

Global Reference List of 100 Core Health Indicators

Working Version 5

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1. Background

At the informal meeting of Global Health Agency Leaders in New York September 24, 2013, it was decided to establish a group of senior focal points from the participating global health agencies, to critically review respective agency reporting requirements from countries. A multi-agency working group consisting of 19 agency representatives was established and chaired by the Director-General of WHO and a rapid assessment of the burden of indicators and reporting requirements for health monitoring was conducted. The assessment included an analysis of the situation from both a global and country perspective, and the key findings and recommendations were published in a report “A rapid assessment of the burden of indicators and reporting requirements for health monitoring¹”.

The report revealed how global investments in disease and program-specific monitoring and evaluation programmes by different agencies have resulted in very large numbers of indicators, diverse indicator definitions, reporting periodicities, fragmented data collection, uncoordinated efforts to strengthen country institutional capacity, causing unnecessary reporting burden to countries and inefficiencies in strengthening country systems.

One of the priority actions identified by the multi-agency working group was for global agencies to bring greater alignment and efficiency in these investments, to rationalize existing reporting demands and to reduce the reporting burden and reporting requirements on countries. To achieve this end, WHO has collaborated with international and multi-lateral partners and countries to move towards agreement on a global reference list of core health indicators that the global community prioritizes for the purposes of monitoring global progress, maintaining programme support and advocating for resources and funding. This list was developed from existing recommended lists that have been proposed in the context of international governing bodies and fora, global and regional health initiatives, technical reference groups and programmes.

The Global Reference List of Core Health Indicators is a means to an end. A core set should help reduce reporting requirements and better facilitate better alignment with and greater investment in one country-led health sector platform for results and accountability that forms the basis for all global reporting².

The purposes of the Global Reference List of Core Health Indicators are to:

- Rationalize and harmonize indicator reporting requirements of agency partners.
- Improve alignment between global reporting needs and country processes for monitoring of progress and performance.
- Enhance efficiency and streamline investments in data sources and analyses for the indicators.
- Improve the quality of results-based monitoring by focusing on better data for fewer indicators.

¹ A Rapid assessment of the burden of indicators and reporting requirements for health monitoring. Prepared for the multi-agency working group on indicators and reporting requirements by the Department of Health Statistics and Information Systems, World Health Organization, February 2014.

² Monitoring, Evaluation and Review of National Health Strategies. A country-led platform for information and accountability. IHP+, WHO, 2011.

2. Indicator classification

There are very many indicators and indicator definitions that have been developed by international organizations, reference groups and interagency groups, countries, academics, advocacy groups and others. The indicators are often used for different purposes including programme management, allocation of resources, monitoring progress in country, performance-based disbursement, global reporting etc.

The Global Reference List of Core Health Indicators presents the indicators according to multiple dimensions. First, each indicator belongs to one of four domains: health status, risk factors, service coverage and health systems. The latter includes service delivery including quality of care, health financing, essential medicines, health workforce and health information. Second, each indicator is further categorised into sub-domains. This includes communicable diseases (HIV/AIDS, STI, TB, malaria, neglected tropical diseases, outbreak/epidemic diseases), reproductive, maternal, newborn, child and adolescent health (including sexual health and reproductive rights and immunization), noncommunicable diseases (including chronic disease and health promotion, nutrition, mental health, substance abuse), injuries and violence and environment.

The third dimension is according to levels of the results chain framework (input, output, outcome and impact), as defined for the IHP+ technical M&E framework.² This framework not only facilitates the identification of core indicators along each link in the results chain, but also links indicators to underlying country data systems and data collection methods, highlights the need for analysis and synthesis of data from multiple sources, regular data quality assessment, and demonstrates how the data need to be communicated and used for both country and global reporting purposes.

The results chain framework has also been used to develop a monitoring framework for universal health coverage.³ The focus is on coverage of interventions and financial risk protection, supported by evidence on selected indicators of health system inputs, service delivery and quality, and health and developmental outcomes.

³ 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)

3. Process and criteria for selecting indicators

3.1 Process

The process for selecting a global reference set of core indicators has been guided by the priority global monitoring requirements relating to the MDG era as well as consideration of the measurement requirements for universal health coverage, noncommunicable diseases and other new global health challenges, and the post-2015 development agenda.

To this end, an initial landscaping exercise was undertaken to take stock of existing global indicator sets and related reporting requirements that have been developed through global agreements, initiatives and reference groups. The exercise took into consideration indicators and reporting requirements relating to:

(i) -Monitoring of international commitments and resolutions in which governments have committed their countries such as UN and World Health Assembly declarations and resolutions:

Examples include, but not limited to:

- The United Nations Millennium Development Goals (MDGs)
- World Health Assembly Resolutions that are associated with monitoring of international commitments
- the United Nations General Assembly Special Session on HIV/AIDS (UNGASS) *Declaration of Commitment*
- the Commission on Information and Accountability for Women's and Children's Health
- Framework of actions for the follow-up to the Programme of Action of the International Conference on Population and Development beyond 2014

(ii) Disease and programme-specific indicators and reporting requirements recommended through technical monitoring and evaluation reference groups and processes involving UN, multi-lateral, bilateral agencies and countries.

Examples include but not limited to:

- Monitoring and Evaluation Technical Reference Group for Roll-Back Malaria
- WHO /UNICEF joint reporting for immunization
- UNICEF WHO every Newborn action plan to end preventable diseases
- WHO/PEPFAR/UNAIDS. A guide to monitoring and evaluation for collaborative TB/HIV activities.

A complete list of the reference group documents is shown in an Annex 1.

This initial landscaping assessment resulted in an initial master list of over 800 global indicators that included many similar indicators of varying definitions and periodicities.

3.2 Indicator prioritization

Working from the master list of indicators, and further to removing duplications and variations of similar indicators, an indicator prioritization process was applied. This process resulted in a first draft core list of indicators that was circulated for peer review to the members of the working group and further distributed to several agency M&E groups. This current version of the Global Reference list of Core Health Indicators (Version 4) reflects, to the extent possible, the comments and inputs from those groups.

The criteria for indicator selection have been used to distinguish between Core (C) and Additional core indicators (A).

Core indicators:

Indicators are prioritized as **Core** if they meet the following criteria:

1. The indicator is prominent in the monitoring of major international declarations to which all member states have agreed, or has been identified through international mechanisms such as reference or interagency groups as a priority indicator in specific program areas.
2. The indicator is scientifically robust, useful, accessible, understandable and SMART (specific, measurable, achievable, relevant and time-bound).
3. There is a strong track record of extensive measurement experience with the indicator (possibly supported by an international database).
4. The indicator is being used by countries in the monitoring of national plans and programmes .

Within the core set it may be important to further distinguish a small set of the most “powerful” indicators that can guide political commitment to health beyond the health sector. Some health MDG indicators, such as the child mortality rate and the maternal mortality ratio, are good examples.

Some of the indicators prioritized as core could be considered aspirational. For several core indicators many countries will not be able to report regular data. An example is causes of death in the population. Yet, few would argue that cause of death indicators should not be included as a core indicator, be it mortality due to AIDS, malaria, road traffic accidents or lung cancer. The indicators are fundamental for health resource allocation and planning, and monitoring of progress and impact.

Additional indicators:

Indicators are considered as **Additional** if they meet at least the first, second and fourth criteria, but do not fully meet the third. This implies that new indicators generally included in this additional category.

Project and grant monitoring

A third category of indicators exists that relate to specific project management and /or donor reporting. They have not been included as part of the global core or additional sets as they tend to be used by specific projects and donors for more specific programme management and accountability purposes.

The grant and project monitoring indicators differ in multiple ways: they are more often input or output indicators and tend to be based on crude data (counting events). The scope is often subnational, limited to a certain population, area or set of clinics engaged in the project. The indicators tend to be computed against a grant or project target rather than population as a whole.

While there is some overlap in the indicators collected for specific projects and donors with the Global Reference List of Core Health Indicators, reporting burden for such projects will not be mitigated at the country level for a significant number of indicators. The data collection investments are local and related to the project and generally not aiming to strengthen the country system. Sometimes national monitoring systems are weakened because of critical staff moving to grant and project monitoring and, if there are multiple projects in parallel, because it becomes more difficult to obtain a national picture from disparate projects.

It will be important over the longer term to work towards further rationalization of this category of indicators. A key principle should be that grant and project monitoring is carried out in a way that the national monitoring and evaluation system as a whole is strengthened.

3.3 Indicator metadata

For many of the indicators in the Global Reference List of Core Health Indicators, a comprehensive metadata set is available. These have been derived from existing sources such as the WHO Indicator and Metadata Registry and programme specific monitoring and evaluation guides. Key metadata include:

- **Indicator Definition** including the numerator and denominator. For some indicators further work is required to fine-tune definitions. For some indicators only a numerator is reported by the country, as models are used to estimate the denominator (but models also need reported data).
- **Disaggregations** that include equity stratifiers such as age and sex, geography, socioeconomic status, and place of residence, among others.
- In some cases, **Additional dimensions** are used to include further breakdowns of the indicator (e.g mortality rates by main cause of death or neglected disease incidence rates of neglected tropical diseases by disease).
- **References** : The key reference group, governing body, resolutions, or programme publication that specifies monitoring of that particular indicator.
- **Data sources**: The main (preferred) data source or data collection methodology is specified for each indicator including:
 - Civil registration and vital statistics systems
 - Population-based health surveys
 - Facility generated data that includes routine facility information systems and health facility assessments and surveys
 - Administrative data sources such as financial and human resource information systems
 - Other: indicators from other sources including estimation and modelling.

The extent to which an indicator is associated with a reporting burden differs by data source. Household surveys require a large investment and are conducted at a relatively low frequency. Adding an indicator or disaggregation is often considered a relatively small burden, although there are always concerns about the potential effect of overly long interviews on data quality. Facility data are collected on a continuous basis and reported on a frequent basis. The bulk of the burden of collecting and reporting often falls on health service providers. A simple new disaggregation may double the recording workload for health workers.

Reporting periodicity is a critical factor that affects the reporting burden and will be included in the next version of the metadata dictionary. Rationalization of indicators needs to go hand in hand with rationalization of reporting requirements. For some indicators annual reporting is desirable: those that can change rapidly and can be measured with great accuracy.

Going forward a priority action will be to publish the Global Reference List of Core Indicators and a full metadata registry both as an online database and in printed form. This will continually be updated and amended as global and country priorities and directions evolve.

4. Global Reference List of Core Health Indicators

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Health status			
Mortality by age and sex			
Life expectancy at birth	Average number of years that a newborn could expect to live, if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory, or geographic area.	Sex, Socioeconomic status, Place of residence	47,48
Adult mortality rate between 15-60 years	Probability that a 15 year old person will die before reaching his/her 60th birthday. The probability of dying between the ages of 15 and 60 years (per 1 000 population) per year among a hypothetical cohort of 100 000 people that would experience the age-specific mortality rate of the reporting year.	Place of residence, Socio-economic status, Sex	16
Under-five mortality rate	Probability of a child born in a specific year or period dying before reaching the age of five, if subject to age-specific mortality rates of that period.	Place of residence, Socio-economic status, Sex	1,47,49, 60
Infant mortality rate	Probability of a child born in a specific year or period dying before reaching the age of one, if subject to age-specific mortality rates of that period.	Place of residence, Socio-economic status, Sex, Age (neonatal: 0-27 days ; postneonatal: 28 days-<1 year)	1,47
Neonatal mortality rate	Number of deaths during the first 28 completed days of life per 1000 live births in a given year or other period.	Place of residence, Socio-economic status, Sex Age in days/weeks, Birthweight	5,16, 36, 46,47
Mortality by cause			
Maternal mortality ratio	Annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100 000 live births, for a specified time period.	Place of residence, Socio-economic status, Age	1,47,50, 60
TB mortality rate	Estimated number of deaths attributable to tuberculosis (TB) in a given year, expressed as the rate per 100 000 population.	Place of residence, Socio-economic status, Age, Sex	1,2,13,16
HIV/AIDS mortality rate	Estimated number of adults and children that have died due to HIV/AIDS in a specific year, expressed per 100 000 population.	Age, Sex, Place of residence, Socio-economic status, TB/HIV co-infected	2
Malaria mortality rate	Number of deaths due to malaria per 100 000 population per year.	Age, Sex, Place of residence, Socio-economic status	1, 2, 17, 21,
Mortality between ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	Unconditional probability of dying between the exact ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.	Place of residence, Socio-economic status, Sex	7,16, 46
Suicide mortality rate	Suicide rate per 100 000 population in a specified period (age-standardized).	Place of residence, Socio-economic status, Sex, Age	8
Mortality rate from road traffic injuries	Number of road traffic fatal injury deaths per 100 000 population (age-standardized)	Per motor vehicles, motor vehicle-km and passenger-km Place of residence Socio-economic status Sex Age	11, 19, 22
Fertility			
Adolescent fertility rate	Annual number of births to women aged 15-19 years per 1000 women in that age group.	Place of residence, Socio-economic status, Marital status (when possible, also capture girls <15)	18, 24, 46
Total fertility rate	Average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality.	Place of residence, Socio-economic status	18

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Morbidity			
New cases of vaccine preventable diseases	Number of confirmed new cases of vaccine preventable diseases that are included in the WHO recommended standards for surveillance of selected VPDs and VPD reported on the WHO-UNICEF reporting form in a specified time period.	Disease (diphtheria, pertussis, neonatal tetanus, total tetanus, measles, rubella, congenital rubella syndrome, mumps, Japanese encephalitis, Yellow Fever), Age, District	2, 14, 16
New cases of IHR and other notifiable diseases	Number of new confirmed cases of IHR notifiable diseases(immediately notifiable diseases) and other notifiable diseases (diseases that could cause serious public health impact and to spread rapidly internationally) per year	<i>IHR notifiable diseases:</i> Smallpox, Poliomyelitis due to wild type poliovirus, Human influenza caused by a new subtype, Severe acute respiratory syndrome (SARS) <i>Other notifiable diseases:</i> Cholera, Pneumonic plague, Yellow fever, Viral haemorrhagic fevers, West Nile fever, Other diseases that are of special national or regional concern (dengue fever, Rift Valley fever and meningococcal disease) Location, Age, Sex	9, 16
HIV incidence	Number of new HIV infections per 1000 person years	General population, Key populations (MSM, sex workers, IDU) Sex and age groups (0-14, 15-24, 15-49) ; Child <3 years, < 1 year (to capture mother-to-child infections) Place of residence	1,2,3,18, 36,37, 46
HIV prevalence	Percentage of people living with HIV in the general and in specific key populations	General population: 15-49 years, 15-59 years, 15 years and over, 0-14 years Specific key populations: MSM, Sex workers, Injecting drug users, Transgender people, Prisoners Sex Place of residence, socioeconomic status	2,3, 36, 37, 46
Sexually transmitted infections incidence rate	Number of new cases of reported STIs (syndromic or etiological reporting) in a specified time period (year)	Age, Sex, Syndrome/pathogen, Key populations Syphilis, Gonorrhoea, Herpes, Chlamydia, Trichomonas vaginalis	28, 36, 46
TB incidence rate	Estimated number of new and relapse tuberculosis (TB) cases arising in a given year, expressed as the rate per 100 000 population. All forms of TB are included, including cases in people living with HIV.	Age, Sex, HIV status	1,2,13, 36, 38
TB notification rate	Number of tuberculosis (TB) cases detected in a given year. The term "case detection", as used here, means that TB is diagnosed in a patient and is reported within the national surveillance system, and then on to WHO.	Type of TB (bacteriologically confirmed/clinically diagnosed, pulmonary/ extrapulmonary) Age, Sex Place of residence, Prisons	2, 13, 36, 38
TB prevalence rate	Number of cases of tuberculosis (all forms) in a population at a given point in time (the middle of the calendar year), expressed as the rate per 100 000 population. It is sometimes referred to as "point prevalence". Estimates include cases of TB in people with HIV.	Bacteriologically confirmed TB, All forms of TB Age, Sex HIV status	1, 2, 13, 36, 38
Malaria parasite prevalence among children 6-59 months	Percentage of children aged 6–59 months in the population	Age, Sex, Place of residence, Season (year and month)	2,17,21, 36
Malaria incidence rate	Number of confirmed reported malaria cases per 1000 persons per year	Age, Place of residence, Season (year and month)	1,2,16,17, 21,36

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Cancer incidence, by type of cancer	Number of new cancers of a specific site/type occurring per 100 000 population.	Type (leading cancers), e.g. lung, breast, cervix, prostate, colon, liver, stomach Age, Sex, Place of residence, Socio-economic status	2, 7
Risk factors			
Nutrition			
Exclusive breastfeeding rate 0–5 months of age	Proportion of infants 0–5 months of age who are fed exclusively with breast milk.	Ever breastfed, Continued breastfeeding at 1 year, Sex	2,4, 5, 6,16,20, 29, 35, 36, 37,60
Early initiation breastfeeding	Percentage of infants breastfed within 1 hour of birth in a specified time period	Initiation on first day	
Incidence of low birth-weight among new-borns	Percentage of live births that weigh less than 2500 g out of the total of live births during the same time period	Place of residence, Socioeconomic status, Birthweight category, Preterm status	2,6,19,20
Children under 5 who are stunted	Percentage of stunting (height-for-age less than -2 standard deviations of the WHO Child Growth Standards median) among children aged 0-4 years	Sex, Age, Place of residence, Socioeconomic status. Also: Below -3 SD	2,4,6,16,20, 0,39, 40,60
Children under 5 who are wasted	Percentage of wasting (weight-for-height less than -2 standard deviations of the WHO Child Growth Standards median) among children aged 0-4 years	Sex, Age, Place of residence, Socioeconomic status Also: Below -3SD	2,6,16,20, 39,40
Anaemia in children	Percentage of children aged 6-59 months with a haemoglobin measurement of <8g/dL	Age, Sex, Place of residence, Socioeconomic status Also: <11 g/dL	6, 17,21, 36
Anaemia prevalence among women of reproductive age	Percentage of women ages 15-49 screened for haemoglobin levels who have a level less than 12g/dL (pregnant women less than 11g/dL)	Age parity, Reproductive status (pregnant, lactating), Trimester of pregnancy, Severity of anaemia Socioeconomic status	2,6, 41, 46
Infections			
Condom use at last sex among people with multiple sexual partnerships in past 12 months	Percentage of women and men aged 15–49 who have had more than one sexual partner in the past 12 months who report the use of a condom during their last sexual intercourse with a higher risk partner.	Sex, Age(15-24, 15-49)	1,3,16, 36, 37, 46
Condom use among key populations (sex workers, men who have sex with men, IDU)	Percentage of sex workers/MSM/IDU reporting the use of a condom the last time they had sex with a client/male partner/any partner respectively	Sex workers: by sex (F/M/transgender); age (<25/25+) MSM: age (<25/25+) IDU: sex; age (<25/25+)	3,36, 37
Environmental risk factors			
Population using a safely managed drinking water service	Percentage of population using an improved drinking water source on premises accessible to all members of the household, which delivers sufficient water to meet domestic needs (non-functional ≤ 2 days in the last 2 weeks), meets WHO guideline values for E.coli, fluoride and arsenic, and is subject to a verified risk management plan.	Socioeconomic status, Place of residence (urban/rural)	25a, 25b, 25c, 25d, 46
Population using a safely managed sanitation service	Percentage of people who (1) use an adequate sanitation facility and (2) whose excreta is safely transported to a designated disposal/treatment site, or treated in situ before being re-used or returned to the environment.	Socioeconomic status, Place of residence (urban/rural)	25a, 25b, 25c, 46
Population using modern fuels for cooking/heating/lighting (indoor air)	Percentage of households/population using modern fuels for cooking/ heating/ lighting.	Sex, Place of residence, Socioeconomics status, Fuel type, End use (i.e. cooking, heating, lighting)	16a, 16b
Non Communicable Diseases			
Total alcohol per capita (aged 15+ years old) consumption	Total alcohol per capita (APC) is defined as the total (sum of recorded APC three-year average and unrecorded APC) amount of alcohol consumed per adult (15+ years) over a calendar year, in litres of pure alcohol.	Age, Sex, other relevant socio-demographic stratifiers where available	2,7,16

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Current tobacco use among persons aged 18+ years	"Smoked tobacco products" includes the consumption of cigarettes, bidis, cigars, cheroots, pipes, shisha (water pipes), fine-cut smoking articles (roll-your-own), krekets, and any other form of smoked tobacco. "Smokeless tobacco" includes moist snuff, plug, creamy snuff, dissolvables, dry snuff, gul, loose leaf, red tooth powder, snus, chimo, gutkha, khaini, gudakhu, zarda, quiwam, dohra, tuibur, nasway, naas/naswar, shammah, betel quid, toombak, pan (betel quid), iq'mik, mishri, tapkeer, tombol and any other tobacco product that is sniffed, held in the mouth, or chewed.	Age, Sex, other relevant socio-demographic stratifiers where available	61
Children under 5 who are overweight	Percentage of overweight (weight-for-height above +2 standard deviations of the WHO Child Growth Standards median) among children aged 0-4 years.	Sex, Age, Place of residence, Socioeconomic status	2,6,7,16,19, 39,41
Obesity and overweight among adults	Percentage of adults (18+ years) who are overweight (defined as having a BMI $\geq 25 \text{ kg/m}^2$) and obese (defined as having a BMI $\geq 30 \text{ kg/m}^2$)	Age, Sex, Other relevant socio-demographic stratifiers where available	
Raised blood pressure among adults	Systolic blood pressure ≥ 140 and/or diastolic blood pressure ≥ 90 among persons aged 18+ years.	Age, Sex, Other relevant socio-demographic stratifiers where available	51
Raised blood glucose/diabetes among adults	Fasting plasma glucose value $\geq 7.0 \text{ mmol/L}$ (126 mg/dL) or on medication for raised blood glucose among adults aged 18+ years.	Age, Sex, other relevant socio-demographic stratifiers where available	52
Population intake of salt	Mean population intake of salt in grams	Age, Sex, other relevant socio-demographic stratifiers where available	53,54,55,56
Insufficient physical activity in adults	Percentage of adults aged 18+ years not meeting any of the following criteria: 150 minutes of moderate-intensity physical activity per week; 75 minutes of vigorous-intensity physical activity per week; an equivalent combination of moderate- and vigorous-intensity physical activity accumulating at least 600 metabolic equivalent minutes per week	Age, Sex, other relevant socio-demographic stratifiers where available	57,58
Injuries			
Intimate partner violence prevalence	Percentage of ever-partnered women 15-49 years who have experienced physical and/or sexual violence by an intimate partner in the last 12 months	Age (15-19, 20-24 and 25-49) HIV status	3, 34, 36, 46
Service coverage			
Reproductive, maternal, newborn, child and adolescent			
Demand for family planning satisfied with modern methods	Percentage of women of reproductive age (15-49 years), who are sexually active, who have their need for family planning satisfied with modern methods	Age, Socio economic status, Place of residence, Marital status	2,4,24, 46,60
Modern contraceptive prevalence rate	Percentage of women aged 15-49 years, married or in-union, who are currently using, or whose sexual partner is using, at least one method of contraception, regardless of the method used	Age, Socio economic status, Place of residence, Method (short, long, permanent), Sexually active (irrespective of marital status or in union)	1,2,4,20,24, 35, 46
Antenatal care coverage	Percentage of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times.	Age, Socio economic status, Place of residence, Type of provider. Also: at least one visit	1,2, 4, 20, 36,60
Skilled birth attendance	Percentage of live births attended by skilled health personnel during a specified time period	Age parity, Socio economic status, Place of residence, Type of provider Also: Institutional delivery coverage (women giving birth in a health institution)	1,4,5,20, 36, 46,60
Postpartum care coverage	Percentage of mothers and babies who received postpartum care within two days of childbirth (regardless of place of delivery)	Age Parity, Marital status, Socio economic status, Place of residence, Facility ownership	4,5, 20, 35,60
Care seeking for pneumonia	Proportion of children aged 0-59 months who had "suspected pneumonia" (ARI) in the previous 2 weeks and were taken to an appropriate health-care provider. The definition of 'appropriate' care provider varies between countries. Percentage of children under 5 with suspected pneumonia (cough and difficult breathing NOT due to a problem in the chest and a blocked nose) in the two weeks preceding the survey taken to an appropriate health facility or provider.	Sex, Socioeconomic status, Place of Residence, Provider Also: with "receiving appropriate antibiotics"	30,16,60

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Children with diarrhoea receiving oral rehydration solution (ORS)	Percentage of children under 5 with diarrhoea in the last two weeks receiving ORS (fluids made from ORS packets or pre-packaged ORS fluids)	Age, Sex, Place of residence, Socioeconomic status Also: with continued feeding; oral rehydration therapy (ORT)	30, 35,16
Vitamin A supplementation coverage	Percentage of children 6–59 months who received 2 age-appropriate doses of vitamin A in the past 12 months	Age, Sex, Socioeconomic status, Place of residence	16, 20, 30, 35
Immunization			
Immunization coverage rate, by vaccine for each vaccine in the national schedule	Percentage of target population who have received the appropriate doses of the recommended vaccines in the national schedule by recommended age: (BCG, hepB, PCV, rotavirus; DTP-HepB-Hib, Pcv; measles; HPV, TT, Influenza)	Age, Sex, Socio economic status Place of residence DTP1 - DTP3 dropout rate; MCV1-MCV2 dropout	60
HIV			
People living with HIV who know their positive HIV status	Percentage of all people living with HIV who know their positive HIV status	Age, Sex, Pregnancy, Key population	36,37, 46
Prevention of Mother-to-Child Transmission	Percentage of HIV-infected pregnant women provided with ARV drugs to reduce the risk of mother-to-child transmission during pregnancy and delivery in the last 12 months	By regimen	3, 4, 36, 37, 46,60
Antiretroviral Therapy (ART) coverage	The percentage of adults and children with advanced HIV infection currently receiving antiretroviral combination therapy in accordance with the nationally approved treatment protocols (or WHO/UNAIDS standards) among the estimated number of adults and children with advanced HIV infection	Sex, Age, Key populations, pregnant women, Persons newly initiating ART during the last year, Provider type (public/private)	1, 3 , 36, 37, 46
HIV Viral load suppression	Percentage of people on ART who are virologically suppressed (VL level ≤ 100 copies/mL)	Sex, Age	3,36
HIV/TB			
TB preventive therapy for HIV-positive people newly enrolled in HIV care	Percentage of eligible adults and children newly enrolled in HIV care (pre-ART and ART) starting treatment for latent TB infection in a specified time period	Adults/children	3, 31,36, 37
TB patients, new and relapse, tested for HIV	Percentage of new and relapse TB patients registered who had an HIV test result recorded in the TB register among the Total number of new and relapse TB patients registered in a specified time period	Age, Sex	2, 13, 3, 36, 37
Antiretroviral therapy (ART) during TB treatment	Percentage of HIV-positive TB patients who received (or are receiving) ART during or at the end of TB treatment, among all HIV positive TB patients registered during the reporting period	Age, Sex	3, 31, 36, 37
Tuberculosis			
TB cases with result for drug susceptibility testing	Percentage of TB cases (new and previously treated) with results for diagnostic drug susceptibility testing during the specified period of assessment	Treatment history	31, 36
TB case detection rate	Proportion of estimated new and relapse tuberculosis (TB) cases detected in a given year under the internationally recommended tuberculosis control strategy		1, 2, 13 , 36
Malaria			
Intermittent preventive therapy for malaria during pregnancy (IPTp)	Percentage of women who received 3 or more doses of intermittent preventive treatment during ANC visits during their last pregnancy	Age, Place of residence, Socio-economic status	2, 17, 20, 21, 36
Use of insecticide treated nets (ITN)	Percentage of children under five years of age in malaria endemic areas who slept under an insecticide-treated nets (ITN) the previous night	Place of residence, Socioeconomic status Also: Age (children under 5); pregnant women	1,2,17,20, 21, 36
Access/ownership of ITN in the household	Percentage of population at risk with access/ownership of ITN in the household.	Each ITN is assumed to be used by 2 people	2,17,20,21 , 36
Indoor residual spraying (IRS) coverage	Percentage of population at risk protected by IRS during a specified time period		2,17,20,21 , 35, 36
NTD			
Coverage of preventive chemotherapy for selected neglected tropical diseases	Target population living in endemic areas in a country and which require preventive chemotherapy for each of the selected diseases (Schistosomiasis, soil transmitted helminths, lymphatic filariasis , onchocerciasis)	Age (pre-school age children 1-4); school aged (5-14 years) and adults >15 years	2, 12,16, 35
Screening and preventive care			
Cervical cancer screening	Proportion of women aged 30-49 who report they were screened for cervical cancer using any of the following methods: Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test	Age, Sex, other relevant socio-demographic stratifiers where available.	59

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Mental Health			
Coverage of services for severe mental health disorders	Percentage of persons with a severe mental disorder (psychosis; bipolar affective disorder; moderate-severe depression) who are using services	Age, Sex	2
Health systems			
Quality and safety of care			
Perioperative mortality rate	All cause death rate prior to discharge among patients having one or more procedures in an operating theatre during the relevant admission	By region/health facility, Age Emergency and elective surgery Also: surgical volume per 100 000 population	19, 23
Institutional maternal mortality ratio	Number of maternal deaths among 100 000 deliveries in Health facilities/institutions.	Age, Parity, Location, Cause of death	1,2,4,16,18,20, 37
Maternal death reviews	Percentage of maternal deaths occurring in the facility that were audited	Community deaths, Major administrative regions, Facilities	4,32
ART retention rate	Percentage of adults and children with HIV alive and on antiretroviral therapy (ART) 12, 24, 36 months (etc.) after initiating treatment among patients initiating antiretroviral therapy during a specified time period.	Age, Sex, Pregnancy, Breastfeeding	1, 3 , 36, 37
TB treatment success rate	Percentage of TB cases successfully treated (cured plus treatment completed) among all new TB cases notified to the national health authorities during a specified period.	Age, Sex Treatment history: new and relapse/Previously treated (excl. relapse), HIV, Bacteriology Also: Drug-susceptible and MDR-TB treatment success rate	1, 2, 13, 31, 36
Second line treatment coverage among MDR-TB cases	Percentage of notified TB patients who have been detected with MDR-TB and enrolled in second-line anti-TB treatment during the specified period of assessment.	New, Previously treated	31, 35, 36
Service-specific availability and readiness	Number of health facilities offering specific services per 10 000 population (e.g. FP, delivery. BEmOC, CEmOC, etc.) and meet minimum service standards based on a set of tracer criteria for specific services etc.)	Facility type, Managing authority Also: average number of items for each service per facility	15, 36, 37, 46
Access			
Service utilization	Number of Outpatient department (OPD) visits per 100 population in a specified time period	Age, Sex, Place of residence Also: Hospital (inpatient) admissions per 100 population	15, 36
Health service access	Percentage of population living within 5km of a health facility (total number of health facilities per 10 000 population)	Facility ownership; type, Location (district, province, national), Density of specific services, Access to emergency surgery	15,16, 36
Hospital bed density	Total number of hospital beds per 10 000 population	Distribution (by province/district), Ownership (public/private), Type of bed	15,16
Availability of essential medicines and commodities	Percentage of health facilities with essential medicines and lifesaving commodities in stock on the day of visit (with median availability).	Facility type, Facility managing authority (public/private), Specific type of medicine/commodity	1,7,15, 36, 37, 46
Median consumer price ratio of selected medicines	Median consumer price ratio (ratio of median local unit price to Management Sciences for Health international reference price) of selected originator medicines	Provider type (public/private) Product type : Medicines : Originator Product type : Medicines : Lowest price generic	1, 15, 37
Health workforce			
Health worker density and distribution	Number of health workers per 1000 population	Cadre : core professionals (physicians, midwives, nurses) ; specific cadres such as specialists (surgeons, psychiatrists, etc) ; other cadres (dentists, pharmacists) Distribution: Place of employment (urban/rural); Subnational (district)	15,16, 36, 37, 43, 46

Indicator name	Definition	Disaggregation/ Additional dimensions	References
Output training institutions	Number of graduates from health workforce educational institutions (including schools of dentistry, medicine, midwifery, nursing, pharmacy) during the last academic year per 1000 population	Level and field of education Also: Sex, age at graduation, home postcode on entry to education institution	15, 35, 36, 43
Health information			
Birth registration coverage	Percentage of births that are registered (within one month of age) as part of a civil registration system	Sex, Place of residence, Socioeconomic status	15
Death registration coverage	Percentage of deaths that are registered (with age and sex)	Place of residence Also: registered with cause (ICD)	15, 36
Completeness of reporting facilities / districts (general, by disease type)	Percentage of facilities that submit reports within the required deadline	Facility type, Managing authority, Geography	15, 35, 36
Health financing			
Current expenditure on health by general government and compulsory schemes % CHE	Current expenditure on health by general government and compulsory schemes as a share of total current expenditure on health	Financing source institutional unit, Disease, Input, Sub-National Level, Socio-economic status	24,36,37, 45, 46
Total current expenditure on health % GDP	Total current expenditure on health as a percentage of gross domestic product	Financing source institutional unit, Main type of care, Main type of provider, Disease, Sub-National Level, Socio-economic status	24,45, 46
Out-of-pocket payment for health as a share of total current expenditure on health	Share of total current expenditure on health paid by households out-of-pocket (expressed as a % of total current expenditure on health, this is the households' out-of-pocket expenditure)	Financing source institutional unit, Disease, Input, Sub-National Level, Socio-economic status	24, 36
Externally sourced funding as share of total current expenditures	Share of total current expenditure on health funded by external (rest of the world) institutional units providing revenues to financing schemes	By Row financing source institutional unit	
Total capital expenditure on health as share of GDP	Total capital expenditure on health as a percentage of gross domestic product	Financing source institutional unit, Financing agent, Provider, Disease	
Incidence of catastrophic health expenditure	Direct out-of-pocket expenditure exceeding 40% of household income net of subsistence needs	By sub national variables available in survey data	15
Incidence of impoverishment due to OOP	Number of households falling below the poverty line due to direct out-of-pocket expenditure	By sub national variables available in survey data	15
Health security			
IHR core capacity index	Percentage of attributes of 13 core capacities that have been attained at a specific point in time. The 13 core capacities are: (1) National legislation, policy and financing, (2) Coordination and National Focal Point communications; (3) Surveillance; (4) Response; (5) Preparedness; (6) Risk communication; (7) Human resources; (8) Laboratory; (9) Points of entry; (10) Zoonosis; (11) Food safety; (12) Chemical; (13) Radionuclear.		2

Core indicators by results chain

Inputs and processes	Output	Outcome	Impact
<p>Health financing</p> <p>Current expenditure on health by general government and compulsory schemes % CHE</p> <p>Total current expenditure on health % GDP</p> <p>Externally sourced funding as as share of total current expenditures</p> <p>Total capital expenditure on health as share of GDP</p> <p>Health workforce</p> <p>Health worker density and distribution</p> <p>Output training institutions</p> <p>Health infrastructure</p> <p>Health service access</p> <p>Hospital bed density</p> <p>Health information</p> <p>Birth registration coverage</p> <p>Death registration coverage</p> <p>Completeness of reporting facilities / districts</p>	<p>Service access and availability</p> <p>Service utilization</p> <p>Service-specific availability and readiness</p> <p>Availability of essential medicines and commodities</p> <p>Median consumer price ratio of selected medicines</p> <p>Service quality and safety</p> <p>Perioperative mortality rate</p> <p>Institutional maternal mortality ratio</p> <p>Maternal death reviews</p> <p>ART retention rate</p> <p>TB treatment success rate</p> <p>Second line treatment coverage among MDR-TB cases</p> <p>Health security</p> <p>IHR core capacity index</p>	<p>Coverage of Interventions</p> <p>Demand for family planning satisfied with modern methods</p> <p>Modern contraceptive prevalence rate</p> <p>Antenatal care coverage</p> <p>Skilled birth attendance</p> <p>Postpartum care coverage</p> <p>Care seeking for pneumonia</p> <p>Children with diarrhoea receiving oral rehydration solution</p> <p>Vitamin A supplementation coverage</p> <p>Immunization coverage rate, by vaccine for each vaccine in the national schedule by recommended age</p> <p>People living with HIV who are aware of positive HIV status</p> <p>Prevention of Mother-to-Child Transmission</p> <p>Antiretroviral Therapy (ART) coverage</p> <p>HIV Viral load suppression</p> <p>TB preventive therapy for HIV-positive people newly enrolled in HIV care</p> <p>TB patients, new and relapse, tested for HIV</p> <p>Antiretroviral therapy (ART) during TB treatment</p> <p>TB cases with result for drug susceptibility testing</p> <p>TB case detection rate</p> <p>Intermittent preventive therapy for malaria during pregnancy (IPTp)</p> <p>Use of insecticide treated nets (ITN)</p> <p>Access/ownership of ITN in the household</p> <p>Indoor residual spraying (IRS) coverage</p> <p>Coverage of regular administration of chemotherapy to all school-aged children at risk of schisto-somiasis & soil-transmitted helminth infection</p> <p>Cervical cancer screening</p> <p>Coverage of services for severe mental health disorders</p> <p>Risk factors and behaviours</p> <p>Exclusive breastfeeding rate 0-5 months of age</p> <p>Early initiation breastfeeding</p> <p>Incidence of low birthweight among newborns</p> <p>Children under 5 who are stunted</p> <p>Children under 5 who are wasted</p> <p>Anaemia in children</p> <p>Anaemia prevalence among women of reproductive age</p> <p>Condom use at last sex among people with multiple sexual partnerships in past 12 months</p> <p>Condom use among key populations (sex workers, men who have sex with men, IDU)</p> <p>Population using a safely managed drinking water service</p> <p>Population using a safely managed sanitation service</p> <p>Population using modern fuels for cooking/heating/lighting (indoor air)</p> <p>Total (recorded and unrecorded) alcohol per capita (aged 15+ years old) consumption</p> <p>Current tobacco use among persons aged 18 + years</p> <p>Children under 5 who are overweight</p> <p>Obesity and overweight among adults</p> <p>Raised blood pressure among adults</p> <p>Raised blood glucose/diabetes among adults</p> <p>Population intake of salt</p> <p>Insufficient physical activity in adults</p> <p>Intimate partner violence prevalence</p>	<p>Health status</p> <p>Life expectancy at birth</p> <p>Adult mortality rate between 15-60 years</p> <p>Under 5 mortality rate</p> <p>Infant mortality rate</p> <p>Neonatal mortality rate</p> <p>Maternal mortality ratio</p> <p>TB mortality rate</p> <p>HIV/AIDS mortality rate</p> <p>Malaria mortality rate</p> <p>Mortality between ages 30 and 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases</p> <p>Mortality rate from suicides</p> <p>Mortality rate from road traffic injuries</p> <p>Adolescent fertility rate</p> <p>Total fertility rate</p> <p>New cases of vaccine preventable diseases</p> <p>New cases of IHR and other notifiable diseases</p> <p>HIV incidence</p> <p>HIV prevalence</p> <p>Sexually transmitted infections incidence rate</p> <p>TB incidence rate</p> <p>TB notification rate</p> <p>TB prevalence rate</p> <p>Malaria parasite prevalence among children 6-59 months</p> <p>Malaria incidence rate</p> <p>Cancer incidence, by type of cancer</p> <p>Financial risk protection</p> <p>Out-of-pocket payment for health as a share of total current expenditure on health</p> <p>Incidence of catastrophic health expenditure</p> <p>Incidence of impoverishment due to OOP</p>

6. Indicator references

- 1 UN. Indicators for monitoring the Millennium Development Goals: definitions, rationale, concepts and sources. New York, United Nations, 2012 (<http://mdgs.un.org/unsd/mi/wiki/MainPage.ashx>).
- 2 WHO. World Health Assembly Governing Body Documentation: Official Records. (<http://apps.who.int/gb/or/>).
- 3 UNAIDS. Global AIDS Response Progress Reporting 2014: construction of core indicators for monitoring the 2011 UN political declaration on HIV/AIDS. Geneva, UNAIDS, 2014. (http://www.unaids.org/en/media/unaids/contentassets/documents/document/2014/GARPR_2014_guidelines_en.pdf).
- 4 WHO. Keeping promises, measuring results: Commission on information and accountability for Women's and Children's Health. Geneva, WHO, 2011 (http://www.everywomaneverychild.org/images/content/files/accountability_commission/final_report/Final_EN_Web.pdf)
- 5 UNICEF/WHO. Every Newborn: An Action Plan To End Preventable Deaths. Geneva, WHO, 2014 (<http://www.everynewborn.org/Documents/Full-action-plan-EN.pdf>).
- 6 WHO. A draft framework for the global monitoring of the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition (6 September 2013). Geneva, WHO, 2013 (http://www.who.int/nutrition/events/2013_consultation_indicators_globalmonitoringframework_WHO_MIYCN.pdf).
- 7 WHO. Draft comprehensive global monitoring framework and targets for the prevention and control of noncommunicable diseases, including a set of indicators. WHO, 2013. (http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_8-en.pdf?ua=1)
- 8 WHO. Mental Health Action Plan, 2013-2020. WHO, 2013. http://apps.who.int/iris/bitstream/10665/89966/1/9789241506021_eng.pdf?ua=1
- 9 WHO. Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern Report of the Ad Hoc Expert Group on Annex 2. Geneva, WHO, 2005 (http://apps.who.int/gb/ghs/pdf/IHR_IGWG2_ID4-en.pdf).
- 10 WHO. IHR Core Capacity monitoring framework: checklist and indicators for monitoring progress in the development of IHR core capacities in State parties. Geneva, WHO, 2013 (http://apps.who.int/iris/bitstream/10665/84933/1/WHO_HSE_GCR_2013.2_eng.pdf).
- 11 WHO. Global status report on road safety: time for action. Geneva, World Health Organization, 2009 (www.who.int/violence_injury_prevention/road_safety_status/2009).
- 12 WHO. Global Plan to Combat Neglected Tropical Diseases, 2008–2015. WHO, 2007. (http://whqlibdoc.who.int/hq/2007/who_cds_ntd_2007.3_eng.pdf)
- 13 WHO. Global TB Report 2013. WHO, 2013. (http://apps.who.int/iris/bitstream/10665/91355/1/9789241564656_eng.pdf?ua=1)
- 14 WHO-UNICEF Joint reporting form. Geneva, WHO, 21 February 2014. Accessed on 21 March 2014, from (http://www.who.int/entity/immunization/monitoring_surveillance/routine/reporting/WHO_UNICEF_JRF_EN.xls?ua=1).
- 15 WHO. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva, WHO, 2010 (http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf?ua=1).
- 16 WHO. World Health Statistics 2014. Geneva, World Health Organization, 2014 (http://www.who.int/gho/publications/world_health_statistics/EN_2014_Part3.pdf?ua=1).
- 16b WHO. Indoor air quality guidelines for household fuel combustion. Geneva, World Health Organization, 2014 [in press] (<http://www.who.int/indoorair/guidelines/hhfc>)
- 17 Roll Back Malaria Partnership/WHO. Disease surveillance for malaria control: an operations manual. Geneva, WHO, 2012 (<http://www.who.int/malaria/publications/atoz/9789241503341/en/>).
- 18 UNFPA. The UNFPA Strategic Plan, 2014-2017 Report of the Executive Director. New York, UNFPA, 26 July 2013

19 OECD (2013), *Health at a Glance 2013: OECD Indicators*, OECD Publishing. (http://dx.doi.org/10.1787/health_glance-2013-en)

20 WHO/UNICEF. Countdown to 2015 decade report (2000-2010): taking stock of maternal, newborn and child survival. Washington, WHO/UNICEF, 2010 (<http://www.countdown2015mnch.org/reports-and-articles/previous-reports/2010-decade-report>).

21 Measure Evaluation/Measure DHS/President's Malaria Initiative/Roll Back Malaria Partnership/UNICEF/WHO. Household Survey Indicators for Malaria Control. Roll Back Malaria/Measure Evaluation, 2013 (http://www.rollbackmalaria.org/toolbox/docs/rbmtoolbox/tool_HouseholdSurveyIndicatorsForMalariaControl.pdf).

22 ESACP Road Safety Goals, Targets and Indicators for the Decade of Action, 2011-2020. (http://e.unescap.org/ttdw/common/Meetings/TIS/EGM-Roadsafety-2010/PPTs/25.ESCAP_GoalNTargetsIndicators.pdf)

23 European Union. European Community on Health Indicator Monitoring (ECHIM). Accessed on 21 March, 2013 from www.echim.org/docs/ehi_longlist.pdf

24 Track20 Monitoring progress in family planning. FP2020 Core Indicators. Accessed on 21 March, 2014 from <http://www.track20.org/pages/data/indicators>

25a WHO/UNICEF. Progress on Sanitation and Drinking Water - 2013 update. WHO and UNICEF 2013. (http://apps.who.int/iris/bitstream/10665/81245/1/9789241505390_eng.pdf?ua=1)

25b UN-Water. A post-2015 Global Goal for Water: synthesis of key findings and recommendations (http://www.unwater.org/fileadmin/user_upload/unwater_new/docs/Topics/UN-Water_paper_on_a_Post-2015_Global_Goal_for_Water.pdf)

25c WASH targets and indicators post-2015: recommendations from international consultations. April 2014, Water Supply and Sanitation Collaborative Council. (http://www.wssinfo.org/fileadmin/user_upload/resources/post-2015-WASH-targets-factsheet-12pp.pdf)

25d Guidelines for drinking-water quality, fourth edition. World Health Organization 2011. (http://www.who.int/water_sanitation_health/publications/2011/dwq_guidelines/en/)

25e Adams J, Bartram J, Chartier Y, editors. Essential environmental standards in health care. Geneva: WHO; 2008. http://www.who.int/water_sanitation_health/hygiene/settings/ehs_health_care.pdf.pdf"

25f Adams J, Bartram J, Chartier Y, Sims J, editors. Water, sanitation and hygiene standards for schools in low-cost settings. Geneva: WHO; 2009. http://www.who.int/water_sanitation_health/publications/wash_standards_school.pdf"

26 WHO-EURO. Performance assessment tool for quality improvement in hospitals (PATH). Denmark, WHO Regional Office for Europe, 2007 (http://www.pathqualityproject.eu/upLoad/file/path_20092010_indicators_descriptive_sheets.pdf).

27 Ke Xu et al. Household catastrophic health expenditure: a multi-country analysis. *The Lancet* 2003; 362: 111-117

28 WHO. Global strategy for the prevention and control of sexually transmitted infections: 2006-2015. Geneva, World Health Organization, 2006. (http://whqlibdoc.who.int/publications/2007/9789241563475_eng.pdf?ua=1)

29 USAID/AED/Food and Nutrition Technical Assistance/UCDAVIS/IFPRI/UNICEF/WHO. Indicators for assessing infant and young child feeding practices. Geneva, WHO, 2008 (http://whqlibdoc.who.int/publications/2008/9789241596664_eng.pdf).

30 WHO/UNICEF. Ending Preventable Child deaths from Pneumonia and Diarrhoea by 2025 - The integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD). Geneva, World Health Organization, 2013. (http://apps.who.int/iris/bitstream/10665/79200/1/9789241505239_eng.pdf?ua=1)

31 WHO/PEPFAR/UNAIDS. A guide to monitoring and evaluation for collaborative TB/HIV activities – 2009 revision. Geneva, World Health Organization, 2009. (http://www.who.int/hiv/pub/tb/hiv_tb_monitoring_guide.pdf)

32 WHO. Consultation on Improving measurement of the quality of maternal, newborn and child care in health facilities. Maternal, Newborn and Child Quality of Care in Health Facilities, 9 – 11 December 2013. Geneva, World Health Organization and Partnership for Maternal, Newborn and Child Health , 2013.

33 WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide - Global update 2005. Summary of risk assessment. Geneva, World Health Organization, 2006.

33b WHO Euro. Environment and Health Information System (ENHIS). Accessed on 23 June, 2014 from <http://www.euro.who.int/en/data-and-evidence/environment-and-health-information-system-ehnis>

34 WHO/LSHTM/SAMRC. Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva, World Health Organization, 2013.

35 USAID. Standard Foreign Assistance Indicators/Standard Foreign Assistance Master Indicator List (MIL). Accessed on 26 June, 2014 from <http://www.state.gov/f/indicators/index.htm>

36 The Global Fund. Monitoring and Evaluation Toolkit. Accessed on 26 June, 2014 from <http://www.theglobalfund.org/en/me/documents/toolkit/>

37 PEPFAR. Next Generation Indicators Reference Guide - Planning and Reporting. Version 1.2. The President's Emergency Plan for AIDS Relief, Feb. 2013. (<http://www.pepfar.gov/documents/organization/81097.pdf>)

38 *Definitions and reporting framework for tuberculosis – 2013 revision* (WHO/HTM/TB/2013.2). Geneva, World Health Organization, 2013. (www.who.int/iris/bitstream/10665/79199/1/9789241505345_eng.pdf).

39 WHO Multicentre Growth Reference Study Group. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. Geneva: World Health Organization, 2006 (http://www.who.int/childgrowth/standards/technical_report/en/)

40 WHO Expert Committee report. Technical Report Series 854. Physical status: the use and interpretation of anthropometry. Geneva, Switzerland: WHO, 1995.

41 de Onis M et al. Development of a WHO growth reference for school-aged children and adolescents. Bulletin of the World Health Organization 2007;85:660-7.

42 WHO. Regional Office for Europe. Targets and indicators for 2020. Version 2. Copenhagen. 2014.

43 WHO. Handbook on monitoring and Evaluation of Human Resources for Health with special focus on low and middle income countries'.

44 WHO guidelines for screening and treatment of precancerous lesions of cervical cancer prevention. Geneva. 2013.

45 WHO. A system of Health Accounts - 2011 Edition. (<http://www.unfpa.org/webdav/site/global/shared/executive-board/FINAL%20UN%20VERSION%20Strategic%20Plan,%202014-2017,%202029%20JULY%202013,%20for%20UN%20submission.docx>)

46 UN. Framework of actions for the follow-up to the Programme of Action of the International Conference on Population and Development (ICPD) beyond 2014 (Feb 2014). Accessed on 19 August 2014. from <https://www.unfpa.org/webdav/site/global/shared/documents/ICPD/Framework%20of%20action%20for%20the%20follow-up%20to%20the%20PoA%20of%20the%20ICPD.pdf>

47 UN. UN Population Division World Population Prospects (<http://esa.un.org/wpp/>)

48 UN. Demographic Yearbook (<http://unstats.un.org/unsd/demographic/products/dyb/dyb2.htm>)

49 UN IGME estimation method for child mortality (http://www.who.int/entity/gho/child_health/mortality/ChildCME_method.pdf.pdf)

50 WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division. Trends in maternal mortality: 1990 to 2013. WHO, May 2014 (<http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/>)

51 WHO. Diet, nutrition and the prevention of chronic diseases: report of a Joint WHO/FAO Expert Consultation. Geneva, World Health Organization, 2003.

52 Levitan B et al. Is nondiabetic hyperglycaemia a risk factor for cardiovascular disease? A meta-analysis of prospective studies. Archives of Internal Medicine, 2004, 164:2147-2155.

53 WHO. Creating an enabling environment for population-based salt reduction strategies: report of a joint technical meeting held by WHO and the Food Standards Agency, United Kingdom. Geneva, World health Organization, 2010.

54 WHO. Prevention of cardiovascular disease: pocket guidelines for assessment and management of cardiovascular risk.

Geneva, World Health Organization, 2007.

55 Brown IJ et al. Salt intakes around the world: implications for public health. *International Journal of Epidemiology*, 2009, 38:791-813.

56 Cappuccio F et al. Policy options to reduce population salt intake. *British Medical Journal*, 2011, 343:d4995.

57 WHO. Global recommendations on physical activity for health. Geneva, World Health Organization, 2010

58 Physical Activity Guidelines Advisory Committee (PAGAC). Physical Activity Guidelines Advisory Committee Report, 2008. Washington, DC, US Department of Health and Human Services, 2008.

59 Ferlay J et al. GLOBOCAN 2008 v1.2, Cancer Incidence and Mortality Worldwide. IARC CancerBase No. 10. (<http://globocan.iarc.fr>, accessed on 18 July, 2012).

60 Countdown to 2015/HMN/UNICEF/WHO. Monitoring maternal, newborn and child health: understanding key progress indicators. WHO, 2011. (http://apps.who.int/iris/bitstream/10665/44770/1/9789241502818_eng.pdf)

61 WHO. Global estimate of the burden of disease from second-hand smoke. Geneva, World Health Organization, 2010.

