6 SDG HEALTH AND HEALTH-RELATED TARGETS

Even though the indicators for the health and health-related SDG targets are still at the proposal stage, it is possible to provide an overview of the current situation broken down by country, region and globally. This not only provides initial information on the challenges ahead but also allows for assessment of the data gaps that exist for the proposed indicators.

6.1 Health targets – 13 targets and 26 proposed indicators

The health goal (SDG 3) comprises 13 targets, including four listed as "means-of-implementation" targets. Each target has one or two proposed indicators, with the exception of SDG Target 3.3: "By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable disease" which has five indicators; and SDG Target 3.9: "By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination" which has three. With a total of 26 indicators, the health goal has the largest number of proposed indicators of all the 17 SDGs.

SDG 3 targets cover a great deal of ground. Almost all of them can be linked to strategies and global action plans that have been adopted by the WHA in recent years, or are under development. Given that there are 13 health targets covering most national health concerns and the majority of international programmes, any approach to national health development that focuses on individual programmes in isolation will be counterproductive, and risk causing even greater fragmentation and competition than has been seen in the past. More crucially, it will fail to address the many cross-cutting issues that do not fit neatly into programme areas. The emphasis on UHC as a cross-cutting goal for the health sector should contribute to overcoming these challenges.[1]

The need for cross-cutting approaches to the health challenges faced should also inform the monitoring of individual targets; which needs to be done in a way that keeps the broader issues in focus. This includes very broad elements such as UHC and health systems, as well as the links to risk factors and determinants that are often considered external to the health sector. The SDGs provision of a framework for more-integrated action is of considerable importance in this regard.

Robust, reliable monitoring of progress and performance is of fundamental importance to all major programmes. The

1 Health in 2015: from MDGs to SDGs. Geneva: World Health Organization; 2015 (http://www.who.int/gho/publications/mdgs-sdgs/en/, accessed 10 April 2016).

sets of indicators proposed for the SDG targets provide critical information, but more information is often needed to understand why progress is or is not being made. In particular, more data are often needed on direct programme performance using coverage indicators and related quality-of-care measures.

6.2 Health-related targets in other goals – many targets linked to health

The SDGs are founded on the principle that they are "integrated and indivisible" – progress in one area is dependent upon progress in many others. Translating this idea into practical action is going to be one of the key challenges for the new agenda. With regard to health, deliberate action will be required to influence governance in many policy arenas to achieve health-sector goals. The health of people is not solely a health-sector responsibility; it is also impacted by issues such as transport, agriculture, housing, trade and foreign policy. To address the multisectoral nature of health determinants, the health sector should promote "Health in All Policies" – an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies and avoids harmful health impacts in order to improve population health and health equity, and address the social determinants of health.[1,2] Well over a dozen targets in other goals can be considered to be health related and should be given special attention in strategies, policies and plans to achieve the health goal, and in monitoring progress. Examples include targets related to nutrition, environmental risk factors and violence.

The SDGs provide a new and exciting opportunity to strengthen governance for health – the underlying assumption of which is that deliberate action is needed to influence governance in other policy arenas to promote and protect health. Areas of particular relevance include trade and intellectual property, sustainable energy, income inequality, migration, food security, and sustainable consumption and production. While much of the attention on governance for health has focused on global issues, the SDG declaration underlines the importance of governance for health at national and regional levels. While the integrated nature of the SDG agenda presents opportunities for new approaches to old problems, it also presents challenges. For example, it will require revisiting and reshaping the architecture for global health, particularly in relation to health security and the development of global public goods.

1 The Helsinki Statement on Health in All Policies. The 8th Global Conference on Health Promotion, Helsinki, 10–14 June 2013 (http://www.who.int/healthpromotion/conferences/8gchp/8gchp_helsinki_statement.pdf, accessed 10 April 2016).

2 Outcome of the World Conference on Social Determinants of Health. Resolution WHA65.8. In: Sixty-fifth World Health Assembly, Geneva, 21–26 May 2012. Resolutions and decisions, annexes. Geneva: World Health Organization; 2012:15–17 (WHA65/2012/REC/1; http://apps.who.int/gb/ebwha/pdf_files/WHA65-REC1/A65_REC1-en.pdf, accessed 10 April 2016).

6.3 Situation in 2016 – a sketch based on global data

This section provides a brief overview of the situation in key areas, drawing on the health and health-related indicators presented in Fig. 6.1. Countries in this "dashboard" are grouped by WHO region, with each country represented by a circle. The areas of focus are: (a) reproductive, maternal, newborn and child health; (b) infectious diseases; (c) NCDs and mental health; (d) injuries and violence; and (e) health systems. As the dashboard clearly shows, there are marked differences both between and within regions, as well as variations in the pattern for each indicator.

A more-extensive analysis is presented for the main indicators in the form of a series of two-page summaries (Annex A). These summaries cover the current situation, a brief discussion of what is needed to achieve the 2030 target, the equity dimension and the data gaps. Annex B then provides the latest country-level estimates for the indicators. Further information is available from the full database and SDG sections of the Global Health Observatory.[3]

Reproductive, maternal, newborn and child health

Multiple targets in SDG 3 and other goals refer to reproductive, maternal, newborn and child health. These include targets for mortality, service coverage, risk factors and health determinants (Table 6.1). *The Global Strategy for Women's, Children's and Adolescents' Health, 2016–2030* is fully aligned with the SDG targets, and is organized around

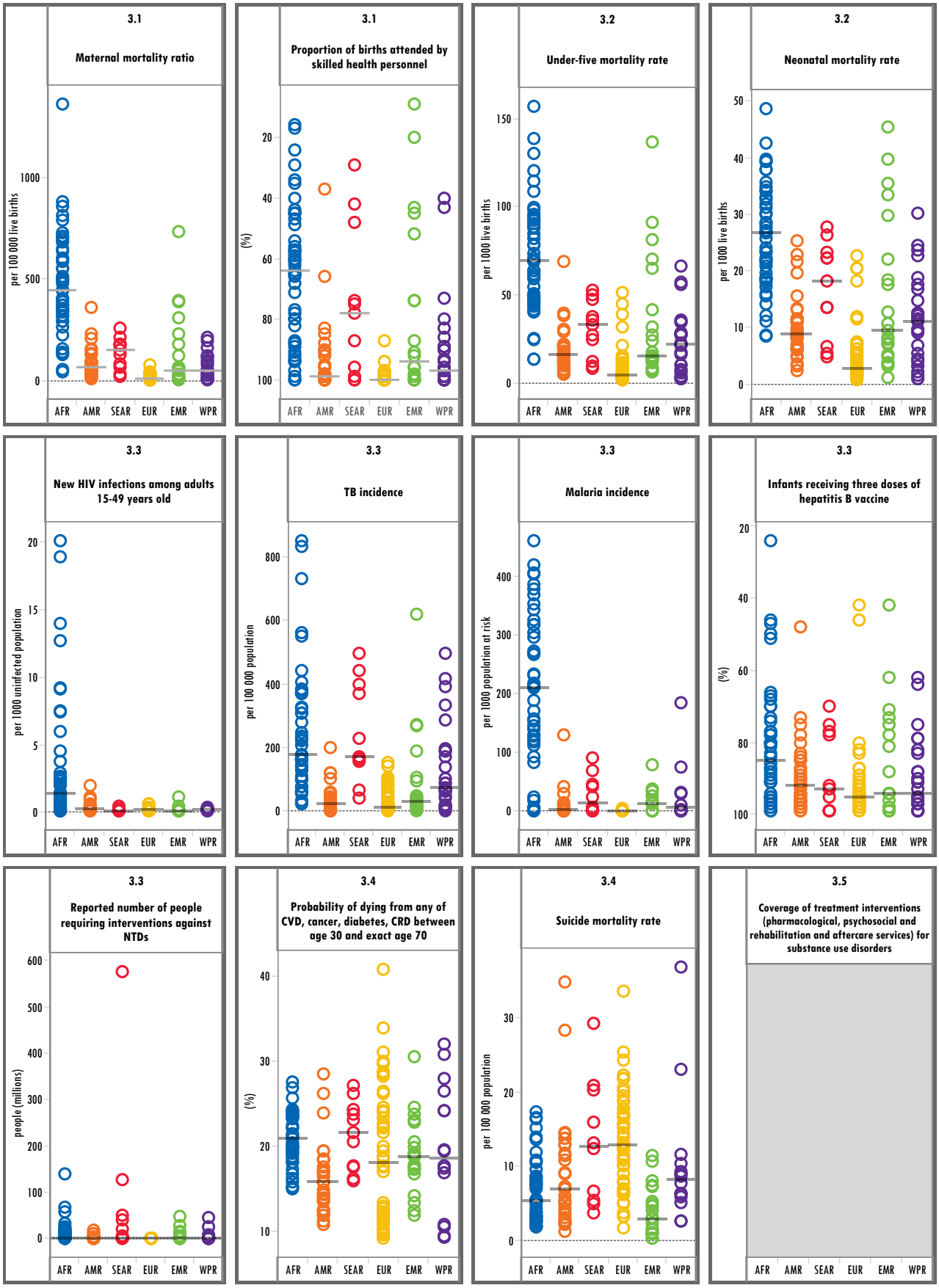
Table 6.1
Selected SDG targets and proposed indicators linked to reproductive, maternal, newborn and child health, by type of indicator

Type of indicator	SDG target	Proposed indicator
Impact	3.1	Maternal mortality
	3.2	Under-five mortality
	3.2	Neonatal mortality
	3.7	Adolescent birth rate
	3.9	Mortality due to unsafe water, sanitation and hygiene; Mortality due to air pollution (household and ambient)
Coverage	3.1	Births attended by skilled health personnel
	3.7	Family planning coverage
	3.8	UHC: RMNCH[a] tracers (family planning, antenatal and delivery care, full immunization coverage, health-seeking behaviour for suspected child pneumonia)
	37 (22)	Model life table systems
Risk factors/ determinants	2.2	Child stunting, child wasting, child overweight
	6.1	Access to safely managed drinking-water source
	6.2	Access to safely managed sanitation
	7.1	Clean household energy
	11.6	Ambient air pollution
	Other	Part of targets in goals on poverty, education, gender etc.

a RMNCH = reproductive, maternal, newborn and child health.

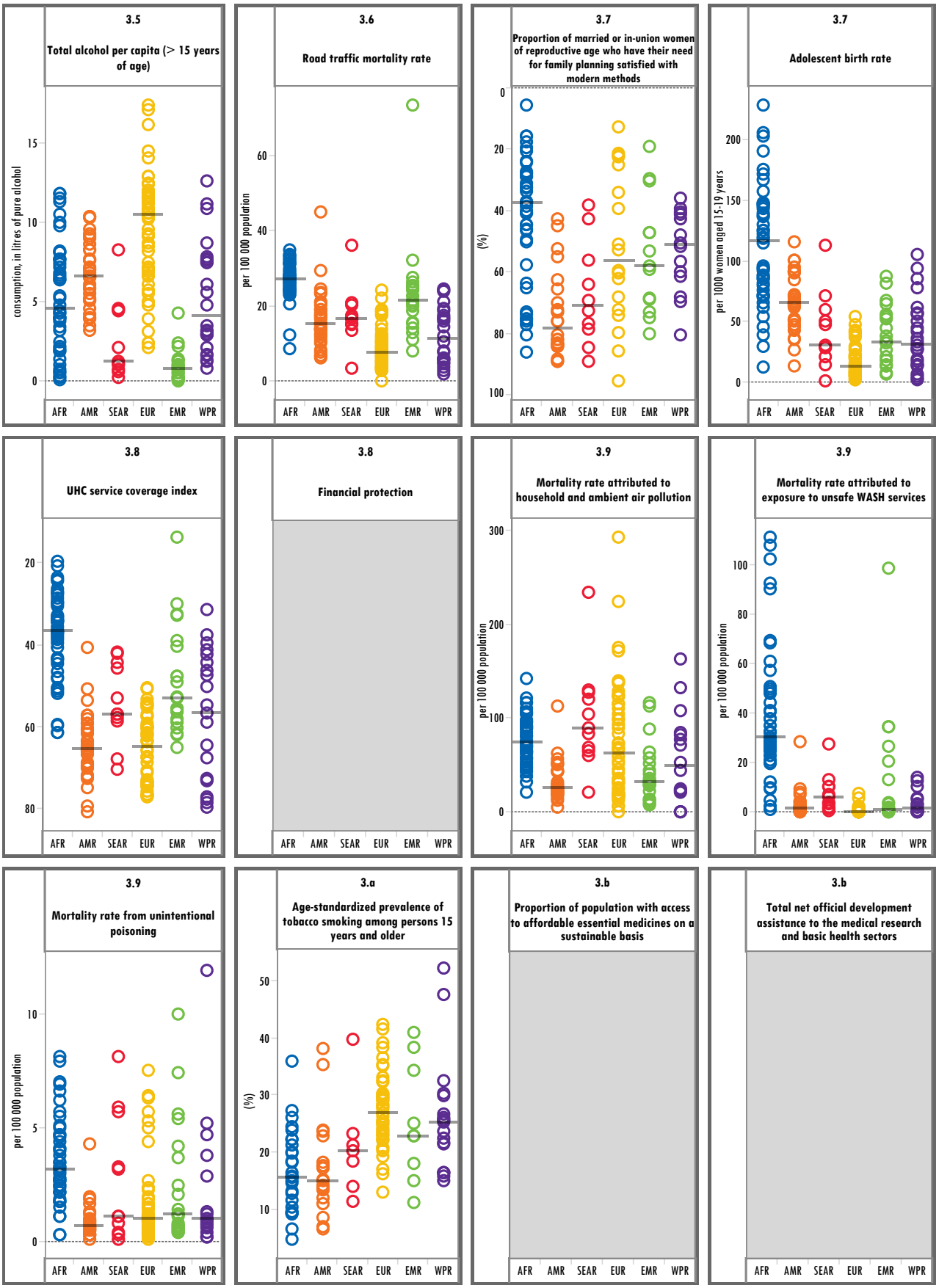
3 The Global Health Observatory (GHO) is WHO's portal providing access to data and analyses for monitoring the global health situation. See: http://www.who.int/gho/en/, accessed 16 April 2016.

Figure 6.1
Dashboard of SDG health and health-related indicators, by proposed indicator and WHO region[a]

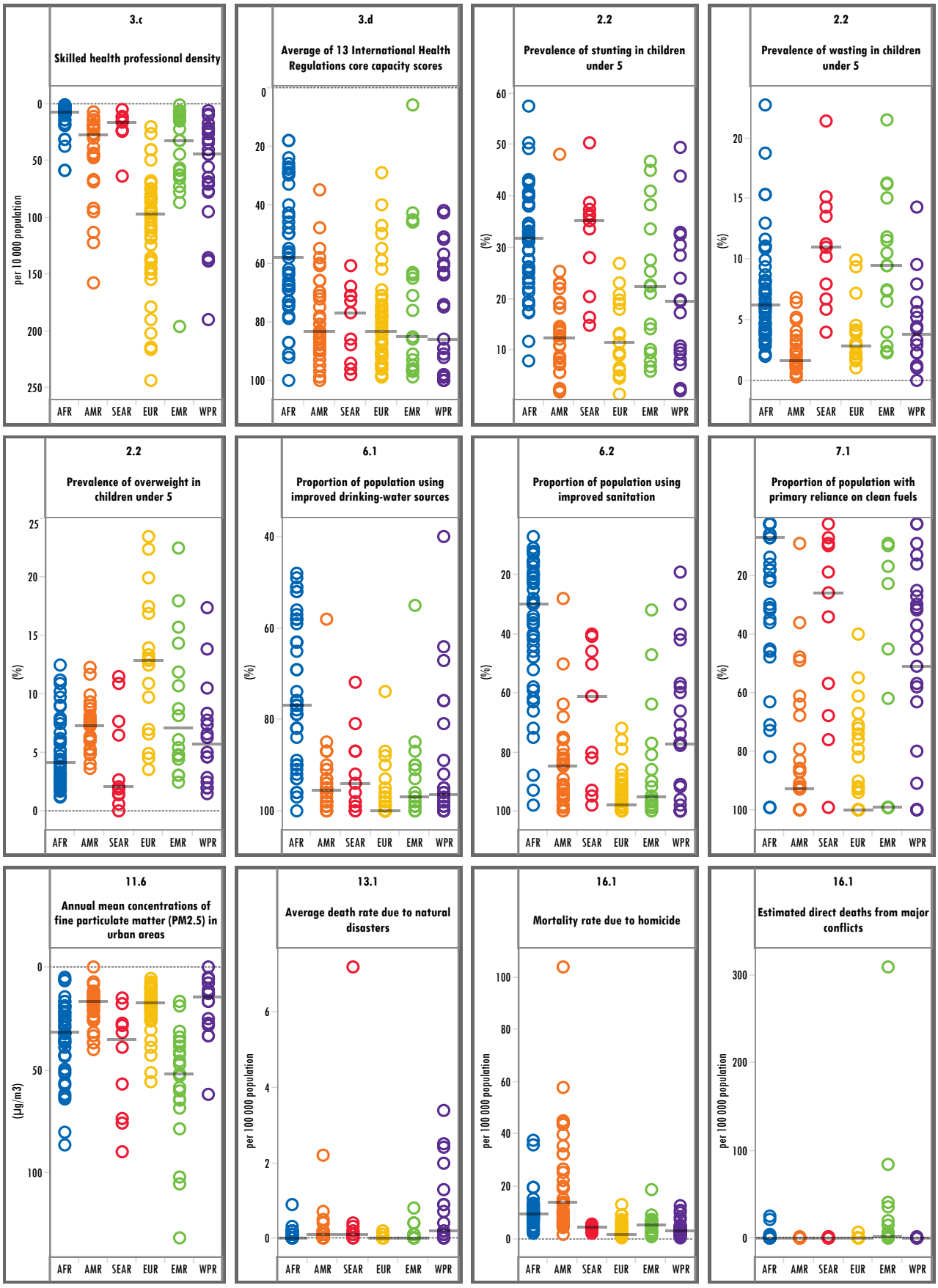


a Each circle represents a country value; horizontal lines indicate the median value for each group. See Annex B for more details on each indicator.

Figure 6.1
Dashboard of SDG health and health-related indicators, by proposed indicator and WHO region continued[a]



a Each circle represents a country value; horizontal lines indicate the median value for each group. See Annex B for more details on each indicator.


3.c
Skilled health professional density
per 10 000 population
0
50
100
150
200
250
AFR AMR SEAR EUR EMR WPR
3.d
Average of 13 International Health Regulations core capacity scores
0
20
40
60
80
100
AFR AMR SEAR EUR EMR WPR
2.2
Prevalence of stunting in children under 5
(%)
60
50
40
30
20
10
AFR AMR SEAR EUR EMR WPR
2.2
Prevalence of wasting in children under 5
(%)
20
15
10
5
0
AFR AMR SEAR EUR EMR WPR
2.2
Prevalence of overweight in children under 5
(%)
25
20
15
10
5
0
AFR AMR SEAR EUR EMR WPR
6.1
Proportion of population using improved drinking-water sources
(%)
40
60
80
100
AFR AMR SEAR EUR EMR WPR
6.2
Proportion of population using improved sanitation
(%)
20
40
60
80
100
AFR AMR SEAR EUR EMR WPR
7.1
Proportion of population with primary reliance on clean fuels
(%)
20
40
60
80
100
AFR AMR SEAR EUR EMR WPR
11.6
Annual mean concentrations of fine particulate matter (PM2.5) in urban areas
(µg/m3)
0
50
100
AFR AMR SEAR EUR EMR WPR
13.1
Average death rate due to natural disasters
per 100 000 population
6
4
2
0
AFR AMR SEAR EUR EMR WPR
16.1
Mortality rate due to homicide
per 100 000 population
100
80
60
40
20
0
AFR AMR SEAR EUR EMR WPR
16.1
Estimated direct deaths from major conflicts
per 100 000 population
300
200
100
0
AFR AMR SEAR EUR EMR WPR

the broad themes of "Survive – Thrive – Transform".[1] It is an example of how a range of health and health-related goals and targets must be addressed to improve health and well-being of women, children and adolescents. The monitoring framework for this global includes proposed SDG indicators and further expands the set of indicators to provide more specificity.

The indicators for SDG targets 3.1 and 3.2 include the MDG indicators of maternal and under-five mortality. In 2015, the maternal mortality ratio (MMR) – the number of maternal deaths per 100 000 live births – was estimated at 216 globally. Almost all of these deaths occurred in low-resource settings and could have been prevented. The global MMR declined by 44% during the MDG era, representing an average annual reduction of 2.3% between 1990 and 2015.[2] In order to achieve the SDG target of 70 per 100 000 live births by 2030, the global annual rate of reduction will need to be at least 7.3%. Attaining that rate requires a marked acceleration in progress in this area. SDG Target 3.1 also includes skilled attendance at birth. Globally, coverage of skilled attendance at birth was estimated to have reached 73% in 2013.[3] However, more than 40% of births in the WHO African Region and WHO South-East Asia Region were not attended by skilled health personnel, and within countries large access disparities associated with differences in socioeconomic status persist.

An estimated 5.9 million children under 5 years died in 2015, with a global under-five mortality rate of 42.5 per 1000 live births. Child mortality is highest in sub-Saharan Africa, where 1 child in 12 dies before their fifth birthday, followed by South-East Asia where 1 in 19 dies before reaching 5 years. The annual rate of reduction in under-five mortality was 3.9% between 2000 and 2015.[4] Currently, 79 countries have under-five mortality rates above the SDG target of 25 under-five deaths per 1000 live births, and 24 countries have rates that are three times higher than that. However, if the momentum established during the MDG era can be maintained, the world will meet the 2030 target. To reflect the importance of neonatal mortality as part of overall child mortality, a specific target of 12 neonatal deaths per 1000 live births in 2030 was included in the SDG. Between 2000 and 2015, there was a 3.1% decline in such deaths, and this rate of improvement would need to be maintained in order to achieve the child mortality target.

SDG Target 3.7 on universal access to sexual and reproductive health-care services is to be monitored by two proposed indicators: the adolescent birth rate; and coverage of modern family planning services. Both of these were also part of MDG global monitoring. The global adolescent birth rate is estimated at 44 per 1000 women aged 15–19, but is five times higher in low-income countries than in high-income countries.[5] In addition, within LMIC, the adolescent birth rate was four times higher among the poorest quintile than among the richest quintile. Much of early childbearing is related to early marriage (SDG Target 5.3). Globally, more than 700 million women alive in 2014 had been married before their 18th birthday, with about 250 million of these entering into marriage or union before age 15.[6] Other targets and indicators related to sexual and reproductive health are included in SDG 5 (gender), such as female genital mutilation/cutting, reproductive health decision-making and sexual or other types of violence by intimate partners or others.

With regard to modern family planning services, globally in 2015, 76% of women of reproductive age who were married or in a union had their need for family planning with a modern method satisfied. As with other indicators, there was considerable regional variation, with, for example, 9 out of 10 married or in-union women of reproductive age in the WHO Western Pacific Region having their family planning needs met, compared with less than half of those in the WHO African Region.[7]

Reproductive, maternal, newborn and child health is one of the four categories of the UHC coverage index (see section 4, Table 4.1). This category includes four coverage indicators: family planning; antenatal care (four visits or more) with skilled attendance at birth; full child immunization coverage; and health-seeking behaviour for suspected child pneumonia. Major coverage gaps for all four of these indicators persist in many countries, especially among disadvantaged populations.

The indicators for SDG Target 2.2 on ending all forms of malnutrition are focused on stunting, wasting and overweight among children under 5 years of age. Globally in 2015, almost one in four children under 5 years of age (23%, or 156 million children) were affected by stunting, with the highest prevalence observed in the WHO African Region (38%), followed by the WHO South-East Asia Region (33%). Children are at greater risk of stunting if they are born in rural areas, poor households or to mothers denied

1 The Global Strategy for Women's, Children's and Adolescents' Health, 2016–2030. Every Women Every Child; 2015 (http://globalstrategy.everywomaneverychild.org/pdf/EWEC_globalstrategyreport_200915_FINAL_WEB.pdf, accessed 11 April 2016).

2 WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Trends in maternal mortality: 1990 to 2015. Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2015 (http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2015/en/, accessed 25 March 2016).

3 Tracking universal health coverage: first global monitoring report. Geneva and Washington (DC): World Health Organization and World Bank; 2015. (http://www.who.int/healthinfo/ universal_health_coverage/report/2015/en/, accessed 9 April 2016).

4 Levels & Trends in Child Mortality. Report 2015. Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. New York (NY), Geneva and Washington (DC): United Nations Children's Fund, World Health Organization, World Bank and United Nations; 2015 (http://www.unicef.org/publications/files/Child_Mortality_Report_2015_Web_9_Sept_15.pdf, accessed 26 March 2016).

5 World Population Prospects: The 2015 Revision. DVD Edition. New York (NY): United Nations, Department of Economic and Social Affairs, Population Division; 2015 (http://esa.un.org/unpd/wpp/Download/Standard/Fertility/, accessed 13 April 2016).

6 Ending child marriage. Progress and prospects. New York (NY): United Nations Children's Fund; 2014 (http://www.unicef.org/media/files/Child_Marriage_Report_7_17_LR..pdf, accessed 10 April 2016).

7 Model-based Estimates and Projections of Family Planning Indicators 2015. New York (NY): United Nations, Department of Economic and Social Affairs, Population Division; 2015 (http://www.un.org/en/development/desa/population/theme/family-planning/cp_model.shtml , accessed 21 April 2016). Special tabulations were prepared for estimates by WHO region.

basic education. Wasting affected 50 million children under 5 years of age (around 7%) globally in 2015. The highest prevalence of wasting was observed in the WHO South-East Asia Region (13.5%, or 24 million children). Regarding overweight, prevalence increased globally and in most regions between 2000 and 2015, to 6% or 42 million children under 5 years of age in 2015, with the highest prevalence observed in the WHO European Region.

Several environmental targets and indicators are also relevant to reproductive, maternal, newborn and child health, including water and sanitation, and air pollution (discussed below). Diarrhoea is among the leading causes of deaths in children under 5 years of age, and household air pollution is estimated to cause half of all pneumonia deaths among the same group.

Infectious diseases

The main target relating to infectious diseases is SDG Target 3.3, which refers to ending the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, and combating hepatitis, water-borne diseases and other communicable diseases. Several other SDG targets address aspects of infectious disease control, including the UHC target (3.8); reduction of mortality due to environmental factors (3.9); and strengthening of country capacity for early warning, risk reduction and management of national and global health risks (3.d). The targets on improving water and sanitation under SDG 6 are also relevant, as are the targets under SDG 1 (poverty), SDG 4 (education), SDG 11 (cities), SDG 13 (climate change) and others (Table 6.2).

Table 6.2
Selected SDG targets and proposed indicators linked to infectious diseases, by type of indicator

Type of indicator	SDG target	Proposed indicator
Impact	3.3	HIV incidence
	3.3	Tuberculosis incidence
	3.3	Malaria incidence
	3.3	Hepatitis B incidence
	3.3	People requiring interventions against neglected tropical diseases
	3.9	Mortality due to unsafe water, sanitation and hygiene; mortality due to air pollution (household and ambient)
Coverage/ system	3.8	UHC: infectious diseases tracer (ART coverage, tuberculosis treatment, use of insecticide-treated nets, access to safely managed drinking-water source and sanitation)
	3.d	International Health Regulations (IHR) capacity and health emergency preparedness
Risk factors/ determinants	6.1	Access to safely managed drinking-water source
	6.2	Access to safely managed sanitation
	7.1	Clean household energy
	Other	Part of targets in goals on poverty, education, cities, climate change etc.

The incidence rates for HIV, tuberculosis (TB), malaria and hepatitis are SDG indicators:

- In 2014, the global HIV incidence rate among adults aged 15–49 years was 0.5 per 1000 uninfected population, with 2 million people becoming infected. HIV incidence was highest in the WHO African Region at 2.6 per 1000 uninfected population in 2014, as compared with other WHO regions where incidence among adults aged 15–49 years ranged from 0.1 to 0.4 per 1000 uninfected.[1]

- In 2014, there were 9.6 million new TB cases (133 per 100 000 population) and 1.5 million TB deaths, including 0.4 million deaths among HIV-positive people. In 2014, the largest number of new TB cases occurred in the WHO South-East Asia Region and WHO Western Pacific Region, accounting for 58% of new cases globally. However, Africa carried the most severe burden, with 281 cases per 100 000 population.[2]

- In 2015, the malaria incidence rate was 91 per 1000 persons at risk, with an estimated 214 million cases and 438 000 deaths (more than two thirds of which occurred in children under 5 years of age). Sub-Saharan Africa has the highest burden, with an incidence rate of 246 per 1000 persons at risk, accounting for roughly 90% of all cases and deaths globally.[3]

- For viral hepatitis no estimates of incidence are available yet. Global coverage of hepatitis B vaccination was 82% in 2014.[4]

Progress towards the target of ending the epidemic of neglected tropical diseases (NTDs) is monitored through the SDG indicator: "People requiring interventions against NTDs". In 2014, at least 1.7 billion people in 185 countries required mass or individual treatment and care for NTDs.

The risk of acquiring infectious diseases varies greatly depending on socioeconomic determinants such as poverty and housing conditions, sex (for example, in the case of HIV infection in women, and tuberculosis in men) and environmental conditions which are influenced by different factors, including climate and climate change. Mortality caused by exposure to unsafe water, sanitation and hygiene (WASH) services is an indicator under SDG Target 3.9. In 2012, an estimated 871 000 deaths (mostly from infectious diseases) were caused by the contamination of drinking-

1 How AIDS changed everything. MDG 6: 15 years, 15 lessons of hope from the AIDS response. Geneva: UNAIDS; 2015 (http://www.unaids.org/en/resources/documents/2015/MDG6_15years-15lessonsfromtheAIDSresponse, accessed 10 April 2016) and UNAIDS/WHO estimates; 2015.

2 Global tuberculosis report 2015. Geneva: World Health Organization; 2015 (http://apps.who.int/iris/bitstream/10665/191102/1/9789241565059_eng.pdf?ua=1, accessed 11 April 2016).

3 World Malaria Report 2015. Geneva: World Health Organization; 2015 (http://www.who.int/malaria/publications/world-malaria-report-2015/report/en/, accessed 10 April 2016).

4 WHO/UNICEF coverage estimates 2014 revision. July 2015 (see: http://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html).

water, bodies of water (such as rivers and reservoirs) and soil, and by inadequate hand-washing facilities and practices resulting from inadequate or inappropriate services. Almost half (45%) of these deaths occurred in the WHO African Region; where 13% of the global population lived.[1,2]

SDG 6 on water and sanitation provides the targets and indicators for monitoring progress towards universal and equitable access to safe and affordable drinking-water, and to adequate and equitable sanitation and hygiene. In 2015, 91% of the world's population used an improved drinking-water source and 68% used an improved sanitation facility.[3] The SDG targets and indicators are more ambitious, and focus on the use of a safely managed drinking-water service, defined as an improved water source which is located on premises, available when needed and free from faecal (and priority chemical) contamination. The SDGs also target safely managed sanitation coverage, which includes access to a hand-washing facility with water and soap. Preliminary estimates for safely managed water coverage are low and suggest that such coverage will be much lower than that for improved drinking-water sources.[4]

SDG Target 3.d: "Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks" concerns more than infectious diseases. The indicator of this target is the International Health Regulations (IHR) capacity and health emergency preparedness index. The IHR require countries to report certain disease outbreaks and other public health events (such as those related to chemical and radio nuclear hazards) to WHO. Despite progress in the implementation of IHR core capacities in recent years, the situation in 2015 is still far from satisfactory.

Noncommunicable diseases and mental health

As shown in Table 6.3, SDG 3 includes targets for the reduction of NCD-related mortality and promotion of mental health (3.4); for reducing substance abuse, including the harmful use of alcohol (3.5); for the reduction of deaths and illnesses from air pollution (3.9); and for tobacco control (3.a).

In 2012, NCDs were responsible for around 38 million deaths per year, accounting for 68% of all deaths worldwide. Of deaths under the age of 70 years, commonly referred to as premature deaths, an estimated 52% were due to NCDs. Over three quarters of those premature deaths were caused by cardiovascular diseases, cancer, diabetes and chronic respiratory disease. Globally, premature mortality from these four main NCDs declined by 15% between 2000 and 2012.[5] This rate of decline is insufficient to meet the 2030 target of a one third reduction.

Table 6.3
Selected SDG targets and proposed indicators linked to noncommunicable diseases and mental health, by type of indicator

Type of indicator	SDG target	Proposed indicator
Impact	3.4	NCD mortality
	3.4	Suicide mortality
	3.9	Mortality due to air pollution (household and ambient)
Coverage/ risk factors	3.8	UHC: NCDs tracers (hypertension treatment coverage; diabetes treatment coverage; cervical cancer screening; tobacco use)
	3.a	Tobacco use
	3.5	Substance abuse (harmful use of alcohol)
Risk factors/ determinants	7.1	Clean household energy
	11.6	Ambient air pollution
	Other	Part of targets in goals on poverty, education, cities, etc.

Mental disorders occur in all regions and cultures of the world with the most prevalent being depression and anxiety, which are estimated to affect nearly one in 10 people on the planet (676 million). At its worst, depression can lead to suicide. In 2012, there were over 800 000 estimated suicide deaths worldwide, with 86% of these occurring in people under the age of 70. Globally, among young adults aged 15–29 years suicide accounts for 8.5% of all deaths and is the second leading cause of death in this group after road traffic injuries.[5]

Substance use and substance-use disorders cause a significant public health burden, including through the harmful use of alcohol. Worldwide alcohol consumption in 2015 was projected to be 6.3 litres of pure alcohol per person aged 15 or older.[6] In 2010, 38% of the world's population aged 15 or older had drunk alcohol in the past 12 months, with 16% of them engaged in heavy episodic drinking.[7] There is considerable global variation in alcohol use.

SDG 3.a addresses the implementation of the WHO Framework Convention on Tobacco Control (FCTC); with tobacco use selected as the indicator of progress. Tobacco use is a leading risk factor for NCDs. In 2015, over 1.1 billion people used tobacco, with far more males (945 million) than females (180 million) smoking. Even though the prevalence of smoking is declining worldwide and in many countries, it appears to be increasing in the WHO Eastern Mediterranean Region and the WHO African Region.[8]

1 Preventing disease through healthy environments. A global assessment of the burden of disease from environmental risks. Geneva: World Health Organization; 2016 (http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf?ua=1, accessed 3 April 2016).

2 Preventing diarrhoea through better water, sanitation and hygiene. Exposures and impacts in low- and middle-income countries. Geneva: World Health Organization, 2015 (http://apps.who.int/iris/bitstream/10665/150112/1/9789241564823_eng.pdf?ua=1&ua=1, accessed 19 April 2016).

3 Progress on sanitation and drinking water – 2015 update and MDG assessment. New York (NY) and Geneva: UNICEF and World Health Organization; 2015 (http://www.who.int/water_sanitation_health/monitoring/jmp-2015-update/en/, accessed 5 April 2016).

4 Hutton, G, Varughese M. The costs of meeting the 2030 Sustainable Development Goals targets on drinking water, sanitation and hygiene. Washington (DC): World Bank; 2016.

5 Global Health Estimates 2013: deaths by cause, age and sex; estimates for 2000–2012. Geneva: World Health Organization; 2014 (http://www.who.int/healthinfo/global_burden_disease/en/).

6 Global Health Observatory [website]. Geneva: World Health Organization. (http://www.who.int/gho/en/)

7 Global status report on alcohol and health 2014. Geneva: World Health Organization; 2014 (http://www.who.int/substance_abuse/publications/global_alcohol_report/en/, accessed 29 March 2016).

8 WHO global report on trends in tobacco smoking 2000–2025 (http://www.who.int/tobacco/publications/surveillance/reportontrendstobaccosmoking/en/index4.html).

Air pollution is a major risk factor for NCDs, causing cardiovascular disease, stroke, chronic obstructive pulmonary disease and lung cancer, as well as increasing the risks for acute respiratory infections. In 2012, ambient (or outdoor) air pollution (for example, from traffic, industrial sources, waste burning or residential fuel combustion) caused 3 million deaths. SDG Target 11.6 focuses on urban environmental risks and includes an indicator on the annual mean levels of fine particulate matter (such as $PM_{2.5}$ and PM_{10}) in cities. In 2014, up to 90% of the population in cities were exposed to fine particulate matter in concentrations exceeding WHO Air Quality Guidelines, with exposure rates varying considerably by region.[1]

In addition, household air pollution caused by cooking with unclean fuels or using inefficient technologies caused an estimated 4.3 million deaths from NCDs and childhood pneumonia.[2] In 2014, some 3.1 billion people relied primarily on polluting fuels (that is, solid fuels and kerosene) for cooking.[3] The smoke or household air pollution arising from this inefficient energy use in the home for cooking, heating and lighting is laced with health-damaging pollutants. SDG Target 7.1 addresses access to affordable, reliable and modern energy services, and is to be monitored with an indicator on the reliance on clean fuels and technologies at the household level.

Injuries and violence

Injuries and violence are included in multiple SDG targets. Road traffic injuries and unintentional injuries are included in the health goal (SDG 3) with targets related to violence and disasters part of other goals (Table 6.4).

According to the latest WHO estimates around 1.25 million people died from road traffic injuries in 2013, and another 20–50 million people sustained non-fatal injuries as a result of road traffic collisions or crashes.[4] Halving the number of global deaths and injuries from road traffic accidents by 2020 (SDG Target 3.6) is an ambitious goal given the dramatic increase in vehicle numbers (up by 90% between 2000 and 2013). However, the past decade has shown that the increase in numbers of deaths due to road traffic injuries has been much smaller than the increase in number of registered vehicles, suggesting that interventions to improve global road safety have had some impact on mortality.

Worldwide in 2012, an estimated 193 000 deaths were caused by unintentional poisonings, which is a proposed indicator for SDG Target 3.9. The highest mortality rates from unintentional poisonings occur in children under 5 years of age and adults over 55 years. The mortality rate is also 50% higher in men than in women.[5]

Table 6.4
Selected SDG targets and proposed indicators linked to injuries and violence, by type of indicator

Type of indicator	SDG target	Proposed indicator
Impact	3.6	Deaths due to road traffic injuries
	3.9	Mortality due to unintentional poisoning
	1.5, 11.5, 13.1	Deaths due to disasters
	16.1	Homicide
	16.1	Conflict-related deaths
Coverage/ risk factors/ determinants	5.2	Women and girls subjected to physical, sexual or physiological violence
	16.1	Population subjected to physical, sexual or physiological violence
	Other	Part of targets in goals on peaceful and inclusive societies, cities, poverty, education, etc.

SDG Target 13.1: "Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries",[6] is linked to the SDG Target 3.d to: "Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks". The proposed indicator for SDG Target 13.1 is the number of deaths, missing and persons affected by disaster per 100 000 people.[7] Globally, 331 natural disasters were registered in 2015, causing 22 662 deaths and affecting 90.2 million people. Both the number of reported disasters and total number of people affected have been declining over the last 15 years, with 2014 witnessing the lowest number of deaths due to natural disasters. However, the long-term mortality trend is dominated by major events, such as the Asia tsunami in 2004; the Myanmar cyclone in 2008; and the Haiti earthquake in 2010.[8]

SDG Target 16.1 aims to: "Significantly reduce all forms of violence and related death rates everywhere". The first indicator proposed for this target is: "Number of victims of intentional homicide per 100 000 population, by age group and sex". It is estimated that homicide and collective violence account for around 10% of global injury-related deaths. In 2012, there were an estimated 475 000 murders. There are very large differences between different regions of the world in this respect, with the highest rates occurring in the WHO Region of the Americas. Four fifths of homicide

1 Air pollution: a global assessment of exposure and burden of disease. Geneva: World Health Organization; 2016. Forthcoming.

2 Global Health Observatory [website]. Geneva: World Health Organization (http://www.who.int/gho/en/).

3 Burning opportunity: clean household energy for health, sustainable development, and wellbeing of women and children. Geneva: World Health Organization; 2016 (http://apps.who.int/iris/bitstream/10665/204717/1/9789241565233_eng.pdf, accessed 3 April 2016).

4 Global status report on road safety 2015. Geneva: World Health Organization; 2015 (http://www.who.int/violence_injury_prevention/road_safety_status/2015/en/, accessed 3 April 2016).

5 Global Health Estimates 2013: deaths by cause, age and sex; estimates for 2000–2012. Geneva: World Health Organization; 2014 (http://www.who.int/healthinfo/global_burden_disease/en/).

6 The same indicator is also proposed for the following two SDG targets relating to disasters: (a) SDG Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters; and (b) SDG Target 11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

7 This indicator may be revised to reflect the future revision of indicators for monitoring in the context of the Sendai Framework.

8 The International Disaster Database [online database]. Brussels: Centre for Research on the Epidemiology of Disasters – CRED (http://www.emdat.be/database, accessed 11 February 2016).

victims are men, and 65% of victims are males aged 15–49 years. Among women, intimate partner homicide accounts for almost 38% of all murders, as compared with 6% of all murders of men. Between 2000 and 2012, there was a marked decline in homicide rates, with an estimated 17% fall globally (from 8.0 to 6.7 per 100 000 population).[1]

A second proposed indicator for SDG Target 16.1 is conflict-related deaths per 100 000 population. In 2015, it is provisionally estimated that 152 000 people (uncertainty range: 89 500–234 600) were killed in wars and conflicts, corresponding to about 0.3% of global deaths.[2] These estimates do not include deaths due to the indirect effects of war and conflict on the spread of diseases, poor nutrition and collapse of health services. Between around 1990 and 2011, there was a decline in the number and intensity of wars and conflicts.[3] Although WHO estimates of global direct conflict deaths (injury deaths) vary substantially by year, there was a statistically significant average decline during the period 1990–2010 of 2% per year, if the Rwandan genocide of 1994 is excluded.

Health systems

Health systems strengthening is a core focus of the SDGs. This is reflected by the fact that UHC is central to the overall health goal as set out in the SDG declaration, and is assigned a specific target (3.8) under the SDG health goal. With its focus on coverage of quality essential health-care services with financial protection for all, UHC underpins the achievement of the other health targets, and takes into account the interconnectedness of health with risk factors and determinants of health that are part of many other SDG targets (Table 6.5). More details on the UHC indicators are provided in section 4.

In order to move towards the UHC goal, country health systems need to be strengthened as well as adapted to meet the shifting health priorities associated with demographic and epidemiological transitions, rapidly developing technologies and changing public expectations. Several health targets (notably 3.b, 3.c and 3.d) address health system issues, mostly focusing on strengthening health systems in least-developed and developing countries.

Access to affordable medicines and vaccines on a sustainable basis is an indicator for SDG Target 3.b, which focuses on support for research and development,

Table 6.5
Selected SDG targets and proposed indicators linked to health systems, by type of indicator

Type of indicator	SDG target	Proposed indicator
Coverage/ financial protection	3.8	UHC index: tracer indicators on service access (hospital access, health workforce density by specific cadres, access to medicines and vaccines, IHR capacities)
	3.8	UHC: financial protection (catastrophic and impoverishing out-of-pocket health spending)
System	3.b	Access to medicines and vaccines
	3.b	Research and development on health issues that primarily affect developing countries, including official development assistance (ODA)
	3.c	Health workforce density and distribution
	3.d	IHR capacity and health emergency preparedness
	17.18	Data disaggregation
	17.19	Coverage of birth and death registration; completion of regular population census

and on the affordability of medicines and vaccines for communicable diseases and NCDs that primarily affect developing countries. Despite improvements in recent decades, the availability of essential medicines at public health facilities is often poor. Even when available, medical products are not necessarily affordable to patients. Studies have shown that in some LMIC where patients have to pay for medicines in the public sector, the prices of some generic medicines are on average 2.9 times higher than international reference prices, and 4.6 times in private facilities.[4]

A second proposed indicator under SDG Target 3.b aims to capture the level of research and development investments. By combining the indicators under targets 3.b and 9.5 (research and development in general), it is possible to evaluate the amount and proportion of public, private and not-for-profit research and development investments directed towards health problems that primarily affect developing countries. In 2014, such funding reached US$ 3.4 billion, and was directed at medical product development.[5] This constitutes approximately 0.004% of the global gross domestic product (GDP) in 2014.[6] Furthermore, less than 2% of all clinical trials addressed such issues in 2012 and only 1% of 336 newly approved chemical entities between 2000 and 2011 were primarily intended for tackling developing country health problems.[7,8] The lack of research capacity in many developing countries is also an important factor.

1 Global status report on violence prevention 2014. Geneva, New York and Vienna: World Health Organization, United Nations Development Programme and United Nations Office on Drugs and Crime; 2014 (http://www.who.int/violence_injury_prevention/violence/status_report/2014/en/, accessed 6 April 2016).

2 Global Health Estimates: deaths by cause, age and sex, with provisional update to 2015 using methods and data sources found at: http://www.who.int/entity/healthinfo/global_burden_disease/GlobalCOD_method_2000_2012.pdf?ua=1 , accessed 22 February 2016).

3 Human security report 2013. The decline in global violence: evidence, explanation, and contestation. Vancouver: Human Security Press; 2014 (http://www.hsrgroup.org/docs/Publications/HSR2013/HSRP_Report_2013_140226_Web.pdf, accessed 10 April 2016).

4 Millennium Development Goal 8: taking stock of the global partnership for development. MDG Gap Task Force Report 2015. New York (NY): United Nations; 2015 (http://www.un.org/en/development/desa/policy/mdg_gap/mdg_gap2015/2015GAP_FULLREPORT_EN.pdf, accessed 23 April 2015).

5 Moran M, Chapman N, Abela-Oversteegen L et al. Neglected disease research and development: the ebola effect. Policy Cures. 2015.

6 The World Bank. Data, GDP ranking (http://data.worldbank.org/data-catalog/GDP-ranking-table, accessed 22 February 2016).

7 Røttingen J-A, Regmi S, Eide M et al. Mapping available health R&D data: what's there, what's missing and what role for a Global Observatory. Lancet. 2013;382:1286–307.

8 Pedrique B, Strub-Wourgaft N, Some C et al. The drug and vaccine landscape for neglected diseases (2000-11): a systematic assessment. Lancet Global Health. 2013;1:e371–9.

SDG Target 3.c: "Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least-developed countries and small island developing States" has one proposed indicator for workforce density and distribution. Major shortages of physicians and nurses/midwives are a matter for concern in most countries in the WHO African Region, WHO South-East Asia Region and WHO Eastern Mediterranean Region, where densities per 1000 population are only a fraction of what they are elsewhere in the world.[1] It has been estimated that there was a deficit of approximately 17.4 million health workers in 2013 – of which almost 2.6 million were physicians and over 9 million were nurses and midwives. Regionally, the largest deficit of health workers was in South-East Asia (6.9 million) followed by Africa (4.2 million).

Statistics on health financing show that total health expenditure per capita is still low in many developing countries. Most developing countries spent less than 8% of their gross domestic product (GDP) on health, and many less than 5%. In 2013, per capita total health expenditure at average exchange rate was less than US$ 50 in 27 countries and less than US$ 100 in 46 countries. Positive trends are discernible, however. Per capita government health expenditure globally increased by about 40% in real terms between 2000 and 2013, with major increases in all regions. This may simply reflect economic growth, but in several countries is also the result of an increased prioritization for health in government budget allocations. On average, across countries, global OOP health spending is down slightly (from 35% of THE in 2000–2004 to 31% in 2010–2013), which suggests an improvement in financial protection. However, average levels in low-income countries remain high (42%).

SDG Target 3.d: "Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks" has obvious implications for health system strengthening. All national and global health risks require full implementation of the IHR; the core capacities of which are basic health system functions that focus on issues related to health security, and require: (a) strong health systems with good information and surveillance infrastructures; (b) an adequate health workforce; and (c) effective service delivery, including access to medicines and vaccines. As noted above, despite progress in the implementation of IHR core capacities in recent years, the situation in 2015 remains far from satisfactory.

6.4 Data gaps – need for strong country health information systems

The SDG agenda presents a major monitoring challenge for all countries. The global set of indicators is large and includes many indicators with considerable measurement issues. Countries will also have to add indicators to ensure that the most relevant aspects of the goals and targets are adequately monitored. Finally, addressing the emphasis on disaggregation of all indicators, where relevant, will be a major challenge for all data collection, analysis and communication efforts.

The monitoring of the health and health-related targets is fairly robust, relative to many other targets. This is partly due to the investments made in monitoring the health MDGs, and partly due to the general emphasis placed on the importance of data and evidence in the health sector. However, there are still major data gaps for most health indicators that need to be addressed in order to improve the ability to track global progress.

Table 6.6 presents a summary of country data availability for a selection of the proposed indicators. More detail is provided in Annex A, which contains short sections on data gaps for each indicator. It is important to distinguish between the availability of global estimates and the strength of the underlying data. Country data availability was assessed based on the underlying data available to WHO or other international agencies producing estimates for global monitoring. The table also presents an assessment of the availability of disaggregated data for global monitoring purposes. An indicator is classified as having "good" data availability/disaggregation if more than 75% of countries where the indicator is relevant have recent data for the indicator (2010 or later); "fair" if 40–74% had recent data; and "poor" if less than 40% of countries had recent data. This does not take into account data quality. For example, cause-of-death information generated by CRVS systems is considered more reliable for NCDs and road traffic injuries than for suicide and unintentional poisoning. Some indicators may have different definitions in different countries, making them less comparable.

Comparable estimates are now produced for every country on a regular basis for most indicators, driven by advances in statistical modelling and a demand for up-to-date comparable statistics at the global level. These global estimates have considerable uncertainty which is greater if data availability is poor. Uncertainty is also greater if more steps are involved in the estimation process. For example, mortality due to air pollution involves not only establishing mortality rates due to specific causes of death (such as respiratory conditions), but also requires data on the proportion of deaths attributable to this risk factor.

1 Global strategy on human resources for health: Workforce 2030. Draft December 2015 (http://www.who.int/hrh/resources/WHO_GSHRH_DRAFT_05Jan16.pdf?ua=1, accessed 11 April 2016).

Table 6.6
Summary of the availability and degree of disaggregation of country data on proposed health and selected health-related SDG indicators[a]

Indicator topic		Country data availability	Disaggregation	Comparable estimates	Source estimates
3.1.1	Maternal mortality	Fair	Poor	Annual	UN MMEIG
3.1.2	Skilled birth attendance	Good	Fair	In preparation	UNICEF, WHO
3.2.1	Under-five mortality rate	Good	Fair	Annual	UN IGME
3.2.2	Neonatal mortality rate	Good	Fair	Annual	UN IGME
3.3.1	HIV incidence	Fair	Fair	Annual	UNAIDS, WHO
3.3.2	Tuberculosis incidence	Fair	Poor	Annual	WHO
3.3.3	Malaria incidence	Fair	Fair	Annual	WHO
3.3.4	Hepatitis B incidence	Poor	Poor	In preparation	WHO
3.3.5	People requiring interventions against NTDs	Good	Poor	Annual	WHO
3.4.1	Mortality due to NCDs	Fair	Poor	Every 2–3 years	WHO
3.4.2	Suicide mortality rate	Fair	Poor	Every 2–3 years	WHO
3.5.1	Treatment substance use disorders	Poor	Poor	Not available	UNODC, WHO
3.5.2	Harmful use of alcohol	Good	Fair	Annual	WHO
3.6.1	Road traffic injury deaths	Good	Poor	Every 2–3 years	WHO
3.7.1	Family planning	Fair	Fair	Annual	UN Population Division
3.7.2	Adolescent birth rate	Good	Fair	Annual	UN Population Division
3.8.1	Coverage index UHC	Fair	Poor	In preparation	WHO, World Bank
3.8.2	Financial protection	Poor	Poor	In preparation	WHO, World Bank
3.9.1	Mortality due to air pollution	Fair	Poor	Every 2–3 years	WHO
3.9.2	Mortality due to WASH	Fair	Poor	Every 2–3 years	WHO
3.9.3	Mortality due unintentional poisoning	Fair	Poor	Every 2–3 years	WHO
3.a.1	Tobacco use	Good	Fair	Every 2–3 years	WHO
3.b.1	Access to medicines and vaccines	Poor	Poor	Not available	WHO
3.b.2	ODA for medical research	Good	Not applicable	In preparation	OECD, WHO
3.c.1	Health workers	Fair	Poor	Not available	WHO
3.d.1	IHR capacity and emergency preparedness	Good	Not applicable	Not applicable	WHO
2.2.1	Stunting among children	Good	Good	Annual	UNICEF, WHO, World Bank
2.2.2	Wasting and overweight among children	Fair	Fair	Annual	UNICEF, WHO, World Bank
6.1.1	Drinking-water services	Good	Good	Every 2–3 years	UNICEF, WHO
6.2.1	Sanitation services	Good	Good	Every 2–3 years	UNICEF, WHO
7.1.1	Clean household energy	Good	Good	Every 2–3 years	WHO
11.6.1	Air pollution	Good	Good	Annual	WHO
13.1.1	Mortality due to disasters	Good	Poor	Every 2–3 years	UNISDR, WHO
16.1.1	Homicide	Fair	Poor	Every 2–3 years	UNODC, WHO
16.1.2	Mortality due to conflicts	Fair	Poor	Every 2–3 years	OCHCR, WHO

a Country data availability and disaggregation were assessed based on the data available to WHO or other international agencies producing estimates for global monitoring. An indicator is classified as having "good" data availability/disaggregation if data were available for more than 75% of countries where the indicator is relevant (2010 or later); "fair" if data were available for 40–74% of countries; and "poor" if data were available for less than 40% of countries.

It is clear that investments in data generation, analysis, communication and use are needed for almost all indicators. This includes investing in CRVS systems, regular standardized household surveys on health, well-functioning routine health facility reporting systems with regular health-facility surveys, and comprehensive administrative data sources such as NHAs and health workforce accounts. Innovative approaches, using advances in information and communication technology, can also greatly facilitate progress. Priorities for such investment were agreed upon by the participants of the Global Summit on Measurement and Accountability for Health, Washington, DC, June 2015, and by global health agency leaders. Box 6.1 shows the corresponding five-point call to action with a set of targets for better data systems in support of health-related SDG monitoring. The workplan of the Health Data Collaborative, based on this call to action, was launched in March 2016.

Box 6.1
Five-point call to action on strengthening country health information systems, with targets[1]

1 Increase the level and efficiency of investments to strengthen country health information system in line with international standards and commitments:

- By 2030, countries are investing adequately in health information and statistical systems;
- By 2020, government and development partner investments are fully aligned with a single country platform for information and accountability.

2 Strengthen country capacity to collect, compile, share, disaggregate, analyse, disseminate, and use data at all levels of the health system:

- By 2020, countries have annual transparent reviews of health progress and system performance, based on high-quality data and analyses led by country institutions;
- By 2025, countries have high quality, comprehensive, disaggregated data to review progress against national plans and report on progress against health-related SDGs;
- By 2020, countries have health information flows that include regular feedback and local use of data locally to improve services and programmes.

3 Ensure that countries have well-functioning sources for generating population health data in line with international standards:

- By 2025, countries have in place a regular, comprehensive programme of health surveys tailored to country needs, and have completed the 2020 round of census, in line with international standards;
- By 2030, all births are registered by civil registration as soon as possible; 80% of deaths are reported, registered, medically certified, and disaggregated by age and sex; causes of death are reported using the International Classification of Diseases (ICD) by all hospitals, with verbal post-mortem ascertaining causes of death in communities.

4 Maximize effective use of the data revolution, based on open standards, to improve health facility and community information systems empowering decision-makers at all levels with real-time access to information:

- By 2020, countries are compliant with IHR national core functions for surveillance and response and have effective, real-time systems in place, including the capacity to analyse and link data using interoperable, interconnected electronic reporting systems within the country;
- By 2025, countries have in place electronic systems for real-time reporting of health statistics from at least 80% of facilities and communities, including data quality assurance;
- By 2030, countries have regular maternal and perinatal death surveillance and response mechanisms at the national, subnational, and facility levels;
- By 2030, at least 90% of countries have complete, up-to-date system of health and workforce accounts using international standards.

5 Promote country and global governance with citizen and community participation for accountability through inclusive, transparent reviews of progress and performance at facility, subnational, national, regional and global levels, linked to the health-related SDGs:

- By 2016, a global coordination and accountability mechanism produces regular reports and reviews the progress of the health measurement roadmap and action plan;
- By 2017, countries have established mechanisms to make health data available to users through electronic dissemination and easy access to a central data repository;
- By 2020, civil society organizations in countries are actively and meaningfully participating in country reviews of progress and performance at all levels.

1 Health measurement and accountability post 2015: Five-point call to action (http://www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/5-point-call-to-action.pdf, accessed 10 April 2016).