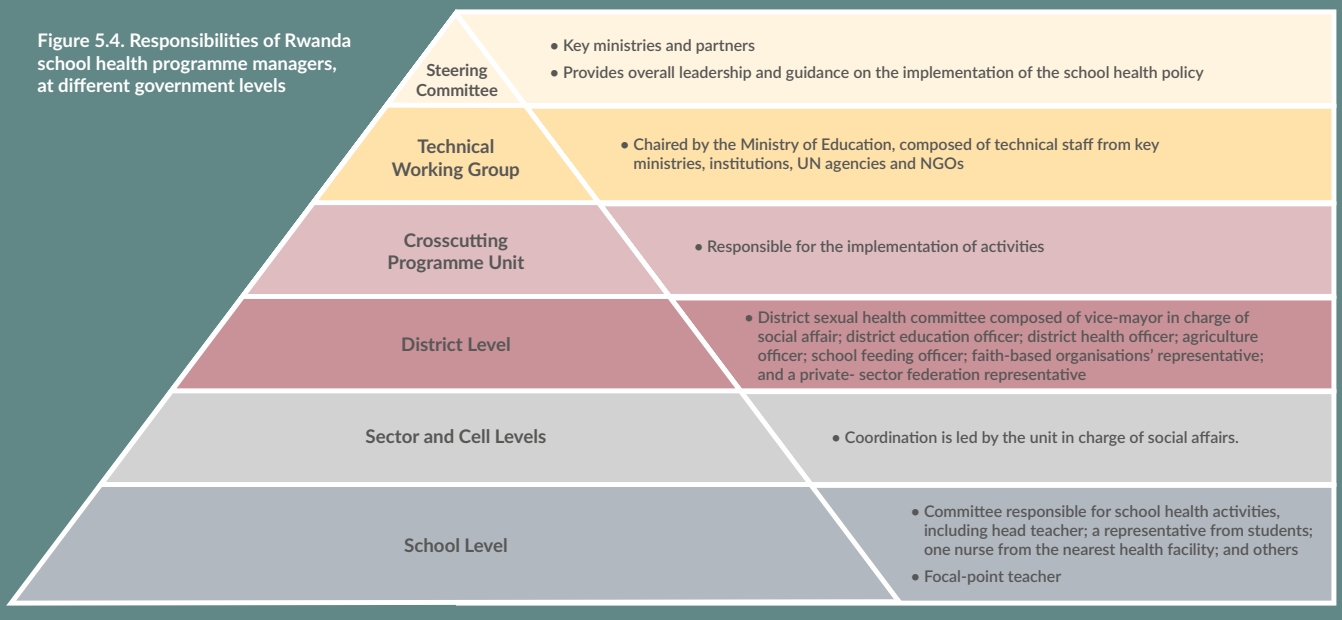
The school health policy recommends policy actions in eight key areas:

- 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



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

5. National programming

Key areas for programming (continued): Intersectoral programmes

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)

6. Monitoring, evaluation and research

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

6. Monitoring, evaluation and research

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.

6. Monitoring, evaluation and research

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.

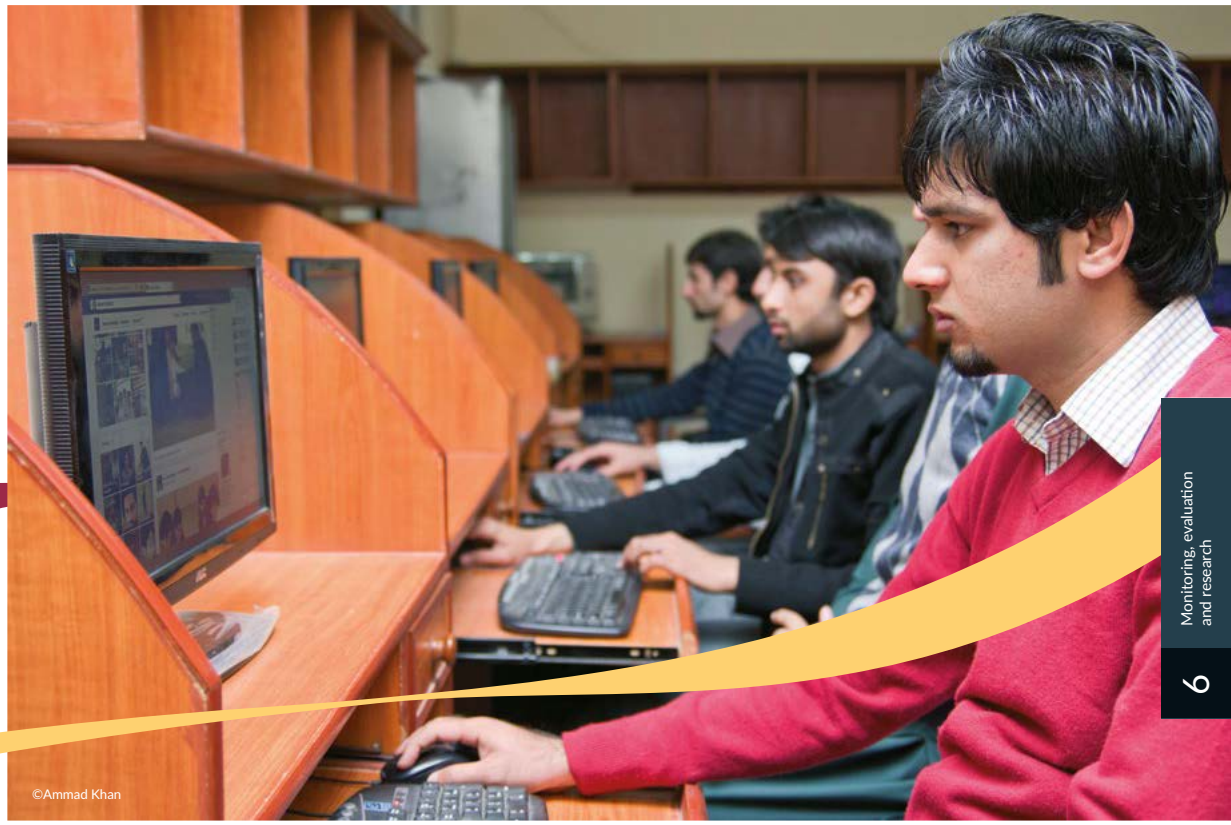
The potential for collecting and/or mining data that come directly from adolescents and young adults through electronic media, such as text messages, radio phone-in programmes and social media is likely to increase considerably during the period of the Global Strategy.

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

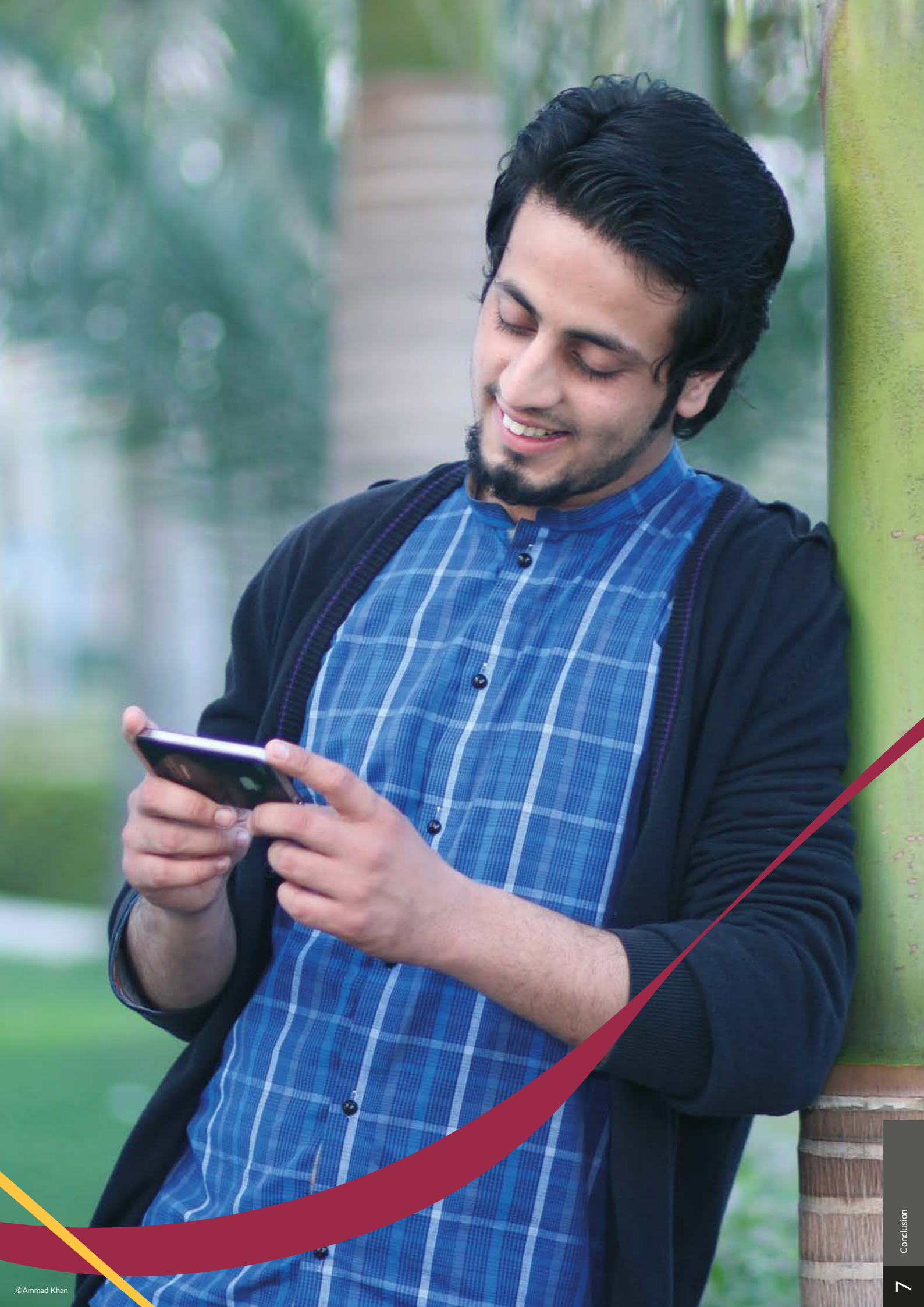
This is an exciting time for adolescent health. In many countries, adolescent health services and programmes are no longer simply subsumed under those for children or adults. Instead, numerous governments have developed and now implement adolescent-specific national health programmes. These efforts vary 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.



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