

# Global Accelerated Action for the Health of Adolescents (AA-HA!): Implementation Guidance DRAFT

--- ANNEX 6 ONLY ---

World Health Organization, 13 December 2016

## ANNEX 6. ADDITIONAL INFORMATION ABOUT MONITORING, EVALUATION, AND RESEARCH

- A6.1. Global Strategy Indicators Related to Adolescent Health
- A6.2. Additional Case Studies of Monitoring, Evaluation, and Research (*Case Studies A6.1-A6.3*)
- A6.3. Additional Information about Priority Areas for Future Research
- A6.4. References [Section 6 and Annex 6 combined]

### A6.1. GLOBAL STRATEGY INDICATORS RELATED TO ADOLESCENT HEALTH

Table A6.1 is a summary of the 12 key and 31 additional indicators that relate to adolescent health, plus the 17 indicators that require further development, that were proposed by the Indicator and Monitoring Framework for the Global Strategy for Women's, Children's and Adolescents' Health (EWEC 2016a).

#### Table A6.1. Global Strategy indicators related to adolescent health.

**Source:** EWEC 2016a. Indicator and Monitoring Framework for the Global Strategy for Women's, Children's and Adolescent's Health (2016-2030).

**Key: Bold Print: Key indicator; Normal Print: Additional indicator; *Italics: Indicator for further development***

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
<b>Reduce global maternal mortality to less than 70 per 100 000 live births</b>			
	<ul style="list-style-type: none"> <li>• Proportion of women aged 15-49 who received 4 or more antenatal care visits (Outcome)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Maternal mortality ratio</b> (Impact)</li> <li>• Proportion of births attended by skilled health personnel (Outcome)</li> <li>• Proportion of women who had a postpartum contact with a health provider within 2 days (Outcome)</li> <li>• <i>Maternal cause of death (direct/indirect) (Impact)</i></li> <li>• <i>Proportion of women with obstetric complications due to abortion (Impact)</i></li> </ul>	
<b>End epidemics of HIV, tuberculosis, malaria, neglected tropical diseases and other communicable diseases</b>			

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
	<ul style="list-style-type: none"> <li>Number of new HIV infections per 1000 uninfected population, disaggregated by age and sex (Impact)</li> <li>Percentage of people living with HIV who are currently receiving antiretroviral therapy (ART), by age and sex (Outcome)</li> <li><i>Human papilloma virus (HPV) vaccine coverage among adolescents (Outcome)</i></li> </ul>		<ul style="list-style-type: none"> <li>Malaria incident cases per 1000 persons per year (Impact)</li> <li>Proportion of households with at least 1 ITN for every 2 people and/or sprayed by indoor residual spray (IRS) within the last 12 months (Outcome)</li> </ul>
<b>Reduce by 1/3 premature mortality from noncommunicable diseases and promote mental health and well-being</b>			
	<ul style="list-style-type: none"> <li><b>Adolescent mortality rate, by sex (Impact)</b></li> <li>Age standardized prevalence of current tobacco use among persons 15 years and older, disaggregated by age (Outcome)</li> <li><i>Adolescent cause of death (Impact)</i></li> <li><i>Harmful use of alcohol among adolescents (Outcome)</i></li> </ul>	<ul style="list-style-type: none"> <li>Suicide mortality rate, by age and sex (Impact)</li> <li><i>Prevalence of depression, by age and sex (Impact)</i></li> </ul>	
<b>End all forms of malnutrition, and address the nutritional needs of adolescent girls, pregnant and lactating women and children</b>			
	<ul style="list-style-type: none"> <li>Prevalence of insufficient physical activity among adolescents (Outcome)</li> <li>Prevalence of anaemia in women aged 15-49, disaggregated by age and pregnancy status (Impact)</li> </ul>		

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
<b>Ensure universal access to sexual and reproductive health-care services (including for family planning) and rights</b>			
	<ul style="list-style-type: none"> <li>Percentage of women of reproductive age (15-49) who have their need for family planning satisfied with modern methods (Outcome)</li> <li><b>Adolescent birth rate (10-14, 15-19) per 1000 women in that age group (Impact)</b></li> <li>Proportion of women aged 15-49 who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care (Outcome)</li> <li><b>Number of countries with laws and regulations that guarantee women aged 15-49 access to sexual and reproductive health care, information and education (Output)</b></li> <li>Proportion of men and women aged 15-24 with basic knowledge about sexual and reproductive health and rights (SRHR) (Impact)</li> <li><i>Proportion of secondary schools that provide comprehensive sexuality education (CSE) (Outcome)</i></li> </ul>		
<b>Substantially reduce pollution-related deaths and illnesses</b>			
			<ul style="list-style-type: none"> <li>Mortality rate attributed to household and ambient air pollution, by age and sex (Impact)</li> <li><b>Proportion of population with primary reliance on clean fuels and technology (Outcome)</b></li> </ul>

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
<b>Achieve universal health coverage, including financial risk protection and access to quality essential services, medicines and vaccines</b>			
			<ul style="list-style-type: none"> <li>• Coverage of essential health services, including RMNCAH (Outcome)</li> <li>• Proportion of the population with financial protection (Output)</li> <li>• Current country health expenditure per capita (including specifically on RMNCAH) financed from domestic sources (Input/Process)</li> <li>• Out-of-pocket expenditure as percentage of total health expenditure (Input/Process)</li> </ul>
<b>Eradicate extreme poverty</b>			
			<ul style="list-style-type: none"> <li>• Proportion of population below international poverty line, by sex, age and employment (Impact)</li> </ul>
<b>Ensure that all girls and boys complete free, equitable and good-quality secondary education</b>			
	<ul style="list-style-type: none"> <li>• Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex (Impact)</li> <li>• Indicator of youth disenfranchisement (Impact)</li> </ul>		

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
<b>Eliminate all harmful practices and all discrimination and violence against women and girls</b>			
	<ul style="list-style-type: none"> <li>Percentage of women aged 20-24 who were married or in a union before age 15 and before age 18 (Impact)</li> <li><b>Proportion of ever-partnered women and girls aged 15 and older subjected to physical, sexual or psychological violence by a current or former intimate partner, in the last 12 months, by form of violence and by age group (Impact)</b></li> <li>Proportion of women and girls aged 15-49 who have undergone female genital mutilation/cutting (FGM/C), by age (Impact)</li> <li>Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex (Output)</li> <li><b>Proportion of young women and men aged 18-29 who experienced sexual violence by age 18 (Impact)</b></li> </ul>	<ul style="list-style-type: none"> <li><i>Percentage of the population reporting having personally felt discriminated against or harassed within the last 12 months on the basis of a ground of discrimination prohibited under international human rights law, disaggregated by age and sex (Impact)</i></li> </ul>	<ul style="list-style-type: none"> <li>Proportion of rape survivors who received HIV post-exposure prophylaxis (PEP) within 72 hours of an incident occurring (Outcome)</li> <li><i>Health-sector specific indicator on discrimination (Outcome)</i></li> </ul>
<b>Achieve universal and equitable access to safe and affordable drinking water and to adequate sanitation and hygiene</b>			
			<ul style="list-style-type: none"> <li><b>Percentage of population using safely managed sanitation services including a hand washing facility with soap and water (Outcome)</b></li> <li>Percentage of population using safely managed drinking water services (Outcome)</li> </ul>

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
<b>Enhance scientific research, upgrade technological capabilities and encourage innovation</b>			
			<ul style="list-style-type: none"> <li>• Research and development expenditure as a proportion of GDP, disaggregated by health/RMNCAH (Input)</li> <li>• <i>Proportion of countries that have systematic innovation registration mechanisms in place for women's, children's and adolescents' health (WCAH) and are reporting top 3 domestic innovations on an annual basis (Input/Process)</i></li> <li>• <i>Proportion of countries that have mechanisms to review innovations using effective Health Technology Assessment approaches (Input/Process)</i></li> </ul>
<b>Provide legal identity for all, including birth registration</b>			
			<ul style="list-style-type: none"> <li>• Proportion of countries that (a) have conducted at least 1 population and housing census in the last 10 years; and (b) have achieved 100% birth registration and 80% death registration (Outcome)</li> </ul>

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
<b>Enhance the global partnership for sustainable development</b>			
			<ul style="list-style-type: none"> <li>• Number of countries reporting progress in multistakeholder development effectiveness monitoring frameworks that support the achievement of the SDGs (Input/Process)</li> <li>• Governance Index (voice, accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption) (Impact)</li> <li>• Does the national RMNCAH strategy/plan of action specify that there should be community participation in decision-making, delivery of health services and monitoring and evaluation? (Input/Process)</li> <li>• <i>Proportion of countries that address young people's multisectorial needs within their national development plans and poverty reduction strategies (Input/Process)</i></li> <li>• <i>Participation measures-women's groups, youth, civil society etc (Output)</i></li> <li>• Implementation rate of commitments to the Global Strategy (Output)</li> </ul>
<b>Equity, humanitarian and human rights as cross-cutting considerations</b>			
			<ul style="list-style-type: none"> <li>• Proportion of indicators at the national (regional, global) level with full disaggregation when relevant, for GS indicators (Input/Process)</li> <li>• Ratification of human</li> </ul>

Target	Indicator (Type)		
	Covers adolescents, including specified age range	Covers adolescents if age disaggregated (no specified age range)	Applicable to all (including adolescents)
			<p>rights treaties related to women’s, children’s and adolescents’ health (Output)</p> <ul style="list-style-type: none"> <li>• Humanitarian Response Index (Outcome)</li> <li>• <i>Health-sector specific indicators on anti-corruption and transparency (Outcome)</i></li> <li>• <i>Percentage of programmes in humanitarian settings based on health needs assessments of women, children and adolescents (Input/Process)</i></li> <li>• <i>Funding gap in the transition from humanitarian aid to sustainable development (Input/Process)</i></li> </ul>

**Sources:** EWEC 2016a. Indicator and monitoring framework for the Global Strategy for Women’s, Children’s and Adolescents’ Health (2016-2030). Every Woman, Every Child, 2016. ([www.who.int/life-course/publications/gc-Indicator-and-monitoring-framework.pdf?ua=1](http://www.who.int/life-course/publications/gc-Indicator-and-monitoring-framework.pdf?ua=1)) downloaded 25<sup>th</sup> July 2016.

## A6.2. ADDITIONAL CASE STUDIES OF MONITORING, EVALUATION, AND RESEARCH

The potential value of institutionalized monitoring and periodic evaluations of adolescent health programmes is illustrated by the England’s Teenage Pregnancy Strategy which is summarized in Case Study A6.1 (Hadley et al 2016a, Hadley et al 2016b) and by the use of routinely-collected data to monitor the effects of a “Year of Sobriety “ in Lithuania in 2008 (Zaborskis et al 2010), summarized in Case Study A6.2.

### CASE STUDY A6.1. Lithuania’s use of routine data to monitor the effect of a “Year of Sobriety”.

Routine clinic attendance data proved very useful in detecting the effects of a national “Year of Sobriety” that was implemented in 2008. The rate of clinic attendances for treatment of toxic effects of alcohol in 7-14 year-olds had increased consistently year-on-year from 2000-2007. However, there was a substantially lower rate in 2008. A similar pattern was seen for road traffic accidents, injuries and deaths.

**Source:** Zaborskis A, Veryga A, Zemaitiene N, Zuoza R, Gaizauskiene A, Petkevicius R, Laukaitiene A. Lithuania: mediating the effects of alcohol and traffic safety control and policies. pp117-131 in: WHO 2010. Socio-environmentally determined health inequities among children and adolescents: Summary of outcomes, background papers and country case studies. Copenhagen, WHO Europe, 2010.

### **CASE STUDY A6.2. England's monitoring and evaluation of its national teenage pregnancy strategy.**

The ten-year Pregnancy Strategy for England, launched in 1999, was a nationally-led, locally-implemented, evidence based programme, developed by the UK government. The main objective of the Strategy was to halve the under-18 conception-rate. An Independent Advisory Group on Teenage Pregnancy was created to monitor progress and advise Ministers. In 2005, a midcourse evaluation was undertaken to explore and compare the outcomes of the high and low performing areas of intervention.

Results showed that areas with better under-18 conception rates had developed their strategy fully in line with the national guidance. The high performing areas had strong senior leadership to prioritize the strategy and had continuous monitoring of their progress. These findings translated into a new national guidance, which included 10 key factors for an effective local strategy and a self-assessment tool to help local areas identify gaps in their strategy. The Minister of Health directly engaged with low performing areas to strengthen the local leadership. The success of the strategy was shown by the achievement of a 51% reduction in the under-18 conception rate between 1998 and 2013.

**Sources:** Hadley A, Chandra-Mouli V, Ingham R. Implementing the United Kingdom Government's 10-Year Teenage Pregnancy Strategy for England (1999-2010): Applicable lessons for Other Countries. *J Adolesc Hlth* 2016;59:68-74; Hadley A, Chandra-Mouli V, Ingham R (2016b). Implementing the United Kingdom's ten year teenage pregnancy strategy for England (1999-2010): How was this done and what did it achieve? *Reproductive Health* (2016) 13:139 DOI 10.1186/s12978-016-0255-4.

An example of an evaluation of a reproductive and sexual health programme in Jharkhand State, India (Barua et al. 2016) in Case Study A6.3.

### **CASE STUDY A6.3. India's evaluation of an adolescent sexual and reproductive health services project.**

The Tarunya project in Jharkhand State, India was launched in 2008 by EngenderHealth with support from the David and Lucile Packard Foundation. The main objective of the project was to improve the quality of adolescent reproductive and sexual health services (ARSH). The project aimed to provide ARSH training to government staff, to strengthen outreach activities to enhance community engagement, and to institutionalize necessary changes in state policies to achieve this. The project was initiated in 12 districts and in 2011 it was scaled up to all 24 districts of the State.

After five years of implementation, internal and external evaluations were carried out. Three main components of the ARSH program were evaluated:

- The project's strategy to improve and expand ARSH service provision to adolescents
- The quality of ARSH services for adolescents and whether this had improved
- Utilization of health services by adolescents

The evaluation was conducted in 34 health facilities in 19 of the 24 districts, using individual interviews and focus group discussions, observations in the facilities, and using household surveys. A composite index for the quality of service provision (including 20 indicators) was developed to measure the health facility and individual health care worker performance in

ARSH services. Each Health facility was then assigned to one of categories of performance (“high”, “medium” or “low”).

The evaluation reported that the project had carried out a number of activities to improve the quality of ARSH services to adolescents, including the development of problem-solving tools. A significant improvement in quality of ARSH services was noted to be linked to the intensity of the project’s intervention. However there was no consistent association between the facility’s quality ranking and the client’s perception of quality of health service delivery. In addition, the team’s assessment revealed that there was only a limited increase in service use by adolescents. These results were used to highlight the need for continued staff training, institutionalization of monitoring and data management, and further research to better understand adolescents health service needs.

**Source:** A. Barua, V. Chandra-Mouli (2016). *The Tarunya Project’s efforts to improve the quality of adolescent reproductive and sexual health services in Jharkhand state, India: a post-hoc evaluation*. Internat J Adolesc Med Hlth, 2016. DOI: 10.1515/ijamh-2016-0024.

### A6.3. ADDITIONAL INFORMATION ABOUT PRIORITY AREAS FOR FUTURE RESEARCH

Tables A6.2 and A6.3 show the five top-ranked SRH research questions in each of the seven domains of adolescent sexual and reproductive health (Hindin et al 2013) (Table A6.2), and the eight other areas of adolescent health (Nagata et al 2016) that were included in a recent research prioritization exercise coordinated by WHO.

**Table A6.2. Research priorities related to adolescent sexual and reproductive health.**

**Source:** Hindin et al 2013.

Health Category		Type of question
<b>Maternal health</b>		
1	What strategies can improve the use of antenatal care, skilled birth attendants, PMTCT and postnatal care by adolescents in resource-poor settings?	Development: operations research/scaling up of existing interventions
2	What factors (including barriers and facilitators) are associated with the utilization of maternal health services (antenatal, intrapartum, postpartum) and neonatal care by adolescents in different settings?	Descriptive: epidemiological research/evaluation of existing interventions
3	What pregnancy outcomes (maternal and neonatal) among adolescents are related to mode of delivery, presence of a skilled birth attendant at delivery and care of infants up to 6 months of age?	Descriptive: epidemiological research/evaluation of existing interventions
4	Do programmes that promote postnatal family planning for adolescent mothers reduce subsequent unwanted pregnancies in this group?	Descriptive: epidemiological research/evaluation of existing interventions
5	Do adolescent girls and adult women receive different antenatal, delivery and postnatal care? If so, how and why?	Descriptive: epidemiological research/evaluation of existing interventions

**Table A6.2. Research priorities related to adolescent sexual and reproductive health.**  
(cont..d) Source: Hindin et al 2013.

<b>Contraception</b>		
1	What strategies can delay first births among married adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
2	Through what mechanisms can the provision of regular and emergency contraceptives to adolescents be financed or subsidized?	Development: operations research/scaling up of existing interventions
3	What strategies can increase consistent and effective condom use among both male and female adolescents?	Development: operations research/scaling up of existing interventions
4	What barriers do health-care providers face when trying to offer contraception services to unmarried adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
5	In settings with high rates of pregnancy in adolescence, what factors protect adolescents from unwanted and/or unsafe pregnancy?	Descriptive: epidemiological research/evaluation of existing interventions
<b>Gender-based violence</b>		
1	How do programmes that aim to keep girls in school longer through measures such as conditional cash transfers affect the prevalence of gender-based violence?	Descriptive: epidemiological research/evaluation of existing interventions
2	What interventions can be integrated into community settings (e.g. schools) to address gender-based violence and its related reproductive outcomes?	Development: operations research/scaling up of existing interventions
3	What strategies might reduce gender-based violence among adolescent sex workers?	Development: operations research/scaling up of existing interventions
4	How feasible, effective and sustainable is the training of community-based health workers on identification and referral of cases of gender-based violence?	Development: operations research/scaling up of existing interventions
5	What is the impact of "healthy schools" initiatives on the reduction in gender-based violence?	Descriptive: epidemiological research/evaluation of existing interventions
<b>HIV treatment and care</b>		
1	What factors facilitate uptake, retention and adherence and minimize treatment failure among adolescents?	Development: operations research/scaling up of existing interventions
2	How do user fees affect access to, use of and retention in treatment among adolescents living with HIV?	Development: operations research/scaling up of existing interventions
3	What factors influence the disclosure of HIV status to others among adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
4	What proportion of young women who test positive for HIV in antenatal or delivery care: (i) receive and take drugs for PMTCT; (ii) are assessed to determine if they need lifelong HAART; (iii) are started on lifelong HAART if clinically indicated?	Descriptive: epidemiological research/evaluation of existing interventions
5	What aspects of the delivery of HIV testing and counselling services are most important from the perspective of adolescents: the speed of the results; confidentiality and anonymity; the social and health services offered; the counselling offered; whether or not they are integrated into the health system?	Development: operations research/scaling up of existing interventions

**Table A6.2. Research priorities related to adolescent sexual and reproductive health. (cont..d)** Source: Hindin et al 2013.

<b>Abortion</b>		
1	How does the provision of contraceptive methods (especially long-acting, reversible methods) as part of post-abortion care affect unintended pregnancy and repeat abortion rates among adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
2	What interventions are effective for informing adolescents about the availability and safe use of misoprostol?	Development: operations research/scaling up of existing interventions
3	How does cost influence adolescents' abortion-seeking behaviour?	Development: operations research/scaling up of existing interventions
4	How much awareness of abortion law, access to safe abortion services and post-abortion care exists among adolescents?	Descriptive: epidemiological research/evaluation of existing interventions
5	What do adolescents know about less invasive procedures for pregnancy termination and post-abortion care (e.g. misoprostol), and to what extent do they have access to them or use them?	Descriptive: epidemiological research/evaluation of existing interventions
<b>Family Planning and HIV service integration</b>		
1	What modalities for delivering integrated HIV/FP services to adolescent boys work best?	Development: operations research/scaling up of existing interventions
2	Does the provision of comprehensive sex education at school: (i) reduce adolescent pregnancies, (ii) increase health-care seeking behaviour among adolescents, or (iii) reduce the incidence of STIs, including HIV infection?	Descriptive: epidemiological research/evaluation of existing interventions
3	What are the most effective and affordable models for delivering integrated contraception and HIV services and information to young married couples?	Development: operations research/scaling up of existing interventions
4	What female-controlled methods for preventing both STIs and pregnancy can be developed and tested?	Discovery: new interventions
5	How much do young female sex workers and injecting drug users need and use contraceptives??	Descriptive: epidemiological research/evaluation of existing interventions
<b>Sexually Transmitted Infections (STIs) and Human Papillomavirus (HPV) infection</b>		
1	What alternative dosing schedules can facilitate HPV vaccine delivery in low-resource settings?	Discovery: new interventions
2	How can school-based and community-based programmes for STI counselling and testing, HPV vaccination and sex education be scaled up?	Development: operations research/scaling up of existing interventions
3	What are the most effective, efficient and sustainable ways to deliver vaccination against HPV?	Development: operations research/scaling up of existing interventions
4	How can adolescents who do not use available STI services (e.g. conditional cash transfers, mobile clinics) be reached?	Development: operations research/scaling up of existing interventions
5	What is the cost-effectiveness of HIV/STI screening programmes among adolescents at highest risk?	Development: operations research/scaling up of existing interventions
5	How can the incorporation of syphilis testing in SRH and maternal health services be optimized to ensure that all adolescents, including pregnant girls, get screened and treated?	Development: operations research/scaling up of existing interventions

**Source:** Hindin MJ, Christiansen CS, Ferguson BJ. Setting research priorities for adolescent sexual and reproductive health in low- and middle-income countries. *Bull World Health Organ* 2013;**91**:10e8.

**Table A6.3. Research priorities in eight areas of adolescent health.**

Source: Nagata et al 2016.

Health Category		Type of Question
<b>Communicable diseases prevention and management</b>		
1	What are the key barriers faced by adolescents to access TB and TB/HIV diagnostic and treatment services in high and low income countries, and how can these be overcome?	Intervention: Delivery/Implementation
2	What are treatment adherence rates, and what are the risk factors for non-adherence or default, among adolescents on long-term treatment for TB?	Descriptive epidemiology
3	What is the potential contribution of peer-led interventions for improving retention in care among adolescents with TB and/or HIV?	Intervention: Delivery/Implementation
4	Which programmatic interventions developed to improve adolescent retention in care and treatment adherence for other communicable diseases (i.e. HIV) would be useful for application in TB programs?	Intervention: Delivery/Implementation
5	What is the incidence and burden of TB among younger (10-14y) and older (15-19y) adolescents in the world, by sex particularly among adolescents with HIV, and what proportion of the adolescents have drug resistant TB?	Descriptive epidemiology
<b>Injuries and violence</b>		
1	What are the barriers and facilitators to increasing compliance with motorcycle helmet legislation?	Intervention: Delivery/Implementation
2	What are the risk and protective factors at various levels (individual, family, peer/social, community) for injuries and violence among adolescents LMICs?	Descriptive epidemiology
3	How best can school-based 'safe routes to school' initiatives be scaled up to include larger numbers of schools and to be incorporated with community-based initiatives?	Intervention: Delivery/Implementation
4	To what extent do strategies that have been shown to reduce one form of violence (e.g., bullying) effectively prevent other forms of violence that youth experience (e.g., partner violence, sexual violence, suicidal behaviour)?	Intervention: Development/Testing
5	What types of communication strategies work best to actually change the key behaviours that put adolescents at increased risk of injuries?	Intervention: Delivery/Implementation
<b>Mental health</b>		
1	What would be the most cost-effective, affordable and feasible package of interventions for promotion of mental health and prevention of mental health disorders among adolescents?	Intervention: Development/Testing
2	What are effective interventions to prevent and treat mental health problems of adolescents that can be delivered at primary care level in LMICs?	Intervention: Development/Testing
3	What are effective interventions addressing self-harm/suicide in adolescent girls in LMICs?	Intervention: Development/Testing
4	What are the costs and benefits of integrating management of child and adolescent mental disorders with other child and adolescent health care delivery platforms?	Intervention: Delivery/Implementation
5	How can mental health and psychosocial support (including identification, support and basic management of relevant conditions) be integrated with adolescent friendly services, general health, reproductive health etc?	Intervention: Delivery/Implementation

**Table A6.3. Research priorities in eight areas of adolescent health (cont..d)**

Source: Nagata et al 2016.

<b>Non-communicable disease management</b>		
1	Can a low cost rapid antigen test for diagnosis of streptococcal pharyngitis (which can lead to rheumatic heart disease) be developed that is suitable for use in low resource settings?	Intervention: Discovery
2	Can interventions for the management of NCDs that have been shown to be effective in adults be used directly in adolescents?	Intervention: Development/Testing
3	How do interventions devised for the management of NCDs in high income countries be used for adolescents in low and middle-income countries translate globally?	Intervention: Delivery/Implementation
4	What are the mortality and morbidity rates and their causes amongst adolescents with diabetes in low- and middle-income countries?	Descriptive epidemiology
5	What proportion of children born with sickle cell disease survive into and through adolescence?	Descriptive epidemiology
<b>Nutrition</b>		
1	What are the causes of anaemia among adolescent girls and how does this vary by region?	Descriptive epidemiology
2	What are the relationships between early pregnancy and stunting, anaemia, and NCD risk (overweight, diabetes, hypertension)?	Descriptive epidemiology
3	What social and behaviour change communication platforms are the most effective to reach adolescents to help them to improve their diet?	Intervention: Development/Testing
4	How does the burden of disease from nutritional causes for adolescent boys and girls vary by country and within countries, and by socio-economic status?	Descriptive epidemiology
5	What is the prevalence of adolescent under-nutrition and over-nutrition by risk/protective factors such as sex, urban/rural residence, schooling, access to green spaces, access to food and socio-economic strata in different world regions?	Descriptive epidemiology
<b>Physical activity</b>		
1	Considering comprehensive theoretical models and variables from different levels/systems/contexts (e.g., Socioecological Model), which variables predict, at an individual or population level, the different patterns of physical activity in adolescents living in low- and middle-income countries?	Descriptive epidemiology
2	What is the best (feasibility, cost, acceptability, effectiveness, sustainability) design of a school-based intervention that aims to engage and gain the support of students, parents and teachers for young people to take the recommended 60 minutes of physical activity daily, and to ensure that there are at least two physical education (PE) classes within schools per week, with at least 50% of the time for PE classes spent in moderate-to-vigorous intensity physical activity)?	Intervention: Discovery
3	What are the policy and/or environmental changes that influence physical activity among adolescents in low- and middle-income countries?	Intervention: Delivery/Implementation
4	How best can the capacity of the education sector be improved to deliver high quality physical education programs within schools?	Intervention: Delivery/Implementation
5	How does one best implement a sustainable, structured physical activity program for adolescents in schools and out of schools in LMICs?	Intervention: Delivery/Implementation

**Table A6.3. Research priorities in eight areas of adolescent health (cont..d)**

Source: Nagata et al 2016.

Substance use		
1	What prevention and treatment services related to substance use are acceptable to adolescents?	Intervention: Discovery
2	What are the risk factors contributing to adolescents' substance use in the different world regions?	Descriptive epidemiology
3	What is the effectiveness of implementation of youth friendly services interventions on substance use?	Intervention: Delivery/Implementation
4	What is the efficacy and effectiveness of a screening instrument linked to a brief intervention for alcohol use among adolescents for use in primary care settings?	Intervention: Development/Testing
5	Are there distinct patterns of and factors leading to substance use (tobacco and other substances) among in- and out-of school female adolescents and male adolescents? (These include: context of use, preferred substance, use related practices, among others)	Descriptive epidemiology
Adolescent health: policy, health and social systems		
1	What platforms and strategies are most effective to reach and help the most vulnerable adolescents (e.g. those not in school, slum dwellers and/or those in poor families)?	Intervention: Delivery/Implementation
2	What are the most cost-effective interventions to decrease multiple health-risk behaviours and conditions and promote healthy behaviours?	Intervention: Development/Testing
3	How can primary health care services be designed to most effectively meet the unique health needs of adolescents?	Intervention: Delivery/Implementation
4	How can new technologies such as cell phones and the Internet be used effectively to provide information, referral and treatment for adolescents?	Intervention: Delivery/Implementation
5	What is the coverage of primary health care services for adolescents?	Descriptive epidemiology

Source: Nagata JM, Ferguson BJ, Ross DA. Research priorities for eight areas of adolescent health in low- and middle-income countries. *J Adolescent Health* 2016;**59**(1):50-60. doi:10.1016/j.jadohealth.2016.03.016. s

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