

Towards a monitoring framework with targets and indicators for the health goals of the post-2015 Sustainable Development Goals

Executive summary

- 1. The health goal:** Health is a precondition for and outcome of policies to promote sustainable development. The UN General Assembly has endorsed the Open Working Group report in which health is one of 17 sustainable development goals (SDG): *“Ensure healthy lives and promote wellbeing for all at all ages”*. Health is also closely linked to other goals such as those related to improving nutrition, water and sanitation. During 2015 an outcome document for the post-2015 development agenda will be developed for adoption at the SDG Summit in September 2015, including goals, targets and indicators and a framework for monitoring and review of implementation.
- 2. Targets and subgoals for health:** The overarching health goal is associated with nine targets (or subgoals), including three related to the MDGs, three to the emerging agenda of noncommunicable diseases and injuries, and three cross-cutting or systems focused, including Universal Health Coverage (UHC). In order to permit monitoring of progress, one or more overarching summary indicators are required as well as indicators for each of the subgoals. The overarching health goal should also be a measure of progress in many other SDGs as health is influenced by economic, social and environmental determinants.
- 3. Selection of targets and indicators:** The targets and monitoring indicators should be based as much as possible on existing political endorsement, technical soundness, parsimony, measurability and relevance. Currently, over 90 targets have been endorsed by Member States at the World Health Assembly and other governing bodies. There are also hundreds of recommended indicators to cover the wide array of health and disease programmes. WHO and global health agency leaders have agreed on a Global Reference Set of 100 Core Indicators in order to be prioritised for the purposes of monitoring progress.¹
- 4. Targets and indicators and equity:** The monitoring of MDGs and other initiatives shows that the most successful models use a parsimonious set of indicators (tracer indicators) and are focused on health outcomes and impact. Annex A summarizes the health targets and proposed indicators which is a fairly large set because of the wide array of proposed health targets. Most proposed indicators are based on existing agreements, often with new targets for 2030. Currently, the baseline years are generally 2010 or 2015. The majority of indicators relate to health status measures, notably mortality and morbidity. Several targets including Universal Health Coverage however include indicators on levels and inequalities in the coverage of interventions and financial protection. Statistics should highlight health inequalities by major stratifiers, including demographic (age, sex/gender), socioeconomic status (wealth, education), and geography (province/district) or other characteristics (migration, minorities etc.).

¹ World Health Organization. Global Reference List of Core Health Indicators. Working draft Version 6 Geneva December 2014.

5. **Country health information systems:** Strong country health information systems are essential, driven by country needs and uses. Country health information systems draw upon multiple data sources, including civil registration and vital statistics systems, population-based surveys, health facility and administrative information systems, and are led by competent country institutions for data collection, compilation and sharing, analysis and synthesis, and communication and use of results. Countries use international standards including the official principles of statistics and global measurement methods. The SDG monitoring process should strengthen country systems and redress the current demand-supply imbalances. Timely quality data are generated for key health indicators, reducing recourse to extensive statistical modelling and data imputation to fill data gaps. This requires an integrated and comprehensive approach that meets all country data needs and allows monitoring of progress towards the health-related SDGs, with high-level political commitment and investments by countries and international partners.
6. **Global monitoring of progress:** Health contributes to the overall SDG monitoring and accountability framework. This implies that a subgroup on health of the UN Interagency group for SDG monitoring is established, based on interagency collaboration and involvement of technical experts. Informal collaborations between academics, UN agencies, government and private sector should also be considered for technical synthesis and analysis of data, based on the model developed by Countdown to 2015 for Maternal, Newborn and Child Survival initiative. The aim is to ensure independence and objectivity in the analysis of progress.
7. **Accountability:** The monitoring of the health-related SDG requires well-established mechanisms for accountability at country, regional and global levels. Such mechanisms need to be inclusive, independent, evidence-based and transparent, and lead to remedial actions. Health monitoring and reviews should feed into the overarching accountability framework for the SDGs. This should include multiple mechanisms including regular reviews of progress by Member States through the World Health Assembly, independent expert review groups that report to governing bodies and possibly social accountability mechanisms that provide a direct avenue for people's voices. These mechanisms bring together the technical synthesis with a strategic analysis of improvement efforts required on the part of countries and international partners, and a powerful advocacy component.

Background

In accordance with the outcome document of the UN Conference on Sustainable Development (Rio+20 conference), the Open Working Group on Sustainable Development Goals (OWG) was established in January 2013 to prepare a proposal on sustainable development goals for consideration by the General Assembly at its 68th session. The Rio+20 outcome document indicated that the sustainable development goals should be limited in number, aspirational and easy to communicate; that they should address all three dimensions of sustainable development (economic, social and environmental); and that they should be coherent with and integrated into the United Nations development agenda beyond 2015. The OWG's proposal for Sustainable Development Goals was developed in 2014 and welcomed by the UN General Assembly in September 2014. The Assembly decided that the OWG proposal “shall be the main basis for integrating sustainable development goals into the post-2015 development agenda, while recognizing that other inputs will also be considered in this intergovernmental negotiation process at the sixty-ninth session of the General Assembly.”

During the first half of 2015 an outcome document for the post-2015 development agenda will be developed for adoption at the SDG Summit in September. This outcome document will be developed through a series of intergovernmental negotiations and inputs from technical agencies and will include the following four elements: 1) an introductory declaration 2) sustainable development goals, targets and indicators; 3) means of implementation and a new global partnerships; 4) framework for monitoring and review of implementation.

The Statistical Commission is likely to be formally tasked with providing guidance on targets and indicators. The Statistical Commission has already established a “Friends of the Chair” group on broader measures of progress which has produced a paper on the process which will be discussed at the March 2015 session of the Commission.

The synthesis report of the Secretary General on the post-2015 agenda, “The road to dignity: ending poverty, transforming all lives and protecting the planet” was published in December 2014. The report presents six elements for delivering on the SDGs which “...would help frame and reinforce the universal, integrated and transformative nature of a sustainable development agenda ...”. The six elements are:

- Dignity: to end poverty and fight inequalities
- People: to ensure healthy lives, knowledge, and the inclusion of women and children
- Prosperity: to grow a strong, inclusive and transformative economy
- Planet: to protect our ecosystems for all societies and our children
- Justice: to promote safe and peaceful societies, and strong institutions
- Partnership: to catalyse global solidarity for sustainable development

This paper aims to summarize the current options for targets and indicators for the health goal, building upon the OWG proposals of one overarching health goal and nine health-related targets or subgoals.² It briefly summarizes recent developments in health targets and indicators relevant to the health-related SDGs. The measurement issues and options related to the overall health goal are discussed first, followed by those related to the nine targets and subgoals and a brief summary of the main targets indicators in other SDGs. The paper concludes with a table that summarizes the proposed targets and indicators.

² This paper was developed in conjunction with and based on the discussions at a WHO technical meeting on Health outcome targets and indicators, 11-12 December 2014, Geneva.

Current developments and proposals

Early 2014, the UN Technical Support Team developed a compendium of statistical notes to inform the OWG about the measurement aspects of the 29 issues that were discussed during its first stocktaking sessions. This document provided general information about conceptual and methodological tools, indicators and data requirements, challenges and limitations. It included a section on health-related measurement issues, prepared with inputs from WHO, UNICEF and others.³

In health there are many official targets, often endorsed by Member States at the World Health Assembly. There are also hundreds of recommended indicators to cover the wide array of diseases and interventions. It will be essential to be parsimonious and clear about the health targets and indicators and, as much as possible, base the recommendations on existing guidance and agreements. It will also be important to discuss a top-level indicator for the overarching health goal that will capture all underlying targets and indicators.

Recent initiatives provide a useful basis for the discussions on health targets and indicators. For instance, leaders from 19 global health agencies including multilateral and bilateral agencies worked together in an effort to rationalize indicators and reporting requirements.⁴ In September 2014, the leaders agreed upon a global reference list of 100 core indicators which should include indicators for the main SDG health targets. A metadata dictionary of the 100 indicators is available in draft.⁵

The Sustainable Development Solutions Network (SDSN), a global network of academic experts established at the request of the UN Secretary General, has proposed a set of 100 indicators for the monitoring of all SDG.⁶ This list includes 14 well-established health indicators, three indicators to be developed and 34 complementary national health indicators.⁷ In addition to the specific indicators related to the MDGs or other processes, under the health goal, the SDSN also included healthy life expectancy at birth.

Measuring progress towards the overall health goal

In the *Report of the Open Working Group of the General Assembly on Sustainable Development Goals*⁸ the overall goal for health (goal 3) is stated as:

Health goal
“Ensure healthy lives and promote wellbeing for all at all ages”.

³ <http://unstats.un.org/unsd/statcom/doc14/BG-FOC-Broader-measures.pdf>

⁴ <http://www.internationalhealthpartnership.net/en/key-issues/monitoring-evaluation/>

⁵ reference <http://www.who.int/healthinfo/indicators/en/>

⁶ <http://unsdsn.org/resources/publications/indicators/>

⁷ The indicators are maternal mortality; neonatal and under-5 mortality; incidence, prevalence and death rates due to HIV; incidence, prevalence and death rates due to tuberculosis; incidence and deaths rates associated with malaria; premature mortality due to leading NCDs; current use of tobacco; harmful use of alcohol; prevalence of overweight and obesity; road traffic accidents per 100,000 population; child immunization coverage (full); contraceptive prevalence rate; healthy life expectancy at birth; mean urban air pollution (PM10 and PM2.5). The SDSN list also includes three “to be developed” health indicators: functioning mental health promotion and prevention in existence; consultations with a licensed provider in a health facility or the community, per year; percentage of the population with effective financial protection for health care.

⁸ UN General Assembly, 12 August 2014, A/68/970

At present, there is no documentation that refers to single or few indicators monitoring of the goals for the SDG, individually or combined. Much of the discussion focuses on a 100 indicators for all targets combined. There are however already 169 targets (or subgoals, as many do not have a target, or it may be very difficult to develop a target) and many targets consist of multiple elements and sub-targets. A SDG set of 100 indicators may also still be a challenge for data collection, reporting, communication of progress and accountability.

Sustainable development goals (A/68/970)	
Health is 1/17 but also in other goals	
1. End poverty in all its forms everywhere	10. Reduce inequality within and among countries
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	11. Make cities and human settlements inclusive, safe, resilient and sustainable
3. Ensure healthy lives and promote well-being for all at all ages	12. Ensure sustainable consumption and production patterns
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	13. Take urgent action to combat climate change and its impacts*
5. Achieve gender equality and empower all women and girls	14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
6. Ensure availability and sustainable management of water and sanitation for all	15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
7. Ensure access to affordable, reliable, sustainable and modern energy for all	16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	17. Strengthen the means of implementation and revitalize the global partnership for sustainable development
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	

WHO has organized two technical meetings to assess different options for high-level outcome measures of health.⁹ If it can be measured reliably, healthy life expectancy would be a useful indicator that captures both mortality and years of life lived in less than good health (i.e., disability). There is increasing interest in the accurate measurement of health, disability and wellbeing, especially in the context of declining mortality due to acute infectious diseases, ageing populations and greater prominence of chronic diseases. More countries are aiming to measure the health of their populations and track changes over time. For example, the EU set a target of gaining two healthy life years by 2020 in its member states.^{10 11} While many attempts have been made to measure population health status, in addition to the underlying cause of decrements to health, through a set of functioning questions and performance measurements, challenges remain with regard to comparable data on functioning of the population collected through comparable measurements over time and across populations in regular

⁹ Reference to meetings. Post-2015 health outcome measures. Technical meeting, WHO, Geneva, 11-12 December 2014. Measurement of Healthy Life Expectancy and Wellbeing. Geneva, 10-11 December 2012. (http://www.who.int/healthinfo/sage/meeting_reports/en/).

¹⁰ http://ec.europa.eu/health/europe_2020_en.htm

¹¹ <http://www.eurohex.eu/>. Includes Joint Action: European Health & Life Expectancy Information System (JA:EHLEIS).

household surveys. A detailed discussion of the advantages and disadvantages of the measures is provided in a separate technical paper.¹²

There are two main approaches at present. The European Union is using a single global activities limitation question with a dichotomous threshold. The summary indicator thus involves a level of arbitrariness in the choice of threshold and is not sensitive to changes in the severity distribution of disability. Research is ongoing to improve the standardization and comparability of the survey questions and results across EU countries.

There are also a number of multi-domain survey modules under development. The WHO World Health Surveys and SAGE survey programs are using a module derived from the WHODAS instrument.¹³ The Budapest and Washington Groups under the auspices of the UN Statistical Commission have developed a four question module for use in national censuses.¹⁴ A number of countries such as Canada have implemented national survey programs using other multi-domain instruments. Research and development on survey methods for comparable measurement of health and functioning should continue, with an aim to develop and widely implement a common survey instrument in the next few years.

Another approach is to rely on extensive modelling of disease and injury sequelae prevalence and distributions, as in the Global Burden of Disease (GBD) Study, and to aggregate these to population levels in order to calculate health-adjusted life expectancy (HALE). The most recent HALE estimates from the GBD 2010 study have also drawn on a comprehensive revision of disability weights involving nationally representative interview surveys in six countries, supplemented by an internet survey.¹⁵ The HALE requires statistically modelled estimates of the prevalence of over 1000 health states. Since these data are not regularly collected for most countries, it can only be calculated by imputing prevalences based on relatively sparse population-representative studies. Because it heavily relies on modelling of disease incidence and prevalence data with disability weights, for a large number of disease and injury sequelae, it is less suitable for monitoring progress. HALE also cannot be calculated for a range of equity stratifiers beyond age, sex and country.

Despite the large gaps in coverage of global mortality information systems, mortality is perhaps more amenable to accurate measurement than morbidity and functioning. Multiple cause-specific mortality targets are proposed for the post-2015 agenda, many focusing on reducing or ending “preventable” deaths. Life expectancy is an attractive summary measure of mortality rates at all ages, and all health and health-related programmes contribute to it. It can be measured accurately, based on complete death registration systems, with an equity dimension. There has also been a proposal to situate these in the context of an overarching goal to reduce the number of deaths before age 70 by 40% by 2030.¹⁶

The life expectancy indicator is well understood and widely used. Regular national data are available for almost half of countries. There is also global momentum to improve civil registration and vital statistics

¹² WHO. An overarching health indicator for the Post-2015 Development Agenda: Brief summary of some proposed candidate indicators. December 2014.

¹³ <http://www.who.int/healthinfo/sage/en/>

¹⁴ <http://unstats.un.org/unsd/methods/citygroup/washington.htm>

¹⁵ Salomon J et al. Healthy life expectancy for 187 countries, 1990–2010: a systematic analysis for the Global Burden Disease Study 2010 *Lancet* 2012; 380: 2144–62.

¹⁶ Norheim OF, et al. Avoiding 40% of the premature deaths in each country, 2010- 30: review of national mortality trends to help quantify the UN Sustainable Development Goal for health. *The Lancet*, published online 19 November 2014, doi:10.1016/S0140-6736(14)61591-9

systems, including death registration data, in countries without reasonable national coverage at present. There are commonly used methods to estimate child mortality and adult mortality from other sources, though regularity of data availability and time delays remain a problem, as does the problems of assessing levels of under-reporting. However, it does not directly address non-fatal health outcomes except through the proxy of mortality risks.

An indicator based on premature deaths under age 70, as proposed by Norheim et al., would allow countries at different stages of development to focus their efforts on the relevant priorities for their situation, whether that be HIV, malaria, TB or child mortality or NCD deaths between ages 30 and 70. However, the indicator appears to exclude older people, and as for life expectancy measures, does not include non-fatal health/disability. In reality, concerted action to reduce non-communicable disease deaths before age 70 will also help to reduce NCD death rates for people aged 70 years and over. Communication around this issue would require special attention and it may be preferable to frame the overarching indicator in terms of life expectancy at birth, with a focus on premature mortality as well as on older age mortality and functioning in countries with high life expectancies.

There is increasing interest in measuring the wellbeing of the population. Reflecting the increasing interest in subjective well-being from both researchers and policy-makers, the Report of the Commission on the Measurement of Economic Performance and Social Progress recommended that national statistical agencies collect and publish measures of subjective well-being. While health and self-reported wellbeing are intricately related they are not synonymous. Health is a critical determinant of subjective wellbeing. Measurement of self-reported wellbeing, both the evaluative as well as the affective component, shares many of the same problems as the measurement of non-fatal health outcomes. The Secretary General's synthesis report from the OWG, nonetheless, states 'New measures of subjective wellbeing are potentially important new tools for policy-making.'

The field of measuring subjective wellbeing is rapidly expanding and distinguishes different aspects including: evaluative life satisfaction: a reflective assessment on a person's life or some specific aspect of it; affective or hedonic: a person's feelings or emotional states, typically measured with reference to a particular point in time, and; eudemonic: a sense of meaning and purpose in life, autonomy, self-realization. A detailed discussion of the different issues related to measurement and monitoring of subjective wellbeing is beyond the scope of this paper.¹⁷

Equity

Equity has both between- and within-countries dimensions. There are different ways in which attention can be given to the equity dimension in post-2015 health monitoring:

- The 17 goals include an equity goal (number 10) which may include a health indicator.
- Stressing the need to disaggregate the selected indicators by key stratifiers including demographic characteristics (gender, age), place of residence (urban/rural, subnational), socioeconomic status (wealth, education), other characteristics (migrants, minorities etc.)
- Equity should be included as part of the overall health goal. For instance:
 - Reduce premature mortality by 50% among the poorest 20%/40% of the population (compared to 40% overall);

¹⁷ See for instance OECD Guidelines on measuring subjective wellbeing. Paris. 2013. <http://www.oecd.org/statistics/guidelines-on-measuring-subjective-well-being.htm>

- Increase life expectancy for the poorest 20%/40% of the population by an additional two years over the national average increase.
- Include disaggregation in UHC coverage and financial protection measures, which is one of the nine subgoals.

Measuring progress towards the health targets and subgoals

Nine subgoals and targets were proposed. This section describes the nine subgoals and the current targets and indicators, including the process of development and endorsement. The nine health subgoals are part of 169 subgoals for the 17 goals. Some of the subgoals include targets. The OWG document also includes four sub-points (3a-3d) which are discussed at the end of this section.

**Goal 3: Ensure healthy lives and promote wellbeing for all at all ages
(OWG report August 2014)**

MDG	{	<ol style="list-style-type: none"> 1. By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births 2. By 2030, end preventable deaths of newborns and children under 5 years of age 3. By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
NCD	{	<ol style="list-style-type: none"> 4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 5. Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol 6. By 2020, halve the number of global deaths and injuries from road traffic accidents
Mix	{	<ol style="list-style-type: none"> 7. By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes 8. Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all 9. By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

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Targets are set for advocacy related to action and funding and also to monitor progress towards results at global, regional or country levels. Part of target setting is a global process that aims to provide inspiration to countries to set ambitious targets. In general, target setting is based on past rates of improvement as a starting point and on high or very high efficacy rates for current and new interventions. Both technical peer review, through expert groups or peer reviewed publications, and political endorsement in governing bodies such as the World Health Assembly are critical. The sub-targets should be consistent with an overall health outcome target.

For most current targets the baseline year is either 2010 or 2015. The year 2010 is better from the measurement perspective as there are more data available on the actual situation. The year 2015 makes more sense from the future achievement perspective as countries would get punished for poor

performance during 2010-2014. It is likely that 2015 is the preferred baseline year, but this would mean that baseline values will have to be adjusted as more data become available for the year 2015.

Target/Subgoal 1

By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

The MDG goal was a three quarter reduction from 1990 levels. Most countries did meet the target by 2015. By 2013 the global maternal mortality ratio was estimated at 210 per 100,000 live births (reference), corresponding with 295,000 maternal deaths.

Two technical and one country face-to-face consultations and one electronic consultation have been held to develop targets for Ending Preventable Maternal Mortality.¹⁸ Progress towards ending preventable maternal deaths is proposed to be measured by monitoring the maternal mortality ratio (MMR, maternal deaths per 100,000 live births), achieving a global average maternal mortality ratio (MMR): of 70 by 2030, and no country to have an MMR greater than 140 by 2030. This implies a global MMR reduction of more than two-thirds.

Target/Subgoal 2

By 2030, end preventable deaths of newborns and children under 5 years of age

The MDG goal was two-thirds reduction in under-five child mortality between 1990 and 2015. Many countries observed major reductions in child mortality, although most countries did not achieve the target. By 2013 the UN estimates of under-five and neonatal child mortality were 46 and 20 per 1,000 live births respectively, down from 90 and 33 in 1990.¹⁹

New child mortality targets were proposed in the context of an initiative by the governments of Ethiopia, India and the United States: the Child Survival Call to Action made in June 2012. Since then, 170 governments, as well as hundreds of civil society and faith based organizations, have signed a pledge, vowing to do everything possible to stop women and children from dying of causes that are avoidable. The commitment is now called A Promise Renewed.²⁰ The under-five mortality target was based on UNICEF modeling work and a project by Johns Hopkins University using the LiST model to scale up interventions and was initially set for 2035: all countries to reduce under-five mortality to 20 or fewer deaths per 1,000 live births by 2035 (or if the country is already at or below that level, to sustain progress, with a focus on reducing inequalities at the subnational level). Greater equity between and within countries is specifically mentioned but no specific target is added. The post-2015 target was based on and compatible with this target and set at 25 per 1,000 live births by 2030.

In addition, targets were set for neonatal mortality as part of the Every Newborn Action Plan, which received special impetus with a Lancet series on every newborn released in May 2014.²¹ The proposed target is no more than 12 neonatal deaths per 1,000 live births by 2030 (10 per 1,000 by 2035).

¹⁸ http://who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/

¹⁹ <http://www.childmortality.org/>

²⁰ Annual *Committing to Child Survival: A Promise Renewed* progress reports have been published for 2012, 2013 and 2014. <http://www.apromiserenewed.org/>

²¹ <http://www.everynewborn.org/>

Target/Subgoal 3

By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

The third subgoal includes and expands the set of leading infectious diseases which were part of the sixth MDG goal.

HIV/AIDS

WHO and UNAIDS have each proposed targets which partly overlap. The WHO proposed targets for HIV for 2030 (baseline year is 2010) are²²:

- 90% reduction in new adult HIV infections, including among key populations
- Zero new infections among children
- 90% reduction in AIDS-related deaths
- 90% reduction in stigma and discrimination faced by people living with HIV and key populations

UNAIDS proposed the following targets for HIV for 2030 for low and middle income countries²³:

- 95% of people living with HIV should know their status
- 95% of people who know their status should be receiving treatment; and
- 95% of people on HIV treatment should be virally suppressed.
- New infections among adults should be reduced to 200,000
- Zero discrimination

The three first three of the UNAIDS targets are basically the equivalent of one effective coverage indicator.²⁴ The 2030 targets are an extension of a set of 2020 targets (90-90-90 for treatment, 500,000 new infections among adults, zero discrimination), which were agreed upon by the UNAIDS governing body (PCB). Ending the epidemic is defined as 90% reduction in new infections and AIDS-related mortality from 2010 levels.

Tuberculosis

In May 2012, Member States called on WHO at the 65th World Health Assembly, to develop a post-2015 tuberculosis (TB) strategy and targets, and present these to the 67th World Health Assembly in 2014. With the goal of ending the global tuberculosis epidemic specific targets were set for the new WHO TB Strategy with milestones for 2020, 2025, 2030 and targets for 2035. The baseline year is 2015.²⁵

Milestones for 2030:

- 90% reduction in tuberculosis deaths;
- 80% reduction in tuberculosis incidence rate (less than 20 tuberculosis cases per 100,000 population)
- No affected families facing catastrophic costs due to tuberculosis

Targets for 2035:

- 95% reduction in tuberculosis deaths
- 90% reduction in tuberculosis incidence rate (less than 10 tuberculosis cases per 100 000 population)

²² http://apps.who.int/iris/bitstream/10665/128120/1/9789241507530_eng.pdf?ua=1

²³ http://www.unaids.org/en/resources/documents/2014/fast_track

²⁴ The target for 2030 is thus $.95 * .95 * .95 = .86$

²⁵ http://www.who.int/tb/post2015_tbstrategy.pdf

- No affected families facing catastrophic costs due to tuberculosis

Malaria

The new malaria goals and targets are proposed as part of the process of developing a global technical strategy which was initiated in 2013 at the request of the World Health Assembly. The final version will be on the agenda of the World Health Assembly in May 2015.²⁶ The proposed targets for malaria for 2030, with 2015 as the baseline year, are:

- 90% reduction in global malaria mortality rate
- 90% reduction in global malaria case incidence
- Eliminate malaria from at least 35 countries in which transmission occurred in 2015
- Prevent re-establishment in all countries that are malaria-free.

Milestones for 20120 and 2025 are also included. The global technical strategy also includes nine outcome (intervention coverage and service output indicators) and five impact indicators. The impact indicators include parasite prevalence (proportion of the population with evidence of malaria infection), number of confirmed malaria cases per 1000 persons per year, number of malaria deaths per 100,000 persons per year and the number of countries that have newly eliminated malaria since 2015.

Neglected tropical diseases

The most recent World Health Assembly resolution on neglected tropical diseases (NTD) was adopted in 2013.²⁷ The resolution refers to targets agreed in the Global Plan to Combat Neglected Tropical Diseases 2008–2015, as set out in WHO’s road map for accelerating work to overcome the global impact of neglected tropical diseases. This also includes 2020 targets for dengue, Buruli ulcer, taeniasis/ cysteriosis, echinococcosis/ hydatidosis, foodborne trematode infections.

In addition, there are several previous WHA resolutions on elimination and eradication of specific NTDs, although most do not specify the year by which elimination/eradication should be achieved or the year has already passed).²⁸ 2030 targets are still to be set for most NTDs.

Hepatitis

Recently, technical work is ongoing on goals and targets for the elimination of hepatitis B and C as a public health issue: “towards a hepatitis free generation, zero deaths and zero infections. “

The following targets have been proposed for 2030:

- 90% reduction in incidence of hepatitis B and C infection
- Zero babies infected
- 60-70% reduction in mortality by 2030 (tens of millions of people treated and cancers averted).

²⁶ <http://www.who.int/malaria/mpac/mpac-sept2014-gts-update-presentation.pdf>

²⁷ WHA 66.12, 2013.

²⁸ These include for instance WHA57.2 (2004): Control of human African trypanosomiasis; WHA63.20 (2010) Chagas disease: control and elimination; WHA60.13 (2007) Control of leishmaniasis; WHA64.16 (2011) Eradication of dracunculiasis; WHA62.1 (2009) Prevention of avoidable blindness and visual impairment.

Additional targets than have been proposed are zero catastrophic expenses for households affected by 2030 and zero discrimination in access to services.

Water-borne and other communicable diseases

This is a general target which includes water-borne infections such as diarrhoea and skin infections and “other communicable diseases”. The latter may be used as an opportunity to set targets for outbreak diseases such as influenza or viral haemorrhagic fevers.

Target/Subgoal 4

By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

Non-communicable diseases

Following the Political Declaration on Noncommunicable Diseases (NCDs) adopted by the UN General Assembly in 2011, WHO developed a global monitoring framework to enable global tracking of progress in preventing and controlling major noncommunicable diseases - cardiovascular disease, cancer, chronic lung diseases and diabetes - and their key risk factors.

The framework comprises nine global targets and 25 indicators and was adopted by Member States during the World Health Assembly in May 2013. The mortality target - a 25% reduction in premature mortality from noncommunicable diseases by 2025 - has already been adopted by the World Health Assembly in May 2012. Member States are encouraged to consider the development of national NCD targets and indicators building on the global framework. The 2030 targets were set by extending the 25 by 25 target.

The nine voluntary global targets are aimed at combatting global mortality from the four main NCDs, accelerating action against the leading risk factors for NCDs and strengthening national health system responses. A technical paper has been published to show how the improvements in six risk factors can lead to the targeted mortality reduction.²⁹ The NCD global targets for 2025, with a 2010 baseline are³⁰:

- A 25% relative reduction in the risk of dying between ages 30 and 70 from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases
- At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context
- A 10% relative reduction in prevalence of insufficient physical activity
- A 30% relative reduction in mean population intake of salt/sodium
- A 30% relative reduction in prevalence of current tobacco use in persons aged 15+.
- A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances
- Halt the rise in diabetes and obesity
- At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes

²⁹ <http://www.thelancet.com/pdfs/journals/lancet/PIIS0140673614606164.pdf>

³⁰ http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_8-en.pdf?ua=1

- An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities

Mental health and well-being

The subgoal does not have a target but merely indicates promote mental health and well-being. The most recent WHA resolution was adopted in 2013 and proposed a set of indicators and targets for 2020.³¹ These include four indicators to monitor the state of country policies and programmes:

- 80 % of countries with national policy/plan for mental health in line with international human rights instruments
- 50% countries with national law for mental health in line with international human rights instruments
- 80% countries with at least two functioning national, multisectoral mental health promotion and prevention programmes
- 80% countries routinely collecting and reporting at least a core set of mental health indicators every two years through their national health and social information systems

In addition, the resolution includes one service coverage and one mortality indicator:

- 20% increase of persons with a severe mental disorder (psychosis; bipolar affective disorder; moderate-severe depression) who are using services
- 10% reduction in suicide death rate.

The challenge for the coverage indicator is to determine the proportion of population in need of services. The suicide mortality indicator has greater potential for measurement, similar to all other indicators that need cause of death information.

Target/Subgoal 5

Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

From the monitoring perspective, the monitoring of the harmful use of alcohol is most advanced. It is included in the nine voluntary targets for NCD (see subgoal 4): “At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context”.

In the Global Action Plan for the prevention and treatment of NCD 2013-2020 three indicators have been proposed to measure progress towards this target³²:

- Total (recorded and unrecorded) alcohol per capita (aged 15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context
- Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context
- Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context.

The first indicator is the most commonly used indicator.

³¹ WHA66.8 (2013) & WHA66 Annex 3 (A66/10 Rev.1)

³² <http://www.who.int/nmh/publications/ncd-action-plan/en/>

Target/Subgoal 6**By 2020, halve the number of global deaths and injuries from road traffic accidents**

The target of halving global deaths from road traffic accidents comes was developed by the working group coordinated by the Partnership on Sustainable, Low Carbon Transport (SLoCaT). The target was based on data reported in the WHO 2013 Global status report (estimates for 2010: 1.24 million deaths). The target year is 2030. Last-minute changes were made to the target year in light of the on-going Decade of Action for Road Safety (2011-2020) which changed the target year to 2020 in the OWG report. Current trends are however not anywhere near the required decline from 1.2 to 600,000 in 5 years, and there is discussion about reinstating 2030 as the target year which would also be better in line with all other SDG targets.

The UN Resolution also calls upon WHO for regular monitoring³³ for road traffic mortality. Injuries will be much more difficult to monitor.

Target/Subgoal 7**By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes**

The MDG target 5b is to achieve, by 2015, universal access to reproductive health. Four indicators were proposed and added to the MDG list: contraceptive prevalence, adolescent birth rate, antenatal care coverage (at least one and at least four visits), and unmet need for family planning. Target 5A also included proportion of births attended by skilled health personnel.

Even though the language of SDG target/subgoal 7 is broader than for MDG 5B, the monitoring should still primarily focus on outcome or coverage indicators. The four indicators under MDG 5B include one coverage indicator (antenatal care) and outcome indicator (adolescent birth rate). Contraceptive prevalence rate and unmet need for family planning can both be used to estimate family planning coverage (percent of demand satisfied). Therefore, the two indicators as closely related measures that could be expressed best in a single indicator called family planning coverage (proportion of need for family planning satisfied). This indicator also fits well under the UHC target/subgoal 8.

Target/Subgoal 8**Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all**

The development of a global monitoring framework for universal health coverage was coordinated by WHO and the World Bank Group and involved broad consultation with many stakeholders through the

³³ http://www.un.org/ga/search/view_doc.asp?symbol=A/68/L.40 UN General Assembly Resolution on global road safety crisis (A/68/L.40; April 2014).

web and multiple multi-stakeholder meetings, including Member State briefings.³⁴ The goal of Universal Health Coverage (UHC) has been endorsed in World Health Assembly and UN General Assembly resolutions.

The targets are:

- By 2030, all populations, independent of household income, expenditure or wealth, place of residence or sex, have at a minimum 80% essential health services coverage.
- By 2030, everyone has 100% financial protection from out-of-pocket payments for health services

The proposed indicators are:

Health services coverage

- *Prevention*: coverage with a set of tracer interventions for prevention services.
 - *Equity*: a measure of prevention service coverage as described above, stratified by wealth quintile, place of residence and sex
 - The proposed tracer indicators include (effective) coverage family planning, antenatal care (4 or more visits), immunization coverage (full or DTP3), non-tobacco use, and adequate water source and sanitary facilities. The latter two indicators are covered under another goal.
- *Treatment*: coverage with a set of tracer interventions for treatment services.
 - *Equity*: a measure of treatment service coverage as described above, stratified by wealth quintile, place of residence and sex
 - The proposed tracer indicators include skilled birth attendance, (effective) coverage of TB treatment, ARV therapy, diabetes treatment and hypertension treatment.

Financial protection coverage

- *Impoverishing expenditure*
 - *Aggregate*: fraction of the population protected against impoverishment by out-of-pocket health expenditures, comprising two types of household: families already below the poverty line on the basis of their consumption and who incur out-of-pocket health expenditures that push them deeper into poverty; and families for which out-of-pocket spending pushes them below the poverty line.
 - *Equity*: fraction of households protected against impoverishment or further impoverishment by out-of-pocket health expenditures, stratified by wealth quintile, place of residence and sex.
- *Catastrophic expenditure*
 - *Aggregate*: fraction of households protected from incurring catastrophic out-of-pocket health expenditure.
 - *Equity*: fraction of households protected from incurring catastrophic out-of-pocket health expenditure stratified by wealth quintile, place of residence and sex.

The first global monitoring report will appear in 2015, prepared by WHO and the World Bank.

Target/Subgoal 9

³⁴ World Health Organization and World Bank Group (2014). Monitoring progress towards universal health coverage at country and global levels: framework, measures and targets. Geneva. (http://www.who.int/healthinfo/universal_health_coverage/en/, accessed 7/7/2014).

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

At present, mortality Indoor air pollution indicator
Outdoor air pollution indicator

Additional points under SDG health goal 3

In addition to the nine subgoals there are four additional points under SDG health goal 3 in the report of the OWG.

3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate

The monitoring of the WHO Framework Convention on Tobacco Control³⁵ is done through an annual WHO report on the global tobacco epidemic.³⁶ It provides the status of a range of measures to implement the framework in all countries, and also summarizes the data on tobacco use. The tobacco use indicator is proposed as a tracer indicator under health subgoal 8 (UHC monitoring).

3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide **access to affordable essential medicines and vaccines**, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide **access to medicines for all**

This point builds upon MDG Target 8.E: in cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries. Access to affordable medicines is best monitored through health facility surveys and routine reports, focusing on a set of tracer indicators that are associated with a high burden of disease.

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

WHO annually publishes country statistics on health financing including total health expenditure, government, external and private expenditures, and out of pocket payments.³⁷ Health workforce statistics currently focus on national density of core health professionals (updated annually by WHO), but increasingly the focus is shifting towards distribution of health workers within countries (e.g. urban rural), stock flows (including migration), and performance of the health workforce.

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

The international health regulations (IHR), an international legal instrument that is binding on countries across the globe, aims is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide. WHO monitors its

³⁵ <http://www.who.int/fctc/en/>

³⁶ http://www.who.int/tobacco/global_report/2013/en/

³⁷ http://www.who.int/gho/publications/world_health_statistics/en/

implementation including the capacities of member states concerning legislation, coordination, surveillance, response, preparedness etc.³⁸

Health-related targets and indicators in other goals

Almost every single goal has a linkage with health. Many are important determinants of health, and therefore, people's health is such a good measure of progress of the whole set of SDG. There are a few goals that deserve specific mentioning:

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Since 2011, the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP) has held consultations to develop targets for post-2015. The process has not been concluded yet, but a 2030 target comprising of four elements has been proposed:³⁹

- to eliminate open defecation;
- to achieve universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities;
- to halve the proportion of the population without access at home to safely managed drinking water and sanitation services; and
- to progressively eliminate inequalities in access

For each target element indicators have been proposed. There are seven indicators and 20 subindicators, excluding the fourth target on inequalities. The indicators are:

- Percentage of population practicing open defecation
- Percentage of population using 'basic' drinking-water
- Percentage of population with 'basic' handwashing facilities with soap and water at home
- Percentage of pupils enrolled in primary and secondary schools providing basic drinking water, basic sanitation, handwashing facilities with soap and water, and menstrual hygiene management facilities
- Percentage of beneficiaries using health facilities providing basic drinking-water, basic sanitation, and washing facilities with soap and water, and menstrual hygiene management facilities
- Percentage of population using a 'safely managed' drinking water service
- Percentage of population using a 'safely managed' sanitation service

Goal 2 End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Global nutrition targets (2025, baseline is 2012)⁴⁰:

- 40% reduction in the number of children under-5 who are stunted
- 50% reduction of anaemia in women of reproductive age
- 30% reduction in low birth weight
- no increase in childhood overweight

³⁸ <http://apps.who.int/gho/data/node.main.IHR?lang=en>

³⁹ http://www.wssinfo.org/fileadmin/user_upload/resources/post-2015-WASH-targets-factsheet-12pp.pdf

⁴⁰ http://www.who.int/nutrition/topics/nutrition_globaltargets2025/en/. EB document A136/9 (November 2014).

- increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%
- reduce and maintain childhood wasting to less than 5%

Monitoring and accountability

Accountability has been defined as a cyclical process of monitoring, review and remedial action. The monitoring of the health-related SDG requires well-established mechanisms for accountability at country, regional and global levels. Such mechanisms need to be inclusive, independent, evidence-based and transparent, and lead to remedial actions.

As with health information systems, the foundation of accountability lies at the country level. Accountability at the country level starts with reliable, accurate, timely, transparent and comprehensive data on progress and performance that is communicated effectively to all relevant constituencies in countries. Regular mechanisms of review of progress and performance should be based on technical synthesis of all data involving the Ministry of Health, national statistics office, institutes of public health and others. The reviews are transparent and inclusive involving government (national and subnational), civil society organizations and development partners. The reviews should be followed by planning and implementation of remedial actions.

At the global level, health should be part of the overall SDG monitoring and accountability framework. Building upon the experience with the Interagency and Expert Review Group for the MDGs, this may imply that an overall group for the SDG monitoring is established. Since the SDG contain a much larger set of goals a subgroup on health of the UN Interagency group for SDG monitoring may be established, again based on interagency collaboration and involvement of technical experts. In addition, informal collaborations between academics, UN agencies, government and private sector should also be considered for technical synthesis and analysis of data, based on the model developed by Countdown to 2015 for Maternal, Newborn and Child Survival initiative. The aim is to ensure independence and objectivity in the analysis of progress.

Health feeds into the overarching accountability framework for the SDGs. This should include multiple mechanisms including regular reviews of progress by Member States through the World Health Assembly, independent expert review groups that report to governing bodies and social accountability mechanisms that provide a direct avenue for people's voices. These mechanisms bring together the technical synthesis with a strategic analysis of improvement efforts required on the part of countries and international partners, and a powerful advocacy component

Conclusions

The table below summarizes the target specifics for the goals and subgoals, and proposed indicators. There are about 27 indicators, many have been endorsed by governing bodies, others are in advanced stages of development.

The majority of indicators require all-cause or cause-specific mortality information. This implies the strengthening of mortality statistics systems that rely on multiple sources including death registration with reliable cause of death. In addition, the measurement of incidence rates (or proxies for incidence) and (effective) coverage of interventions, as well as financial protection will be critical. Household surveys with biological and clinical data collection will be critical, also to effectively measure inequalities in the population. Timely, reliable and accurate health facility data can complement household survey data.

If the overarching indicator for monitoring the health goal in the SDGs is healthy life expectancy to capture both mortality and decrements in health status of the population, an agenda will need to be developed to ensure comparability of measures of functioning in national population health surveys. A core set of these items that would allow for comparability within countries over time and sub-groups as well as across countries that can be incorporated within national data generation exercises would be essential. This would then enable the combining of this information with mortality data to monitor healthy life expectancy. This would then enable the measurement of the impact of chronic conditions such as NCDs, mental health conditions such as dementia and musculoskeletal conditions (in addition to infectious and maternal and child health conditions) as these conditions become increasingly prevalent with an ageing population worldwide.

The health sector will need to engage with the overall process of development of the outcome statement and the Statistical Commission to provide technical inputs on the validity of the health goal, targets and indicators, also those targets of relevance in other goals.

Annex A
Summary of health goals, targets and potential indicators with endorsement status.

Overall goal	Target specifics	Indicator	Endorsement status
Ensure healthy lives and promote wellbeing for all at all ages	Increase (healthy) life expectancy by: 6 years in developing and 2 years in developed countries	Life expectancy at birth (including 40% reduction in premature deaths before age 70)	Technical meetings and publications
Subgoal	Target specifics	Indicator	Endorsement status
1 Reduce the global maternal mortality ratio to less than 70 per 100,000 live births	Reduce the global MMR to less than 70 and no country to have MMR above 140	Maternal deaths per 100,000 live births	International meeting in 2014 to set target; no governing body endorsement
2 End preventable newborn and under-5 child deaths;	All countries to reduce under-5 mortality to less than 25 /1,000	Under-five mortality per 1,000 live births	Part of child survival call to action; part of a Promise Renewed
	All countries reduce neonatal mortality to less than 12 / 1,000	Neonatal mortality per 1,000 live births	Every Newborn Action Plan – endorsed by WHA
3 End the epidemics of AIDS, TB, malaria and NTD	90% reduction in new adult HIV infections, including among key populations	HIV incidence rate per 100 adult person years	UNAIDS PCB
	Zero new infections among children	HIV incidence rate per 100 children person years	
	90% reduction in AIDS-related deaths	HIV/AIDS deaths per 100,000 population	
	80% reduction in tuberculosis incidence rate (< 20 cases per 100,000 population)	TB incidence per 1000 person years	Global TB Action Plan 2035; endorsed by WHA
	90% reduction in tuberculosis deaths	TB deaths per 100,000 population	
	90% reduction in global malaria case incidence	Malaria incident cases per 1000 person years	Global Technical Strategy
	90% reduction in global malaria mortality rate	Malaria deaths per 100,000 population	
Neglected Tropical Diseases	No targets for 2030 at present		Multiple resolutions and targets for 2015 and 2020, often related to elimination
3 Combat hepatitis, water-borne diseases and other communicable diseases	90% reduction in hepatitis B and C incidence rate	Hepatitis B antibody prevalence in children (age 5)	Technical discussions on hepatitis
	Water-borne diseases		
	Other communicable diseases		
4 Reduce premature mortality from NCDs through prevention and treatment and promote mental health and wellbeing	One-third reduction of premature mortality from NCD	Probability of dying of cardiovascular disease, cancer, chronic respiratory disease or diabetes at ages 30-70	WHA resolution 2013 Also includes 8 other targets mostly on risk factors
	10% reduction in suicide-related mortality	Suicide-related mortality per 100,000 population	WHA Resolution
5 Strengthen prevention and treatment of substance abuse, including narcotic drug use and harmful use of alcohol	10% reduction of alcohol per capita consumption	Alcohol per capita consumption	WHA resolution

6 Reduce deaths and injuries due to road traffic accidents	Halve the number of global traffic deaths (from 1.2 mln to 600,000)	Number of deaths due to road traffic accidents	Partnership on Sustainable, Low Carbon Transport; Decade of Action for Road Safety (2011-2020) uses same target for 2020
7 Ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	Ensure universal access to sexual and reproductive health care services	Adolescent birth rate Contraceptive prevalence rate Unmet need for FP Antenatal care use (4+ visits)	The indicators are the MDG target 5B indicators
8 Achieve UHC, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	All populations, independent of household income, expenditure or wealth, place of residence or sex, have at a minimum 80% essential health services coverage Everyone has 100% financial protection from out-of-pocket payments for health services	Coverage with a set of tracer interventions for prevention and treatment services** Fraction of the population protected against impoverishment by out-of-pocket health expenditures, Fraction of households protected from incurring catastrophic out-of-pocket health expenditure.	Stratified by wealth quintile, place of residence and sex, where relevant Comprising two types of household: families already below the poverty line on the basis of their consumption and who incur out-of-pocket health expenditures that push them deeper into poverty; and families for which out-of-pocket spending pushes them below the poverty line.
9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	No specifics	Mortality attributed to: <ul style="list-style-type: none"> • household air pollution • outdoor ambient pollution at levels • water and soil pollution and contamination • hazardous chemicals Morbidity: attributed to the same risk factors	For most countries models will be needed to attribute mortality and morbidity to the risk factors.

** The tracer interventions may vary by country but all should include for prevention - FP, ANC (4+ visits), immunization (full or DTP3), non-tobacco use, and adequate water source and sanitary facilities - and for treatment - skilled birth attendance, TB treatment, ARV therapy, diabetes and hypertension treatment.