World Health Statistics 2011

Indicator compendium

Indicator Code Book

World Health Statistics - World Health Statistics indicators

Table of Contents

- Estimated prevalence of tuberculosis (per 100 000 population)
- Exclusive breastfeeding under 6 months (%)
- External resources for health as a percentage of total expenditure on health
- General government expenditure on health as a percentage of total expenditure on health
- General government expenditure on health as a percentage of total government expenditure
- Gross national income per capita (PPP int. $)
- Health life expectancy (HALE) at birth
- Hepatitis B (HepB3) immunization coverage among 1-year-olds (%)
- Hib (Hib3) immunization coverage among 1-year-olds (%)
- HIV prevalence among adults aged 15-49 years (%)
- Hospital beds (per 10 000 population)
- Life expectancy at birth
- Low-birth-weight newborns (%)
- Maternal mortality ratio (per 100 000 live births)
- Measles (MCV) immunization coverage among 1-year-olds (%)
- Median availability of selected generic medicines (%)
- Median consumer price ratio of selected generic medicines
- Neonatal mortality rate (per 1000 live births)
- Neonates protected at birth against neonatal tetanus (PAB) (%)
- Net primary school enrolment rate (%)
- Notified cases of tuberculosis
- Number of community health workers
- Number of dentistry personnel
- Number of environment and public health workers
- Number of nursing and midwifery personnel
- Number of pharmaceutical personnel
- Number of physicians
- Number of reported cases of cholera
- Number of reported cases of congenital rubella syndrome
- Number of reported cases of diphtheria
- Number of reported cases of H5N1 influenza
- Number of reported cases of japanese encephalitis
- Number of reported cases of leprosy (Number of newly detected cases of leprosy)
- Number of reported cases of malaria
- Number of reported cases of measles
- Number of reported cases of mumps
- Number of reported cases of neonatal tetanus
- Number of reported cases of pertussis
- Number of reported cases of plague
- Number of reported cases of poliomyelitis

- Number of reported cases of rubella
- Number of reported cases of total tetanus
- Number of reported cases of yellow fever
- Number of suspected meningitis cases reported
- Out-of-pocket expenditure as a percentage of private expenditure on health
- Per capita government expenditure on health (PPP int. $)
- Per capita government expenditure on health at average exchange rate (US$)
- Per capita total expenditure on health (PPP int. $)
- Per capita total expenditure on health at average exchange rate (US$)
- Population (in thousands) total
- Population living in urban areas (%)
- Population living on <$1 (PPP int. $) a day (%)
- Population median age (years)
- Population proportion over 60 (%)
- Population proportion under 15 (%)
- Population using improved drinking-water sources (%)
- Population using improved sanitation facilities (%)
- Population using solid fuels
- Prevalence of condom use by adults (15-49 years) at higher-risk sex (%)
- Prevalence of current tobacco use among adolescents aged 13-15 years (%)

Å Prevalence of current tobacco use among adults aged Ó 15 years (%)

- Private expenditure on health as a percentage of total expenditure on health
- Private prepaid plans as a percentage of private expenditure on health
- Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (%)
- Social security expenditure on health as a percentage of general government expenditure on health
- Stillbirth rate (per 1000 total births)
- Total expenditure on health as a percentage of gross domestic product
- Total fertility rate (per woman)
- Tuberculosis case detection rate for new smear-positive cases (%)
- Under-five mortality rate (probability of dying by age 5 per 1000 live births)
- Unmet need for family planning (%)

Adolescent fertility rate (per 1000 women)

Indicator ID	3
Indicator name	Adolescent fertility rate (per 1000 women)
Name abbreviated	Adolescent fertility rate
Data Type Representation	Rate
Indicator group	Demographic and socio-economic statistics
Rationale	The adolescent birth rate, technically known as the age-specific fertility rate provides a basic measure of reproductive health focusing on a vulnerable group of adolescent women. There is substantial agreement in the literature that women who become pregnant and give birth very early in their reproductive lives are subject to higher risks of complications or even death during pregnancy and birth and their children are also more vulnerable. Therefore, preventing births very early in a woman's life is an important measure to improve maternal health and reduce infant mortality. Furthermore, women having children at an early age experience a curtailment of their opportunities for socio-economic improvement, particularly because young mothers are unlikely to keep on studying and, if they need to work, may find it especially difficult to combine family and work responsibilities. The adolescent birth rate provides also indirect evidence on access to reproductive health since the youth, and in particular unmarried adolescent women, often experience difficulties in access to reproductive health care.
Definition	The annual number of births to women aged 15-19 years per 1,000 women in that age group. It is also referred to as the age-specific fertility rate for women aged 15-19.
Associated terms	
Preferred data sources	Civil registration with complete coverage
Other possible data sources	Population census Household surveys

Method of measurement	The adolescent birth rate is generally computed as a ratio. The numerator is the number of live births to women 15 to 19 years of age, and the denominator an estimate of exposure to childbearing by women 15 to 19 years of age. The numerator and the denominator are calculated differently for civil registration, survey and census data. (a) In the case of civil registration the numerator is the registered number of live-births born to women 15 to 19 years of age during a given year, and the denominator is the estimated or enumerated population of women aged 15 to 19. (b) In the case of survey data, the adolescent birth rate is generally computed based on retrospective birth histories. The numerator refers to births to women that were 15 to 19 years of age at the time of the birth during a reference period before the interview, and the denominator to person-years lived between the ages of 15 and 19 by the interviewed women during the same reference period. Whenever possible, the reference period corresponds to the five years preceding the survey. The reported observation year corresponds to the middle of the reference period. For some surveys, no retrospective birth histories are available and the estimate is based on the date of last birth or the number of births in the 12 months preceding the survey. (c) In the case of census data, the adolescent birth rate is generally computed based on the date of last birth or the number of births in the 12 months preceding the enumeration. The census provides both the numerator and the denominator for the rates. In some cases, the rates based on censuses are adjusted for underregistration based on indirect methods of estimation. For some countries with no other reliable data, the own-children method of indirect estimation provides estimates of the adolescent birth rate for a number of years before the census. (http://mdgs.un.org/unsd/mdg/Metadata.aspx, accessed 19 October 2009)
Method of estimation	The United Nations Population Division compiles and updates data on adolescent fertility rate for MDG monitoring. Estimates based on civil registration are provided when the country reports at least 90 per cent coverage and when there is reasonable agreement between civil registration estimates and survey estimates. Survey estimates are only provided when there is no reliable civil registration. Given the restrictions of the UN MDG database, only one source is provided by year and country. In such cases precedence is given to the survey programme conducted most frequently at the country level, other survey programmes using retrospective birth histories, census and other surveys in that order. (http://mdgs.un.org/unsd/mdg/Metadata.aspx, accessed 19 October 2009)
M&E Framework	Impact
Method of estimation of global and regional aggregates	Global and regional estimates are based on population-weighted averages using the number of women aged 15-19 years as the weight. They are presented only if available data cover at least 50% of total number of women aged 15-19 years in the regional or global groupings.
Disaggregation	
Unit of Measure	Births per 1000 women in the respective age group
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	For civil registration, rates are subject to limitations depending on the completeness of birth registration, the treatment of infants born alive but dead before registration or within the first 24 hours of life, the quality of the reported information relating to age of the mother, and the inclusion of births from previous periods. The population estimates may suffer from limitations connected to age misreporting and coverage. For survey and census data, the main limitations concern age misreporting, birth omissions, misreporting the date of birth of the child, and sampling variability in the case of surveys. (http://mdgs.un.org/unsd/mdg/Metadata.aspx, accessed 19 October 2009)

Links	Manual X: Indirect Techniques for Demographic Estimation (United Nations, 1983) Handbook on the Collection of Fertility and Mortality Data (United Nations, 2004) The official United Nations site for MDG indicators
Comments	The adolescent birth rate is commonly reported as the age-specific fertility rate for ages 15 to 19 in the context of calculation of total fertility estimates. A related measure is the proportion of adolescent fertility measured as the percentage of total fertility contributed by women aged 15-19. (http://mdgs.un.org/unsd/mdg/Metadata.aspx, accessed 19 October 2009)
Contact person	

Adult literacy rate (%)

Indicator ID	77
Indicator name	Adult literacy rate (%)
Name abbreviated	Adult literacy rate (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	The percentage of population aged 15 years and over who can both read and write with understanding a short simple statement on his/her everyday life. Generally, 'literacy' also encompasses 'numeracy', the ability to make simple arithmetic calculations.
Associated terms	
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	UNESCO compiles data on adult literacy rate, mainly from national population census, household and/or labour force surveys.
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	UNESCO Institute of for Statistics: Data Centre
Comments	
Contact person	

Adult mortality rate (probability of dying between 15 to 60 years per 1000 population)

Indicator ID	64
Indicator name	Adult mortality rate (probability of dying between 15 to 60 years per 1000 population)
Name abbreviated	Adult mortality rate
Data Type Representation	Rate
Indicator group	Health status
Rationale	Disease burden from non-communicable diseases among adults - the most economically productive age span - is rapidly increasing in developing countries due to ageing and health transitions. Therefore, the level of adult mortality is becoming an important indicator for the comprehensive assessment of the mortality pattern in a population.
Definition	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.
Associated terms	Life table : A set of tabulations that describe the probability of dying, the death rate and the number of survivors for each age or age group. Accordingly, life expectancy at birth and adult mortality rates are outputs of a life table.
Preferred data sources	Civil registration with complete coverage
Other possible data sources	Household surveys Population census Sample or sentinel registration systems
Method of measurement	Civil or sample registration: Mortality by age and sex are used to calculate age specific rates. Census: Mortality by age and sex tabulated from questions on recent deaths that occurred in the household during a given period preceding the census (usually 12 months). Census or surveys: Direct or indirect methods provide adult mortality rates based on information on survival of parents or siblings.
Method of estimation	Empirical data from different sources are consolidated to obtain estimates of the level and trend in adult mortality by fitting a curve to the observed mortality points. However, to obtain the best possible estimates, judgement needs to be made on data quality and how representative it is of the population. Recent statistics based on data availability in most countries are point estimates dated by at least 3-4 years which need to be projected forward in order to obtain estimates of adult mortality for the current year. In case of inadequate sources of age-specific mortality rates, life tables are derived from estimated under-5 mortality rates using a modified logit system, a model developed by WHO to which a global standard is applied. Predominant type of statistics: predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	The numbers of deaths estimated from life table and population by age groups are aggregated by relevant region in order to compute age specific mortality rates, then the adult mortality rate.
Disaggregation	Sex Location (urban/rural)

Disaggregation	Education level
	Wealth : Wealth quintile
	Boundaries : Administrative regions
	Boundaries : Health regions
Unit of Measure	Deaths per 1000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	There is a dearth of data on adult mortality, notably in low income countries. Methods to estimate adult mortality from censuses and surveys are retrospective and possibly subject to considerable measurement error.
Links	Methods for estimating adult mortality (UN Population Division, 2002)
	WHO Mortality Database
Comments	
Contact person	

Age-standardized mortality rate (per 100 000 population)

Indicator ID	78
Indicator name	Age-standardized mortality rate (per 100 000 population)
Name abbreviated	Age-standardized mortality rate (per 100 000 population)
Data Type Representation	Rate
Indicator group	Health status
Rationale	The numbers of deaths per 100 000 population are influenced by the age distribution of the population. Two populations with the same age-specific mortality rates for a particular cause of death will have different overall death rates if the age distributions of their populations are different. Age-standardized mortality rates adjust for differences in the age distribution of the population by applying the observed age-specific mortality rates for each population to a standard population.
Definition	The age-standardized mortality rate is a weighted average of the age-specific mortality rates per 100 000 persons, where the weights are the proportions of persons in the corresponding age groups of the WHO standard population.
Associated terms	WHO Standard Population : The WHO World Standard Population was based on the average world population structure for the period 2000-2025 as assessed every two years by the United Nations Population Division for each country by age and sex. Estimates from the UN Population Division 1998 assessment (being the latest one at the time the WHO Standard Population was chosen) based on population censuses and other demographic sources, adjusted for enumeration errors were used. The use of an average world population as well as a time series of observations removes the effects of historical events such as wars and famine on population age composition. WHO Standard Population is defined to reflect the average age structure of the world's population over the next generation, from the year 2000 to 2025. (http://www.who.int/healthinfo/paper31.pdf)
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Civil registration with complete coverage Household surveys Population census Sample or sentinel registration systems Special studies Surveillance systems
Method of measurement	Data on deaths by cause, age and sex collected using national death registration systems or sample registration systems
Method of estimation	Life tables specifying all-cause mortality rates by age and sex for WHO Member States are developed from available death registration data, sample registration systems (India, China) and data on child and adult mortality from censuses and surveys. Cause-of-death distributions are estimated from death registration data, and data from population-based epidemiological studies, disease registers and notifications systems for selected specific causes of death. Causes of death for populations without useable death-registration data were estimated using cause -of-death models together with data from population-based epidemiological studies, disease registers and notifications systems for 21 specific causes of death.
M&E Framework	Impact

Method of estimation of global and regional aggregates	Aggregation of estimates of deaths by cause, age and sex for WHO Member States to estimate regional and global age-sex-cause specific mortality rates.
Disaggregation	Cause Age Sex
Unit of Measure	Deaths per 100 000 population
Unit Multiplier	
Expected frequency of data dissemination	Every 2-3 years
Expected frequency of data collection	Continuous
Limitations	
Links	Global Burden of Disease (WHO website) Age Standardization of Rates: A New WHO Standard (WHO, 2001) Counting the dead and what they died from: an assessment of the global status of cause of death data (Mathers et al, 2005) Global burden of disease and risk factors (Lopez et al, 2006) Global Burden of Disease (GBD): 2002 estimates (WHO) The Global Burden of Disease: 2004 update (WHO, 2008) Mortality and Burden of Disease Estimates for WHO Member States in 2004 (WHO, 2009)
Comments	Uncertainty in estimated all-cause mortality rates ranges from around ±1% for high-income countries to ±15–20% for sub-Saharan Africa, reflecting large differences in the availability and quality of data on mortality, particularly for adult mortality. Uncertainty ranges are generally larger for estimates of death rates from specific diseases. For example, the relative uncertainty for death rates from ischaemic heart disease ranges from around ±12% for high-income countries to ±25–35% for sub-Saharan Africa. The relatively large uncertainty for high-income countries reflects a combination of uncertainty in overall mortality levels, in cause-of-death assignment, and in the attribution of deaths coded to ill-defined causes.
Contact person	

Alcohol consumption among adults aged Ó15 years

Indicator ID	127
Indicator name	Alcohol consumption among adults aged Ó15 years
Name abbreviated	
Data Type Representation	Rate
Indicator group	Risk factors
Rationale	Harmful use of alcohol is related to many diseases and health conditions, including chronic diseases such as alcohol dependence, cancer and liver cirrhosis, and acute health problems such as injuries. The level of per capita consumption of alcohol across the population aged 15 years and older is one of the key indicators for monitoring the magnitude of alcohol consumption in the population and likely trends in alcohol-related problems.
Definition	Litres of pure alcohol, computed as the sum of alcohol production and imports, less alcohol exports, divided by the adult population (aged 15 years and older).
Associated terms	
Preferred data sources	Administrative reporting system
Other possible data sources	Special studies
Method of measurement	Estimated amount of pure ethanol in litres of total alcohol, and separately, beer, wine and spirits consumed per adult (15 years and older) in the country during a calendar year, as calculated from official statistics on production, sales, import and export, taking into account stocks whenever possible.
Method of estimation	Recorded adult per capita consumption of pure alcohol is based on data from different sources, including government statistics, alcohol industry statistics in the public domain and the Food and Agriculture Organization of the United Nations' statistical database (FAOSTAT). Predominant type of statistics: unadjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population aged Ó15 years. They are presented only if available data cover at least 50% of total population aged Ó15 years in the regional or global groupings.
Disaggregation	
Unit of Measure	Litres of pure alcohol per person per year
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	It is important to note that these figures comprise, in most cases, the recorded alcohol consumption only. Factors that influence the accuracy of per capita data are: informal production, tourist and overseas consumption, stockpiling, waste and spillage, smuggling, duty-free sales, and variations in beverage strength and the quality of the data on which it is based.
Links	Global Information System on Alcohol and Health (WHO)
Comments	
Contact person	

Annual population growth rate (%)

Indicator ID	79
Indicator name	Annual population growth rate (%)
Name abbreviated	Annual population growth rate (%)
Data Type Representation	Rate
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	Average exponential rate of annual growth of the population over a given period.
Associated terms	
Preferred data sources	Civil registration Population census
Other possible data sources	
Method of measurement	It is calculated as ln(Pt/Po) where t is the length of the period.
Method of estimation	Population data are taken from the most recent UN Population Division's "World Population Prospects".
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Antenatal care coverage - at least four visits (%)

Indicator ID	80
Indicator name	Antenatal care coverage - at least four visits (%)
Name abbreviated	Antenatal care coverage - at least four visits (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Antenatal care coverage is an indicator of access and use of health care during pregnancy. The antenatal period presents opportunities for reaching pregnant women with interventions that may be vital to their health and wellbeing and that of their infants. Receiving antenatal care at least four times, as recommended by WHO, increases the likelihood of receiving effective maternal health interventions during antenatal visits. This is an MDG indicator.
Definition	The percentage of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times. Due to data limitations, it is not possible to determine the type of provider for each visit. Numerator: The number of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times. Denominator: Total number of women aged 15-49 with a live birth in the same period.
Associated terms	Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10)
Preferred data sources	Household surveys
Other possible data sources	Facility reporting system
Method of measurement	The number of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times during pregnancy is expressed as a percentage of women aged 15-49 with a live birth in the same period. (Number of women aged 15-49 attended at least four times during pregnancy by any provider for reasons related to the pregnancy/ Total number of women aged 15-49 with a live birth) *100 The indicators of antenatal care (at least one visit and at least four visits) are based on standard questions that ask if and how many times the health of the woman was checked during pregnancy. Unlike antenatal care coverage (at least one visit), antenatal care coverage (at least four visit) includes care given by any provider, not just skilled health personnel. This is because the key national level household surveys do not collect information on type of provider for each visit. The indicators of antenatal care (at least one visit and at least four visits) are based on standard questions that ask if, how many times, and by whom the health of the woman was checked during pregnancy. Household surveys that can generate this indicator includes Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS) and other surveys based on similar methodologies. Service/facility reporting system can be used where the coverage is high, usually in industrialized countries.

Method of estimation	WHO and UNICEF compiles empirical data from household surveys. At the global level, data from facility reporting are not used. Before data are included into the global databases, UNICEF and WHO undertake a process of data verification that includes correspondence with field offices to clarify any questions regarding estimates. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	UNICEF and the WHO produce regional and global estimates. These are based on population-weighted averages weighted by the total number of births. These estimates are presented only if available data cover at least 50% of total births in the regional or global groupings.
Disaggregation	Location (urban/rural) Education level Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	It is important to note that the MDG indicators do not capture the components of care described under "Comments" below. Receiving antenatal care during pregnancy does not guarantee the receipt of all of the interventions that are effective in improving maternal health. Receipt of antenatal care at least four times, which is recommended by WHO, increases the likelihood of receiving the interventions during antenatal visits. Although the indicator for “at least one visit” refers to visits with skilled health providers (doctor, nurse, midwife), “four or more visits” usually measures visits with any provider because national-level household surveys do not collect provider data for each visit. In addition, standardization of the definition of skilled health personnel is sometimes difficult because of differences in training of health personnel in different countries. Recall error is a potential source of bias in the data. In household surveys, the respondent is asked about each live birth for a period up to five years before the interview. The respondent may or may not know or remember the qualifications of the person providing ANC. Discrepancies are possible if there are national figures compiled at the health facility level. These would differ from global figures based on survey data collected at the household level. In terms of survey data, some survey reports may present a total percentage of pregnant women with ANC from a skilled health professional that does not conform to the MDG definition (for example, includes a provider that is not considered skilled such as a community health worker). In that case, the percentages with ANC from a doctor, a nurse or a midwife are totaled and entered into the global database as the MDG estimate.
Links	WHO Reproductive health indicators database Childinfo: Monitoring the Situation of Children and Women (UNICEF) Demographic and Health Surveys (DHS) WHO Antenatal Care Randomized Trial: Manual for the Implementation of the New Model (WHO, 2002)

Links	Antenatal care in developing countries: promises, achievements and missed opportunities (WHO-UNICEF, 2003) Reproductive Health Indicators - Guidelines for their generation, interpretation and analysis for global monitoring (WHO, 2006)
Comments	WHO recommends a standard model of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content of antenatal care visits, which should include clinical examination, blood testing to detect syphilis & severe anemia (and others such as HIV, malaria as necessary according to the epidemiological context), gestational age estimation, uterine height, blood pressure taken, maternal weight / height, detection of sexually transmitted infections (STI)s, urine test (multiple dipstick) performed, blood type and Rh requested, tetanus toxoid given, iron / Folic acid supplementation provided, recommendation for emergencies / hotline for emergencies. ANC coverage figures should be closely followed together with a set of other related indicators, such as proportion of deliveries attended by a skilled health worker or deliveries occurring in health facilities, and disaggregated by background characteristics, to identify target populations and planning of actions accordingly.
Contact person	

Antenatal care coverage - at least one visit (%)

Indicator ID	81
Indicator name	Antenatal care coverage - at least one visit (%)
Name abbreviated	Antenatal care coverage - at least one visit (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Antenatal care coverage is an indicator of access and use of health care during pregnancy. The antenatal period presents opportunities for reaching pregnant women with interventions that may be vital to their health and wellbeing and that of their infants. Receiving antenatal care at least four times, as recommended by WHO, increases the likelihood of receiving effective maternal health interventions during antenatal visits. This is an MDG indicator.
Definition	The percentage of women aged 15-49 with a live birth in a given time period that received antenatal care provided by skilled health personnel (doctors, nurses, or midwives) at least once during pregnancy. Numerator: The number of women aged 15-49 with a live birth in a given time period that received antenatal care provided by skilled health personnel (doctors, nurses or midwives) at least once during pregnancy Denominator: Total number of women aged 15-49 with a live birth in the same period.
Associated terms	Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10) Skilled birth personnel : An accredited health professional—such as a midwife, doctor or nurse—who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns. Traditional birth attendants (TBA), trained or not, are excluded from the category of skilled attendant at delivery.
Preferred data sources	Household surveys
Other possible data sources	Facility reporting system
Method of measurement	The number of women aged 15-49 with a live birth in a given time period that received antenatal care provided by skilled health personnel (doctors, nurses or midwives) at least once during pregnancy is expressed as a percentage of women aged 15-49 with a live birth in the same period: (Number of women aged 15-49 attended at least once during pregnancy by skilled health personnel for reasons related to the pregnancy/ Total number of women aged 15-49 with a live birth) *100 The indicators of antenatal care (at least one visit and at least four visits) are based on standard questions that ask if, how many times, and by whom the health of the woman was checked during pregnancy. Household surveys that can generate this indicator includes Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS) and other surveys based on similar methodologies. Service/facility reporting system can be used where the coverage is high, usually in industrialized countries.

Method of estimation	WHO and UNICEF compiles empirical data from household surveys. At the global level, data from facility reporting are not used. Before data are included into the global databases, UNICEF and WHO undertake a process of data verification that includes correspondence with field offices to clarify any questions regarding estimates. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	UNICEF and the WHO produce regional and global estimates. These are based on population-weighted averages weighted by the total number of births. These estimates are presented only if available data cover at least 50% of total births in the regional or global groupings.
Disaggregation	Location (urban/rural) Education level Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	It is important to note that the MDG indicators do not capture the components of care described under "Comments" below. Receiving antenatal care during pregnancy does not guarantee the receipt of all of the interventions that are effective in improving maternal health. Receipt of antenatal care at least four times, which is recommended by WHO, increases the likelihood of receiving the interventions during antenatal visits. Although the indicator for “at least one visit” refers to visits with skilled health providers (doctor, nurse, midwife), “four or more visits” usually measures visits with any provider because national-level household surveys do not collect provider data for each visit. In addition, standardization of the definition of skilled health personnel is sometimes difficult because of differences in training of health personnel in different countries. Recall error is a potential source of bias in the data. In household surveys, the respondent is asked about each live birth for a period up to five years before the interview. The respondent may or may not know or remember the qualifications of the person providing ANC. Discrepancies are possible if there are national figures compiled at the health facility level. These would differ from global figures based on survey data collected at the household level. In terms of survey data, some survey reports may present a total percentage of pregnant women with ANC from a skilled health professional that does not conform to the MDG definition (for example, includes a provider that is not considered skilled such as a community health worker). In that case, the percentages with ANC from a doctor, a nurse or a midwife are totaled and entered into the global database as the MDG estimate.
Links	WHO Reproductive health indicators database Childinfo: Monitoring the Situation of Children and Women (UNICEF) Demographic and Health Surveys (DHS) WHO Antenatal Care Randomized Trial: Manual for the Implementation of the New Model (WHO, 2002)

Links	Antenatal care in developing countries: promises, achievements and missed opportunities (WHO-UNICEF, 2003) Reproductive health indicators: guidelines for their generation, interpretation and analysis for global monitoring (WHO, 2006)
Comments	WHO recommends a standard model of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content of antenatal care visits, which should include clinical examination, blood testing to detect syphilis & severe anemia (and others such as HIV, malaria as necessary according to the epidemiological context), gestational age estimation, uterine height, blood pressure taken, maternal weight / height, detection of sexually transmitted infections (STI)s, urine test (multiple dipstick) performed, blood type and Rh requested, tetanus toxoid given, iron / Folic acid supplementation provided, recommendation for emergencies / hotline for emergencies. ANC coverage figures should be closely followed together with a set of other related indicators, such as proportion of deliveries attended by a skilled health worker or deliveries occurring in health facilities, and disaggregated by background characteristics, to identify target populations and planning of actions accordingly.
Contact person	Lale Say (sayl@who.int)

Antiretroviral therapy coverage among HIV-infected pregnant women for PMTCT (%)

Indicator ID	82
Indicator name	Antiretroviral therapy coverage among HIV-infected pregnant women for PMTCT (%)
Name abbreviated	Antiretroviral therapy coverage among HIV-infected pregnant women for PMTCT (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	In the absence of any preventative interventions, infants born to and breastfed by HIV-infected women have roughly a one-in-three chance of acquiring infection themselves. This can happen during pregnancy, during labour and delivery or after delivery through breastfeeding. The risk of mother-to-child transmission can be significantly reduced through the complementary approaches of antiretroviral regimens for the mother with or without prophylaxis to the infant, implementation of safe delivery practices and use of safer infant feeding practices. The purpose of this indicator is to assess progress in preventing mother-to-child transmission of HIV (PMTCT).
Definition	The percentage of HIV-infected pregnant women who received antiretroviral medicines to reduce the risk of mother-to-child transmission, among the estimated number of HIV-infected pregnant women. Numerator: Number of HIV-infected pregnant women who received antiretroviral medicines to reduce the risk of mother-to-child transmission in the last 12 months Denominator: Estimated number of HIV-infected pregnant women in the last 12 months
Associated terms	Antiretroviral treatment : The use of a combination of 3 or more antiretroviral drugs for purpose of treatment in accordance with nationally approved treatment protocols (or WHO/UNAIDS standards). ARV regimen prescribed for post exposure prophylaxis are excluded.
Preferred data sources	Facility reporting system
Other possible data sources	

Method of measurement	Numerator There are four general antiretroviral categories that HIV-infected women can receive for the prevention of mother-to-child transmission (PMTCT): a) Single-dose Nevirapine only b) Prophylactic regimens using a combination of two antiretroviral drugs c) Prophylactic regimens using a combination of three antiretroviral drugs d) Antiretroviral therapy for HIV-infected pregnant women eligible for treatment HIV-infected women receiving any antiretroviral therapy, including specifically for prophylaxis, meet the definition for the numerator. Countries should report the total number of HIV-infected pregnant women who were provided with any antiretrovirals as the numerator. Countries can compile data for the numerator from patient registers at antenatal clinics, delivery and care sites, and post-partum care and HIV service sites. This should be disaggregated by regimen type. Women receiving antiretroviral drugs in both the private sector and the public sector should be included in the numerator where data for both are available. Denominator The denominator is generated by estimating the number of HIV-infected women who were pregnant in the last 12 months. This is based on surveillance data from antenatal clinics. Two methods are possible for generating the estimate for the denominator: 1. Estimates generated by a projection model such as Spectrum (see Epidemiological software and tools, 2009); or 2. Multiplying: (a) the total number of women who gave birth in the last 12 months, which can be obtained from the Central Statistics Office estimates of births or estimates from the UN Population Division, by (b) the most recent national estimate of HIV prevalence in pregnant women, which can be derived from HIV sentinel surveillance antenatal clinic estimates. (UNAIDS/WHO, 2010)
Method of estimation	Estimating the numerator The number of pregnant women living with HIV receiving antiretrovirals for PMTCT is based on national programme data aggregated from facilities or other service delivery sites and as reported by the country. Estimating the denominator The number of pregnant women living with HIV who need antiretroviral medicine for PMTCT is estimated using standardized statistical modelling based on UNAIDS/WHO methods that consider various epidemic and demographic parameters and national programme coverage of antiretroviral therapy in the country (such as HIV prevalence among women of reproductive age, effect of HIV on fertility and antiretroviral therapy coverage). These statistical modelling procedures are used to derive a comprehensive population-based estimate of the number of all pregnant women living with HIV who need antiretrovirals for PMTCT in the country. Estimating the coverage of antiretrovirals for PMTCT The coverage of antiretrovirals for PMTCT is calculated by dividing the number of pregnant women living with HIV who received antiretrovirals for PMTCT of HIV by the estimated number of pregnant women living with HIV who need antiretrovirals for PMTCT in the country. Estimates of coverage are based on the standardized estimates of pregnant women living with HIV who need antiretrovirals for PMTCT derived using UNAIDS/WHO methods. Point estimates are given for countries with a generalized epidemic, these estimates are presented here. Point estimates and ranges for countries with a generalized epidemic, and ranges for countries with a concentrated epidemic are available in the report "Towards universal access - Scaling up priority HIV/AIDS interventions in the health sector". (WHO/UNAIDS/UNICEF, 2009) Predominant type of statistics: predicted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	

Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	This indicator permits monitoring trends in antiretroviral drug provision that addresses PMTCT. However, since countries provide different regimens of antiretroviral drugs for PMTCT, cross-country comparisons of aggregate estimates must be interpreted with caution and with reference to the regimens provided. (UNAIDS/WHO, 2010)
Links	HIV/AIDS Data and Statistics (WHO) Methods and assumptions for HIV estimates (UNAIDS) 2008 Report on the Global AIDS epidemics (UNAIDS, 2008) Guidelines on Construction of Core Indicators: 2010 Reporting (UNAIDS, 2009) Epidemiological software and tools (UNAIDS website, 2009) Towards universal access - Scaling up priority HIV/AIDS interventions in the health sector (WHO/UNAIDS/UNICEF, 2009) Tools for collecting data on the health sector response to HIV/AIDS in 2010 (WHO, 2010) Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: towards universal access (WHO, 2006)
Comments	In 2006, international guidelines were updated to recommend more efficacious regimens for prevention of mother-to-child transmission, and countries may be at different phases in adopting the newer recommendations. In some countries, large numbers of pregnant women do not have access to antenatal clinic services or choose not to make use of them. Pregnant women living with HIV may be more or less likely to use antenatal clinic services (or public rather than private antenatal clinic services) than those who are not infected, particularly where antiretroviral therapy can be accessed via such services or where levels of stigma are particularly high. National estimates of HIV-infected pregnant women should be derived by adjusting surveillance data from antenatal clinic sentinel sites and other sources, taking into consideration characteristics such as rural/urban patterns of HIV prevalence that may affect the representation of surveillance sites. Methods for monitoring coverage of this service are therefore also evolving. To access the most current information available please consult: http://www.who.int/hiv/topics/mtct/guidelines/en/index.html (UNAIDS, 2009)
Contact person	

Antiretroviral therapy coverage among people with advanced HIV infection (%)

Indicator ID	12
Indicator name	Antiretroviral therapy coverage among people with advanced HIV infection (%)
Name abbreviated	Antiretroviral therapy coverage among people with advanced HIV infection (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	As the HIV epidemic matures, increasing numbers of people are reaching advanced stages of HIV infection. Antiretroviral therapy (ART) has been shown to reduce mortality among those infected and efforts are being made to make it more affordable within low- and middle-income countries. This indicator assesses the progress in providing antiretroviral combination therapy to all people with advanced HIV infection.
Definition	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. Numerator: Number of adults and children with advanced HIV infection who are currently receiving antiretroviral combination therapy in accordance with the nationally approved treatment protocol (or WHO/UNAIDS standards) at the end of the reporting period Denominator: Estimated number of adults and children with advanced HIV infection
Associated terms	Antiretroviral treatment : The use of a combination of 3 or more antiretroviral drugs for purpose of treatment in accordance with nationally approved treatment protocols (or WHO/UNAIDS standards). ARV regimen prescribed for post exposure prophylaxis are excluded. Human Immunodeficiency Virus (HIV) : A virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death.
Preferred data sources	Facility reporting system Administrative reporting system Surveillance systems
Other possible data sources	

Method of measurement	Numerator The numerator can be generated by counting the number of adults and children who received antiretroviral combination therapy at the end of the reporting period. Antiretroviral therapy taken only for the purpose of prevention of mother-to-child transmission and post-exposure prophylaxis are not included in this indicator. HIV-infected pregnant women who are eligible for antiretroviral therapy and on antiretroviral therapy for their own treatment are included in this indicator. The number of adults and children with advanced HIV infection who are currently receiving antiretroviral combination therapy can be obtained through data collected from facility-based antiretroviral therapy registers or drug supply management systems. These are then tallied and transferred to cross-sectional monthly or quarterly reports which can then be aggregated for national totals. Patients receiving antiretroviral therapy in the private sector and public sector should be included in the numerator where data are available. Denominator The denominator is generated by estimating the number of people with advanced HIV infection requiring (in need of/eligible for) antiretroviral therapy. This estimation must take into consideration a variety of factors including, but not limited to, the current numbers of people with HIV, the current number of patients on antiretroviral therapy, and the natural history of HIV from infection to enrolment on antiretroviral therapy. A standard modelling method is recommended. The Estimation and Projection Package (EPP)* and Spectrum*, softwares have been developed by the UNAIDS/WHO Reference Group on Estimates, Models and Projections. Need or eligibility for antiretroviral therapy should follow the WHO definitions for the diagnosis of advanced HIV (including AIDS) for adults and children. (UNAIDS, 2009)

Method of estimation	WHO, UNAIDS and UNICEF are responsible for reporting data for this indicator at the international level, and have been compiling country specific data since 2003. The data from countries are collected through three international monitoring and reporting processes. 1. Health sector response to HIV/AIDS (WHO/UNAIDS/UNICEF) 3. UNGASS Declaration of Commitment on HIV/AIDS (UNAIDS) Both processes are linked through common indicators and a harmonized timeline for reporting. Estimating the numerator Data for the calculation of the numerator are compiled from the most recent reports received by WHO and/or UNAIDS from health ministries or from other reliable sources in the countries, such as bilateral partners, foundations and nongovernmental organizations that are major providers of treatment services. Estimating the denominator The number of people who need antiretroviral therapy in a country is estimated using statistical modelling methods. In response to the emergence of new scientific evidence, in December 2009 WHO updated its antiretroviral therapy guidelines for adults and adolescents. According to the new guidelines, which were developed in consultation with multiple technical and implementing partners, all adolescents and adults, including pregnant women, with HIV infection and a CD4 count at or below 350 cells/mm3 should be started on antiretroviral therapy, regardless of whether or not they have clinical symptoms. Those with severe or advanced clinical disease (WHO clinical stage 3 or 4) should start antiretroviral therapy irrespective of CD4 cell count. In order to compare the impact of the new guildelines, both sets of needs for the year 2009 are included, i.e. estimated needs estimated based on a threshold for initiation of antiretroviral therapy with < 200 cells/mm3 (old guidelines) as well as < 350 cells/mm3 (new guidelines). Estimating antiretroviral therapy coverage The estimates of antiretroviral therapy coverage presented here are calculated by dividing the estimated number of people receiving antiretroviral therapy as of December by the number of people estimated to need treatment in same year (based on UNAIDS/WHO methods). Predominant type of statistics: predicted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global estimates are calculated as weighted averages of the country level indicator where the weights correspond to each country's share of the total number of people needing antiretroviral therapy. Although WHO and UNAIDS collect data on the number of people receiving antiretroviral therapy in high-income countries, as of 2007, no need numbers have been established for these countries. Aggregated coverage percentages are based solely on low- and middle-income countries.
Disaggregation	Sex Age Provider type (public/private)
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Estimating the number of people receiving antiretroviral therapy involves some uncertainty in countries that have not yet established regular reporting systems that can capture data on people who initiate treatment for the first time, rates of adherence among people who receive treatment, people who discontinue treatment, and those who die. To analyse and compare antiretroviral therapy coverage across countries, international agencies use standardized estimates of treatment need. Specialized software is used to generate uncertainty ranges around estimates for antiretroviral therapy need. Depending on the quality of surveillance data, the ranges for some countries can be large.
Links	HIV/AIDS Data and Statistics (WHO) Methods and assumptions for HIV estimates (UNAIDS) 2008 Report on the Global AIDS epidemics (UNAIDS, 2008) Guidelines on Construction of Core Indicators: 2010 Reporting (UNAIDS, 2009) Tools for collecting data on the health sector response to HIV/AIDS in 2010 (WHO, 2010) in Current Opinion in HIV and AIDS: Vol.5 Issue 1 p 97–102) Towards universal access - Scaling up priority HIV/AIDS interventions in the health sector (WHO/UNAIDS/UNICEF, 2010)
Comments	This indicator permits monitoring trends in coverage but does not attempt to distinguish between different forms of antiretroviral therapy or to measure the cost, quality or effectiveness of treatment provided. These will each vary within and between countries and are liable to change over time. The degree of utilization of antiretroviral therapy will depend on factors such as cost relative to local incomes, service delivery infrastructure and quality, availability and uptake of voluntary counseling and testing services, and perceptions of effectiveness and possible side effects of treatment. (UNAIDS, 2009) Latest country specific coverage for 2008 were not published as treatment guidelines have been revised, and the effects on treatment need for adults are currently being assessed.
Contact person	

Births attended by skilled health personnel (%)

Indicator ID	25
Indicator name	Births attended by skilled health personnel (%)
Name abbreviated	Births attended by skilled health personnel
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	All women should have access to skilled care during pregnancy and childbirth to ensure prevention, detection and management of complications. Assistance by properly trained health personnel with adequate equipment is key to lowering maternal deaths. As it is difficult to accurately measure maternal mortality, and model-based estimates of the maternal mortality ratio cannot be used for monitoring short-term trends, the proportion of births attended by skilled health personnel is used as a proxy indicator for this purpose. This is an MDG indicator.
Definition	The proportion of births attended by skilled health personnel. Numerator: The number of births attended by skilled health personnel (doctors, nurses or midwives) trained in providing life saving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, childbirth and the post-partum period; to conduct deliveries on their own; and to care for newborns. Denominator: The total number of live births in the same period.
Associated terms	Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10) Skilled birth personnel : An accredited health professional—such as a midwife, doctor or nurse—who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns. Traditional birth attendants (TBA), trained or not, are excluded from the category of skilled attendant at delivery.
Preferred data sources	Household surveys
Other possible data sources	Facility reporting system
Method of measurement	The percentage of births attended by skilled health personnel is calculated as the number of births attended by skilled health personnel (doctors, nurses or midwives) expressed as total number of births in the same period. Births attended by skilled health personnel = (Number of births attended by skilled health personnel / Total number of live births) x 100 In household surveys, such as the Demographic and Health Surveys, the Multiple Indicator Cluster Surveys, and the Reproductive Health Surveys, the respondent is asked about each live birth and who had helped them during delivery for a period up to five years before the interview. Service/facility records could be used where a high proportion of births occur in health facilities and therefore they are recorded.

Method of estimation	Data for global monitoring are reported by UNICEF and WHO. These agencies obtain the data from national sources, both survey and registry data. Before data can be included in the global databases, UNICEF and WHO undertake a process of data verification that includes correspondence with field offices to clarify any questions. In terms of survey data, some survey reports may present a total percentage of births attended by a type of provider that does not conform to the MDG definition (e.g., total includes provider that is not considered skilled, such as a community health worker). In that case, the percentage delivered by a physician, nurse, or a midwife are totaled and entered into the global database as the MDG estimate. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global aggregates are weighted averages of the country data, using the number of live births for the reference year in each country as the weight. No figures are reported if less than 50 per cent of the live births in the region are covered.
Disaggregation	Location (urban/rural) Education level Wealth : Wealth quintile Health personnel Place of Delivery Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The indicator is a measure of a health system's ability to provide adequate care during birth, a period of elevated mortality and morbidity risk for both mother and newborn. However, this indicator may not adequately capture women's access to good quality care, particularly when complications arise. In order to effectively reduce maternal deaths, skilled health personnel should have the necessary equipment and adequate referral options. Standardization of the definition of skilled health personnel is sometimes difficult because of differences in training of health personnel in different countries. Although efforts have been made to standardize the definitions of doctors, nurses, midwives and auxiliary midwives used in most household surveys, it is probable that many skilled attendants' ability to provide appropriate care in an emergency depends on the environment in which they work. Recall error is another potential source of bias in the data. In household surveys, the respondent is asked about each live birth for a period up to five years before the interview. The respondent may or may not know or remember the qualifications of the attendant at delivery. In the absence of survey data, some countries may have health facility data. However, it should be noted that these data may overestimate the proportion of deliveries attended by a skilled professional because the denominator might not capture all women who deliver outside of health facilities.
Links	WHO Reproductive health indicators database

Links	Childinfo: Monitoring the Situation of Children and Women (UNICEF) Demographic and Health Surveys (DHS) Reduction of maternal mortality: a joint WHO/UNFPA/UNICEF/World Bank statement (1999) Making pregnancy safer: the critical role of the skilled attendant (WHO, 2004) The World Health Report 2005: Make every mother and child count (WHO, 2005) Reproductive health indicators: Guidelines for their generation, interpretation and analysis for global monitoring (WHO, 2006) Proportion of births attended by a skilled attendant: 2008 updates (WHO, 2008) State of World Population 2008 (UNFPA, 2008) The State of the World Children (UNICEF)
Comments	The indicator is a measure of a health system's ability to provide adequate care for pregnant women. Concerns have been expressed that the term skilled attendant may not adequately capture women's access to good quality care, particularly when complications arise. In addition, standardization of the definition of skilled health personnel is sometimes difficult because of differences in training of health personnel in different countries. Although efforts have been made to standardize the definitions of doctors, nurses, midwives and auxiliary midwives used in most household surveys, it is probable that many skilled attendants' ability to provide appropriate care in an emergency depends on the environment in which they work.
Contact person	

Births by caesarean section (%)

Indicator ID	68
Indicator name	Births by caesarean section (%)
Name abbreviated	Births by caesarean section
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	The percentage of births by caesarean section is an indicator of access to and use of health care during childbirth.
Definition	Percentage of births by caesarean section among all live births in a given time period.
Associated terms	Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10)
Preferred data sources	Facility reporting system Household surveys
Other possible data sources	
Method of measurement	Household surveys: birth history—detailed questions on the last-born child or all children a woman has given birth to during a given period preceding the survey (usually 3 to 5 years), including characteristics of the birth(s). The number of live births to women surveyed provides the denominator. Service or facility records: the number of women having given birth by caesarean section (numerator). Census projections or, in some cases, vital registration data can be used to provide the denominator (numbers of live births).
Method of estimation	WHO compiles empirical data from household surveys for this indicator. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of live births for the reference year in each country as the weight. No figures are reported if less than 50 per cent of live births in the region are covered.
Disaggregation	Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	This indicator does not provide information on the reason for undergoing caesarean section, and includes caesarean sections that were performed without a clinical indication as well as those that were medically indicated. The extent to which caesarean sections are performed according to clinical need, therefore, is not possible to determine.
Links	Guidelines for monitoring the availability and use of obstetric services (WHO-UNICEF-UNFPA, 1997) Reproductive health indicators—guidelines for their generation, interpretation and analysis for global monitoring. (WHO, 2006) The world health report 2005—make every mother and child count (WHO, 2005) Demographic and Health Surveys
Comments	An approximate figure of less than 5% indicates that all women who are in need may not be receiving caesarean section at birth.
Contact person	

Case detection rate for all forms of tuberculosis

Indicator ID	1422
Indicator name	Case detection rate for all forms of tuberculosis
Name abbreviated	TB case detection rate
Data Type Representation	Percent
Indicator group	
Rationale	It provides an indication of the effectiveness of national tuberculosis (TB) programmes in finding, diagnosing and treating people with TB. WHO does not recommend that countries set specific targets for the case detection rate for all forms of TB because the denominator (estimated number of incident TB cases during a calendar year) is not directly measureable and there is thus considerable uncertainty about its true value. For more information, see Frequently asked questions about case detection rates
Definition	The proportion of estimated new and relapse tuberculosis (TB) cases detected in a given year under the internationally recommended tuberculosis control strategy. 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 to WHO. The term "rate" is used for historical reasons; the indicator is actually a ratio (expressed as percentage) and not a rate.
Associated terms	All forms (of tuberculosis) : Pulmonary (smear-positive and smear-negative) and extrapulmonary TB. Tuberculosis (TB) : An infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. TB is treatable with a six-month course of antibiotics. Notification (in the context of reporting tuberculosis cases to WHO) : The process of reporting diagnosed TB cases to WHO. This does not refer to the systems in place in some countries to inform national authorities of cases of certain "notifiable" diseases.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	The number of new and relapse TB cases diagnosed and treated in national TB control programmes and notified to WHO, divided by WHO's estimate of the number of incident TB cases for the same year, expressed as a percentage. Uncertainty bounds are provided in addition to best estimates. For more information, see Annex 1 of WHO's 2010 report on global TB control.
M&E Framework	
Method of estimation of global and regional aggregates	Estimates are also produced at global level, for WHO regions and for World Bank Income Groups. For methodology, see Annex 1 of WHO's 2010 report on global TB control.

Disaggregation	
Unit of Measure	Percent
Unit Multiplier	Not Applicable
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	The case detection rate for all forms of TB should not be used for planning purposes. For more information, see Frequently asked questions about case detection rates
Links	WHO TB data Frequently asked questions about case detection rates The Global Plan to Stop TB 2011 - 2015 Global tuberculosis control report
Comments	This indicator replaces the case detection rate for smear-positive TB which will not be published from 2010 onwards.
Contact person	TB data enquiries (tbdata@who.int)

Children aged <5 years overweight (%)

Indicator ID	74
Indicator name	Children aged <5 years overweight (%)
Name abbreviated	Children aged <5 years overweight
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	This indicator belongs to a set of indicators whose purpose is to measure nutritional imbalance and malnutrition resulting in undernutrition (assessed by underweight, stunting and wasting) and overweight. Child growth is the most widely used indicator of nutritional status in a community and is internationally recognized as an important public-health indicator for monitoring health in populations. In addition, children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have a greater risk of suffering illness and death.
Definition	Percentage of overweight (weight-for-height above +2 standard deviations of the WHO Child Growth Standards median) among children aged 0-5 years
Associated terms	Child overweight : Weight-for-height greater than +2 standard deviations of the WHO Child Growth Standards median. Child underweight : Weight-for-age less than -2 standard deviations of the WHO Child Growth Standards median. Stunting : Height-for-age less than -2 standard deviations of the WHO Child Growth Standards median. Wasting : Weight-for-height less than -2 standard deviations of the WHO Child Growth Standards median.
Preferred data sources	Household surveys Specific population surveys Surveillance systems
Other possible data sources	
Method of measurement	Percentage of children aged <5 years overweight for age = (Number of children aged 0-5 years that are over two standard deviations from the median weight-for-height of the WHO Child Growth Standards / Total number of children aged 0-5 years that were measured) * 100. Children`s weight and height are measured using standard technology, e.g. children less than 24 months are measured lying down, while standing height is measured for children 24 months and older. The data sources include national nutrition surveys, any other nationally-representative population-based surveys with nutrition modules, and national surveillance systems.

Method of estimation	WHO maintains the Global Database on Child Growth and Malnutrition, which includes population-based surveys that fulfill a set of criteria. Data are checked for validity and consistency and raw data sets are analysed following a standard procedure to obtain comparable results. Prevalence below and above defined cut-off points for weight-for-age, height-for-age, weight-for-height and body mass index (BMI)-for-age, in preschool children are presented using z-scores based on the WHO Child Growth Standards. A detailed description of the methodology and procedures of the database including data sources, criteria for inclusion, data quality control and database work-flow, are described in a paper published in 2003 in the International Journal of Epidemiology (de Onis & Blössner, 2003). Predominant type of statistics: adjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	A well-established methodology for deriving global and regional trends and forecasting future trends, have been published (de Onis et al., 2004a, 2004b)
Disaggregation	Age Sex Location (urban/rural) Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Bimonthly
Expected frequency of data collection	Every 5 years
Limitations	
Links	WHO Global Database on Child Growth and Malnutrition WHO Child Growth Standards website 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 The WHO Global Database on Child Growth and Malnutrition: methodology and applications (de Onis & Blössner, 2003) Estimates of global prevalence of childhood underweight in 1990 and 2015 (de Onis et al, 2004a) Methodology for estimating regional and global trends of child malnutrition (de Onis et al, 2004b)

Comments	The percentage of children with low height-for-age reflects the cumulative effects of under-nutrition and infections since birth, and even before birth. This measure, therefore, should be interpreted as an indication of poor environmental conditions and/or long-term restriction of a child`s growth potential. The percentage of children with low weight-for-age may reflect the less common 'wasting' (i.e. low weight-for-height) indicating acute weight loss, and/or the much more common 'stunting' (i.e. low height-for-age). Thus, it is a composite indicator that is difficult to interpret. Overweight (i.e. high weight-for -height) is an indicator of malnutrition at the other extreme. Some country populations are facing a double-burden with high prevalence of under- and overweight simultaneously. An international set of standards (i.e. the WHO Child Growth Standards) is used to calculate prevalence for the indicators low weight-for-age, low height-for-age, and high weight-for-height. The International Pediatric Association (IPA), the Standing Committee on Nutrition of the United Nations System (SCN), and the International Union of Nutritional Sciences (IUNS), have officially endorsed the use of the WHO standards, describing them as an effective tool for detecting and monitoring undernutrition and overweight, thus addressing the double burden of malnutrition affecting populations on a global basis. The WHO Child Growth Standards, launched in 2006, replaces the NCHS/WHO international reference for the analysis of nutritional surveys. National nutrition surveys and national nutrition surveillance systems are the preferred primary data sources for child nutrition indicators. If these sources are not available, any random, nationally representative, population-based survey with a sample size of at least 400 children that presents results based on the WHO standards or provides access to the raw data enabling re-analysis could be used. Generally national surveys are recommended to be conducted about every 5 years. But this also depends on the nutritional status as well as on the change in the economical situation, the perceived change of nutritional status, and the occurrence of human made crisis and natural disasters.
Contact person	WHO Global Database on Child Growth and Malnutrition (whonutgrowthdb@who.int)

Children aged <5 years sleeping under insecticide-treated nets (%)

Indicator ID	13
Indicator name	Children aged <5 years sleeping under insecticide-treated nets (%)
Name abbreviated	Children aged <5 years sleeping under insecticide-treated nets
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	In areas of intense malaria transmission, malaria-related morbidity and mortality are concentrated in young children, and the use of insecticide-treated nets (ITN) by children under 5 has been demonstrated to considerably reduce malaria disease incidence, malaria-related anaemia and all cause under 5 mortality. In addition to being listed as an MDG indicator under Goal 6, the use of ITNs is identified by WHO as one of the main interventions to reduce the burden of malaria.
Definition	Percentage of children under five years of age in malaria endemic areas who slept under an insecticide-treated nets (ITN) the previous night.
Associated terms	Insecticide-treated net (ITN) : A mosquito net that has been treated within 12 months or is a long-lasting insecticidal net (LLIN) Malaria : An infectious disease caused by the parasite Plasmodium and transmitted via the bites of infected mosquitoes. Symptoms of uncomplicated malaria usually appear between 10 and 15 days after the mosquito bite and include fever, chills, headache, muscular aching and vomiting. Malaria can be treated with artemisinin-based combination and other therapies. Malaria responds well if treated with an effective antimalarial medicine at an early stage. However, if not treated, the falciparum malaria may progress to severe case and death. Less than one person in a thousand may die from the disease. Symptoms of severe disease include: coma (cerebal malaria), metabolic acidosis, severe aneamia, hypoglycaemia (low blood sugar levels) and in adults, kidney failure or pulmonary oedmea (a build up of fluid in the lungs). By this stage 15-20% of people receiving treatment will die. If untreated, severe malaria is almost always fatal. The symptoms of malaria overlap with other diseases so one can not always be certain that a death is due to malaria particularly as many deaths occur in children who may simultaneously suffer from a range conditions including respiratory infections, diarhoea, and malnutrition. Effective interventions exist to reduce the incidence of malaria including the use of insecticide treated mosquito nets and indoor residual spraying with insecticide. Malaria-risk areas : Areas of stable malaria transmission (allowing the development of some level of immunity) and areas of unstable malaria transmission (seasonal and less predictable transmission impeding the development of effective immunity)
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	The number of children <5 years sleeping under insecticide-treated mosquito nets = (The number of children aged 0-59 months who slept under an insecticide-treated mosquito net the night prior to the survey / The total number of children aged 0-59 months included in the survey) x 100 Data are derived from nationally-representative household surveys such as Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Malaria Indicator Surveys (MIS), and `rider` questions on other representative population-based surveys, that include questions on whether children under five years of age slept under an ITN the previous night.

Method of estimation	Data from nationally-representative household surveys, including Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS) and Malaria Indicator Surveys (MIS), are compiled in the UNICEF global databases. The data are reviewed in collaboration with Roll Back Malaria (RBM) partnership, launched in 1998 by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP) and the World Bank. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global estimates are based on population-weighted averages weighted by the total number of children under five years of age. These estimates are presented only if available data cover at least 50% of total children under five years of age in the regional or global groupings.
Disaggregation	Age Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Every 3-5 years
Limitations	The accuracy of reporting in household surveys may vary. Also, seasonal influences related to fluctuations in vector and parasite prevalence may affect level of coverage depending on timing of the data collection. Because of issues of date recall of last impregnation with insecticide, this indicator may not provide reliable estimates of net retreatment status. Furthermore, the standard survey instrument does not collect information on whether the net was washed after treatment, which can reduce its effectiveness. Typically, estimates are provided for the national level, which may underestimate the level of coverage among subpopulations living in localized areas of malaria transmission.
Links	WHO/Roll Back Malaria website World Malaria Report 2008 (WHO) The United Nations official site for the MDG indicators
Comments	It is important to note that while the MDG indicator only refers to children aged <5 years, WHO recommends that all household members sleep under ITNs in malaria-risk areas.
Contact person	

Children aged <5 years stunted (%)

Indicator ID	72
Indicator name	Children aged <5 years stunted (%)
Name abbreviated	Children aged <5 years stunted
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	This indicator belongs to a set of indicators whose purpose is to measure nutritional imbalance and malnutrition resulting in undernutrition (assessed by underweight, stunting and wasting) and overweight. Child growth is the most widely used indicator of nutritional status in a community and is internationally recognized as an important public-health indicator for monitoring health in populations. In addition, children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have a greater risk of suffering illness and death.
Definition	Percentage of stunting (height-for-age less than -2 standard deviations of the WHO Child Growth Standards median) among children aged 0-5 years
Associated terms	Child overweight : Weight-for-height greater than +2 standard deviations of the WHO Child Growth Standards median. Child underweight : Weight-for-age less than -2 standard deviations of the WHO Child Growth Standards median. Severe stunting : Height-for-age less than -3 standard deviations of the WHO Child Growth Standards median. Stunting : Height-for-age less than -2 standard deviations of the WHO Child Growth Standards median. Wasting : Weight-for-height less than -2 standard deviations of the WHO Child Growth Standards median.
Preferred data sources	Household surveys Specific population surveys Surveillance systems
Other possible data sources	
Method of measurement	Percentage of children aged <5 years stunted for age = (Number of children aged 0-5 years that fall below minus two standard deviations from the median height-for-age of the WHO Child Growth Standards / Total number of children aged 0-5 years that were measured) * 100. Children`s weight and height are measured using standard technology, e.g. children less than 24 months are measured lying down, while standing height is measured for children 24 months and older. The data sources include national nutrition surveys, any other nationally-representative population-based surveys with nutrition modules, and national surveillance systems.

Method of estimation	WHO maintains the Global Database on Child Growth and Malnutrition, which includes population-based surveys that fulfill a set of criteria. Data are checked for validity and consistency and raw data sets are analysed following a standard procedure to obtain comparable results. Prevalence below and above defined cut-off points for weight-for-age, height-for-age, weight-for-height and body mass index (BMI)-for-age, in preschool children are presented using z-scores based on the WHO Child Growth Standards. A detailed description of the methodology and procedures of the database including data sources, criteria for inclusion, data quality control and database work-flow, are described in a paper published in 2003 in the International Journal of Epidemiology (de Onis & Blössner, 2003). Predominant type of statistics: adjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	A well-established methodology for deriving global and regional trends and forecasting future trends, have been published (de Onis et al., 2004a, 2004b)
Disaggregation	Age Sex Location (urban/rural) Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Bimonthly
Expected frequency of data collection	Every 5 years
Limitations	
Links	WHO Global Database on Child Growth and Malnutrition WHO Child Growth Standards website 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 The WHO Global Database on Child Growth and Malnutrition: methodology and applications (de Onis & Blössner, 2003) Estimates of global prevalence of childhood underweight in 1990 and 2015 (de Onis et al, 2004a) Methodology for estimating regional and global trends of child malnutrition (de Onis et al, 2004b)

Comments	The percentage of children with low height-for-age reflects the cumulative effects of under-nutrition and infections since birth, and even before birth. This measure, therefore, should be interpreted as an indication of poor environmental conditions and/or long-term restriction of a child`s growth potential. The percentage of children with low weight-for-age may reflect the less common 'wasting' (i.e. low weight-for-height) indicating acute weight loss, and/or the much more common 'stunting' (i.e. low height-for-age). Thus, it is a composite indicator that is difficult to interpret. Overweight (i.e. high weight-for-height) is an indicator of malnutrition at the other extreme. Some country populations are facing a double-burden with high prevalence of under- and overweight simultaneously. An international set of standards (i.e. the WHO Child Growth Standards) is used to calculate prevalence for the indicators low weight-for-age, low height-for-age, and high weight-for-height. The International Pediatric Association (IPA), the Standing Committee on Nutrition of the United Nations System (SCN), and the International Union of Nutritional Sciences (IUNS), have officially endorsed the use of the WHO standards, describing them as an effective tool for detecting and monitoring undernutrition and overweight, thus addressing the double burden of malnutrition affecting populations on a global basis. The WHO Child Growth Standards, launched in 2006, replaces the NCHS/WHO international reference for the analysis of nutritional surveys. National nutrition surveys and national nutrition surveillance systems are the preferred primary data sources for child nutrition indicators. If these sources are not available, any random, nationally representative, population-based survey with a sample size of at least 400 children that presents results based on the WHO standards or provides access to the raw data enabling re-analysis could be used. Generally national surveys are recommended to be conducted about every 5 years. But this also depends on the nutritional status as well as on the change in the economical situation, the perceived change of nutritional status, and the occurrence of human made crisis and natural disasters.
Contact person	WHO Global Database on Child Growth and Malnutrition (whonutgrowthdb@who.int)

Children aged <5 years underweight (%)

Indicator ID	27
Indicator name	Children aged <5 years underweight (%)
Name abbreviated	Children aged <5 years underweight
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	This indicator belongs to a set of indicators whose purpose is to measure nutritional imbalance and malnutrition resulting in undernutrition (assessed by underweight, stunting and wasting) and overweight. Child growth is the most widely used indicator of nutritional status in a community and is internationally recognized as an important public-health indicator for monitoring health in populations. In addition, children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have a greater risk of suffering illness and death.
Definition	Percentage of underweight (weight-for-age less than -2 standard deviations of the WHO Child Growth Standards median) among children aged 0-5 years.
Associated terms	Child overweight : Weight-for-height greater than +2 standard deviations of the WHO Child Growth Standards median. Child severe underweight : Weight-for-age less than -3 standard deviations of the WHO Child Growth Standards median. Child underweight : Weight-for-age less than -2 standard deviations of the WHO Child Growth Standards median. Stunting : Height-for-age less than -2 standard deviations of the WHO Child Growth Standards median. Wasting : Weight-for-height less than -2 standard deviations of the WHO Child Growth Standards median.
Preferred data sources	Household surveys Specific population surveys Surveillance systems
Other possible data sources	
Method of measurement	Percentage of children aged < 5 years underweight for age = (Number of children aged 0-5 years that fall below minus two standard deviations from the median weight-for-age of the WHO Child Growth Standards / Total number of children aged 0-5 years that were measured) * 100. Children`s weight and height are measured using standard technology, e.g. children less than 24 months are measured lying down, while standing height is measured for children 24 months and older. The data sources include national nutrition surveys, any other nationally-representative population-based surveys with nutrition modules, and national surveillance systems.

Method of estimation	WHO maintains the Global Database on Child Growth and Malnutrition, which includes population-based surveys that fulfill a set of criteria. Data are checked for validity and consistency and raw data sets are analysed following a standard procedure to obtain comparable results. Prevalence below and above defined cut-off points for weight-for-age, height-for-age, weight-for-height and body mass index (BMI)-for-age, in preschool children are presented using z-scores based on the WHO Child Growth Standards. A detailed description of the methodology and procedures of the database including data sources, criteria for inclusion, data quality control and database work-flow, are described in a paper published in 2003 in the International Journal of Epidemiology (de Onis & Blössner, 2003). Predominant type of statistics: adjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	A well-established methodology for deriving global and regional trends and forecasting future trends, have been published (de Onis et al., 2004a, 2004b)
Disaggregation	Age Sex Location (urban/rural) Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Bimonthly
Expected frequency of data collection	Every 5 years
Limitations	
Links	WHO Global Database on Child Growth and Malnutrition WHO Child Growth Standards website 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 The WHO Global Database on Child Growth and Malnutrition: methodology and applications (de Onis & Blössner, 2003) Estimates of global prevalence of childhood underweight in 1990 and 2015 (de Onis et al, 2004a) Methodology for estimating regional and global trends of child malnutrition (de Onis et al, 2004b)

Comments	The percentage of children with low height-for-age reflects the cumulative effects of under-nutrition and infections since birth, and even before birth. This measure, therefore, should be interpreted as an indication of poor environmental conditions and/or long-term restriction of a child`s growth potential. The percentage of children with low weight-for-age may reflect the less common 'wasting' (i.e. low weight-for-height) indicating acute weight loss, and/or the much more common 'stunting' (i.e. low height-for-age). Thus, it is a composite indicator that is difficult to interpret. Overweight (i.e. high weight-for-height) is an indicator of malnutrition at the other extreme. Some country populations are facing a double-burden with high prevalence of under- and overweight simultaneously. An international set of standards (i.e. the WHO Child Growth Standards) is used to calculate prevalence for the indicators low weight-for-age, low height-for-age, and high weight-for-height. The International Pediatric Association (IPA), the Standing Committee on Nutrition of the United Nations System (SCN), and the International Union of Nutritional Sciences (IUNS), have officially endorsed the use of the WHO standards, describing them as an effective tool for detecting and monitoring undernutrition and overweight, thus addressing the double burden of malnutrition affecting populations on a global basis. The WHO Child Growth Standards, launched in 2006, replaces the NCHS/WHO international reference for the analysis of nutritional surveys. National nutrition surveys and national nutrition surveillance systems are the preferred primary data sources for child nutrition indicators. If these sources are not available, any random, nationally representative population-based survey with a sample size of at least 400 children that presents results based on the WHO standards or provides access to the raw data enabling re-analysis could be used. Generally national surveys are recommended to be conducted about every 5 years. But this also depends on the nutritional status as well as on the change in the economical situation, the perceived change of nutritional status, and the occurrence of human made crisis and natural disasters.
Contact person	WHO Global Database on Child Growth and Malnutrition (whonutgrowthdb@who.int)

Children aged <5 years with ARI symptoms taken to facility

Indicator ID	70
Indicator name	Children aged <5 years with ARI symptoms taken to facility
Name abbreviated	
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Acute respiratory infections (ARI) are responsible for almost 20% of all deaths of children aged less than 5 years worldwide. The proportion of under-fives with ARI that are taken to an appropriate health-care provider is a key indicator for coverage of intervention and care-seeking, and provides critical inputs to the monitoring of progress towards child survival-related Millennium Development Goals and Strategies.
Definition	Proportion of children aged 0–59 months who had 'presumed pneumonia' (ARI) in the last 2 weeks and were taken to an appropriate health-care provider. Strictly speaking, 'ARI' stands for 'acute respiratory infection'. During the UNICEF/WHO Meeting on Child Survival Survey-based Indicators, held in New York, 17–18 June 2004, it was recommended that ARI be described as 'presumed pneumonia' to better reflect probable cause and the recommended interventions. The definition of ARI used in the Multiple Indicator Cluster Surveys (MICS) was chosen by the group and is based on mothers' perceptions of a child who has a cough, is breathing faster than usual with short, quick breaths or is having difficulty breathing, excluding children that had only a blocked nose. The definition of 'appropriate' care provider varies between countries.
Associated terms	
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles empirical data from household surveys. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	
Disaggregation	Age Location (urban/rural) Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	These indicators are usually collected in DHS and MICS surveys; however, the accuracy of reporting in household surveys varies and is likely to be prone to recall bias. Seasonality related to the prevalence of ARI may also affect the results and their comparability between and within countries.

Links	The State of the World`s Children 2009 - UNICEF How many child deaths can we prevent this year? (Jones et al, 2003) Meta-analysis of intervention trials on case-management of pneumonia in community settings (Sazawal & Black, 1992) Child Morbidity and Treatment Patterns (DHS, 1991) Demographic and Health Surveys Multiple Indicator Cluster Surveys
Comments	The framework for the review of child survival indicators during the UNICEF/WHO Meeting on Child Survival Survey-based Indicators was the set of prevention and treatment interventions outlined in the Lancet series on child survival.
Contact person	

Children aged <5 years with diarrhoea receiving oral rehydration therapy

Indicator ID	71
Indicator name	Children aged <5 years with diarrhoea receiving oral rehydration therapy
Name abbreviated	
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Diarrhoeal diseases remain one of the major causes of mortality among under-fives, accounting for 1.8 million child deaths worldwide, despite all the progress in its management and the undeniable success of the oral rehydration therapy (ORT). Therefore monitoring of the coverage of this very cost-effective intervention is crucial for the monitoring of progress towards the child survival-related Millennium Development Goals and Strategies.
Definition	Proportion of children aged 0–59 months who had diarrhoea in the last 2 weeks and were treated with oral rehydration salts or an appropriate household solution (ORT). According to DHS, the term(s) used for diarrhoea should encompass the expressions used for all forms of diarrhoea, including bloody stools (consistent with dysentery), watery stools, etc. It encompasses the mother`s definition as well as the 'local term(s)'. The definition of "appropriate household solution" may vary between countries.
Associated terms	
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles empirical data from household surveys. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	
Disaggregation	Age Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	

Limitations	These indicators are usually collected in DHS and MICS surveys; however, the accuracy of reporting in household surveys varies and is likely to be prone to recall bias. Also, seasonal influences related to the prevalence of diarrhoeal disease may affect the results of data collection for this indicator. The comparability of results across countries and over time may therefore be affected. Frequent changes in the definition of this indicator have seriously compromised the ability to reliably assess trends over time. There are two specific limitations with some of the associated terms of this indicator: 1. Discussions have been held on whether treated should be considered when the electrolyte solution was 'given', 'received', 'ingested', or 'offered' to the child; and 2. Comparability of data on appropriate household solution.
Links	The State of the World`s Children 2009 - UNICEF How many child deaths can we prevent this year? (Jones et al, 2003) Factors associated with trends in infant and child mortality in developing countries during the 1990s (Rutstein, 2000) Reducing deaths from diarrhoea through oral rehydration therapy (Victora et al, 2000) Use of oral rehydration therapy in acute watery diarrhoea (Sack, 1991) Child Morbidity and Treatment Patterns (DHS, 1991) Demographic and Health Surveys Multiple Indicator Cluster Surveys
Comments	The framework for the discussion and review of child health indicators in the UNICEF/WHO Meeting on Child Survival Survey-based Indicators was the set of prevention and treatment interventions outlined in the Lancet series on child survival.
Contact person	

Children aged <5 years with fever who received treatment with any antimalarial (%)

Indicator ID	14
Indicator name	Children aged <5 years with fever who received treatment with any antimalarial (%)
Name abbreviated	Children with fever treated with anti-malarial drugs
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Prompt treatment with effective antimalarial drugs for children with fever in malaria-risk areas is a key intervention to reduce mortality. In addition to being listed as a global Millennium Development Goals Indicator under Goal 6, effective treatment for malaria is also identified by WHO, UNICEF, and the World Bank as one of the main interventions to reduce the burden of malaria in Africa. In areas of sub-Saharan Africa with stable levels of malaria transmission, it is essential that prompt access to treatment is ensured to prevent the degeneration of malaria from its onset to a highly lethal complicated picture. This requires drug availability at household or community level and, for complicated cases, availability of transport to the nearest equipped facility.
Definition	Percentage of children aged < 5 years with fever in malaria-risk areas being treated with effective antimalarial drugs.
Associated terms	Malaria : An infectious disease caused by the parasite Plasmodium and transmitted via the bites of infected mosquitoes. Symptoms of uncomplicated malaria usually appear between 10 and 15 days after the mosquito bite and include fever, chills, headache, muscular aching and vomiting. Malaria can be treated with artemisinin-based combination and other therapies. Malaria responds well if treated with an effective antimalarial medicine at an early stage. However, if not treated, the falciparum malaria may progress to severe case and death. Less than one person in a thousand may die from the disease. Symptoms of severe disease include: coma (cerebal malaria), metabolic acidosis, severe aneamia, hypoglycaemia (low blood sugar levels) and in adults, kidney failure or pulmonary oedmea (a build up of fluid in the lungs). By this stage 15-20% of people receiving treatment will die. If untreated, severe malaria is almost always fatal. The symptoms of malaria overlap with other diseases so one can not always be certain that a death is due to malaria particularly as many deaths occur in children who may simultaneously suffer from a range conditions including respiratory infections, diarhoea, and malnutrition. Effective interventions exist to reduce the incidence of malaria including the use of insecticide treated mosquito nets and indoor residual spraying with insecticide. Malaria-risk areas : Areas of stable malaria transmission (allowing the development of some level of immunity) and areas of unstable malaria transmission (seasonal and less predictable transmission impeding the development of effective immunity)
Preferred data sources	Household surveys
Other possible data sources	

Method of measurement	The number of children <5 years sleeping with fever who received treatment with any antimalarial = (The number of children aged 0-59 months with fever in the 2 weeks prior to the survey who received any anti-malarial medicine / The total number of children aged 0-59 months reported to have fever in the two weeks prior to the survey) x 100 Data are derived from household surveys such as Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Malaria Indicator Surveys (MIS).
Method of estimation	Data from nationally-representative household surveys, including Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS) and Malaria Indicator Surveys (MIS), are compiled in the UNICEF global databases. The data are reviewed in collaboration with Roll Back Malaria (RBM) partnership, launched in 1998 by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP) and the World Bank. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of children aged <5 years for the reference year in each country as the weight. No figures are reported if less than 50 per cent of children aged <5 years in the region are covered.
Disaggregation	Age Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Every 3-5 years
Limitations	As malaria burden reduces as a result of control efforts, all fever cases are not necessarily malaria. In addition, many countries are increasing their diagnostic capacity. Therefore, interpretation of the indicator becomes less important to measure access to antimalarial treatment. This indicator is being revised by MERG to allow disaggregated evaluation of access to those who were diagnosed. The accuracy of reporting in household surveys may vary. The indicator reports on receiving any anti-malarial medicine and includes all anti-malarial medicines, such as chloroquine, that may be less effective due to widespread resistance and treatment failures.
Links	WHO/Roll Back Malaria website World Malaria Report 2008 The United Nations official site for the MDG indicators Antimalarial Drug Combination Therapy: A Report of WHO Technical Consultation (WHO, 2001) Guidelines for the treatment of malaria, second edition (WHO, 2010)

Comments	WHO recommends Normal 0 false false false /* Style Definitions */ table.MsoNormalTable {mso-style-name:"Table Normal"; mso-tstyle-rowband-size:0; mso-tstyle-colband-size:0; mso-style-noshow:yes; mso-style-parent:""; mso-padding-alt:0mm 5.4pt 0mm 5.4pt; mso-para-margin:0mm; mso-para-margin-bottom:.0001pt; mso-pagination:widow-orphan; font-size:10.0pt; font-family:"Times New Roman"; mso-fareast-font-family:"Times New Roman"; mso-ansi-language:#0400; mso-fareast-language:#0400; mso-bidi-language:#0400;} Artemisinin Combination Therapy for the treatment of P.falciparum malaria in order to overcome resistance to commonly used antimalarial drugs such as chloroquine and sulfadoxine/pyrimethamine and to prevent or delay the development of further drug resistance. Artemisinin-based combination treatments (ACTs) (WHO, 2001) are considered to be the most effective combinations. ACTs combine an artemisinin compound with a partner antimalarial drug to which there is little or no resistance in the country or situation in which the ACT is to be deployed. The advantages of ACTs relate to the properties of artemisinin compounds, which include rapid reduction of the parasite biomass with fast resolution of clinical symptoms, reduce gametocyte carriage and, thus, the transmissibility of malaria, effectiveness against multidrug-resistant falciparum malaria, and a good safety profile. (WHO, 2010)

Comments

Contact person

Children aged 6-59 months who received vitamin A supplementation

Indicator ID	69
Indicator name	Children aged 6-59 months who received vitamin A supplementation
Name abbreviated	
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Supplementation with vitamin A is considered to be a critically important intervention for child survival owing to the strong evidence that exists for its impact on reducing child mortality. Therefore, measuring the proportion of children who have received vitamin A within the last 6 months is crucial for monitoring coverage of interventions towards the child survival-related Millennium Development Goals and Strategies.
Definition	Proportion of children aged 6–59 months who received a high-dose vitamin A supplement within the last 6 months. High dose vitamin A, according to the International Vitamin A Consultative Group (IVACG) definition, refers to "doses equal or greater than 25 000 IU".
Associated terms	
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles empirical data from nationally-representative household surveys. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	
Disaggregation	Age Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	These indicators are usually collected in DHS and MICS surveys; however the accuracy of reporting in household surveys varies and is likely to include recall bias. The comparability of results across countries and over time may therefore be affected. There are also significant discrepancies between data obtained through household surveys and those obtained from National Immunization Days and routine service statistics for this indicator, which are currently under investigation.
Links	The State of the World`s Children 2009 - UNICEF

Links	How many child deaths can we prevent this year? (Jones et al, 2003) Vitamin A deficiency. In: Comparative quantification of health risks: global and regional burden of disease attributable to selected major risk factors. (Rice et al, 2003) Demographic and Health Surveys Multiple Indicator Cluster Surveys
Comments	The framework for the discussion and review of child health indicators in the UNICEF/WHO Meeting on Child Survival Survey-based Indicators was the set of prevention and treatment interventions outlined in the Lancet series on child survival.
Contact person	

Civil registration coverage of births (%)

Indicator ID	83
Indicator name	Civil registration coverage of births (%)
Name abbreviated	Civil registration coverage of births (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	Complete coverage, accuracy and timeliness of civil registration are essential for quality vital statistics.
Definition	Estimated level of coverage of birth registration
Associated terms	Civil registration : The continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population as provided through decree or regulation in accordance with the legal requirements of a country. Civil registration system : Refers to all institutional, legal, technical settings needed to perform the civil registration functions in a technical, sound, coordinated, and standardized manner throughout the country, taking into account cultural and social circumstances particular to the country.
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	Estimates of coverage are taken from two sources: 1. United Nations demographic yearbook 2007 Only those with the code "C" (Civil registration, estimated over 90% complete) are reported in the World Health Statistics 2010. 2. UNICEF's State of the World's Children 2009 Estimates refer to the percentage of children less than five years old who were registered at the moment of the survey. The numerator of this indicator includes children whose birth certificate was seen by the interviewer or whose mother or caretaker says the birth has been registered. MICS data refer to children alive at the time of the survey.
M&E Framework	Input
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	The State of the World's Children (UNICEF) Demographic Yearbook
Comments	

Contact person

Civil registration coverage of deaths (%)

Indicator ID	84
Indicator name	Civil registration coverage of deaths (%)
Name abbreviated	Civil registration coverage of deaths (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	Estimated level of coverage of death registration
Associated terms	Civil registration : The continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population as provided through decree or regulation in accordance with the legal requirements of a country. Civil registration system : Refers to all institutional, legal, technical settings needed to perform the civil registration functions in a technical, sound, coordinated, and standardized manner throughout the country, taking into account cultural and social circumstances particular to the country.
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	WHO estimates coverage by dividing the total deaths reported for a country-year from the vital registration system by the total estimated deaths for that year for the national population.
M&E Framework	Input
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	WHO Mortality Database
Comments	
Contact person	

Contraceptive prevalence

Indicator ID	5
Indicator name	Contraceptive prevalence
Name abbreviated	Contraceptive prevalence
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Contraceptive prevalence rate is an indicator of health, population, development and women's empowerment. It also serves as a proxy measure of access to reproductive health services that are essential for meeting many of the Millennium Development Goals, especially those related to child mortality, maternal health, HIV/AIDS, and gender equality.
Definition	The 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.
Associated terms	Contraceptive methods : Include modern and traditional methods. Modern methods include female and male sterilization, oral hormonal pills, the intra-uterine device (IUD), the male condom, injectables, the implant (including Norplant), vaginal barrier methods, the female condom and emergency contraception. Traditional methods of contraception include the rhythm (periodic abstinence), withdrawal, lactational amenorrhea method (LAM) and folk methods.
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	Contraceptive prevalence = (Women of reproductive age (15-49) who are married or in union and who are currently using any method of contraception / Total number of women of reproductive age (15-49) who are married or in union) x 100 Household surveys that can generate this indicator includes Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS) and other surveys based on similar methodologies.
Method of estimation	The United Nations Population Division compiles data from nationally representative surveys including the Demographic and Health Surveys (DHS), the Fertility and Family Surveys (FFS), the CDC-assisted Reproductive Health Surveys (RHS), the Multiple Indicator Cluster Surveys (MICS) and national family planning, or health, or household, or socio-economic surveys. In general, all nationally representative surveys with comparable questions on current use of contraception are included. There is no attempt to provide estimates when country data are not available The results are published regularly in the World Contraceptive Use report. (http://unstats.un.org/unsd/mdg/Metadata.aspx , accessed on 7 April 2010) Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global estimates are based on weighted averages, using the total number of of women of reproductive age (15-49) who are married or in union. These estimates are presented only if available data cover at least 50% of total number of women of reproductive age (15-49) who are married or in union in the regional or global groupings.
Disaggregation	Age

Disaggregation	Location (urban/rural) Education level Wealth : Wealth quintile Marital status Method of contraception Boundaries : Administrative regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	
Limitations	Contraceptive prevalence is generally estimated from nationally representative sample survey data. Differences in the survey design and implementation, as well as differences in the way survey questionnaires are formulated and administered can affect the comparability of the data. The most common differences relate to the range of contraceptive methods included and the characteristics (age, sex, marital or union status) of the persons for whom contraceptive prevalence is estimated (base population). The time frame used to assess contraceptive prevalence can also vary. In most surveys there is no definition of what is meant by “currently using” a method of contraception. When data on contraceptive use among married or in-union women aged 15 to 49 are not available, information on contraceptive prevalence for the next most comparable group of persons is reported. Illustrations of base populations that are sometimes presented are: sexually active women (irrespective of marital status), ever-married women, or men and women who are married or in union. When information on current use is not available, data on use of contraceptive methods at last sexual intercourse or during the previous year are utilized. Footnotes are employed to indicate any differences between the data presented and the standard definition of contraceptive prevalence. In some surveys, the lack of probing questions, asked to ensure that the respondent understands the meaning of the different contraceptive methods, can result in an underestimation of contraceptive prevalence, in particular for non-traditional methods. Sampling variability can also be an issue, especially when contraceptive prevalence is measured for a specific subgroup (according to method, age-group, level of educational attainment, place of residence, etc) or when analyzing trends over time. (http://unstats.un.org/unsd/mdg/Metadata.aspx , accessed on 7 April 2010)
Links	World Contraceptive Use 2007 (United Nations, 2008) World Contraceptive Use 2009 (United Nations, 2009) Reproductive Health Indicators: Guidelines for their Generation, Interpretation and Analysis for Global Monitoring (WHO, 2006) The United Nations official site for the MDG indicators World Contraceptive Use 2010 (United Nations, 2011)
Comments	The indicator “unmet need for family planning” provides complementary information to contraceptive prevalence.
Contact person	

Deaths due to HIV/AIDS (per 100 000 population)

Indicator ID	86
Indicator name	Deaths due to HIV/AIDS (per 100 000 population)
Name abbreviated	Deaths due to HIV/AIDS (per 100 000 population)
Data Type Representation	Rate
Indicator group	Health status
Rationale	The HIV/AIDS mortality rates of adults and of children aged less than 15 years are leading indicators of the level of impact of the HIV/AIDS epidemic and of the impact of interventions, particularly the scaling-up of treatment and prevention of mother-to-child transmission in countries with generalized HIV epidemics.
Definition	The estimated number of adults and children that have died due to HIV/AIDS in a specific year, expressed per 100 000 population.
Associated terms	
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Surveillance systems Household surveys
Method of measurement	
Method of estimation	Empirical data from different HIV surveillance sources are consolidated to obtain estimates of the level and trend on HIV infection and of mortality in adults and children. Standard methods and tools for HIV estimates that are appropriate to the pattern of the HIV epidemic are used . However, to obtain the best possible estimates, judgement needs to be used as to the quality of the data and how representative it is of the population. UNAIDS and WHO produce country-specific estimates of mortality due to HIV/AIDS every two years. The most recent estimates are presented in the 2008 Report on the Global AIDS epidemics (UNAIDS, 2008). To calculate mortality rates, the total population are derived from the World Population Prospects: The 2006 Revision (UN Population Division, 2007). Predominant type of statistics: predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	
Disaggregation	Age Sex
Unit of Measure	Deaths per 100 000 population
Unit Multiplier	
Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	

Limitations	Although many countries have collected information on mortality in adults and children in recent years, underreporting is a feature of systems in many countries, partly owing to stigma and lack of diagnosis. It is crucial that civil registration systems (completeness of registration) and survey data-collection are of high quality. WHO does estimate the level of underestimation of civil registration systems and there clearly is substantial variation in data quality and consistency between countries.
Links	HIV/AIDS Data and Statistics (WHO) Improved data, methods and tools for the 2007 HIV and AIDS estimates and projections (Sex Transm Infect, August 2008, Volume 84, Issue Suppl 1) Report on the global AIDS epidemic
Comments	
Contact person	

Deaths due to malaria (per 100 000 population)

Indicator ID	16
Indicator name	Deaths due to malaria (per 100 000 population)
Name abbreviated	Deaths due to malaria (per 100 000 population)
Data Type Representation	Rate
Indicator group	Health status
Rationale	Information on malaria death rates can help to judge the success of program implementation, and may point to failures of programs in terms of prevention of malaria or access to effective treatment. Malaria is not only important in its own right but the disease can contribute to deaths arising from other conditions. In addition, malaria imposes an economic burden on families particularly those who are least able to pay for prevention and treatment and most affected by loss of income due to the disease. The disease also represents a financial burden to malaria-endemic countries that must use scarce resources to fund bednets, insecticides and drugs in an effort to control the disease.
Definition	The number of deaths due to malaria per 100 000 population per year.
Associated terms	Malaria : An infectious disease caused by the parasite Plasmodium and transmitted via the bites of infected mosquitoes. Symptoms of uncomplicated malaria usually appear between 10 and 15 days after the mosquito bite and include fever, chills, headache, muscular aching and vomiting. Malaria can be treated with artemisinin-based combination and other therapies. Malaria responds well if treated with an effective antimalarial medicine at an early stage. However, if not treated, the falciparum malaria may progress to severe case and death. Less than one person in a thousand may die from the disease. Symptoms of severe disease include: coma (cerebal malaria), metabolic acidosis, severe aneamia, hypoglycaemia (low blood sugar levels) and in adults, kidney failure or pulmonary oedmea (a build up of fluid in the lungs). By this stage 15-20% of people receiving treatment will die. If untreated, severe malaria is almost always fatal. The symptoms of malaria overlap with other diseases so one can not always be certain that a death is due to malaria particularly as many deaths occur in children who may simultaneously suffer from a range conditions including respiratory infections, diarhoea, and malnutrition. Effective interventions exist to reduce the incidence of malaria including the use of insecticide treated mosquito nets and indoor residual spraying with insecticide.
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Special studies
Method of measurement	

Method of estimation	The World Health Organization (WHO) is the agency responsible for these indicators at the international level. It compiles information supplied by the Ministries of Health, the agencies responsible for malaria surveillance in endemic countries. The procedures for adjusting data to allow international comparability are as follows. The number of malaria deaths is derived by one of two methods: (i) by multiplying the estimated number of P. falciparum malaria cases in a country by a fixed case-fatality rate. This method is used for all countries outside the African Region and for countries in the African Region where estimates of case incidence are derived from routine reporting systems and where malaria comprises less than 5% of all deaths in children under 5 as described in the Global Burden of Disease Incremental Revision for 2004 (GBD 2004). A case fatality rate of 0.45% is applied to the estimated number of P. falciparum cases for countries in the African Region and a case fatality rate of 0.3% for P. falciparum cases in other regions. (In situations where the fraction of all deaths due to malaria deaths is small, the use of a case fatality rate in conjunction with estimates of case incidence is considered to provide a better guide to the levels of malaria mortality than attempts to estimate the fraction of deaths due to malaria.) (ii) For countries in the African Region where malaria comprises 5% or more of all deaths in children under 5, the number of deaths are derived from an estimate of the number of people living at high, low or no risk of malaria. Malaria deaths rates for these populations are inferred from longitudinal studies of malaria deaths as recorded in the published literature. The malaria death rate is expressed as the number of deaths due to malaria per 100 000 population per year with the population of a country derived from projections made by the UN Population Division. The adjustment procedures as described above aim to take into account underreporting of cases in countries due to patients not using public sector facilities, or gaps in public sector reporting systems. For some countries, that do not undertake laboratory conformation of cases, the adjustments also aim to correct for over-diagnosis of malaria. Where data from surveillance systems are not available, or considered to be of insufficient quality, incidence is derived from estimated levels of malaria risk and will mostly be a different source from locally available estimates. Predominant type of statistics: predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of population for the reference year in each country as the weight.
Disaggregation	Age Location (urban/rural) Wealth : Wealth quintile
Unit of Measure	Deaths per 100 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Estimates of incidence and death rates are critically dependent on the information provided to WHO by NMCPs, and on the data available in published household surveys. The adjustment procedures aim to take into account underreporting of cases in countries due to patients not using public sector facilities, or gaps in public sector reporting systems. For some countries, that do not undertake laboratory confirmation of cases, the adjustments also aim to correct for over-diagnosis of malaria. Estimates of the number of malaria cases are particularly sensitive to the completeness of health facility reporting. If Ministries of Health keep accurate records of the number of surveillance reports received and expected from health facilities then adjustments can be made for missing reports. However, if this information is not rigorously recorded, and the stated reporting completeness differs from reality then the number of malaria cases will be misestimated. Where data from surveillance systems are not available, or considered to be of insufficient quality, incidence is derived from estimated levels of malaria risk. In such cases, uncertainty arises because: (i) the delimitation of only two risk categories (high and low) does not provide for a fine categorization of malaria risk (ii) the longitudinal studies used to determine typical incidence or death rates were not designed to be representative of the levels of endemicity they purport to describe, are small in number, and show a wide variation in measured case incidence, with few, if any, studies in urban areas and low-risk rural areas which required rates to be inferred; (iii) the adjustments made to take into account the effects of interventions on case incidence are based on a relatively small number of clinical trials.
Links	WHO/Roll Back Malaria website World Malaria Report 2008 The United Nations official site for the MDG indicators
Comments	
Contact person	

Density of community health workers (per 10 000 population)

Indicator ID	85
Indicator name	Density of community health workers (per 10 000 population)
Name abbreviated	Density of community health workers
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low density of health personnel usually suggests inadequate capacity to meet minimum coverage of essential services. In particular, many countries, especially ones with shortages and maldistribution of highly skilled medical and nursing professionals, rely on community health workers – community health aides selected, trained and working in the communities from which they come – to render certain basic health services.
Definition	Number of community health workers per 10 000 population.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of community health workers (including community health officers, community health-education workers, community health aides, family health workers and associated occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting 'community health worker' as their current occupation (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, staffing records, payroll records, training records, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database.

M&E Framework	Output
Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons per 10 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health occupations, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. The roles and activities of community health workers are enormously diverse throughout their history, within and across countries and across programmes. While much effort has been made to harmonize the data to enhance comparability, the diversity of health worker roles and information sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector (for-profit or not-for-profit), double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks (e.g. volunteer community health workers), or people with training in services provision working outside the health care sector (e.g. at a teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 – working together for health (WHO, 2006) Community health workers: what do we know about them? (WHO, 2007)
Comments	
Contact person	

Density of dentistry personnel (per 10 000 population)

Indicator ID	87
Indicator name	Density of dentistry personnel (per 10 000 population)
Name abbreviated	Density of dentistry personnel
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low density of health personnel usually suggests inadequate capacity to meet minimum coverage of essential services.
Definition	Number of dentistry personnel per 10 000 population.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of dentistry personnel (including dentists, dental assistants, dental therapists and related occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in dentistry (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database.
M&E Framework	Output

Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons per 10 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with education in dental studies working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 – working together for health (WHO, 2006)
Comments	
Contact person	Human Resouces for Health - Statistics (hrhstatistics@who.int)

Density of environment and public health workers (per 10 000 population)

Indicator ID	322
Indicator name	Density of environment and public health workers (per 10 000 population)
Name abbreviated	Density of environment and public health workers
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low density of health personnel usually suggests inadequate capacity to meet minimum coverage of essential services.
Definition	Number of environment and public health workers per 10 000 population.
Associated terms	
Preferred data sources	Administrative reporting system Population census Household surveys
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of environment and public health workers (including environmental and public health officers, environmental and public health technicians, sanitarians, hygienists and related occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in dentistry (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database
M&E Framework	Output
Method of estimation of global and regional aggregates	
Disaggregation	Age

Disaggregation	Location (urban/rural) Main work activity Occupational specialization Provider type (public/private)
Unit of Measure	Persons per 10 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with education in dental studies working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Density of nursing and midwifery personnel (per 10 000 population)

Indicator ID	105
Indicator name	Density of nursing and midwifery personnel (per 10 000 population)
Name abbreviated	Density of nursing and midwifery personnel
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Methodologically, there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population. It has been estimated however, in the World Health Report 2006, that countries with fewer than 23 physicians, nurses and midwives per 10 000 population generally fail to achieve adequate coverage rates for selected primary health care interventions as prioritized by the Millennium Development Goals framework.
Definition	Number of nursing and midwifery personnel per 10 000 population.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of nursing and midwifery personnel (including professional nurses, professional midwives, auxiliary nurses, auxiliary midwives, enrolled nurses, enrolled midwives and related occupations such as dental nurses and primary care nurses) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in nursing or midwifery (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database.

M&E Framework	Output
Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons per 10 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with training in nursing and midwifery working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 – working together for health (WHO, 2006)
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Density of pharmaceutical personnel (per 10 000 population)

Indicator ID	320
Indicator name	Density of pharmaceutical personnel (per 10 000 population)
Name abbreviated	Density of pharmaceutical personnel
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low density of health personnel usually suggests inadequate capacity to meet minimum coverage of essential services.
Definition	Number of pharmaceutical personnel per 10 000 population
Associated terms	
Preferred data sources	Administrative reporting system Population census Household surveys
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of pharmaceutical personnel (including pharmacists, pharmaceutical assistants, pharmaceutical technicians and related occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in dentistry (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database
M&E Framework	Output
Method of estimation of global and regional aggregates	

Disaggregation	Age Location (urban/rural) Main work activity Occupational specialization Provider type (public/private)
Unit of Measure	Persons per 10 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with education in dental studies working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Density of physicians (per 10 000 population)

Indicator ID	112
Indicator name	Density of physicians (per 10 000 population)
Name abbreviated	Density of physicians
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Methodologically, there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population. It has been estimated however, in the World Health Report 2006, that countries with fewer than 23 physicians, nurses and midwives per 10 000 population generally fail to achieve adequate coverage rates for selected primary health care interventions as prioritized by the Millennium Development Goals framework.
Definition	Number of medical doctors (physicians), including generalist and specialist medical practitioners, per 10 000 population.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for density of physicians depends on the nature of the original data source. Estimating the number of physicians using population census data is a count of the number of people reporting 'physician' as their current occupation (as classified according to the tasks and duties of their job). A similar method is used for counting physicians from labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. In general, the denominator data for physicians density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database.
M&E Framework	Output

Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons per 10 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers used here is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. The WHO framework draws on the latest revisions to the internationally standardized classification systems of the International Labour Organization (International Standard Classification of Occupations), the United Nations Educational, Scientific and Cultural Organization (International Standard Classification of Education) and the United Nations Statistics Division (International Standard Industrial Classification of All Economic Activities). While much effort has been made to harmonize the data to enhance cross-national comparability, the diversity of sources means that considerable variability remains across countries in the coverage, quality and reference year of the original data. In particular, for some countries the available information from official sources does not make it clear whether both the public and private sectors are included. Data derived from population censuses, and on physicians and nursing and midwifery personnel, are generally the most complete and comparable information on human resources in health systems; data on health management and support workers tend to be the least complete. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, health service providers working outside the health care sector (e.g. nurses working in a school or large private company), workers who are unpaid or unregulated but performing health care tasks (e.g. volunteer community health workers) or people with health vocational training who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 - working together for health (WHO, 2006)
Comments	
Contact person	

Density of radiotherapy units (per 1 000 000 population)

Indicator ID	2441
Indicator name	Density of radiotherapy units (per 1 000 000 population)
Name abbreviated	Density of radiotherapy units
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	In 2010, WHO launched a Baseline country survey on medical devices that allowed to identify the status of high cost medical devices in the Member States, including radiotherapy equipment, both linear accelerators and Cobalt-60. Cancer is a leading cause of death worldwide, killing nearly eight million people a year. Yet about one-third of these lives could be saved if cancer is detected and treated early. Three-quarters of cancer deaths occur in developing countries where the resources needed to prevent, diagnose and treat cancer are severely limited or nonexistent. Consequently, it is important to know the gaps in availability in order to find programmes to improve accesibility. As a result, WHO and the International Atomic Energy Agency (IAEA) have created a Joint Programme on Cancer Control focusing on the needs of radiotherapy equipments in developing countries.
Definition	Number of radiotherapy units, including Linear Accelerators and Cobalt-60 from the public and private sectors, per 1 000 000 population.
Associated terms	
Preferred data sources	Administrative reporting system
Other possible data sources	
Method of measurement	Count of medical devices available in the country, divided by the number of population.
Method of estimation	Information collected directly from ministries of health through the baseline country survey on medical devices 2010, conducted by HQ/HSS/EHT/DIM. In case of non-response, Directory of Radiotherapy Centres (DIRAC) International Atomic Energy Agency data was used The population data was obtained from the United Nations Statistics Division. Predominant type of statistcis: Unadjusted.
M&E Framework	Input
Method of estimation of global and regional aggregates	
Disaggregation	Provider type (public/private) Location (urban/rural) Boundaries : Administrative regions
Unit of Measure	Unit per 1,000,000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Periodic
Limitations	Information from IAEA was used for the countries that reported data not available or did not respond to the "Baseline country survey on medical devices 2010". When the data from both sources was not identical, WHO's information was taken into further consideration. These variations might be due to a non-registration of some radiotherapy facilities with IAEA , old and non-functional equipment and/or equipment in installion process therefore not registered yet.

Links	Medical devices (on WHO website)
	Improving cancer control in developing countries (WHO media center)
Comments	
Contact person	Ms Adriana Velazquez Berumen (velazquezberumena@who.int)

Diphtheria tetanus toxoid and pertussis (DTP3) immunization coverage among 1-year-olds (%)

Indicator ID	88
Indicator name	Diphtheria tetanus toxoid and pertussis (DTP3) immunization coverage among 1-year-olds (%)
Name abbreviated	Diphtheria tetanus toxoid and pertussis (DTP3) immunization coverage among 1-year-olds (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Immunization is an essential component for reducing under-five mortality. Immunization coverage estimates are used to monitor coverage of immunization services and to guide disease eradication and elimination efforts. It is a good indicator of health system performance.
Definition	The percentage of one-year-olds who have received three doses of the combined diphtheria, tetanus toxoid and pertussis vaccine in a given year.
Associated terms	Diphtheria : A disease caused by the bacterium Corynebacterium diphtheriae. This germ produces a toxin that can harm or destroy human body tissues and organs. One type of diphtheria affects the throat and sometimes the tonsils. Another type, more common in the tropics, causes ulcers on the skin. Pertussis : A disease of the respiratory tract caused by bacteria that live in the mouth, nose, and throat. Also known as whooping cough. Many children who contract pertussis have coughing spells that last four to eight weeks. The disease is most dangerous in infants. Tetanus : A disease that is acquired when the spores of the bacterium Clostridium Tetani infect a wound or the umbilical stump. Spores are universally present in the soil. People of all ages can get tetanus but the disease is particularly common and serious in newborn babies ("neonatal tetanus"). It requires treatment in a medical facility, often in a referral hospital. Neonatal tetanus, which is mostly fatal, is particularly common in rural areas where deliveries are at home without adequate sterile procedures.
Preferred data sources	Facility reporting system Household surveys
Other possible data sources	
Method of measurement	Service/facility reporting system ("administrative data"): Reports of vaccinations performed by service providers (e.g. district health centres, vaccination teams, physicians) are used for estimates based on service/facility records. The estimate of immunization coverage is derived by dividing the total number of vaccinations given by the number of children in the target population, often based on census projections. Household surveys: Survey items correspond to children's history in coverage surveys. The principle types of surveys are the Expanded Programme on Immunization (EPI) 30-cluster survey, the UNICEF Multiple Indicator Cluster Survey (MICS), and the Demographic and Health Survey (DHS). The indicator is estimated as the percentage of children ages 12–23 months who received three doses of the combined diphtheria, tetanus toxoid and pertussis vaccine time before the survey.

Method of estimation	Distinction is made between situations where data reported by national authorities accurately reflect immunization system performance and those where the data are likely compromised and may present a misleading view of immunization coverage. While there are frequently general trends in immunization coverage levels, no attempt is made to fit data points using smoothing techniques or time series methods. The estimates are informed and constrained by the following heuristics: Country–specific: Each country's data are reviewed individually; data and information are not "borrowed" from other countries. If national data are available from a single source, the estimates are based solely on that source, supplemented with linear interpolation to impute values for years where data are not available. If no data are available for the most recent estimation period, the estimate remains the same as the previous year's. If new data or information subsequently become available, the relevant portion of the time series is updated. Consistent trends and patterns: If survey data tend to confirm (e.g., within +/- 10% points) reported data, the estimates are based on reported data. If multiple survey points show a fairly consistent relationship with the trend in reported data and the survey data are significantly different from reported data, the estimates are based on reported data calibrated to the level established by the survey data. If survey data are inconsistent with reported data and the survey data appear more reliable, coverage estimates are based on survey data and interpolation between survey data points for intervening years. If multiple data points are available for a given country, vaccine/dose, and year data points are not averaged; rather potential biases in each of the sources are considered and an attempt to construct a consistent pattern over time, choosing data with the least potential for bias consistent with temporal trends and comparisons between vaccines is made. If coverage patterns are inconsistent between vaccines and dose number, an attempt to identify and adjust for possible biases is made. If inconsistent patters are explained by programmatic (e.g., vaccine shortage) or contextual events (e.g., "international incidences") the estimates reflect the impact of these events. When faced with situations where several estimates are possible, alternative explanations that appear to cover the observed data are constructed and treated as competing hypotheses., local information is considered, potential biases in the data identified and the more likely hypothesis identified. Recall bias adjustment: In instances where estimates are based primarily on survey data and the proportion of vaccinations based on maternal recall is high, survey coverage levels are adjusted to compensate for maternal recall for multi -dose antigens (i.e., DTP, POL, HepB and Hib) by applying the dropout between the first and third doses observed in the documented data to the vaccination history reported by the child's caretaker. No coverage greater than 100%: Coverage levels in excess of 100% are occasionally reported. While such coverage levels are theoretically possible, they are more likely to be the results of systematic error in the ascertainment of the numerator or the denominator, a mid-year change in target age-groups, or inclusion of children outside the target age group in the numerator. The highest estimate of coverage is 99%. Local knowledge incorporated: By consulting local experts an attempt to put the data in a context of local events - those occurring in the immunization system (e.g. vaccine shortage for parts of the year, donor withdrawal, change in management or policies, etc.) as well as more widely-occurring events (e.g. international incidences, civil unrest, etc.) is made. Information on such events is used to support (or challenge) sudden changes in coverage levels. Description and dissemination of results: For each country, year and vaccine/dose the WHO and UNICEF estimates are presented in both graphic and tabular forms along with the data upon which they are based. The estimates are "thickened",, by providing a description of the assumptions and decisions made in developing the specific estimates. Predominant type of statistics: unadjusted and adjusted

M&E Framework	Outcome
Method of estimation of global and regional aggregates	Global and regional coverage is a weighted sum of WHO/UNICEF estimates of national coverage by target population from the United Nations Population Division's World Population Prospects. The size of the target population is the national annual number of infants surviving their first year of life.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	One of the perceived weaknesses of the estimates is related to the subjective nature of our methods. Subjectivity arises primarily in 1) the choice of rules, and 2) the decision as to which rule should apply in a given circumstance. We have no theoretical foundation for our selection of rules and no validation of their reliability; the choices have been based on appeals to rationality, consistency and the lack of alternatives that produce more reasonable estimates. We are currently formalizing the rules to provide more explicit, consistent and replicable grounds for our estimates. A serious limitation of the current estimates is the absence of any articulation of uncertainty; as presented, the estimates appear equally precise and certain. The uncertainty in the estimates is rooted in the accuracy and precision of the empirical data (described above) and in the choice and application of the heuristics (model-based uncertainty). We are currently exploring methods to determine the likely error in empirical data and the additional uncertainty introduced by our methods.
Links	WHO and UNICEF estimates of national immunization coverage WHO vaccine-preventable diseases: monitoring system. 2009 Global summary (WHO, 2009) Immunization Summary: A statistical reference containing data through 2008 (WHO-UNICEF, 2010)
Comments	The quality of the estimates are determined by the quality and availability of empirical data. Vaccination is relatively easy to measure and two methods - facility reports and surveys - have been developed, each of which, when properly designed and implemented, provides accurate and reliable direct measures of coverage levels. Implemented jointly , they provide a validation of coverage levels. However, both methods are subject to biases. In some instances, these biases may be identified and corrected and we have attempted to do so. These data are supplemented with local consultations that often explain inconsistencies and anomalies in the data and provide insight into forces that influence coverage levels. WHO and UNICEF are working closely with countries to improve the quality and usefulness of coverage monitoring data systems.
Contact person	

Distribution of causes of death among children aged <5 years (%)

Indicator ID	89
Indicator name	Distribution of causes of death among children aged <5 years (%)
Name abbreviated	Distribution of causes of death among children aged <5 years (%)
Data Type Representation	Percent
Indicator group	Health status
Rationale	The target of Millennium Development Goal 4 is to “Reduce by two thirds, from 1990 to 2015, the under-five mortality rate”. Efforts to improve child survival can be effective only if they are based on reasonably accurate information about the causes of childhood deaths. Cause-of-death information is needed to prioritize interventions and plan for their delivery, to determine the effectiveness of disease-specific interventions, and to assess trends in disease burden in relation to national and international goals.
Definition	Distribution of main causes of death among children aged < 5 years, expressed as percentage of total deaths. The causes of death refers to the concept of the 'underlying cause of death' as defined by ICD-10 (WHO, 1992).
Associated terms	Underlying cause of death : a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury (ICD-10)
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Special studies
Method of measurement	Data from civil registration with complete coverage (80% or over) and medical certification of cause of death, or nationally representative epidemiological studies of causes of child death (special studies analysing causes of death based on verbal autopsy studies or other sources for countries without civil registration data). Predominant type of statistics: predicted and adjusted.
Method of estimation	WHO regularly receives mortality-by-cause data from Member States, as recorded in national civil registration systems. These statistics are analysed to obtain the distribution of child deaths by cause in countries where those systems are judged to be sound (on the basis of reliable diagnostic procedures and standard application of cause coding that follows ICD rules as applied to death certificates) and have coverage rates of 80% or above. For countries with an incomplete or no vital registration system, epidemiological studies and statistical modelling are used extensively. Cause-of-death data from civil registration systems are evaluated for their completeness. Complete and nationally-representative data were then grouped by ICD codes into the cause categories, and the proportions of these causes with regard to the total number of deaths of children aged less than 5 years were then computed. For countries with incomplete data or no data, the distribution of deaths by cause was estimated in two steps. In the first step, a statistical model was used to assign deaths to one of three broad categories of causes: communicable diseases; noncommunicable diseases; or injuries and external causes. In a second step, cause-specific under-five mortality estimates from the Child Health Epidemiology Reference Group (CHERG), WHO technical programmes, and UNAIDS were taken into account in assigning the distribution of deaths to specific causes. A variety of methods, including proportional mortality and natural history models, were used by CHERG and WHO to develop country-level cause-specific mortality estimates. All CHERG working groups developed comparable and standardized procedures to generate estimates from the databases.

M&E Framework	Impact
Method of estimation of global and regional aggregates	Aggregation of estimates for WHO Member States
Disaggregation	Age
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	
Links	WHO Mortality Database The Global Burden of Disease: 2004 update (WHO, 2008) Black et al. Global, regional, and national causes of child mortality in 2008: a systematic analysis. Lancet (available online 11 May 2010) Child mortality by cause methodology Causes of death 2008: data sources and methods
Comments	A better understanding of the indirect contributions of diseases to child deaths is needed in order to assess disease control priorities and evaluate interventions.
Contact person	

Distribution of years of life lost by broader causes (%)

Indicator ID	90
Indicator name	Distribution of years of life lost by broader causes (%)
Name abbreviated	Distribution of years of life lost by broader causes (%)
Data Type Representation	Percent
Indicator group	Health status
Rationale	Years of life lost (YLLs) take into account the age at which deaths occur by giving greater weight to deaths occurring at younger ages and lower weight to deaths occurring at older ages. The YLLs (percentage of total) indicator measures the YLLs due to a particular cause of death as a proportion of the total YLLs lost due to premature mortality in the population.
Definition	Distribution of years of life lost by broader causes, expressed as percentage of total of years of life lost.
Associated terms	Years of Life Lost (YLL) : The number of years of life lost when a person dies prematurely. It is a measure of premature mortality that takes into account both the frequency of deaths and the age at which death occurs, and is an important input of the DALYs for a disease or health condition. YLLs are calculated from the number of deaths at each age multiplied by a global standard life expectancy for the age at which death occurs. (The Global Burden of Disease: 2004 Update, WHO, 2008) Disability-adjusted life years (DALY) : A health-gap measure that extends the concept of potential years of life lost due to premature death to include equivalent years of 'healthy' life lost by virtue of being in states of poor health or disability (Global burden of disease and risk factors, Lopez et al., 2006). DALYs for a disease or health condition are calculated as the sum of the YLLs because of premature mortality in the population and the years lived with a disability (YLDs) for incident cases of the health condition.
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Civil registration with complete coverage Household surveys Population census Sample or sentinel registration systems Special studies Surveillance systems
Method of measurement	Data from civil registration and medical certification of cause of death, sample registration with verbal autopsy, nationally representative mortality surveys, national burden of disease studies.

Method of estimation	Life tables specifying all-cause mortality rates by age and sex for WHO Member States are developed from available death registration data, sample registration systems (India, China) and data on child and adult mortality from censuses and surveys. Cause-of-death distributions are estimated from death registration data, together with data from population-based epidemiological studies, disease registers and notifications systems for selected specific causes of death. Causes of death for populations without useable death-registration data are estimated using cause-of-death models together with data from population-based epidemiological studies, disease registers and notifications systems for 21 specific causes of death. Years of Life Lost (YLLs) are calculated from the number of deaths multiplied by a standard life expectancy at the age at which death occurs. The standard life expectancy used for YLLs at each age is the same for deaths in all regions of the world and is the same as that used for the calculation of disability-adjusted life years (DALYs). Additionally, 3% time discounting and non-uniform age weights that give less weight to years lived at young and older ages were used, as for the DALY. With non-uniform age weights and 3% discounting, a death in infancy corresponds to 33 YLLs, and deaths at age 5 to 20 years to around 36 YLLs. Predominant type of statistics: predicted and adjusted.
M&E Framework	Impact
Method of estimation of global and regional aggregates	Aggregation of estimates for WHO Member States
Disaggregation	Age Sex
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Every 5 years
Expected frequency of data collection	Continuous
Limitations	Uncertainty in the percentage of estimated all-cause YLL ranges from around ±1% for high-income countries to ±15–20% for sub-Saharan Africa, reflecting large differences in the availability of data on mortality, particularly for adult mortality. Uncertainty ranges are generally larger for estimates of deaths from specific diseases. For example, the relative uncertainty for deaths from ischaemic heart disease ranges from around ±12% for high-income countries to ±25–35% for sub-Saharan Africa. The relatively large uncertainty for high-income countries reflects a combination of uncertainty in overall mortality levels, in cause-of-death assignment, and in the attribution of deaths coded to ill-defined causes.
Links	Global Burden of Disease (WHO website) Global burden of disease and risk factors (Lopez et al, 2006) Global Burden of Disease (GBD): 2002 estimates (WHO) The Global Burden of Disease: 2004 update (WHO, 2008) Mortality and Burden of Disease Estimates for WHO Member States in 2004 (WHO, 2009)
Comments	
Contact person	

Estimated deaths due to tuberculosis, excluding HIV (per 100 000 population)

Indicator ID	17
Indicator name	Estimated deaths due to tuberculosis, excluding HIV (per 100 000 population)
Name abbreviated	TB mortality rate (excluding HIV)
Data Type Representation	Rate
Indicator group	Mortality Health status
Rationale	Incidence, prevalence and mortality are the three main indicators used to assess the burden of disease caused by TB. Of the three, mortality is the only indicator that can be directly measured in all countries (provided vital registration systems are in place). Target 6.c of the Millenium development Goals is to "have halted by 2015 and begun to reverse the incidence of malaria and other major diseases". Indicator 6.9 is defined as "incidence, prevalence and death rates associated with TB". The Stop TB Partnership has set a target of halving the 1990 TB mortality rate by 2015. .
Definition	The estimated number of deaths attributable to tuberculosis (TB) in a given year, expressed as the rate per 100 000 population. Published values are rounded to three significant figures. Uncertainty bounds are provided in addition to best estimates. See Annex 1 of WHO's 2010 report on global TB control.
Associated terms	All forms (of tuberculosis) : Pulmonary (smear-positive and smear-negative) and extrapulmonary TB. Human Immunodeficiency Virus (HIV) : A virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body’s ability to fight off infection and disease, which can ultimately lead to death. Tuberculosis (TB) : An infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. TB is treatable with a six-month course of antibiotics.
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Special studies Sample or sentinel registration systems Specific population surveys
Method of measurement	Vital registration data are used where available. Elsewhere, estimates of mortality are derived from estimates of incidence and the case fatality rate. Estimates of TB mortality are produced through a consultative and analytical process led by WHO and are published annually. See "Method of Estimation".
Method of estimation	Estimates of TB mortality are produced through a consultative and analytical process led by WHO and are published annually. Uncertainty bounds are provided in addition to best estimates. Published values are rounded to three significant figures.

M&E Framework	Impact
Method of estimation of global and regional aggregates	Estimates are also produced at global level, for WHO regions and for World Bank Income Groups. For methodology, see Annex 1 of WHO's 2010 report on global TB control.
Disaggregation	
Unit of Measure	Deaths per 100 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Mortality due to TB can only be measured directly when there is a good death registration system, with accurate coding of cause-of-death. The number of patients dying while receiving treatment for TB (as reported in routine follow-up of cohorts of TB patients) is not an indication of mortality due to TB, as it includes deaths from causes other than TB, and excludes deaths from TB among people not on treatment. Mortality surveys and demographic surveillance systems using verbal autopsy to determine cause of death are potential sources of improved estimates of mortality due to TB.
Links	The United Nations' official site for the MDG indicators The Stop TB Strategy: building on and enhancing DOTS to meet the TB-related Millennium Development Goals (WHO, 2006) WHO TB data Global tuberculosis control report The Global Plan to Stop TB 2011 - 2015 WHO Global Task Force on TB Impact Measurement Policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control The measurement and estimation of tuberculosis mortality (Korenromp et al. 2009)
Comments	
Contact person	TB data enquiries (tbdata@who.int)

Estimated incidence of tuberculosis (per 100 000 population)

Indicator ID	20
Indicator name	Estimated incidence of tuberculosis (per 100 000 population)
Name abbreviated	TB incidence rate
Data Type Representation	Rate
Indicator group	Health status
Rationale	Incidence (cases arising in a given time period, usually one year) gives an indication of the burden of TB in a population, and of the size of the task faced by a national TB control programme. Incidence can change as the result of changes in transmission (the rate at which people become infected with Mycobacterium tuberculosis), or changes in the rate at which people infected with Mycobacterium tuberculosis develop TB disease (e.g. as a result of changes in nutritional status or of HIV infection). Because TB can develop in people who became infected many years previously, the effect of TB control on incidence is less rapid than the effect on prevalence or mortality. Target 6.c of the Millenium development Goals is to "have halted by 2015 and begun to reverse the incidence of malaria and other major diseases". Indicator 6.9 is defined as "incidence, prevalence and death rates associated with TB".
Definition	The 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. Published values are rounded to three significant figures. Uncertainty bounds are provided in addition to best estimates. See Annex 1 of WHO's 2010 report on global TB control.
Associated terms	All forms (of tuberculosis) : Pulmonary (smear-positive and smear-negative) and extrapulmonary TB. Human Immunodeficiency Virus (HIV) : A virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body’s ability to fight off infection and disease, which can ultimately lead to death. Tuberculosis (TB) : An infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. TB is treatable with a six-month course of antibiotics.
Preferred data sources	Surveillance systems
Other possible data sources	Specific population surveys
Method of measurement	

Method of estimation	Estimates of TB incidence are produced through a consultative and analytical process led by WHO and are published annually. These estimates are based on annual case notifications, assessments of the quality and coverage of TB notification data, national surveys of the prevalence of TB disease and on information from death (vital) registration systems. Estimates of incidence for each country are derived using one or more of the following approaches, depending on the available data: 1. incidence = case notifications / estimated proportion of cases detected 2. incidence = prevalence / duration of condition 3. incidence = deaths / proportion of incident cases that die Uncertainty bounds are provided in addition to best estimates. Details are available from "Policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control" and Annex 1 of WHO's 2010 report on global TB control.
M&E Framework	Impact
Method of estimation of global and regional aggregates	Estimates are also produced at global level, for WHO regions and for World Bank Income Groups. For methodology, see Annex 1 of WHO's 2010 report on global TB control.
Disaggregation	HIV status
Unit of Measure	Cases per 100 000 population per year
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	
Links	The United Nations' official site for the MDG indicators The Stop TB Strategy: building on and enhancing DOTS to meet the TB-related Millennium Development Goals (WHO, 2006) WHO TB data The Global Plan to Stop TB 2011 - 2015 Policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control WHO Global Task Force on TB Impact Measurement
Comments	Routine surveillance data provide a good basis for estimates of incidence in countries where the majority of incident cases are treated and notified to WHO. Where the proportion of cases notified is consistent over time (even if it is low), trends in incidence can be judged from trends in notified cases. Where TB control efforts change over time it is difficult to differentiate between changes in incidence and changes in the proportion of cases notified. A national surveillance system is an integral part of good TB control, and one of the components of DOTS, which forms the core of the Stop TB Strategy. As surveillance improves in countries implementing the strategy, so will estimates of the incidence of TB.
Contact person	TB data enquiries ()

Estimated prevalence of tuberculosis (per 100 000 population)

Indicator ID	23
Indicator name	Estimated prevalence of tuberculosis (per 100 000 population)
Name abbreviated	TB prevalence rate
Data Type Representation	Rate
Indicator group	Health status
Rationale	Incidence, prevalence and mortality are the three main indicators used to assess the burden of disease caused by TB. Target 6.c of the Millenium development Goals is to "have halted by 2015 and begun to reverse the incidence of malaria and other major diseases". Indicator 6.9 is defined as "incidence, prevalence and death rates associated with TB". The Stop TB Partnership has set a target of halving the 1990 TB prevalence and mortality rates by 2015.
Definition	The 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. Published values are rounded to three significant figures. Uncertainty bounds are provided in addition to best estimates. See Annex 1 of WHO's 2010 report on global TB control.
Associated terms	All forms (of tuberculosis) : Pulmonary (smear-positive and smear-negative) and extrapulmonary TB. Human Immunodeficiency Virus (HIV) : A virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death. Tuberculosis (TB) : An infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. TB is treatable with a six-month course of antibiotics.
Preferred data sources	Specific population surveys
Other possible data sources	Special studies
Method of measurement	Prevalence can be estimated in national population-based surveys. Where survey data are not available, estimates of prevalence are derived from estimates of incidence and the duration of disaease.

Method of estimation	Estimates of TB prevalence are based on a consultative and analytical process led by WHO and are published annually. Uncertainty bounds are provided in addition to best estimates. Where available, TB prevalence surveys are used to estimate prevalence. In most instances, survey data are not available, and country-specific estimates of prevalence are derived from estimates of incidence (for additional details, please refer to the TB incidence indicator metadata), combined with assumptions about the duration of disease. The prevalence of TB is calculated from the product of incidence and duration of disease: Prevalence = incidence x duration of the condition. The duration of disease is very difficult to measure directly. It is assumed to vary according to whether the individual receives treatment in a DOTS programme or not; and whether the individual is infected with HIV. Further, durations are assumed to follow distributions with a large variance to account for differences between countries. Further details are available from Tuberculosis prevalence surveys handbook (2nd edition), Policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control and from Annex 1 of WHO's 2010 report on global TB control.
M&E Framework	Impact
Method of estimation of global and regional aggregates	Estimates are also produced at global level, for WHO regions and for World Bank Income Groups. For methodology, see Annex 1 of WHO's 2010 report on global TB control.
Disaggregation	Forms of disease HIV status
Unit of Measure	Cases per 100 000 population
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	
Links	The United Nations' official site for the MDG indicators The Stop TB Strategy: building on and enhancing DOTS to meet the TB-related Millennium Development Goals (WHO, 2006) WHO TB data Global tuberculosis control report The Global Plan to Stop TB 2011 - 2015 Policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control WHO Global Task Force on TB Impact Measurement Tuberculosis prevalence surveys handbook (2nd edition)
Comments	Prevalence of disease surveys are costly and logistically complex, but they do provide a direct measure of bacteriologically confirmed, prevalent TB disease, and can serve as a platform for other investigations, e.g., the interactions between patients and the health system. Surveys are particularly useful where routine surveillance data are poor.
Contact person	TB data enquiries (tbdata@who.int)

Exclusive breastfeeding under 6 months (%)

Indicator ID	130
Indicator name	Exclusive breastfeeding under 6 months (%)
Name abbreviated	Exclusive breastfeeding under 6 months
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	This indicator belong to a set of indicators whose purpose is to measure infant and young child feeding practices, policies and programmes. Infant and young child feeding practices directly affect the nutritional status and survival of children. Exclusive breastfeeding is the single most effective intervention to improve the survival of children. Improving infant and young child feeding practices is therefore critical to improved nutrition, health and development of children.
Definition	Proportion of infants 0–5 months of age who are fed exclusively with breast milk.
Associated terms	Children ever breastfed : Proportion of children born in the last 24 months who were ever breastfed. Continued breastfeeding at 1 year : Proportion of children 12–15 months of age who are fed breast milk. Continued breastfeeding at 2 years : Proportion of children 20–23 months of age who are fed breast milk. Duration of breastfeeding : Median duration of breastfeeding among children less than 36 months of age. Early initiation of breastfeeding : Proportion of children born in the last 5 years, 3 years or 24 months who were put to the breast within one hour of birth. Exclusive breastfeeding under 6 months : An infant feeding practice whereby the infant receives breast milk (including expressed breast milk or breast milk from a wet nurse) and allows the infant to receive ORS, drops, syrups (vitamins, minerals, medicines), but nothing else.
Preferred data sources	Household surveys Specific population surveys Surveillance systems
Other possible data sources	
Method of measurement	Percentage of infants 0–5 months of age who are fed exclusively with breast milk = (Infants 0–5 months of age who received only breast milk during the previous day/Infants 0–5 months of age) x 100 . Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) include questions on liquids and foods given the previous day, and number of milk feeds the previous day, to learn if the child is being exclusively breastfed.
Method of estimation	WHO maintains the WHO Global Data Bank on Infant and Young Child Feeding, which pools information mainly from national and regional surveys, and studies dealing specifically with the prevalence and duration of breastfeeding and complementary feeding. The process includes data checking and validation. Predominant type of statistics: adjusted.
M&E Framework	Outcome
Method of estimation of global and regional aggregates	
Disaggregation	Sex

Disaggregation	Location (urban/rural) Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Continuous
Expected frequency of data collection	Every 3-5 years
Limitations	Various countries are still collecting information on under-four months old, hence affecting the results and comparability. Many developed countries do not collect this information regularly.
Links	The WHO Global Data Bank on Infant and Young Child Feeding Indicators for assessing infant and young child feeding practices, Part I: Definitions (WHO, UNICEF, USAID, AED, UCDAVIS, IFPRI, 2008)
Comments	
Contact person	

External resources for health as a percentage of total expenditure on health

Indicator ID	91
Indicator name	External resources for health as a percentage of total expenditure on health
Name abbreviated	ExtHE as % of THE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. Most indicators presented in NHA involve a measurement at the level of purchaser/payer of health services. This is, however, an indicator which refers to the origin of the resources used to purchase health services. It is the only information about the sources of funds provided in these tables. The other indicators - GGHE, PvtHE etc. - are financing agents, the entities where the use of the funds are controlled. Some of these external sources will be channeled through the government's budget, some through insurance agencies, some through the private or NGO sectors. As such, these funds cannot simply be added to those reported in the earlier breakdowns. In the special case where external agencies act as domestic NGOs in providing or purchasing health care in a recipient country, they would be included as financing agents as well as a source. We provide here only the source level measurement. The analysis of financing sources contributes to identify the distribution of the financing burden of health services. This indicator contributes to assess sustainability of financing.
Definition	External resources for health expressed as a percentage of total expenditure on health.
Associated terms	Rest of the world funds / External resources for health : The sum of resources channeled towards health by all non-resident institutional units that enter into transactions with resident units or have other economic links with resident units, explicitly labeled for health or not, to be used as mean of payments of health goods and services or as investment in capital goods by financing agents in the government or private sectors. They include donations and loans, in cash and in-kind resources.. Total expenditure on health (THE) : The sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of General Government Expenditure on Health and Private Expenditure on Health.
Preferred data sources	National Health Accounts
Other possible data sources	Administrative reporting system

Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. This indicator traces the financing flows from external sources who provide the funds to public and private financing agents. It includes in kind and in cash resources provided as loans and grants. NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. These resources are accounted for in the same period and amount when they are used by the financing agent. Loans are treated to be accounted only once. External funds are valued at recipients' market value Monetary and non monetary transactions are accounted for at purchasers value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).
Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The preferred data sources are NHA reports, OECD-DAC, reports by International funding agencies such as Global Fund. Other possible data sources include country reports on external sources by institution or from MoF. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government/private expenditure on health. Some figures may be underestimated when financing sources lack a comprehensive recording system, notably when resources are directly channeled to local government, nongovernmental organizations or to providers, or directly supporting household payments (e.g. remittances).
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)

Comments	Financing sources involve a separate level of measurement to the previous indicators reported here, thus, this indicator cannot be added to those expressed as financing agents, providers or health goods and services. External resources are at this time the only source reported by WHO, thus it does not reflect the total origin of the THE. Frequent valuation at recipient country may differ to the valuation by the country providing the funds.
Contact person	

General government expenditure on health as a percentage of total expenditure on health

Indicator ID	92
Indicator name	General government expenditure on health as a percentage of total expenditure on health
Name abbreviated	GGHE as % of THE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understanding the relative weight of public entities in total expenditure on health. It includes not just the resources channeled through government budgets to providers of health services but also the expenditure on health by parastatals, extrabudgetary entities and notably the compulsory health insurance payments. It refers to resources collected and pooled by the above public agencies regardless of the source, so includes any donor (external) funding passing through these agencies.
Definition	Level of general government expenditure on health (GGHE) expressed as a percentage of total expenditure on health (THE)
Associated terms	Expenditure on Health : The sum of outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. General government expenditure on health (GGHE) : The sum of health outlays paid for in cash or supplied in kind by government entities, such as the Ministry of Health, other ministries, parastatal organizations or social security agencies (without double counting government transfers to social security and extrabudgetary funds). It includes all expenditure made by these entities, regardless of the source, so includes any donor funding passing through them. It includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. It includes current and capital expenditure. Total expenditure on health (THE) : The sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of General Government Expenditure on Health and Private Expenditure on Health.
Preferred data sources	National Health Accounts
Other possible data sources	Administrative reporting system Special studies

Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. In this indicator resources are tracked for all public entities acting as financing agents: managing health funds and purchasing or paying for health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Specially, it aims to be consolidated not to double count government transfers to social security and extrabudgetary funds. Monetary and non monetary transactions are accounted for at purchasers' value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).
Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, International Monetary Fund (IMF), government financial statistics and international financial statistics; OECD health data; and the United Nations national accounts statistics. National sources include National health accounts (NHA) reports, national accounts (NA) reports, general government (GG) accounts, public expenditure reviews (PER), government expenditure by purpose reports (COFOG), institutional reports of public entities involved in health care provision or financing, notably social security and other health insurance compulsory agencies and Ministry of Finance (MoF) reports. Other possible data sources include executed budget and financing reports of social security and health insurance compulsory schemes, central bank reports, academic studies, reports and data provided by central statistical offices and ministries, statistical yearbooks and other periodicals, and on official web sites. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local government, extrabudgetary entities or data from specific sources reported independently, such as external funds.
Links	National health accounts (NHA) (WHO website)

Links	Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	This indicator includes all compulsory pooled resources for health.
Contact person	

General government expenditure on health as a percentage of total government expenditure

Indicator ID	93
Indicator name	General government expenditure on health as a percentage of total government expenditure
Name abbreviated	GGHE as % of GGE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understand the weight of public spending on health within the total value of public sector operations. It includes not just the resources channeled through government budgets but also the expenditure on health by parastatals, extrabudgetary entities and notably the compulsory health insurance. It refers to resources collected and pooled by public agencies including all the revenue modalities.
Definition	Level of general government expenditure on health (GGHE) expressed as a percentage of total government expenditure.
Associated terms	Expenditure on Health : The sum of outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. General government expenditure (GGE) : It summarizes the total operations of all public entities. It includes the consolidated outlays of all levels of government: territorial authorities (Central/Federal Government, Provincial / Regional / State / District authorities; Municipal / Local governments), social security and extrabudgetary funds. The revenue base of these entities may comprise multiple sources, including external funds and loans. It includes current and capital expenditure. General government expenditure on health (GGHE) : The sum of health outlays paid for in cash or supplied in kind by government entities, such as the Ministry of Health, other ministries, parastatal organizations or social security agencies (without double counting government transfers to social security and extrabudgetary funds). It includes all expenditure made by these entities, regardless of the source, so includes any donor funding passing through them. It includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. It includes current and capital expenditure.
Preferred data sources	National Health Accounts
Other possible data sources	Administrative reporting system Special studies

Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. In this indicator resources are tracked for all public entities acting as financing agents: managing health funds and purchasing or paying for health goods and services. The NHA strategy is to track records of transactions, in order to reaching a comprehensive coverage without double counting, notably by consolidating intergovernmental transfers. Monetary and non monetary transactions are accounted for at purchasers value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).
Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, International Monetary Fund (IMF), government financial statistics and international financial statistics; OECD health data; and the United Nations national accounts statistics. National sources include National health accounts (NHA) reports, national accounts (NA) reports, general government (GG) accounts, public expenditure reviews (PER), government expenditure by purpose reports (COFOG), institutional reports of public entities involved in health care provision or financing, notably social security and other health insurance compulsory agencies and Ministry of Finance (MoF) reports. GGE reported by the Central Bank and the Ministry of Finance. Other possible data sources include executed budget and financing reports of social security and health insurance compulsory schemes, academic studies, reports and data provided by central statistical offices and ministries, statistical yearbooks and other periodicals, and on official web sites. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government/private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local government, extrabudgetary agencies or expenditure related to specific financing sources which are reported separately, such as external fund.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003)

Links	A System of Health Accounts (OECD, 2000)
Comments	GGE involves all types of expenditure, current and capital. It includes too all types of revenue. GGE includes funds that are provided by donors, and channeled through the government. It is not the same as the General Government Final Consumption, which comprises only current spending.
Contact person	

Gross national income per capita (PPP int. $)

Indicator ID	94
Indicator name	Gross national income per capita (PPP int. $)
Name abbreviated	Gross national income per capita (PPP int. $)
Data Type Representation	Ratio
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.
Associated terms	Gross national income (GNI) : The sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	Estimates are taken from the World Bank's World Development Indicator.
M&E Framework	Determinant
Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	
Unit of Measure	PPP international dollar
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	
Links	World Development Indicators (World Bank)
Comments	
Contact person	

Health life expectancy (HALE) at birth

Indicator ID	66
Indicator name	Health life expectancy (HALE) at birth
Name abbreviated	Health life expectancy (HALE) at birth
Data Type Representation	Statistic
Indicator group	Health status
Rationale	Substantial resources are devoted to reducing the incidence, duration and severity of major diseases that cause morbidity but not mortality and to reducing their impact on people's lives. It is important to capture both fatal and non-fatal health outcomes in a summary measure of average levels of population health. Healthy life expectancy (HALE) at birth adds up expectation of life for different health states, adjusted for severity distribution making it sensitive to changes over time or differences between countries in the severity distribution of health states.
Definition	Average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury.
Associated terms	
Preferred data sources	Special studies
Other possible data sources	
Method of measurement	
Method of estimation	Since comparable health state prevalence data are not available for all countries, a four-stage strategy is used: 1. Data from the WHO Global Burden of Disease (GBD) study are used to estimate severity-adjusted prevalence by age and sex for all countries. 2. Data from the WHO Multi-Country Survey Study (MCSS) and World Health Survey (WHS) are used to make independent estimates of severity adjusted prevalence by age and sex for survey countries. 3. Prevalence for all countries is calculated based on GBD, MCSS and WHS estimates. 4. Life tables constructed by WHO are used with Sullivan`s method to compute HALE for countries. Predominant type of statistics: Predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Aggregation of HALE inputs for WHO Member States to regional and global level.
Disaggregation	Age Sex
Unit of Measure	Years
Unit Multiplier	
Expected frequency of data dissemination	Every 5 years
Expected frequency of data collection	Every 5 years
Limitations	The first challenge is lack of reliable data on mortality and morbidity, especially from low income countries. Other issues include lack of comparability of self-reported data from health interviews and the measurement of health-state preferences for such self-reporting.
Links	Methods for Measuring Healthy Life Expectancy (WHO, 2003)

Links	World Health Report 2004: Changing History (WHO, 2004)
Comments	
Contact person	

Hepatitis B (HepB3) immunization coverage among 1-year-olds (%)

Indicator ID	95
Indicator name	Hepatitis B (HepB3) immunization coverage among 1-year-olds (%)
Name abbreviated	Hepatitis B (HepB3) immunization coverage among 1-year-olds (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Immunization is an essential component for reducing under-five mortality. Immunization coverage estimates are used to monitor coverage of immunization services and to guide disease eradication and elimination efforts. It is a good indicator of health system performance.
Definition	The percentage of one-year-olds who have received three doses of hepatitis B vaccine in a given year.
Associated terms	
Preferred data sources	Facility reporting system Household surveys
Other possible data sources	
Method of measurement	Service/facility reporting system ("administrative data"): Reports of vaccinations performed by service providers (e.g. district health centres, vaccination teams, physicians) are used for estimates based on service/facility records. The estimate of immunization coverage is derived by dividing the total number of vaccinations given by the number of children in the target population, often based on census projections. Household surveys: Survey items correspond to children's history in coverage surveys. The principle types of surveys are the Expanded Programme on Immunization (EPI) 30-cluster survey, the UNICEF Multiple Indicator Cluster Survey (MICS), and the Demographic and Health Survey (DHS). The indicator is estimated as the percentage of children ages 12–23 months who received three doses of hepatitis B vaccine either any time before the survey.

Method of estimation	Distinction is made between situations where data reported by national authorities accurately reflect immunization system performance and those where the data are likely compromised and may present a misleading view of immunization coverage. While there are frequently general trends in immunization coverage levels, no attempt is made to fit data points using smoothing techniques or time series methods. The estimates are informed and constrained by the following heuristics: Country–specific: Each country's data are reviewed individually; data and information are not "borrowed" from other countries. If national data are available from a single source, the estimates are based solely on that source, supplemented with linear interpolation to impute values for years where data are not available. If no data are available for the most recent estimation period, the estimate remains the same as the previous year's. If new data or information subsequently become available, the relevant portion of the time series is updated. Consistent trends and patterns: If survey data tend to confirm (e.g., within +/- 10% points) reported data, the estimates are based on reported data. If multiple survey points show a fairly consistent relationship with the trend in reported data and the survey data are significantly different from reported data, the estimates are based on reported data calibrated to the level established by the survey data. If survey data are inconsistent with reported data and the survey data appear more reliable, coverage estimates are based on survey data and interpolation between survey data points for intervening years. If multiple data points are available for a given country, vaccine/dose, and year data points are not averaged; rather potential biases in each of the sources are considered and an attempt to construct a consistent pattern over time, choosing data with the least potential for bias consistent with temporal trends and comparisons between vaccines is made. If coverage patterns are inconsistent between vaccines and dose number, an attempt to identify and adjust for possible biases is made. If inconsistent patters are explained by programmatic (e.g., vaccine shortage) or contextual events (e.g., "international incidences") the estimates reflect the impact of these events. When faced with situations where several estimates are possible, alternative explanations that appear to cover the observed data are constructed and treated as competing hypotheses., local information is considered, potential biases in the data identified and the more likely hypothesis identified. Recall bias adjustment: In instances where estimates are based primarily on survey data and the proportion of vaccinations based on maternal recall is high, survey coverage levels are adjusted to compensate for maternal recall for multi -dose antigens (i.e., DTP, POL, HepB and Hib) by applying the dropout between the first and third doses observed in the documented data to the vaccination history reported by the child's caretaker. No coverage greater than 100%: Coverage levels in excess of 100% are occasionally reported. While such coverage levels are theoretically possible, they are more likely to be the results of systematic error in the ascertainment of the numerator or the denominator, a mid-year change in target age-groups, or inclusion of children outside the target age group in the numerator. The highest estimate of coverage is 99%. Local knowledge incorporated: By consulting local experts an attempt to put the data in a context of local events - those occurring in the immunization system (e.g. vaccine shortage for parts of the year, donor withdrawal, change in management or policies, etc.) as well as more widely-occurring events (e.g. international incidences, civil unrest, etc.) is made. Information on such events is used to support (or challenge) sudden changes in coverage levels. Description and dissemination of results: For each country, year and vaccine/dose the WHO and UNICEF estimates are presented in both graphic and tabular forms along with the data upon which they are based. The estimates are "thickened",, by providing a description of the assumptions and decisions made in developing the specific estimates.

Method of estimation	Predominant type of statistics: unadjusted and adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Global and regional coverage is a weighted sum of WHO/UNICEF estimates of national coverage by target population from the United Nations Population Division's World Population Prospects. The size of the target population is the national annual number of infants surviving their first year of life.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	One of the perceived weaknesses of the estimates is related to the subjective nature of our methods. Subjectivity arises primarily in 1) the choice of rules, and 2) the decision as to which rule should apply in a given circumstance. We have no theoretical foundation for our selection of rules and no validation of their reliability; the choices have been based on appeals to rationality, consistency and the lack of alternatives that produce more reasonable estimates. We are currently formalizing the rules to provide more explicit, consistent and replicable grounds for our estimates. A serious limitation of the current estimates is the absence of any articulation of uncertainty; as presented, the estimates appear equally precise and certain. The uncertainty in the estimates is rooted in the accuracy and precision of the empirical data (described above) and in the choice and application of the heuristics (model-based uncertainty). We are currently exploring methods to determine the likely error in empirical data and the additional uncertainty introduced by our methods.
Links	WHO and UNICEF estimates of national immunization coverage WHO vaccine-preventable diseases: monitoring system. 2009 Global summary (WHO, 2009) Immunization Summary: A statistical reference containing data through 2008 (WHO-UNICEF, 2010)
Comments	The quality of the estimates are determined by the quality and availability of empirical data. Vaccination is relatively easy to measure and two methods - facility reports and surveys - have been developed, each of which, when properly designed and implemented, provides accurate and reliable direct measures of coverage levels. Implemented jointly , they provide a validation of coverage levels. However, both methods are subject to biases. In some instances, these biases may be identified and corrected and we have attempted to do so. These data are supplemented with local consultations that often explain inconsistencies and anomalies in the data and provide insight into forces that influence coverage levels. WHO and UNICEF are working closely with countries to improve the quality and usefulness of coverage monitoring data systems.
Contact person	

Hib (Hib3) immunization coverage among 1-year-olds (%)

Indicator ID	96
Indicator name	Hib (Hib3) immunization coverage among 1-year-olds (%)
Name abbreviated	Hib (Hib3) immunization coverage among 1-year-olds (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Immunization is an essential component for reducing under-five mortality. Immunization coverage estimates are used to monitor coverage of immunization services and to guide disease eradication and elimination efforts. It is a good indicator of health system performance.
Definition	The percentage of one-year-olds who have received three doses of Haemophilus influenzae type B vaccine in a given year.
Associated terms	
Preferred data sources	Facility reporting system Household surveys
Other possible data sources	
Method of measurement	Service/facility reporting system ("administrative data"): Reports of vaccinations performed by service providers (e.g. district health centres, vaccination teams, physicians) are used for estimates based on service/facility records. The estimate of immunization coverage is derived by dividing the total number of vaccinations given by the number of children in the target population, often based on census projections. Household surveys: Survey items correspond to children's history in coverage surveys. The principle types of surveys are the Expanded Programme on Immunization (EPI) 30-cluster survey, the UNICEF Multiple Indicator Cluster Survey (MICS), and the Demographic and Health Survey (DHS). The indicator is estimated as the percentage of children ages 12–23 months who received three doses of Haemophilus influenzae type B vaccine either any time before the survey.

Method of estimation	Distinction is made between situations where data reported by national authorities accurately reflect immunization system performance and those where the data are likely compromised and may present a misleading view of immunization coverage. While there are frequently general trends in immunization coverage levels, no attempt is made to fit data points using smoothing techniques or time series methods. The estimates are informed and constrained by the following heuristics: Country–specific: Each country's data are reviewed individually; data and information are not "borrowed" from other countries. If national data are available from a single source, the estimates are based solely on that source, supplemented with linear interpolation to impute values for years where data are not available. If no data are available for the most recent estimation period, the estimate remains the same as the previous year's. If new data or information subsequently become available, the relevant portion of the time series is updated. Consistent trends and patterns: If survey data tend to confirm (e.g., within +/- 10% points) reported data, the estimates are based on reported data. If multiple survey points show a fairly consistent relationship with the trend in reported data and the survey data are significantly different from reported data, the estimates are based on reported data calibrated to the level established by the survey data. If survey data are inconsistent with reported data and the survey data appear more reliable, coverage estimates are based on survey data and interpolation between survey data points for intervening years. If multiple data points are available for a given country, vaccine/dose, and year data points are not averaged; rather potential biases in each of the sources are considered and an attempt to construct a consistent pattern over time, choosing data with the least potential for bias consistent with temporal trends and comparisons between vaccines is made. If coverage patterns are inconsistent between vaccines and dose number, an attempt to identify and adjust for possible biases is made. If inconsistent patters are explained by programmatic (e.g., vaccine shortage) or contextual events (e.g., "international incidences") the estimates reflect the impact of these events. When faced with situations where several estimates are possible, alternative explanations that appear to cover the observed data are constructed and treated as competing hypotheses., local information is considered, potential biases in the data identified and the more likely hypothesis identified. Recall bias adjustment: In instances where estimates are based primarily on survey data and the proportion of vaccinations based on maternal recall is high, survey coverage levels are adjusted to compensate for maternal recall for multi -dose antigens (i.e., DTP, POL, HepB and Hib) by applying the dropout between the first and third doses observed in the documented data to the vaccination history reported by the child's caretaker. No coverage greater than 100%: Coverage levels in excess of 100% are occasionally reported. While such coverage levels are theoretically possible, they are more likely to be the results of systematic error in the ascertainment of the numerator or the denominator, a mid-year change in target age-groups, or inclusion of children outside the target age group in the numerator. The highest estimate of coverage is 99%. Local knowledge incorporated: By consulting local experts an attempt to put the data in a context of local events - those occurring in the immunization system (e.g. vaccine shortage for parts of the year, donor withdrawal, change in management or policies, etc.) as well as more widely-occurring events (e.g. international incidences, civil unrest, etc.) is made. Information on such events is used to support (or challenge) sudden changes in coverage levels. Description and dissemination of results: For each country, year and vaccine/dose the WHO and UNICEF estimates are presented in both graphic and tabular forms along with the data upon which they are based. The estimates are "thickened",, by providing a description of the assumptions and decisions made in developing the specific estimates.

Method of estimation	Predominant type of statistics: unadjusted and adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Global and regional coverage is a weighted sum of WHO/UNICEF estimates of national coverage by target population from the United Nations Population Division's World Population Prospects. The size of the target population is the national annual number of infants surviving their first year of life.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	One of the perceived weaknesses of the estimates is related to the subjective nature of our methods. Subjectivity arises primarily in 1) the choice of rules, and 2) the decision as to which rule should apply in a given circumstance. We have no theoretical foundation for our selection of rules and no validation of their reliability; the choices have been based on appeals to rationality, consistency and the lack of alternatives that produce more reasonable estimates. We are currently formalizing the rules to provide more explicit, consistent and replicable grounds for our estimates. A serious limitation of the current estimates is the absence of any articulation of uncertainty; as presented, the estimates appear equally precise and certain. The uncertainty in the estimates is rooted in the accuracy and precision of the empirical data (described above) and in the choice and application of the heuristics (model-based uncertainty). We are currently exploring methods to determine the likely error in empirical data and the additional uncertainty introduced by our methods.
Links	WHO and UNICEF estimates of national immunization coverage WHO vaccine-preventable diseases: monitoring system. 2009 Global summary (WHO, 2009) Immunization Summary: A statistical reference containing data through 2008 (WHO-UNICEF, 2010)
Comments	The quality of the estimates are determined by the quality and availability of empirical data. Vaccination is relatively easy to measure and two methods - facility reports and surveys - have been developed, each of which, when properly designed and implemented, provides accurate and reliable direct measures of coverage levels. Implemented jointly , they provide a validation of coverage levels. However, both methods are subject to biases. In some instances, these biases may be identified and corrected and we have attempted to do so. These data are supplemented with local consultations that often explain inconsistencies and anomalies in the data and provide insight into forces that influence coverage levels. WHO and UNICEF are working closely with countries to improve the quality and usefulness of coverage monitoring data systems.
Contact person	

HIV prevalence among adults aged 15-49 years (%)

Indicator ID	334
Indicator name	HIV prevalence among adults aged 15-49 years (%)
Name abbreviated	
Data Type Representation	Percent
Indicator group	Health status
Rationale	HIV and AIDS has become a major public health problem in many countries and monitoring the course of the epidemic and impact of interventions is crucial. Both the Millennium Development Goals (MDG) and the United Nations General Assembly Special Session on HIV and AIDS (UNGASS) have set goals of reducing HIV prevalence.
Definition	The estimated number of adults aged 15-49 years with HIV infection, whether or not they have developed symptoms of AIDS, expressed as per cent of total population in that age group.
Associated terms	Human Immunodeficiency Virus (HIV) : A virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death.
Preferred data sources	Household surveys Surveillance systems
Other possible data sources	
Method of measurement	Standardized tools and methods of estimation have been developed by UNAIDS and WHO in collaboration with the UNAIDS Reference Group on Estimation, Modelling and Projections. In countries with a generalized epidemic, national estimates of HIV prevalence are based on data generated by surveillance systems that focus on pregnant women who attend a selected number of sentinel antenatal clinics, and in an increasing number of countries on nationally representative serosurveys. In countries with a low level or concentrated epidemic national estimates of HIV prevalence are primarily based on surveillance data collected from populations at high risk (sex workers, men who have sex with men, injecting drug users) and estimates of the size of populations at high and low risk. This data is entered into the Estimation and Projection Package (EPP) software which fits a simple epidemiological model to the epidemic structure defined. EPP finds the best fitting curve that describes the evolution of adult HIV prevalence over time, and calibrates that curve based on prevalence found in any national surveys or default values in case there is no national survey available. For countries with very little available prevalence data (less than three consistent surveillance sites) a point prevalence estimate and projection is made using spreadsheet models (the Workbook Method). The resulting point prevalence estimates for several years are entered into EPP to find the best fitting curve that describes the evolution of adult HIV prevalence over time. (http://www.unaids.org/en/KnowledgeCentre/HIVData/Methodology/ , accessed on 2 may 2010)
Method of estimation	The country-specific estimates of adults living with HIV, used as the numerator for this indicator, have been produced by National AIDS Programs and compiled by UNAIDS and WHO. They have been discussed with national AIDS programs for review and comments, but are not necessarily the official estimates used by national governments. For countries where no recent data were available, country-specific estimates have not been listed in the tables. (2008 Report on the Global AIDS epidemics, Annex 1). Predominant type of statistics: predicted

M&E Framework	Impact
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of population aged Ó 15 years for the reference year in each country as the weight. No figures are reported if less than 50 per cent of the population aged Ó 15 years in the region are covered.
Disaggregation	Sex Location (urban/rural) Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	
Limitations	
Links	HIV/AIDS Data and Statistics (WHO) Global HIV/AIDS Online Database (UNAIDS-WHO) Methods and assumptions for HIV estimates (UNAIDS) Improved data, methods and tools for the 2007 HIV and AIDS estimates and projections (Sex Transm Infect. August 2008. Volume 84. Issue Suppl 1) UNAIDS Report on the global AIDS epidemic
Comments	The estimates in the 2008 Report on the Global AIDS epidemics are presented together with ranges, which reflect the certainty associated with each of the estimates. The extent of uncertainty depends mainly on the type of epidemic, and the quality, coverage and consistency of a country's surveillance system and, in generalized epidemics, whether or not a population-based survey with HIV testing was conducted. The main indicator proposed for monitoring progress towards achieving the international goals is HIV prevalence among young people aged 15-24 years, which is a better proxy for monitoring HIV incidence. Although countries are moving towards collecting better data on young people, mainly by capturing data on young pregnant women attending antenatal clinics or national population based surveys, comparable data availability is still limited. Analysis of trends on consistent sites have been proposed as a an alternative to tool to assess recent rends and countries have been encouraged to collect report HIV surveillance data by age breakdown.
Contact person	

Hospital beds (per 10 000 population)

Indicator ID	97
Indicator name	Hospital beds (per 10 000 population)
Name abbreviated	Hospital beds (per 10 000 population)
Data Type Representation	Ratio
Indicator group	Health systems resources
Rationale	
Definition	The number of hospital beds available per every 10 000 inhabitants in a population.
Associated terms	
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	Data were compiled from the WHO Regional offices and modified to standardize the unit of measure of per 10 000 population.
M&E Framework	Output
Method of estimation of global and regional aggregates	Regional and global estimates are based on population-weighted averages weighted by the total population. These estimates are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	Statistics on hospital bed density are generally drawn from routine administrative records but in some settings only public sector beds are included.
Links	European Health for All Database (WHO Regional Office for Europe) Country Health Information Profiles (WHO Regional Office for Western Pacific) Core Health Indicators and MDGs (WHO Regional Office for South-East Asia) Regional Core Health Data Initiative (PAHO)
Comments	Hospital beds are used to indicate the availability of inpatinet services. There is no global norm for the density of hospital beds in relation to total population.
Contact person	

Life expectancy at birth

Indicator ID	65
Indicator name	Life expectancy at birth
Name abbreviated	Life expectancy at birth
Data Type Representation	Statistic
Indicator group	Demographics
Rationale	Life expectancy at birth reflects the overall mortality level of a population. It summarizes the mortality pattern that prevails across all age groups - children and adolescents, adults and the elderly.
Definition	The 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.
Associated terms	Life table : A set of tabulations that describe the probability of dying, the death rate and the number of survivors for each age or age group. Accordingly, life expectancy at birth and adult mortality rates are outputs of a life table.
Preferred data sources	Civil registration with complete coverage
Other possible data sources	Household surveys
	Population census
Method of measurement	Life expectancy at birth is derived from life tables and is based on sex- and age -specific death rates. Life expectancy at birth values from the United Nations correspond to mid-year estimates, consistent with the corresponding United Nations fertility medium-variant quinquennial population projections.
Method of estimation	TBD
M&E Framework	Impact
Method of estimation of global and regional aggregates	
Disaggregation	Sex : Male
	Sex : Female
Unit of Measure	Years
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	
Links	
Comments	
Contact person	

Low-birth-weight newborns (%)

Indicator ID	76
Indicator name	Low-birth-weight newborns (%)
Name abbreviated	Low-birth-weight newborns
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	At the population level, the proportion of babies with a low birth weight is an indicator of a multifaceted public-health problem that includes long-term maternal malnutrition, ill health, hard work and poor health care in pregnancy. On an individual basis, low birth weight is an important predictor of newborn health and survival.
Definition	The percentage of live births that weigh less than 2,500 g out of the total of live births during the same time period
Associated terms	Birth weight : The first weight of the fetus or newborn obtained after birth. For live births, birth weight should ideally be measured within the first hour of life before significant postnatal weight loss occurs. Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10) Low birth weight : A weight of less than 2500 g (up to and including 2499 g), irrespective of gestational age. Low birth weight may be subdivided into very low birth weight (less than 1500 g) and extremely low birth weight (less than 1 000 g).
Preferred data sources	Facility reporting system Household surveys
Other possible data sources	
Method of measurement	The percentage of low birthweight newborns = (Number of live-born babies with birth weight less than 2,500 g / Number of live births) x 100 Service or facility records: the proportion of live births with low birth weight, among births occurring in health institutions. Household surveys: DHS include questions on birth weight as well as the mothers' subjective assessment of the infant's size at birth (i.e. very large, larger than average, average, smaller than average, very small), for births in the last 5 to 10 years.
Method of estimation	Where reliable health-service statistics with a high level of population coverage exist, percentage of low-birth-weight births is reported. For household survey data, different adjustments are made according to the type of information available (numerical birth-weight data or the subjective assessment of the mother). Predominant type of statistics: crude and adjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of live births for the reference year in each country as the weight. No figures are reported if less than 50 per cent of live births in the region are covered.
Disaggregation	Sex

Disaggregation	Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Every 5 years
Expected frequency of data collection	
Limitations	- The large proportion of infants not weighed at birth, and the estimates based on mothers' subjective assessments constitute a significant impediment to the accurate monitoring of low birth weight. - It is not possible to make inferences about the rate of preterm birth in a population using the LBW rate. Methods have been developed for making inferences about preterm births based on birth weight distributions but they have not been tested in different populations. - LBW does not distinguish between preterm birth and fetal growth restriction and it does not permit assessment of the entire range of gestation and fetal growth.
Links	International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) (WHO, 2004) Demographic and Health Surveys (DHS) Low birthweight: country, regional and global estimates (WHO-UNICEF, 2004) UNICEF Global Database on Low Birth Weight Monitoring low birth weight: an evaluation of international estimates and an updated estimation procedure (Blanc & Wardlaw, 2005)
Comments	
Contact person	

Maternal mortality ratio (per 100 000 live births)

Indicator ID	26
Indicator name	Maternal mortality ratio (per 100 000 live births)
Name abbreviated	Maternal mortality ratio
Data Type Representation	Ratio
Indicator group	Health status
Rationale	Complications during pregnancy and childbirth are a leading cause of death and disability among women of reproductive age in developing countries. The maternal mortality ratio represents the risk associated with each pregnancy, i.e. the obstetric risk. It is also a Millennium Development Goal Indicator for monitoring Goal 5, improving maternal health. The indicator monitors deaths related to pregnancy and childbirth. It reflects the capacity of the health systems to provide effective health care in preventing and addressing the complications occurring during pregnancy and childbirth.
Definition	The maternal mortality ratio (MMR) is the 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 year.
Associated terms	Late maternal death : Death from any obstetric cause (direct or indirect) occurring more than 42 days but less than one year after delivery. Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10) Maternal death : The death of a woman while pregnant or within 42 days after termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. To facilitate the identification of maternal deaths in circumstances in which cause-of-death attribution is inadequate, ICD 10 introduced an additional category, pregnancy-related death, which is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.
Preferred data sources	Vital registration with complete coverage and medical certification of cause of death
Other possible data sources	Household surveys Population census Sample or sentinel registration systems Special studies

Method of measurement	The maternal mortality ratio can be calculated by dividing recorded (or estimated) maternal deaths by total recorded (or estimated) live births in the same period and multiplying by 100,000. Measurement requires information on pregnancy status, timing of death (during pregnancy, childbirth, or within 42 days of termination of pregnancy), and cause of death. Maternal mortality ratio = (Number of maternal deaths / Number of live births) X 100,000 The maternal mortality ratio can be calculated directly from data collected through vital registration systems, household surveys or other sources. However, there are often data quality problems, particularly related to the underreporting and misclassification of maternal deaths. Therefore, data are often adjusted in order to take into account these data quality issues. Adjustments for underreporting and misclassification of deaths and model-based estimates should be made in the cases where data are not reliable. Because maternal mortality is a relatively rare event, large sample sizes are needed if household surveys are used. This is very costly and may still result in estimates with large confidence intervals, limiting the usefulness for cross-country or overtime comparisons. To reduce sample size requirements, the sisterhood method used in the DHS surveys measures maternal mortality by asking respondents about the survival of sisters. It should be noted that the sisterhood method results in pregnancy-related mortality: regardless of cause of death, all deaths occurring during pregnancy, birth, or the six weeks following the termination of the pregnancy are included in the numerator of the maternal mortality ratio. Reproductive Age Mortality Studies (RAMOS) is a special study that uses varied sources, depending on the context, to identify all deaths of women of reproductive age and ascertain which of these are maternal or pregnancy-related.

Method of estimation	WHO, UNICEF, UNFPA and The World Bank have developed a method to adjust existing data in order to take into account these data quality issues and ensure the comparability of different data sources. This method involves assessment of data for completeness and, where necessary, adjustment for underreporting and misclassification of deaths as well as development of estimates through statistical modeling for countries with no reliable national level data. Data on maternal mortality and other relevant variables are obtained through databases maintained by WHO, UNPD, UNICEF, and WB. Data available from countries varies in terms of the source and methods. Given the variability of the sources of data, different methods are used for each data source in order to arrive at country estimates that are comparable and permit regional and global aggregation. Currently, only about one third of all countries/territories have reliable data available, and do not need additional estimations. For about half of the countries included in the estimation process, country-reported estimates of maternal mortality are adjusted for the purposes of comparability of the methodologies. For the remainder of countries/territories—those with no appropriate maternal mortality data --a statistical model is employed to predict maternal mortality levels. However, the calculated point estimates with this methodology might not represent the true levels of maternal mortality. It is advised to consider the estimates together with the reported uncertainty margins where the true levels are regarded to lie. Currently, only about one third of all countries/territories have reliable data available, and do not need additional estimations. For about half the countries included in the estimation process, country-reported estimates of maternal mortality are adjusted for the purposes of comparability of the methodologies. For the remainder of countries/territories—those with no appropriate maternal mortality data --a statistical model is employed to predict maternal mortality levels. However, the calculated point estimates with this methodology might not represent the true levels of maternal mortality. It is advised to consider the estimates together with the reported uncertainty margins where the true levels are regarded to lie. Predominant type of statistics: predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Regional and global aggregates are based on weighted averages using the total number of live births as the weight. Aggregates are presented only if available data cover at least 50% of total live births in the regional or global grouping.
Disaggregation	Age Location (urban/rural) Education level Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	Deaths per 100 000 live births
Unit Multiplier	
Expected frequency of data dissemination	Every 3-5 years
Expected frequency of data collection	

Limitations	Maternal mortality is difficult to measure. Vital registration and health information systems in most developing countries are weak, and thus, cannot provide an accurate assessment of maternal mortality. Even estimates derived from complete vital registration systems, such as those in developed countries; suffer from misclassification and underreporting of maternal deaths. Due to the very large confidence limits of maternal mortality estimates, the MDG statistics track trends only at the regional level. The country estimates are not suitable for assessing trends over time or for making comparisons between countries. As a result, it is recommended that process indicators, such as attendance by skilled health personnel at delivery and use of health facilities for delivery, be used to assess progress towards the reduction in maternal mortality.
Links	WHO Reproductive health indicators database The sisterhood method for estimating maternal mortality: Guidance for potential users (WHO, 1997) State of World Population 2008 (UNFPA, 2008) The State of the World Children (UNICEF) Reproductive health indicators: Guidelines for their generation, interpretation and analysis for global monitoring (WHO, 2006) Maternal Mortality and Morbidity (Say & Pattinson, 2008) Trends in maternal mortality: 1990 to 2008 (WHO, 2010)
Comments	The ability to generate country, regional, and global estimates with higher precision and accuracy would be greatly facilitated if country civil registration systems were further improved. This improvement would reduce the need to conduct special maternal mortality studies (which are time-consuming, expensive, and of limited use in monitoring trends). The maternal mortality ratio should not be confused with the maternal mortality rate (whose denominator is the number of women of reproductive age), which reflects not only the risk of maternal death per pregnancy or birth but also the level of fertility in the population. The maternal mortality ratio (whose denominator is the number of live births) indicates the risk once a woman becomes pregnant, thus does not take fertility levels in a population into consideration.
Contact person	

Measles (MCV) immunization coverage among 1-year-olds (%)

Indicator ID	2
Indicator name	Measles (MCV) immunization coverage among 1-year-olds (%)
Name abbreviated	Measles immunization coverage
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Immunization is an essential component for reducing under-five mortality. Immunization coverage estimates are used to monitor coverage of immunization services and to guide disease eradication and elimination efforts. It is a good indicator of health system performance. Percentage of children under one year of age immunized against measles is one of MDG indicators.
Definition	The percentage of children under one year of age who have received at least one dose of measles-containing vaccine in a given year. For countries recommending the first dose of measles vaccine in children over 12 months of age, the indicator is calculated as the proportion of children less than 12-23 months of age receiving one dose of measles-containing vaccine.
Associated terms	Measles : A highly contagious, serious disease caused by a virus. It remains a leading cause of death among young children globally, despite the availability of a safe and effective vaccine. Measles is transmitted via droplets from the nose, mouth or throat of infected persons. Initial symptoms, which usually appear 10–12 days after infection, include high fever, runny nose, bloodshot eyes, and tiny white spots on the inside of the mouth. Several days later, a rash develops, starting on the face and upper neck and gradually spreading downwards.
Preferred data sources	Facility reporting system Household surveys
Other possible data sources	
Method of measurement	Service/facility reporting system ("administrative data"): Reports of vaccinations performed by service providers (e.g. district health centres, vaccination teams, physicians) are used for estimates based on service/facility records. The estimate of immunization coverage is derived by dividing the total number of vaccinations given by the number of children in the target population, often based on census projections. Household surveys: Survey items correspond to children's history in coverage surveys. The principle types of surveys are the Expanded Programme on Immunization (EPI) 30-cluster survey, the UNICEF Multiple Indicator Cluster Survey (MICS), and the Demographic and Health Survey (DHS). The indicator is estimated as the percentage of children ages 12–23 months who received at least one dose of measles vaccine either any time before the survey or before the age of 12 months.

Method of estimation	Distinction is made between situations where data reported by national authorities accurately reflect immunization system performance and those where the data are likely compromised and may present a misleading view of immunization coverage. While there are frequently general trends in immunization coverage levels, no attempt is made to fit data points using smoothing techniques or time series methods. The estimates are informed and constrained by the following heuristics: Country–specific: Each country's data are reviewed individually; data and information are not "borrowed" from other countries. If national data are available from a single source, the estimates are based solely on that source, supplemented with linear interpolation to impute values for years where data are not available. If no data are available for the most recent estimation period, the estimate remains the same as the previous year's. If new data or information subsequently become available, the relevant portion of the time series is updated. Consistent trends and patterns: If survey data tend to confirm (e.g., within +/- 10% points) reported data, the estimates are based on reported data. If multiple survey points show a fairly consistent relationship with the trend in reported data and the survey data are significantly different from reported data, the estimates are based on reported data calibrated to the level established by the survey data. If survey data are inconsistent with reported data and the survey data appear more reliable, coverage estimates are based on survey data and interpolation between survey data points for intervening years. If multiple data points are available for a given country, vaccine/dose, and year data points are not averaged; rather potential biases in each of the sources are considered and an attempt to construct a consistent pattern over time, choosing data with the least potential for bias consistent with temporal trends and comparisons between vaccines is made. If coverage patterns are inconsistent between vaccines and dose number, an attempt to identify and adjust for possible biases is made. If inconsistent patters are explained by programmatic (e.g., vaccine shortage) or contextual events (e.g., "international incidences") the estimates reflect the impact of these events. When faced with situations where several estimates are possible, alternative explanations that appear to cover the observed data are constructed and treated as competing hypotheses., local information is considered, potential biases in the data identified and the more likely hypothesis identified. Recall bias adjustment: In instances where estimates are based primarily on survey data and the proportion of vaccinations based on maternal recall is high, survey coverage levels are adjusted to compensate for maternal recall for multi -dose antigens (i.e., DTP, POL, HepB and Hib) by applying the dropout between the first and third doses observed in the documented data to the vaccination history reported by the child's caretaker. No coverage greater than 100%: Coverage levels in excess of 100% are occasionally reported. While such coverage levels are theoretically possible, they are more likely to be the results of systematic error in the ascertainment of the numerator or the denominator, a mid-year change in target age-groups, or inclusion of children outside the target age group in the numerator. The highest estimate of coverage is 99%. Local knowledge incorporated: By consulting local experts an attempt to put the data in a context of local events - those occurring in the immunization system (e.g. vaccine shortage for parts of the year, donor withdrawal, change in management or policies, etc.) as well as more widely-occurring events (e.g. international incidences, civil unrest, etc.) is made. Information on such events is used to support (or challenge) sudden changes in coverage levels. Description and dissemination of results: For each country, year and vaccine/dose the WHO and UNICEF estimates are presented in both graphic and tabular forms along with the data upon which they are based. The estimates are "thickened",, by providing a description of the assumptions and decisions made in developing the specific estimates.

Method of estimation	Predominant type of statistics: unadjusted and adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Global and regional coverage is a weighted sum of WHO/UNICEF estimates of national coverage by target population from the United Nations Population Division's World Population Prospects. The size of the target population is the national annual number of infants surviving their first year of life.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	One of the perceived weaknesses of the estimates is related to the subjective nature of our methods. Subjectivity arises primarily in 1) the choice of rules, and 2) the decision as to which rule should apply in a given circumstance. We have no theoretical foundation for our selection of rules and no validation of their reliability; the choices have been based on appeals to rationality, consistency and the lack of alternatives that produce more reasonable estimates. We are currently formalizing the rules to provide more explicit, consistent and replicable grounds for our estimates. A serious limitation of the current estimates is the absence of any articulation of uncertainty; as presented, the estimates appear equally precise and certain. The uncertainty in the estimates is rooted in the accuracy and precision of the empirical data (described above) and in the choice and application of the heuristics (model-based uncertainty). We are currently exploring methods to determine the likely error in empirical data and the additional uncertainty introduced by our methods.
Links	WHO and UNICEF estimates of national immunization coverage WHO vaccine-preventable diseases: monitoring system. 2009 Global summary (WHO, 2009) Immunization Summary: A statistical reference containing data through 2008 (WHO-UNICEF, 2010)
Comments	The quality of the estimates are determined by the quality and availability of empirical data. Vaccination is relatively easy to measure and two methods - facility reports and surveys - have been developed, each of which, when properly designed and implemented, provides accurate and reliable direct measures of coverage levels. Implemented jointly , they provide a validation of coverage levels. However, both methods are subject to biases. In some instances, these biases may be identified and corrected and we have attempted to do so. These data are supplemented with local consultations that often explain inconsistencies and anomalies in the data and provide insight into forces that influence coverage levels. More importantly, WHO and UNICEF are working closely with countries to improve the quality and usefulness of coverage monitoring data systems.
Contact person	

Median availability of selected generic medicines (%)

Indicator ID	10
Indicator name	Median availability of selected generic medicines (%)
Name abbreviated	Median availability of selected generic medicines
Data Type Representation	Statistic
Indicator group	Health systems resources
Rationale	Access to treatment is heavily dependent on the availability of affordable medicines. A regular, sustainable supply of essential medicines is required to avoid medicine shortages that can cause avoidable suffering and death. This indicator is part of a series of 9 indicators proposed by WHO to measure MDG Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries.
Definition	Median percent availability of selected generic medicines in a sample of health facilities.
Associated terms	Generic medicine : A pharmaceutical product usually intended to be interchangeable with the originator brand product, manufactured without a licence from the originator manufacturer and marketed after the expiry of patent or other exclusivity rights.
Preferred data sources	Special facility surveys
Other possible data sources	
Method of measurement	A standard methodology has been developed by WHO and Health Action International (HAI). Data on the availability of a specific list of medicines are collected in at least four geographic or administrative areas in a sample of medicine dispensing points. Availability is reported as the percentage of medicine outlets where a medicine was found on the day of the survey.
Method of estimation	WHO and HAI compiles data from the surveys of medicine price and availability. Most countries have only conducted a single survey. Where repeat surveys have been conducted, the most recent data is used. Predominant type of statistics: adjusted
M&E Framework	Output
Method of estimation of global and regional aggregates	
Disaggregation	Provider type (public/private) Product type
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Periodic
Expected frequency of data collection	

Limitations	There are several known limitations of the data: • Although there is some standardization of survey medicines across surveys, the basket of medicines surveyed differs in each country. • Availability is determined for the specific list of survey medicines, and do not account for alternate dosage forms or strengths of these products or therapeutic alternatives. • Availability data only refer to the day of data collection at each facility and may not reflect average availability of medicines over time. • Expected availability in public sector facilities may vary according to the level of care of the individual facility and whether or not a survey medicine is included on the national essential medicines list (EML).
Links	WHO/HAI survey methodology and database Analysis of medicine availability as part of an MDG Gap Task Force report on MDG
Comments	This indicator is one of the WHO Medium-Term Strategic Plan (MTSP) country progress indicators. The MTSP target is 80 per cent, though country-specific targets are probably needed. It is recommended that countries conduct surveys of medicine price and availability every 2 years.
Contact person	

Median consumer price ratio of selected generic medicines

Indicator ID	11
Indicator name	Median consumer price ratio of selected generic medicines
Name abbreviated	Median consumer price ratio of selected generic medicines
Data Type Representation	Statistic
Indicator group	Health systems resources
Rationale	Medicines account for 20-60% of health spending in developing and transitional countries. Furthermore, up to 90% of the population in developing countries purchase medicines through out-of-pocket payments, making medicines the largest family expenditure item after food. As a result, medicines are unaffordable for large sections of the global population and are a major burden on government budgets. This indicator is part of a series of 9 indicators proposed by WHO to measure MDG Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries.
Definition	Median consumer price ratio (ratio of median local unit price to Management Sciences for Health international reference price) of selected generic medicines.
Associated terms	Generic medicine : A pharmaceutical product usually intended to be interchangeable with the originator brand product, manufactured without a licence from the originator manufacturer and marketed after the expiry of patent or other exclusivity rights.
Preferred data sources	Special facility surveys
Other possible data sources	
Method of measurement	A standard methodology has been developed by WHO and Health Action International (HAI). The unit prices (price per tablet, capsule, dose, milliliter) of a specific list of medicines are collected in at least four geographic or administrative areas of a country, in a sample of medicine dispensing points.
Method of estimation	WHO and HAI compiles data from the surveys of medicine price and availability. Most countries have only conducted a single survey. Where repeat surveys have been conducted, the most recent data is used. To facilitate international comparisons, price results are presented as the ratio of a medicine`s median price across outlets to the Management Sciences for Health (MSH) median international reference price for the year preceding the survey. Consumer Price Ratio = median local unit price / MSH international reference unit price At least 4 prices must be obtained for calculation of the consumer price ratio. MSH international reference price have been selected as a comparator as they are widely available, updated frequently, and relatively stable over time. They represent median prices of high quality multi-source medicines offered to developing and middle-income countries by different suppliers. The large majority of MSH prices are for multi-source products, and are usually ‘Ex-Works’ prices. Data are unadjusted for differences in MSH reference price year used, exchange rate fluctuations, national inflation rates, variations in purchasing power parities, levels of development or other factors.
M&E Framework	Output

Method of estimation of global and regional aggregates	
Disaggregation	Provider type (public/private) Product type
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Periodic
Expected frequency of data collection	
Limitations	Data collection limitations: • Although there is some standardization of survey medicines across surveys, the basket of medicines surveyed differs in each country. • Prices are determined for the specific list of survey medicines, and do not account for alternate dosage forms of these products or therapeutic alternatives. • The reliability of price ratios as a metric for comparison depends on the number of supplier prices used to determine the median international reference price for each medicine. When few supplier prices are available or when the buyer price is used as a proxy, results can be skewed by a particularly high/low reference price. Although it is possible to disaggregate country data by region, due to low availability of medicines there is often insufficient price data for sub-national analyses.
Links	WHO/HAI survey methodology and database Analysis of medicine availability as part of an MDG Gap Task Force report on MDG 8
Comments	The consumer price ratio is an expression of how much greater or less the local medicine price is than the international reference price, e.g. an MPR of 2 would mean that the local medicine price is twice that of the international reference price. The consumer price ratio is one of the WHO Medium-Term Strategic Plan country progress indicators. The MTSP target is below four times world market reference price. It is recommended that countries conduct surveys of medicine price and availability every 2 years.
Contact person	

Neonatal mortality rate (per 1000 live births)

Indicator ID	67
Indicator name	Neonatal mortality rate (per 1000 live births)
Name abbreviated	Neonatal mortality rate
Data Type Representation	Ratio
Indicator group	Health status
Rationale	Mortality during the neonatal period accounts for a large proportion of child deaths, and is considered to be a useful indicator of maternal and newborn neonatal health and care. Generally, the proportion of neonatal deaths among child deaths under the age of five is expected to increase as countries continue to witness a decline in child mortality.
Definition	Number of deaths during the first 28 completed days of life per 1000 live births in a given year or other period. Neonatal deaths (deaths among live births during the first 28 completed days of life) may be subdivided into early neonatal deaths, occurring during the first 7 days of life, and late neonatal deaths, occurring after the 7th day but before the 28th completed day of life.
Associated terms	Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10) Neonatal period : A period that commences at birth and ends 28 completed days after birth
Preferred data sources	Civil registration with complete coverage
Other possible data sources	Household surveys
Method of measurement	Data from civil registration: The number of live births and the number of neonatal deaths are used to calculate age-specific rates. This system provides annual data. Data from household surveys: Calculations are based on birth history —– a series of detailed questions on each child that a woman has given birth to during the 5 or 10 years preceding the survey. The total number of live births surveyed provides the denominator.

Method of estimation	To ensure consistency with mortality rates in children younger than 5 years (U5MR) produced for the United Nations by the Inter-agency Group for Mortality Estimation (IGME) and to account for variation in survey-to-survey measurement errors, country data points for U5MR and the neonatal mortality rate (NMR) were rescaled for all years to match the latest time series estimates of U5MR produced by IGME. This rescaling assumes that the proportionate measurement error in NMR and U5MR is equal for each data point. For countries with high quality civil registration data covering at least 17 of the 20 years in the period 1990-2009, and with no more than two consecutive years without data, estimates were taken directly from rescaled data points from civil registration systems. For remaining countries, the following multilevel statistical model was applied to estimate neonatal mortality rates ln(NMRi/1000) = Ŭ0+ à1*ln(U5MR/1000) + à2*([ln(U5MR/1000)]2) + Ŭj[i] + Ŭk[i] + Ůi , where, for observation i, Ŭj[i] and Ŭk[i] are country-level and region-level random effects respectively, and Ůi is a random error term. The country-level random effect was assumed zero when we predicted for countries without country specific input data. Predominant type of statistics: adjusted and predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Average weighted by live births
Disaggregation	Sex Location (urban/rural) Education level : Maternal education Wealth : Wealth quintile Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	Deaths per 1000 live births
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	The reliability of estimates of neonatal mortality depends on the accuracy and completeness of reporting and recording of births and deaths. Underreporting and misclassification are common, especially for deaths occurring early in life.
Links	International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) (WHO, 2004) WHO Mortality Database Neonatal mortality (WHO website)
Comments	
Contact person	

Neonates protected at birth against neonatal tetanus (PAB) (%)

Indicator ID	98
Indicator name	Neonates protected at birth against neonatal tetanus (PAB) (%)
Name abbreviated	Neonates protected at birth against neonatal tetanus (PAB) (%)
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Immunization is an essential component for reducing under-five mortality. Immunization coverage estimates are used to monitor coverage of immunization services and to guide disease eradication and elimination efforts. It is a good indicator of health system performance.
Definition	The proportion of neonates in a given year that can be considered as having been protected against tetanus as a result of maternal immunization.
Associated terms	Tetanus : A disease that is acquired when the spores of the bacterium Clostridium Tetani infect a wound or the umbilical stump. Spores are universally present in the soil. People of all ages can get tetanus but the disease is particularly common and serious in newborn babies ("neonatal tetanus"). It requires treatment in a medical facility, often in a referral hospital. Neonatal tetanus, which is mostly fatal, is particularly common in rural areas where deliveries are at home without adequate sterile procedures.
Preferred data sources	Special studies
Other possible data sources	
Method of measurement	
Method of estimation	PAB coverage is estimated using a mathematical model. PAB is the proportion of births in a given year that can be considered as having been protected against tetanus as a result of maternal immunization. In this model, annual cohorts of women are followed from infancy through their life. A proportion receive DTP in infancy (estimated based on the WHO-UNICEF estimates of DTP3 coverage). In addition some of these women also receive TT through routine services when they are pregnant and may also receive TT during Supplementary Immunization activities (SIAs) . The model also adjusts reported data, taking into account coverage patterns in other years, and/or results available through surveys. The duration of protection is then calculated, based on WHO estimates of the duration of protection by doses ever received. A further description of the model can be found in: Griffiths U., Wolfson L., Quddus A.,Younus M., Hafiz R.. Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan. Bulletin of the World Health Organization 2004; 82:643-651 Predominant type of statistics: predicted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Global and regional coverage is a weighted sum of WHO/UNICEF estimates of national coverage by target population from the United Nations Population Division's World Population Prospects. The size of the target population is the national annual number of births.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	"Protection at Birth against tetanus" is only based on protection provided through tetanus-toxoid immunization, and not through clean deliveries. The method is based on a mathematical model, and uses several inputs, each of which may have imprecise estimates: - DTP3 coverage is based on WHO-UNIEF estimates, which in turn are based on reported and survey data; - TT2+ among adult women is estimated using reported coverage estimates, survey results, and expert opinion. - Supplemental Immunization Activities (SIAs) results are based on reported numbers, and may be imprecise and incomplete. - Population figures (including target population data) may be imprecise. It is difficult to estimate what proportion of women who have been reached through SIAs had also already received tetanus vaccine through routine services. In addition, booster doses given at other ages (e.g. at 18 months or in later childhood/adolescence) are not included in the model.
Links	WHO and UNICEF estimates of national immunization coverage Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan (Griffiths et al, 2004) WHO vaccine-preventable diseases: monitoring system, 2009 Global summary (WHO, 2009) Immunization Summary: A statistical reference containing data through 2008 (WHO-UNICEF, 2010)
Comments	
Contact person	

Net primary school enrolment rate (%)

Indicator ID	99
Indicator name	Net primary school enrolment rate (%)
Name abbreviated	Net primary school enrolment rate (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	Enrolment of the official age group for primary level education expressed as a percentage of the corresponding population.
Associated terms	
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	UNESCO compiles data on net primary school enrollment ratio.
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	Sex
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	UNESCO Institute of Statistics: Data Centre
Comments	
Contact person	

Notified cases of tuberculosis

Indicator ID	333
Indicator name	Notified cases of tuberculosis
Name abbreviated	TB case notifications
Data Type Representation	Count
Indicator group	
Rationale	
Definition	The 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. The number of cases are reported in the following categories: New TB case: pulmonary smear-positive New TB case: pulmonary smear-negative New TB case: pulmonary smear unknown/not done New TB case: extrapulmonary New TB case: other Retreatment TB case: relapse (pulmonary smear and/or culture positive) Retreatment TB case: treatment after failure (pulmonary smear and/or culture positive) Retreatment TB case: treatment after default (pulmonary smear and/or culture positive) Retreatment TB case: other Other TB cases (treatment history unknown The total of all new cases and relapse cases represents the total detected incident cases of TB in a given year. For more detailed case definitions see Treatment of Tuberculosis: guidelines for national programmes
Associated terms	New case of tuberculosis : Tuberculosis (TB) in a patient who has never received treatment for TB, or who has taken anti-TB drugs for less than 1 month. Notification (in the context of reporting tuberculosis cases to WHO) : The process of reporting diagnosed TB cases to WHO. This does not refer to the systems in place in some countries to inform national authorities of cases of certain "notifiable" diseases. Smear-positive tuberculosis : A case of TB where Mycobacterium tuberculosis bacilli are visible in the patient's sputum when examined under the microscope. For exact definition, see Global tuberculosis control : epidemiology, strategy, financing : WHO report 2009 (WHO, 2009). Tuberculosis (TB) : An infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. TB is treatable with a six-month course of antibiotics.
Preferred data sources	Surveillance systems
Other possible data sources	

Method of measurement	The number of cases detected by national TB control programmes is collected as part of routine surveillance. Annual case notifications are reported annually by countries to WHO using a web-based data collection system. See Global tuberculosis control 2010. The TB case notifications reported by countries follow the WHO recommendations on case definitions and recording and reporting; they are internationally comparable and there is no need for any adjustment.
Method of estimation	Reported by countries.
M&E Framework	Impact
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	
Links	WHO TB data Treatment of Tuberculosis: guidelines for national programmes Global tuberculosis control report The Global Plan to Stop TB 2011 - 2015 WHO Global Task Force on TB Impact Measurement Policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control
Comments	
Contact person	TB data enquiries (tbdata@who.int)

Number of community health workers

Indicator ID	100
Indicator name	Number of community health workers
Name abbreviated	Number of community health workers
Data Type Representation	Count
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low numbers of health personnel usually suggest inadequate capacity to meet minimum coverage of essential services. In particular, many countries, especially ones with shortages and maldistribution of highly skilled medical and nursing professionals, rely on community health workers – community health aides selected, trained and working in the communities from which they come – to render certain basic health services.
Definition	Total number of community health workers in the country.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of community health workers (including community health officers, community health-education workers, community health aides, family health workers and associated occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting 'community health worker' as their current occupation (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, staffing records, payroll records, training records, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.
M&E Framework	Output

Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health occupations, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. The roles and activities of community health workers are enormously diverse throughout their history, within and across countries and across programmes. While much effort has been made to harmonize the data to enhance comparability, the diversity of health worker roles and information sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks (e.g. volunteer community health workers), or people with training in services provision working outside the health care sector (e.g. at a teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 – working together for health (WHO, 2006) Community health workers: what do we know about them? (WHO, 2007)
Comments	
Contact person	

Number of dentistry personnel

Indicator ID	101
Indicator name	Number of dentistry personnel
Name abbreviated	Number of dentistry personnel
Data Type Representation	Count
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low numbers of health personnel usually suggest inadequate capacity to meet minimum coverage of essential services.
Definition	Total number of dentistry personnel in the country.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of dentistry personnel (including dentists, dental assistants, dental therapists and related occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in dentistry (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.
M&E Framework	Output
Method of estimation of global and regional aggregates	Regional and global aggregates are the sums of country data. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age

Disaggregation	Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with education in dental studies working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 – working together for health (WHO, 2006)
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Number of environment and public health workers

Indicator ID	321
Indicator name	Number of environment and public health workers
Name abbreviated	Number of environment and public health workers
Data Type Representation	Count
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low density of health personnel usually suggests inadequate capacity to meet minimum coverage of essential services.
Definition	Total number of environment and public health workers in the country
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Population census Household surveys
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of environment and public health workers (including environmental and public health officers, environmental and public health technicians, sanitarians, hygienists and related occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in dentistry (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.
M&E Framework	Output

Method of estimation of global and regional aggregates	
Disaggregation	Age Location (urban/rural) Main work activity Occupational specialization Provider type (public/private)
Unit of Measure	Persons
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with education in dental studies working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Number of nursing and midwifery personnel

Indicator ID	102
Indicator name	Number of nursing and midwifery personnel
Name abbreviated	Number of nursing and midwifery personnel
Data Type Representation	Count
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Methodologically, there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population. It has been estimated however, in the World Health Report 2006, that countries with fewer than 23 physicians, nurses and midwives per 10 000 population generally fail to achieve adequate coverage rates for selected primary health care interventions as prioritized by the Millennium Development Goals framework.
Definition	Total number of nursing and midwifery personnel in the country.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of nursing and midwifery personnel (including professional nurses, professional midwives, auxiliary nurses, auxiliary midwives, enrolled nurses, enrolled midwives and related occupations such as dental nurses and primary care nurses) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in nursing or midwifery (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.
M&E Framework	Output
Method of estimation of global and regional aggregates	Regional and global aggregates are sums of country data. They are presented only if available data cover at least 50% of total population in the regional or global groupings.

Disaggregation	Age Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with training in nursing and midwifery working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 – working together for health (WHO, 2006)
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Number of pharmaceutical personnel

Indicator ID	319
Indicator name	Number of pharmaceutical personnel
Name abbreviated	Number of pharmaceutical personnel
Data Type Representation	Count
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Measuring and monitoring the availability of health workers is a critical starting point for understanding the health system resources situation in a country. While there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population, low density of health personnel usually suggests inadequate capacity to meet minimum coverage of essential services.
Definition	Total number of pharmaceutical personnel in the country
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Population census Administrative reporting system Household surveys
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of pharmaceutical personnel (including pharmacists, pharmaceutical assistants, pharmaceutical technicians and related occupations) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting their current occupation in dentistry (as classified according to the tasks and duties of their job). A similar method is used for estimates based on labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.
M&E Framework	Output
Method of estimation of global and regional aggregates	

Disaggregation	Main work activity Provider type (public/private) Age Location (urban/rural) Sex Occupational specialization
Unit of Measure	Persons
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	Annual
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with education in dental studies working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce
Comments	
Contact person	Human Resources for Health - Statistics (hrhstatistics@who.int)

Number of physicians

Indicator ID	104
Indicator name	Number of physicians
Name abbreviated	Number of physicians
Data Type Representation	Count
Indicator group	Health systems resources
Rationale	Preparing the health workforce to work towards the attainment of a country's health objectives represents one of the most important challenges for its health system. Methodologically, there are no gold standards for assessing the sufficiency of the health workforce to address the health care needs of a given population. It has been estimated however, in the World Health Report 2006, that countries with fewer than 23 physicians, nurses and midwives per 10 000 population generally fail to achieve adequate coverage rates for selected primary health care interventions as prioritized by the Millennium Development Goals framework.
Definition	Total number of medical doctors (physicians) in the country.
Associated terms	Classification of health workers : The WHO framework for classifying health workers draws on the latest revisions of international classifications for social and economic statistics, including the International Standard Classification of Occupations (2008 revision), the International Standard Classification of Education (1997 revision) and the International Standard Industrial Classification of All Economic Activities (fourth revision).
Preferred data sources	Administrative reporting system Household surveys Population census
Other possible data sources	Health facility assessments
Method of measurement	The method of estimation for number of physicians (including generalist and specialist medical practitioners) depends on the nature of the original data source. Enumeration based on population census data is a count of the number of people reporting 'physician' as their current occupation (as classified according to the tasks and duties of their job). A similar method is used for counting physicians from labour force survey data, with the additional application of a sampling weight to calibrate for national representation. Data from health facility assessments and administrative reporting systems may be based on head counts of employees, duty rosters, staffing records, payroll records, registries of health professional regulatory bodies, or tallies from other types of routine administrative records on human resources. Ideally, information on the stock of health workers should be assessed through administrative records compiled, updated and reported at least annually, and periodically validated and adjusted against data from a population census or other nationally representative source.
Method of estimation	WHO compiles data on health workforce from four major sources: population censuses, labour force and employment surveys, health facility assessments and routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure). Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.
M&E Framework	Output
Method of estimation of global and regional aggregates	Regional and global aggregates sums of country data. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	Age

Disaggregation	Sex Location (urban/rural) Occupational specialization Main work activity Provider type (public/private)
Unit of Measure	Persons
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	The classification of health workers is based on criteria for vocational education and training, regulation of health professions, and the activities and tasks involved in carrying out a job, i.e. a framework for categorizing key workforce variables according to shared characteristics. While much effort has been made to harmonize the data to enhance comparability, the diversity of sources means that considerable variability remains across countries and over time in the coverage and quality of the original data. Some figures may be underestimated or overestimated when it is not possible to distinguish whether the data include health workers in the private sector, double counts of health workers holding two or more jobs at different locations, workers who are unpaid or unregulated but performing health care tasks, or people with a medical education working outside the health care sector (e.g. at a research or teaching institution) or who are not currently engaged in the national health labour market (e.g. unemployed, migrated, retired or withdrawn from the labour force for personal reasons).
Links	WHO Global Atlas of the Health Workforce The world health report 2006 - working together for health (WHO, 2006)
Comments	
Contact person	

Number of reported cases of cholera

Indicator ID	42
Indicator name	Number of reported cases of cholera
Name abbreviated	Cholera - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed cholera cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO transmits data as reported by national authorities (ministries of health). Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Cholera, 2008. Weekly epidemiological record, 2009, vol. 84, 31 (pp 309–324) WHO Global Task Force on Cholera Control

Comments

Contact person

Number of reported cases of congenital rubella syndrome

Indicator ID	57
Indicator name	Number of reported cases of congenital rubella syndrome
Name abbreviated	Congenital Rubella Syndrome - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed congenital rubella syndrome cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Rubella : An infection caused by a virus. Congenital rubella syndrome (CRS) is an important cause of severe birth defects. When a woman is infected with the rubella virus early in pregnancy, she has a 90% chance of passing the virus on to her fetus. This can cause the death of the fetus, or it may cause CRS. Even though it is a mild childhood illness CRS causes many birth defects. Deafness is the most common, but CRS can also cause defects in the eyes, heart, and brain.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of diphtheria

Indicator ID	43
Indicator name	Number of reported cases of diphtheria
Name abbreviated	Diphtheria - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed diphtheria cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Diphtheria : A disease caused by the bacterium Corynebacterium diphtheriae. This germ produces a toxin that can harm or destroy human body tissues and organs. One type of diphtheria affects the throat and sometimes the tonsils. Another type, more common in the tropics, causes ulcers on the skin. Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.

Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of H5N1 influenza

Indicator ID	53
Indicator name	Number of reported cases of H5N1 influenza
Name abbreviated	H5N1 influenza - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed H5N1 influenza cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases confirmed by laboratory testing. Confirmed cases reported to WHO's Department of Epidemic and Pandemic Alert and Response. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	
Comments	

Contact person

Number of reported cases of japanese encephalitis

Indicator ID	44
Indicator name	Number of reported cases of japanese encephalitis
Name abbreviated	Japanese encephalitis - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed Japanese encephalitis cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Japanese encephalitis : The main cause of viral encephalitis in many countries of Asia. The infection is mosquito-borne and caused by a virus, related to dengue, yellow fever and West Nile viruses. The virus exists in a transmission cycle between mosquitoes and pigs and/or water birds. Humans become infected only incidentally when bitten by an infected mosquito and the disease is predominantly found in rural and periurban settings. The disease is endemic with seasonal distribution in parts of China, the Russian Federation's south-east, and South and South-East Asia.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Japanese encephalitis is difficult to identify without specialized laboratory tests that are often not available in developing countries. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of leprosy (Number of newly detected cases of leprosy)

Indicator ID	47
Indicator name	Number of reported cases of leprosy (Number of newly detected cases of leprosy)
Name abbreviated	Leprosy - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	WHA Resolution 44.9 on elimination of leprosy as a public health problem
Definition	Enumeration of clinically confirmed newly detected cases of leprosy. WHO operational definition of a case of leprosy: a person showing clinical signs of leprosy, with or without bacteriological confirmation of the diagnosis, and requiring chemotherapy. This definition excludes individuals cured of the infection but having residual disabilities due to leprosy.
Associated terms	Leprosy : A chronic disease of man resulting from infection with Mycobacterium leprae which affects mainly nerves and skin. There is no gold standard to identify leprosy infection. The diagnosis of leprosy is mainly based on clinical grounds and therefore lacks specificity, notwithstanding intra- and inter- observer variations. Clinical, bacteriological, histopathological and immunological tools are all unsatisfactory with regard to reaching a high positive predictive value for screening leprosy in the community. For operational purposes, the WHO proposed classifying patients as either paucibacillary or multibacillary leprosy cases.
Preferred data sources	Surveillance systems
Other possible data sources	Special studies
Method of measurement	
Method of estimation	WHO compiles data on reported cases of leprosy submitted by the national leprosy programmes. As WHO is providing antileprosy treatment free of charge to all countries (MDT), the request for MDT supply is linked to reporting cases. Predominant type of statistics: unadjusted.
M&E Framework	Impact
Method of estimation of global and regional aggregates	
Disaggregation	Boundaries : Administrative regions Boundaries : Health regions
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Continuous
Limitations	
Links	Leprosy (WHO website) WHO Weekly Epidemiological Record

Comments	Most of the information available on the leprosy burden in the world is based on disease registration. Annual reports from most endemic countries provide point prevalence, annual detection, treatment coverage and number of patients released from registers. Some countries provide more details, such as age-group specific detection (below 15 and adults), the proportion of multibacillary patients among new cases and the proportion of disabled patients (WHO grade 2) among new cases. Information generated by national information systems is supplemented by: - Surveys: total population surveys, selected population surveys, random sample surveys - WHO questionnaires - Regular national programme evaluations, including Leprosy Elimination Monitoring (LEM) - Reports from WHO and other consultants - Prospective studies for research purpose
Contact person	

Number of reported cases of malaria

Indicator ID	50
Indicator name	Number of reported cases of malaria
Name abbreviated	Malaria - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	The sum of confirmed cases of malaria (confirmed by slide examination or RDT) and probable (unconfirmed) cases of malaria (cases that were not tested but treated as malaria)
Associated terms	Malaria : An infectious disease caused by the parasite Plasmodium and transmitted via the bites of infected mosquitoes. Symptoms of uncomplicated malaria usually appear between 10 and 15 days after the mosquito bite and include fever, chills, headache, muscular aching and vomiting. Malaria can be treated with artemisinin-based combination and other therapies. Malaria responds well if treated with an effective antimalarial medicine at an early stage. However, if not treated, the falciparum malaria may progress to severe case and death. Less than one person in a thousand may die from the disease. Symptoms of severe disease include: coma (cerebal malaria), metabolic acidosis, severe aneamia, hypoglycaemia (low blood sugar levels) and in adults, kidney failure or pulmonary oedmea (a build up of fluid in the lungs). By this stage 15-20% of people receiving treatment will die. If untreated, severe malaria is almost always fatal. The symptoms of malaria overlap with other diseases so one can not always be certain that a death is due to malaria particularly as many deaths occur in children who may simultaneously suffer from a range conditions including respiratory infections, diarhoea, and malnutrition. Effective interventions exist to reduce the incidence of malaria including the use of insecticide treated mosquito nets and indoor residual spraying with insecticide.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	Reported cases of malaria = confirmed cases + probable (clinical) cases In endemic countries where health information system is weak and diagnosis is limited, national malaria control programmes (NMCPs) often collect data on the number of suspected cases, those tested and those confirmed. Probable or unconfirmed cases are calculated by subtracting the number tested from the number suspected.
Method of estimation	WHO compiles data on reported cases of malaria, submitted by the national malaria control programmes (NMCPs). Predominant type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual

Expected frequency of data collection	Continuous
Limitations	To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. Malaria is endemic to certain geographical regions, but extremely rare elsewhere. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases. To indicate burden of disease of malaria, number of estimated cases is preferred over number of reported cases. The proportion of cases notified can vary between countries and over time, trends in cases may be influenced by changes in reporting effort rather than underlying trends in disease. Malaria is difficult to identify without specialized laboratory tests that are often not available in developing countries. In settings where cases are identified through clinical signs and symptoms alone, there is considerable over-diagnosis of malaria. WHO estimation methods aim to correct for these biases.
Links	WHO/Roll-Back Malaria website World Malaria Report 2008
Comments	
Contact person	

Number of reported cases of measles

Indicator ID	60
Indicator name	Number of reported cases of measles
Name abbreviated	Measles - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed measles cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Measles : A highly contagious, serious disease caused by a virus. It remains a leading cause of death among young children globally, despite the availability of a safe and effective vaccine. Measles is transmitted via droplets from the nose, mouth or throat of infected persons. Initial symptoms, which usually appear 10–12 days after infection, include high fever, runny nose, bloodshot eyes, and tiny white spots on the inside of the mouth. Several days later, a rash develops, starting on the face and upper neck and gradually spreading downwards.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of mumps

Indicator ID	55
Indicator name	Number of reported cases of mumps
Name abbreviated	Mumps - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed mumps cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Mumps : An infection caused by a virus. It is sometimes called infectious parotitis, and it primarily affects the salivary glands. Mumps is mostly a mild childhood disease. It most often affects children between five and nine years old. But the mumps virus can infect adults as well. When it does, complications are more likely to be serious. As more children receive mumps vaccine, it is expected that cases will become more common in older children than in younger ones.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of neonatal tetanus

Indicator ID	58
Indicator name	Number of reported cases of neonatal tetanus
Name abbreviated	Neonatal tetanus - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed neonatal tetanus cases.
Associated terms	Tetanus : A disease that is acquired when the spores of the bacterium Clostridium Tetani infect a wound or the umbilical stump. Spores are universally present in the soil. People of all ages can get tetanus but the disease is particularly common and serious in newborn babies ("neonatal tetanus"). It requires treatment in a medical facility, often in a referral hospital. Neonatal tetanus, which is mostly fatal, is particularly common in rural areas where deliveries are at home without adequate sterile procedures.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of pertussis

Indicator ID	45
Indicator name	Number of reported cases of pertussis
Name abbreviated	Pertussis - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed pertussis cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Pertussis : A disease of the respiratory tract caused by bacteria that live in the mouth, nose, and throat. Also known as whooping cough. Many children who contract pertussis have coughing spells that last four to eight weeks. The disease is most dangerous in infants.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.

Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of plague

Indicator ID	54
Indicator name	Number of reported cases of plague
Name abbreviated	Plague - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Suspected (clinically and epidemiologically) and confirmed Plague cases by laboratory. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	
Comments	

Contact person

Number of reported cases of poliomyelitis

Indicator ID	51
Indicator name	Number of reported cases of poliomyelitis
Name abbreviated	Poliomyelitis - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	Poliomyelitis is targeted for eradication. Highly sensitive surveillance for acute flaccid paralysis (AFP), including immediate case investigation, and specimen collection are critical for the detection of wild poliovirus circulation with the ultimate objective of polio eradication. AFP surveillance is also critical for documenting the absence of poliovirus circulation for polio-free certification.
Definition	Reported cases of laboratory-confirmed polio cases. A polio case is confirmed if wild poliovirus is isolated from stool specimens collected from an Acute flaccid paralysis (AFP) case.
Associated terms	Acute flaccid paralysis (AFP) : Sudden onset of weakness and floppiness in any part of the body in a child < 15 years of age OR paralysis in a person of any age in whom polio is suspected.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Week
Expected frequency of data collection	Week
Limitations	
Links	Polio case count (WHO website)
Comments	A country should continue to report AFP cases even after interrupting wild poliovirus transmission. In those countries that have been polio free for decade, the detection rate of AFP cases is less accurate than in polio infected countries or countries at high risk of being re- infected by the poliovirus. The AFP surveillance system is based on an active surveillance system and is therefore quite accurate.
Contact person	Epidata (epidata@who.int)

Number of reported cases of rubella

Indicator ID	59
Indicator name	Number of reported cases of rubella
Name abbreviated	Rubella - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed rubella cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Rubella : An infection caused by a virus. Congenital rubella syndrome (CRS) is an important cause of severe birth defects. When a woman is infected with the rubella virus early in pregnancy, she has a 90% chance of passing the virus on to her fetus. This can cause the death of the fetus, or it may cause CRS. Even though it is a mild childhood illness CRS causes many birth defects. Deafness is the most common, but CRS can also cause defects in the eyes, heart, and brain.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of total tetanus

Indicator ID	48
Indicator name	Number of reported cases of total tetanus
Name abbreviated	Total tetanus - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed total tetanus cases.
Associated terms	Tetanus : A disease that is acquired when the spores of the bacterium Clostridium Tetani infect a wound or the umbilical stump. Spores are universally present in the soil. People of all ages can get tetanus but the disease is particularly common and serious in newborn babies ("neonatal tetanus"). It requires treatment in a medical facility, often in a referral hospital. Neonatal tetanus, which is mostly fatal, is particularly common in rural areas where deliveries are at home without adequate sterile procedures.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of reported cases of yellow fever

Indicator ID	52
Indicator name	Number of reported cases of yellow fever
Name abbreviated	Yellow fever - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Confirmed yellow fever cases, including those confirmed clinically, epidemiologically, or by laboratory investigation. Cases that have been discarded following laboratory investigation should not be included.
Associated terms	Clinically-confirmed case : A case that meets the clinical case definition of the country Epidemiologically-confirmed case : A case that meets the clinical case definition and is linked epidemiologically to a laboratory-confirmed case Laboratory-confirmed case : A case that meets the clinical case definition and is confirmed by laboratory investigation Yellow fever : A disease that is caused by the yellow fever virus, which is carried by mosquitoes. It is endemic in 33 countries in Africa and 11 countries in South America. The yellow fever virus can be transmitted by mosquitoes which feed on infected animals in forests, then pass the infection when the same mosquitoes feed on humans travelling through the forest. The greatest risk of an epidemic occurs when infected humans return to urban areas and are fed on by the domestic vector mosquito Aedus aegypti, which then transmits the virus to other humans.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by national authorities. Type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Sum of reported cases.
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	

Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. Yellow fever is endemic to certain geographical regions, but extremely rare elsewhere. For vaccine-preventable diseases, case numbers are affected by immunization rates. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	Immunization surveillance, assessment and monitoring: Data, statistics and graphics (WHO website)
Comments	
Contact person	

Number of suspected meningitis cases reported

Indicator ID	49
Indicator name	Number of suspected meningitis cases reported
Name abbreviated	Meningitis - number of reported cases
Data Type Representation	Count
Indicator group	Health status
Rationale	
Definition	Suspected cases of meningitis, as per the meningitis clinical case definition.
Associated terms	Meningitis : Clinical case definition: any person with sudden onset of fever (>38.5 C rectal or 38.0 C axillary) and one of the following signs: neck stiffness, altered consciousness or other meningeal signs.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	
Method of estimation	WHO compiles data as reported by National Authorities. Predominant type of statistics: unadjusted
M&E Framework	Impact
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	Cases
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	Case numbers are generally a poor indication of the true burden of disease. To interpret these numbers, one needs to consider both epidemiological patterns and data collection efforts in specific countries. Despite ongoing efforts to enhance disease surveillance and response, many countries face challenges in accurately identifying, diagnosing and reporting infectious diseases due to the remoteness of communities, lack of transport and a communication infrastructure, and shortage of skilled health-care workers and laboratory facilities to ensure accurate diagnosis. No inference can be drawn from these figures about a country's effort or progress in controlling particular diseases.
Links	WHO Epidemic and Pandemic Alert and Response
Comments	
Contact person	

Out-of-pocket expenditure as a percentage of private expenditure on health

Indicator ID	107
Indicator name	Out-of-pocket expenditure as a percentage of private expenditure on health
Name abbreviated	OOPs as % of PvtHE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. It contributes to understanding the relative weight of direct payments by households in total health expenditures. High out-of-pocket payments are strongly associated with catastrophic and impoverishing spending. Thus it represents a key support for equity and planning processes.
Definition	Level of out-of-pocket expenditure expressed as a percentage of private expenditure on health
Associated terms	Out-of-pocket expenditure : The expenditure on health by households as direct payments to health care providers. It should be netted from reimbursements from health insurance. A household is an individual or a group of persons sharing the same living accommodation, which pool some, or all, of their income and wealth and which consume certain types of goods and services collectively, mainly housing and food. Private expenditure on health : The sum of outlays for health by private entities, such as households, commercial or mutual health insurance, non-profit institutions serving households, resident corporations and quasi-corporations with a health services delivery or financing function. It includes expenditures from all sources, so includes any donor funding passing through these "financing agents".
Preferred data sources	National Health Accounts Administrative reporting system Household surveys
Other possible data sources	Special studies
Method of measurement	National health accounts traces the financing flows from the households as the agents who decide on the use of the funds to health providers. Thus in this indicator are included only the direct payments or out-of-pocket expenditure. NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Thus reimbursements from insurance should be deducted. Monetary and non monetary transactions are accounted for at purchasers value, thus in kind payments should be valued at purchasers' price. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, International Monetary Fund (IMF) international financial statistics; OECD health data; and the United Nations national accounts statistics. National sources include National health accounts (NHA) reports, national accounts (NA) reports, comprehensive financing studies, private expenditure by purpose reports (COICOP), institutional reports of private entities involved in health care provision or financing notably actuarial and financial reports of private health insurance agencies. Additional sources involve: household surveys, business surveys, economic censuses. Other possible data sources include ad hoc surveys. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Impact
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions.
Disaggregation	
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government/private expenditure on health. Some figures lack accuracy when they do not involve a full commodity flow. Household surveys tend to be biased due to sampling and non sampling errors.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	This indicator is the main component of the measured private expenditure on health in most countries of the world. An ongoing effort to standardize and improve the measurement procedures can be consulted in WHO NHA website.
Contact person	

Per capita government expenditure on health (PPP int. $)

Indicator ID	108
Indicator name	Per capita government expenditure on health (PPP int. $)
Name abbreviated	GGHE pc Int$
Data Type Representation	Money
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understand the relative level of public spending on health to the beneficiary population, expressed in international dollars to facilitate international comparisons. It includes not just the resources channeled through government budgets but also the expenditure on health by parastatals, extrabudgetary entities and notably the compulsory health insurance. It refers to resources collected and polled by public agencies including all the revenue modalities.
Definition	Per capita general government expenditure on health (GGHE) expressed in PPP international dollar
Associated terms	General government expenditure on health (GGHE) : The sum of health outlays paid for in cash or supplied in kind by government entities, such as the Ministry of Health, other ministries, parastatal organizations or social security agencies (without double counting government transfers to social security and extrabudgetary funds). It includes all expenditure made by these entities, regardless of the source, so includes any donor funding passing through them. It includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. It includes current and capital expenditure. International dollar rate / PPP : A hypothetical currency unit that takes into account differences in relative purchasing power between countries.
Preferred data sources	National Health Accounts Administrative reporting system
Other possible data sources	
Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. In this indicator resources are tracked for all public entities acting as financing agents: managing health funds and purchasing or paying for health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Specially, it aims to be consolidated not to double count government transfers to social security and extrabudgetary funds. Monetary and non monetary transactions are accounted for at purchasers' value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principle international references used are GGHE: WHO NHA database. PPP: WB, WHO estimates for countries which WB does not provide PPPs. Population figures are taken from UN pop, OECD HD, EUROSTAT database. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	PPP international dollar
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local government, other ministries and extrabudgetary entities. A time lag affects the registration of population migrations voluntary and forced ones.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	
Contact person	

Per capita government expenditure on health at average exchange rate (US$)

Indicator ID	109
Indicator name	Per capita government expenditure on health at average exchange rate (US$)
Name abbreviated	GGHE pc X-rate
Data Type Representation	Money
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understand the relative level of public spending on health to the beneficiary population, expressed in US$ to facilitate international comparisons. It includes not just the resources channeled through government budgets but also the expenditure on health by parastatals, extrabudgetary entities and notably the compulsory health insurance. It refers to resources collected and pooled by public agencies including all the revenue modalities.
Definition	Per capita general government expenditure on health (GGHE) expressed at average exchange rate for that year in US dollar. Current prices.
Associated terms	Exchange rate : Observed average number of units at which a currency is traded in the banking system. General government expenditure on health (GGHE) : The sum of health outlays paid for in cash or supplied in kind by government entities, such as the Ministry of Health, other ministries, parastatal organizations or social security agencies (without double counting government transfers to social security and extrabudgetary funds). It includes all expenditure made by these entities, regardless of the source, so includes any donor funding passing through them. It includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. It includes current and capital expenditure.
Preferred data sources	National Health Accounts Administrative reporting system
Other possible data sources	
Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. In this indicator resources are tracked for all public entities acting as financing agents: managing health funds and purchasing or paying for health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Specially, it aims to be consolidated not to double count government transfers to social security and extrabudgetary funds. Monetary and non monetary transactions are accounted for at purchasers value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. Preferred data sources: GGHE: WHO NHA database. Exchange rate: IMF IFS. Population figures are taken from UN Population Division, OECD HD, EUROSTAT database. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	USD
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government/private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local government, or extrabudgetary entities. A time lag affects the registration of migrations voluntary and forced ones.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	Data are intended to approximate current values.
Contact person	

Per capita total expenditure on health (PPP int. $)

Indicator ID	110
Indicator name	Per capita total expenditure on health (PPP int. $)
Name abbreviated	THE pc Int$
Data Type Representation	Money
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understand the total expenditure on health relative to the beneficiary population, expressed in Purchasing Power Parities (PPP) to facilitate international comparisons.
Definition	Per capita total expenditure on health (THE) expressed in PPP international dollar.
Associated terms	International dollar rate / PPP : A hypothetical currency unit that takes into account differences in relative purchasing power between countries. Total expenditure on health (THE) : The sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of General Government Expenditure on Health and Private Expenditure on Health.
Preferred data sources	National Health Accounts
Other possible data sources	
Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. NHA synthesize the financing flows of a health system, recorded from the origin of the resources (sources), and the purchasing agents (financing schemes), which distribute their funds between providers, to pay for selected health goods and services to benefit individuals. Beneficiaries are analysed across geographical, demographic, socioeconomic and epidemiological dimensions. Total expenditure on health (THE) is measured as the sum of spending of all financing agents managing funds to purchase health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Monetary and non monetary transactions are accounted for at purchasers' values. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. Preferred data sources: THE: WHO NHA database. PPP exchange rates: WB, WHO estimates for countries which WB does not provide PPPs. Population figures are taken from UN Population Division, OECD HD, EUROSTAT database. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	PPP international dollar
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government/private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local government, corporations, nongovernmental organizations or insurance. A time lag affects the registration of population migrations voluntary and forced ones.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	Data are intended to approximate current values.
Contact person	

Per capita total expenditure on health at average exchange rate (US$)

Indicator ID	111
Indicator name	Per capita total expenditure on health at average exchange rate (US$)
Name abbreviated	THE pc at X-rate
Data Type Representation	Money
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understand the total expenditure on health relative to the beneficiary population, expressed in USD to facilitate international comparisons.
Definition	Per capita total expenditure on health (THE) expressed at average exchange rate for that year in US$. Current prices.
Associated terms	Exchange rate : Observed average number of units at which a currency is traded in the banking system. Total expenditure on health (THE) : The sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of General Government Expenditure on Health and Private Expenditure on Health.
Preferred data sources	National Health Accounts
Other possible data sources	
Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. NHA synthesize the financing flows of a health system, recorded from the origin of the resources (sources), and the purchasing agents (financing schemes), which distribute their funds between providers, to pay for selected health goods and services to benefit individuals. Beneficiaries are analysed across geographical, demographic, socioeconomic and epidemiological dimensions. Total expenditure on health (THE) is measured as the sum of spending of all financing agents managing funds to purchase health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Monetary and non monetary transactions are accounted for at purchasers' values. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).
Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are; THE: NHA reports or WHO NHA database. Exchange rate: IMF IFS, OECD HD, EUROSTAT database. Population figures are taken from UN Population Division, OECD HD, EUROSTAT database. WHO sends estimates to the respective Ministries of Health every year for validation

M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	USD
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government/private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local government, corporations, nongovernmental organizations or insurance. A time lag affects the registration of population migrations voluntary and forced ones.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	Data are intended to approximate current values.
Contact person	

Population (in thousands) total

Indicator ID	113
Indicator name	Population (in thousands) total
Name abbreviated	Population (in thousands) total
Data Type Representation	Count
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	De facto population in a country, area or region as of 1 July of the year indicated. Figures are presented in thousands.
Associated terms	
Preferred data sources	Civil registration Population census
Other possible data sources	
Method of measurement	
Method of estimation	Population data are taken from the most recent UN Population Division's "World Population Prospects".
M&E Framework	
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	
Unit Multiplier	3
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Population living in urban areas (%)

Indicator ID	114
Indicator name	Population living in urban areas (%)
Name abbreviated	Population living in urban areas (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	The percentage of de facto population living in areas classified as urban according to the criteria used by each area or country as of 1 July of the year indicated.
Associated terms	
Preferred data sources	Civil registration Population census
Other possible data sources	
Method of measurement	
Method of estimation	Population data are taken from the most recent UN Population Division's "World Population Prospects".
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Population living on <$1 (PPP int. $) a day (%)

Indicator ID	115
Indicator name	Population living on <$1 (PPP int. $) a day (%)
Name abbreviated	Population living on <$1 (PPP int. $) a day (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	The $1.25 a day poverty line – the critical threshold value below which an individual or household is determined to be poor -- corresponds to the value of the poverty lines in the poorest countries (the poorest countries are determined by international rank of GNI per capita in PPP terms). This threshold is a measure of extreme poverty that allows for comparisons across countries when converted using PPP exchange rates for consumption. In addition, poverty measures based on an international poverty line attempt to hold the real value of the poverty line constant over time allowing for accurate assessments of progress toward meeting the goal of eradicating extreme poverty and hunger.
Definition	The poverty rate at $1.25 a day is the proportion of the population living on less than $1.25 a day, measured at 2005 international prices, adjusted for purchasing power parity (PPP). Purchasing power parities (PPP) conversion factor, private consumption, is the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a U.S. dollar would buy in the United States. This conversion factor is applicable to private consumption.
Associated terms	Poverty line : The poverty line is a marker used to measure poverty based on income or consumption levels. A person is considered poor if his or her consumption or income level falls below the minimum level necessary to meet basic needs. This minimum level is referred to as the poverty line.
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	
Method of estimation	The formula for calculating the proportion of the population living below the poverty line, or headcount index, is as follows: P0 = 1/ N × I (yi Ò z) = Np / N Where I(.) is an indicator function that takes on a value of 1 if the bracketed expression is true, and 0 otherwise. If individual consumption or income (yi) is less than the poverty line (z), then I(.) is equal to 1 and the individual is counted as poor. Np is the total number of the poor. N is the total population.
M&E Framework	Determinant
Method of estimation of global and regional aggregates	Global and regional estimates are based on population-weighted averages using total population. They are presented only if available data cover at least 50% of total population in the regional or global groupings.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	

Limitations	As a result of revisions in PPP exchange rates, poverty rates for individual countries cannot be compared with poverty rates reported in earlier editions. The poverty rate is a useful tool for policy makers and donors to target development policies to the poor. Yet it has the drawback that it does not capture the depth of poverty; failing to account for the fact that some people may be living just below the poverty line while others live far below the poverty line. Policymakers seeking to make the largest possible impact on reducing poverty rates might be tempted to direct their poverty alleviation resources to those closest to the poverty line (and therefore least poor).
Links	PovcalNet (World Bank)
Comments	
Contact person	

Population median age (years)

Indicator ID	116
Indicator name	Population median age (years)
Name abbreviated	Population median age (years)
Data Type Representation	Statistic
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	Age that divides the population in two parts of equal size, that is, there are as many persons with ages above the median as there are with ages below the median.
Associated terms	
Preferred data sources	
Other possible data sources	
Method of measurement	
Method of estimation	Population data are taken from the most recent UN Population Division's "World Population Prospects".
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	Years
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Population proportion over 60 (%)

Indicator ID	117
Indicator name	Population proportion over 60 (%)
Name abbreviated	Population proportion over 60 (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	The percentage of de facto population aged 60 years and older in a country, area or region as of 1 July of the year indicated.
Associated terms	
Preferred data sources	Civil registration Population census
Other possible data sources	
Method of measurement	
Method of estimation	Population data are taken from the most recent UN Population Division's "World Population Prospects".
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Population proportion under 15 (%)

Indicator ID	118
Indicator name	Population proportion under 15 (%)
Name abbreviated	Population proportion under 15 (%)
Data Type Representation	Percent
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	The percentage of de facto population aged 0-14 years in a country, area or region as of 1 July of the year indicated.
Associated terms	
Preferred data sources	Civil registration Population census
Other possible data sources	
Method of measurement	
Method of estimation	Population data are taken from the most recent UN Population Division's "World Population Prospects".
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Population using improved drinking-water sources (%)

Indicator ID	8
Indicator name	Population using improved drinking-water sources (%)
Name abbreviated	Population using improved drinking-water sources
Data Type Representation	Percent
Indicator group	Risk factors
	Demographic and socio-economic statistics
Rationale	Access to drinking water and basic sanitation is a fundamental need and a human right vital for the dignity and health of all people. The health and economic benefits of improved water supply to households and individuals are well documented. Use of an improved drinking water source is a proxy for the use of safe drinking water.
Definition	The percentage of population using an improved drinking water source. An improved drinking water source, by nature of its construction and design, is likely to protect the source from outside contamination, in particular from faecal matter. Improved drinking water sources include: - Piped water into dwelling, plot or yard - Public tap/stand pipe - Tube well/borehole - Protected dug well - Protected spring and - Rainwater collection On the other hand, unimproved drinking water sources are: - Unprotected drug well, - Unprotected spring, - Cart with small tank/drum, - Tanker truck, - Surface water (river, dam, lake, pond, stream, canal, irrigation channel ad any other surface water), and - Bottled water (if it is not accompanied by another improved source (WHO & UNICEF, 2010)
Associated terms	
Preferred data sources	Household surveys
	Population census
Other possible data sources	Administrative reporting system

Method of measurement	The indicator is computed as the ratio of the number of people who use an improved drinking water source, urban and rural, expressed as a percentage. The percentage of total population using an improved drinking water source is the population weighted average of the previous two numbers. The use of drinking water sources and sanitation facilities is part of the wealth-index used by household surveys to divide the population into wealth quintiles. As a result, most nationally representative household surveys include information about water and sanitation. These include Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), World Health Surveys, Living Standards Measurement Surveys, Core Welfare Indicator Questionnaires, Health and Nutrition Surveys, Household Budget Surveys, Pan Arab Project for Family Health Surveys, Reproductive Health Surveys and many other nationally representative household surveys. The survey questions and response categories pertaining to access to drinking water are fully harmonized between MICS and DHS, which is adopted from the standard questionnaire promoted for inclusion into survey instruments by the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP). This can be accessed through www.wssinfo.org .
Method of estimation	JMP assembles, reviews and assesses data collected by national statistics offices and other relevant institutions through nationally representative household surveys and national censuses. For each country, survey and census data are plotted on a time series: 1980 to present. A linear trend line, based on the least-squares method, is drawn through these data points to estimate coverage for 1990, 1995, 2000, 2005 and 2008 The total coverage estimates are based on the aggregate of the population-weighted average of urban and rural coverage numbers. The population estimates in this report, including the urban/ rural distribution, are those published by the United Nations Population Division, 2008 revision. (WHO & UNICEF, 2010) Predominant type of statistics: adjusted and predicted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of population for the reference year in each country as the weight. No figures are reported if less than 50 per cent of the population in the region are covered.
Disaggregation	Location (urban/rural)
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	
Limitations	Use of an improved drinking water source is a proxy for access to safe drinking water. Surveys and censuses, data sources used by JMP, measure "use" and not "access", since the data is collected directly from the users of the facilities. Measurability of sustainable access to safe drinking water at the national scale, as warranted by the MDG target, poses a huge challenge for JMP. (WHO & UNICEF, 2010) Information is missing from many developed countries.
Links	WHO/UNICEF Joint Monitoring Programme website Progress on sanitation and drinking-water, 2010 update (WHO and UNICEF, 2010)
Comments	
Contact person	

Population using improved sanitation facilities (%)

Indicator ID	9
Indicator name	Population using improved sanitation facilities (%)
Name abbreviated	Population using improved sanitation facilities
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	Access to drinking water and basic sanitation is a fundamental need and a human right vital for the dignity and health of all people. The health and economic benefits of improved sanitation facilities to households and individuals are well documented. Use of an improved sanitation facility is a proxy for the use of basic sanitation.
Definition	The percentage of population using an improved sanitation facility. An improved sanitation facility is one that likely hygienically separates human excreta from human contact. Improved sanitation facilities include: - Flush or pour-flush to piped sewer system, septic tank or pit latrine, - Ventilated improved pit latrine, - Pit latrine with slab and - Composting toilet However, sanitation facilities are not considered improved when shared with other households, or open to public use. While, unimproved sanitation include: - Flush or pour-flush to elsewhere, - Pit latrine without slab or open pit, - Bucket, hanging toilet or hanging latrine and - No facilities or bush or field (open defecation) (WHO & UNICEF, 2010.)
Associated terms	
Preferred data sources	Household surveys Population census
Other possible data sources	Administrative reporting system
Method of measurement	The indicator is computed as the ratio of the number of people who use an improved sanitation facility, urban and rural, expressed as a percentage. The percentage of total population using an improved sanitation facility is the population weighted average of the previous two numbers. The use of drinking water sources and sanitation facilities is part of the wealth-index used by household surveys to divide the population into wealth quintiles. As a result, most nationally representative household surveys include information about water and sanitation. These include Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), World Health Surveys, Living Standards Measurement Surveys, Core Welfare Indicator Questionnaires, Health and Nutrition Surveys, Household Budget Surveys, Pan Arab Project for Family Health Surveys and Reproductive Health Surveys and many other nationally representative household surveys. The survey questions and response categories pertaining to access to sanitation are fully harmonized between MICS and DHS, which is adopted from the standard questionnaire promoted for inclusion into survey instruments by the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP). This can be accessed through www.wssinfo.org .

Method of estimation	JMP assembles, reviews and assesses data collected by national statistics offices and other relevant institutions through nationally representative household surveys and national censuses. For each country, survey and census data are plotted on a time series: 1980 to present. A linear trend line, based on the least-squares method, is drawn through these data points to estimate coverage for 1990, 1995, 2000, 2005 and 2008. The total coverage estimates are based on the aggregate of the population-weighted average of urban and rural coverage numbers. The population estimates in this report, including the urban/ rural distribution, are those published by the United Nations Population Division, 2008 revision. The coverage estimates for improved sanitation facilities presented are discounted by the proportion of the population that shared an improved type of sanitation facility. (WHO & UNICEF, 2010) Predominant type of statistics: adjusted and predicted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of population for the reference year in each country as the weight. No figures are reported if less than 50 per cent of the population in the region are covered.
Disaggregation	Location (urban/rural)
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	
Limitations	Use of an improved sanitation facility is a proxy for access to basic sanitation. Surveys and censuses, data sources used by JMP, measure "use" and not "access", since the data is collected directly from the users of the facilities. Measurability of sustainable access to basic sanitation at the national scale, as warranted by the MDG target, poses a challenge for JMP. (WHO & UNICEF, 2010) Information is missing from many developed countries.
Links	WHO/UNICEF Joint Monitoring Programme website Progress on sanitation and drinking-water, 2010 update (WHO and UNICEF, 2010)
Comments	
Contact person	

Population using solid fuels

Indicator ID	318
Indicator name	Population using solid fuels
Name abbreviated	
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	The use of solid fuels in households is associated with increased mortality from pneumonia and other acute lower respiratory diseases among children, as well as increased mortality from chronic obstructive pulmonary disease and lung cancer (where coal is used) among adults.
Definition	The percentage of the population that relies on solid fuels as the primary source of domestic energy for cooking and heating.
Associated terms	Solid fuels : Biomass fuels, such as wood, charcoal, crops or other agricultural waste, dung, shrubs and straw, and coal
Preferred data sources	Household surveys Population census
Other possible data sources	
Method of measurement	The indicator is calculated as the number of people using solid fuels divided by total population, expressed as percentage. Solid fuel use data are routinely collected at the national and sub national levels in most countries using censuses and surveys. Household surveys used include: United States Agency for International Development (USAID)-supported Demographic and Health Surveys (DHS); United Nations Children's Fund (UNICEF)-supported Multiple Indicator Cluster Surveys (MICS); WHO-supported World Health Surveys (WHS); and other reliable and nationally representative country surveys.
Method of estimation	The indicator draws on already published data sources. Until 2004, national data were not modified and reported as such. For the 2009 reporting (2007 being the year reported), as the number of nationally representative data has increased, the methods developed and implemented by the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (WHO & UNICEF 2006) were followed: - Where solid fuel use information is available for a single year, a horizontal line is drawn six years into the past and six years into the future; - Where solid fuel use information is available for two or more years that are spaced four or fewer years apart, an average is calculated. This average is extrapolated six years into the past and six years into the future. - Where solid fuel use information is available for two or more years that are spaced at least five years apart, linear regression is performed. The linear regression line is extrapolated up to two years after the latest survey point and up to two years before the earliest survey point. Outside of these time limits, the extrapolated regression line is flat for four years in either direction. Where coverage reaches 0% or 100%, a horizontal line is drawn from the year before coverage reaches 0% or 100%. Missing data are estimated based on the following criteria: - All countries with a Gross National Income (GNI) per capita above USD 10,500 are assumed to have made a complete transition to using non-solid fuels as the primary source of domestic energy for cooking and heating. - Missing data are not estimated for countries with a GNI per capita below USD 10,500, and for which no household solid fuel use data are available.
M&E Framework	Outcome

Method of estimation of global and regional aggregates	Countries are population-weighted to obtain regional aggregates; for countries with no data, the regional mean exposure is assumed; for countries with less than 5% of solid fuel use (SFU), 0% is assumed for the calculation of regional or global means; for countries with more than 95% of SFU, 95% is assumed in the calculation of the mean.
Disaggregation	Location (urban/rural) Boundaries : Administrative regions Wealth : Wealth quintile Education level
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Every 2-3 years
Expected frequency of data collection	Every 3-5 years
Limitations	The indicator uses solid fuel use as a proxy for indoor air pollution, as it is not currently possible to obtain nationally representative samples of indoor concentrations of criteria pollutants, such as small particles and carbon monoxide. The indicator is based on the main type of fuel used for cooking as cooking occupies the largest share of overall household energy needs. However, many households use more than one type of fuel for cooking and, depending on climatic and geographical conditions, heating with solid fuels can also be a contributor to indoor air pollution levels.
Links	Indoor air pollution (WHO website)
Comments	There may be discrepancies between internationally reported and nationally reported figures. The reasons are the following: - Use of different definitions of solid fuel (wood only or wood and any other biomass, e.g. dung residues). - Use of different total population estimate - Estimates are expressed as percentage of population using solid fuels (as per MDG indicator) as compared to percentage of household using solid fuels (as assessed by surveys such as DHS or MICS - Where several survey results were available, averages or linear regression over time were made for reporting for a given year, which may differ from a single national survey data poin - In the estimates presented here, values above 95% solid fuel use are reported as “>95%”, and values below 5% as “<5"
Contact person	bonjourso (bonjourso@who.int)

Prevalence of condom use by adults (15-49 years) at higher-risk sex (%)

Indicator ID	15
Indicator name	Prevalence of condom use by adults (15-49 years) at higher-risk sex (%)
Name abbreviated	Condom use during higher-risk sex
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	Condom use is an important measure of protection against HIV, especially among people with multiple sexual partners. The purpose of this indicator is to assess progress towards preventing exposure to HIV through unprotected sex with non-regular partners.
Definition	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
Associated terms	
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	Data are derived from household surveys such as Demographic and Health Surveys (DHS), Multiple Indicators Cluster Survey (MICS), Behavioural Surveillance Surveys. Respondents are asked whether or not they have ever had sexual intercourse and, if yes, they are asked: 1. In the last 12 months, how many different people have you had sexual intercourse with? If more than one, the respondent is asked: 2. Did you or your partner use a condom the last time you had sexual intercourse? The indicator is calculated by dividing the number of respondents (aged 15–49) who reported having had more than one sexual partner in the last 12 months who also reported that a condom was used the last time they had sex, by the number of respondents (15–49) who reported having had more than one sexual partner in the last 12 months.
Method of estimation	Estimates derived from household surveys (DHS, MICS) are presented here, as compiled and reported by UNAIDS in the 2008 Report on the Global AIDS epidemics, Annex 2 (UNAIDS, 2008). Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	
Disaggregation	Sex Age
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	Every 3-5 years
Limitations	

Links	HIV/AIDS Data and Statistics (WHO) HIV/AIDS Survey Indicators Database (MEASURE DHS) Guidelines on Construction of Core Indicators (UNAIDS, 2007) 2008 Report on the Global AIDS epidemics (UNAIDS, 2008) Guidelines on Construction of Core Indicators: 2010 Reporting (UNAIDS, 2009)
Comments	This indicator shows the extent to which condoms are used by people who are likely to have higher-risk sex (i.e. change partners regularly). However, the broader significance of any given indicator value will depend upon the extent to which people engage in such relationships. Thus, levels and trends should be interpreted carefully using the data obtained on the percentages of people that have had more than one sexual partner within the last year. The maximum protective effect of condoms is achieved when their use is consistent rather than occasional. The current indicator does not provide the level of consistent condom use. However, the alternative method of asking whether condoms were always/sometimes/never used in sexual encounters with non-regular partners in a specified period is subject to recall bias. Furthermore, the trend in condom use during the most recent sex act will generally reflect the trend in consistent condom use. (UNAIDS, 2009)
Contact person	

Prevalence of current tobacco use among adolescents aged 13-15 years (%)

Indicator ID	129
Indicator name	Prevalence of current tobacco use among adolescents aged 13-15 years (%)
Name abbreviated	
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	The risk of chronic diseases starts early in childhood and such behaviour continues into adulthood. Tobacco is an addictive substance and smoking often starts in adolescence, before the development of risk perception. By the time the risk to health is recognized, addicted individuals find it difficult to stop tobacco use.
Definition	The prevalence of tobacco use (including smoking and the use of oral tobacco and snuff) among 13–15-year-olds on more than one occasion in the 30 days preceding the survey.
Associated terms	
Preferred data sources	Specific population surveys
Other possible data sources	
Method of measurement	Prevalence of current tobacco use among adolescents aged 13-15 years can be obtained from the Global Youth Tobacco Survey (GYTS) and Global School Health Survey (GSHS), which are school-based surveys that include the following questions: 1. The number of days on which respondent smoke cigarettes during the past 30 days 2. Whether or not, or the number of days on which, respondent used any tobacco products other than cigarettes during the past 30 days
Method of estimation	WHO compiles data from Global Youth Tobacco Survey (GYTS) and Global School Health Survey (GSHS) in the WHO Global InfoBase. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population aged 13-15 years. They are presented only if available data cover at least 50% of total population aged 13-15 years in the regional or global groupings.
Disaggregation	Sex
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	Some of the surveys were conducted in small subnational populations and therefore may not accurately reflect the national picture.
Links	WHO Global InfoBase WHO/CDC Global Youth Tobacco Survey Global School-based Student Health Survey
Comments	

Contact person

Prevalence of current tobacco use among adults aged Ó 15 years (%)

Indicator ID	128
Indicator name	Prevalence of current tobacco use among adults aged Ó 15 years (%)
Name abbreviated	
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	The prevalence of current tobacco smoking among adults is an important measure of the health and economic burden of tobacco, and provides a baseline for evaluating the effectiveness of tobacco control programmes over time. While a more general measure of tobacco use (including both smoked and smokeless products) would be ideal, data limitations restrict the present indicator to smoked tobacco. Adjusted and age-standardized prevalence rates are constructed solely for the purpose of comparing tobacco use prevalence estimates across multiple countries or across multiple time periods for the same country. These rates should not be used to estimate the number of smokers in the population.
Definition	Current smoking of any tobacco product prevalence estimates, resulting from the latest adult tobacco use survey (or survey which asks tobacco use questions), which have been adjusted according to the WHO regression method for standardising described in the Method of Estimation below. "Tobacco smoking" includes cigarettes, cigars, pipes or any other smoked tobacco products. “Current smoking” includes both daily and non-daily or occasional smoking.
Associated terms	
Preferred data sources	Household surveys
Other possible data sources	Specific population surveys Surveillance systems
Method of measurement	

Method of estimation	WHO has developed a regression method that attempts to enable comparisons between countries. If data are partly missing or are incomplete for a country, the regression technique uses data available for the region in which the country is located to generate estimates for that country. The regression models are run at the United Nations sub-regional level 3 separately for males and females in order to obtain age-specific prevalence rates for that region. These estimates are then substituted for the country falling within the sub-region for the missing indicator. Note that the technique cannot be used for countries without any data: these countries are excluded from any analysis. Information from heterogeneous sources that originate from different surveys and do not employ standardized survey instruments render difficult the production of national-level age-standardized rates. The four types of differences between surveys and the relevant adjustment procedures used are listed below. Differences in age groups covered by the survey: In order to estimate smoking prevalence rates for standard age ranges (by five-year groups from age 15 until age 80 and thereafter from 80 to 100 years), the association between age and daily smoking is examined for males and females separately for each country using scatter plots. For this exercise, data from the latest nationally representative survey are chosen; in some cases more than one survey is chosen if male and female prevalence rates stem from different surveys or if the additional survey supplements data for the extreme age intervals. To obtain age-specific prevalence rates for five-year age intervals, regression models using daily smoking prevalence estimates from a first order, second order and third order function of age are graphed against the scatter plot and the best fitting curve is chosen. For the remaining indicators, a combination of methods is applied: regression models are run at the sub-regional level to obtain age-specific rates for current and daily cigarette smoking, and an equivalence relationship is applied between smoking prevalence rates and cigarette smoking where cigarette smoking is dominant to obtain age-specific prevalence rates for current and daily cigarette smoking for the standard age intervals. Differences in the types of indicators of tobacco use measured: If we have data for current tobacco smoking and current cigarette smoking, then definitional adjustments are made to account for the missing daily tobacco smoking and daily cigarette smoking. Likewise, if we have data for current and daily tobacco smoking only, then tobacco type adjustments are made across tobacco types to generate estimates for current and daily cigarette smoking. Differences in geographic coverage of the survey within the country: Adjustments are made to the data by observing the prevalence relationship between urban and rural areas in countries falling within the relevant sub-region. Results from this urban-rural regression exercise are applied to countries to allow a scaling-up of prevalence to the national level. As an example, if a country has prevalence rates for daily smoking of tobacco in urban areas only, the regression results from the rural-urban smoking relationship are used to obtain rural prevalence rates for daily smoking. These are then combined with urban prevalence rates using urban-rural population ratios as weights to generate a national prevalence estimate as well as national age-specific rates. Differences in survey year: For the WHO Report on the Global Tobacco Epidemic, 2009, smoking prevalence estimates were generated for year 2006. Smoking prevalence data are sourced from surveys conducted in countries in different years. In some cases, the latest available prevalence data came from surveys before the year 2006 while in other cases the survey was later than 2006. To obtain smoking prevalence estimates for 2006, trend information is used either to project into the future for countries with data older than 2006 or to backtrack for countries with data later than 2006. This is achieved by incorporating trend information from all available surveys for each country. For countries without historical data, trend information from the respective sub-region in which they fall is used. Age-standardized prevalence:

Method of estimation	Tobacco use generally varies widely by sex and across age groups. Although the crude prevalence rate is reasonably easy to understand for a country at one point in time, comparing crude rates between two or more countries at one point in time, or of one country at different points in time, can be misleading if the two populations being compared have significantly different age distributions or differences in tobacco use by sex. The method of age-standardization is commonly used to overcome this problem and allows for meaningful comparison of prevalence between countries. The method involves applying the age-specific rates by sex in each population to one standard population. The WHO Standard Population, a fictitious population whose age distribution was artificially created and is largely reflective of the population age structure of low- and middle-income countries, was used. The resulting age-standardized rate, also expressed as a percentage of the total population, refers to the number of smokers per 100 WHO Standard Population. As a result, the rate generated using this process is only a hypothetical number with no inherent meaning in its magnitude. It is only useful when contrasting rates obtained from one country to those obtained in another country, or from the same country at a different points in time. In order to produce an overall smoking prevalence rate for a country, the age-standardized prevalence rates for males and females must be combined to generate total prevalence. Since the WHO Standard Population is the same irrespective of sex, the age-standardized rates for males and females are combined using population weights for males and for females at the global level from the UN population data for 2006. For example, if the age-standardized prevalence rate for tobacco smoking in adults is 60% for males and 30% for females, the combined prevalence rate for tobacco smoking in all adults is calculated as 60 x (0.51) + 30 x (0.49) = 45%, with the figures in brackets representing male and female population weights. Thus, of the total smoking prevalence (45%) the proportion of smoking attributable to males is 66.7% [= (30 ÷ 45) x 100] and to females 33.3% [= (15 ÷ 45) x 100]. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global aggregates are based on population-weighted averages weighted by the total number of population aged Ó15 years. They are presented only if available data cover at least 50% of total population aged Ó15 years in the regional or global groupings.
Disaggregation	Sex
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Continuous
Expected frequency of data collection	
Limitations	
Links	WHO Global InfoBase
Comments	Developing standard methods for adjusting and reporting the prevalence of tobacco use represents our best effort for developing a baseline with which to compare future prevalence estimates of tobacco use. The ideal would be to have national government agreement on a standard framework for collecting survey data on chronic disease risk factors, including tobacco use, within a common timeframe. As this may take a little time, these estimates are intended to be the baseline for tobacco control efforts worldwide.
Contact person	

Private expenditure on health as a percentage of total expenditure on health

Indicator ID	119
Indicator name	Private expenditure on health as a percentage of total expenditure on health
Name abbreviated	PvtHE as % of THE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understanding the relative weight of private entities in total expenditure on health. It includes expenditure from pooled resources with no government control, such as voluntary health insurance, and the direct payments for health by corporations (profit, non-for-profit and NGOs) and households. As a financing agent classification, it includes all sources of funding passing through these entities, including any donor (funding) they use to pay for health.
Definition	Definition Level of private expenditure on health expressed as a percentage of total expenditure on health.
Associated terms	Expenditure on Health : The sum of outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. Private expenditure on health : The sum of outlays for health by private entities, such as households, commercial or mutual health insurance, non-profit institutions serving households, resident corporations and quasi-corporations with a health services delivery or financing function. It includes expenditures from all sources, so includes any donor funding passing through these "financing agents". Total expenditure on health (THE) : The sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of General Government Expenditure on Health and Private Expenditure on Health.
Preferred data sources	National Health Accounts Administrative reporting system Household surveys
Other possible data sources	Special studies
Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. In this indicator resources are tracked for all private entities acting as financing agents: managing health funds and purchasing or paying for health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Monetary and non monetary transactions are accounted for at purchasers value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, International Monetary Fund (IMF) international financial statistics; OECD health data; and the United Nations national accounts statistics. National sources include national health accounts (NHA) reports, national accounts (NA) reports, comprehensive financing studies, private expenditure by purpose reports (COICOP), institutional reports of private entities involved in health care provision or financing notably actuarial and financial reports of private health insurance agencies, household surveys, business surveys, economic censuses. Other possible data sources include ad hoc surveys. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for corporations, nongovernmental organizations or insurance. Records on out-of-pocket payments (OOPS) can be partial.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	This indicator includes voluntary pooled insurance for health insurance as well as direct payments by private agents.
Contact person	

Private prepaid plans as a percentage of private expenditure on health

Indicator ID	120
Indicator name	Private prepaid plans as a percentage of private expenditure on health
Name abbreviated	Prepaid as % PvtHE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understanding the relative weight of voluntary health insurance payments in total health expenditure.
Definition	Level of private prepaid plans expressed as a percentage of private expenditure on health.
Associated terms	Prepaid and risk-pooling plans : The expenditure on health by private insurance institutions. Private insurance enrolment may be contractual or voluntary. This indicator includes only those expenditures that are not controlled or mandated by government units for the purpose of providing social benefits to members. Private expenditure on health : The sum of outlays for health by private entities, such as households, commercial or mutual health insurance, non-profit institutions serving households, resident corporations and quasi-corporations with a health services delivery or financing function. It includes expenditures from all sources, so includes any donor funding passing through these "financing agents".
Preferred data sources	National Health Accounts Administrative reporting system Special studies
Other possible data sources	Household surveys
Method of measurement	National health accounts traces the financing flows from the pooling prepaid private schemes who decide on the use of their funds to purchase health care for their beneficiaries. NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage, thus reimbursements to households should be consolidated. Monetary and non monetary transactions are accounted for at purchasers value. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, OECD health data; and the United Nations national accounts statistics. National sources include national health accounts reports, national accounts reports, comprehensive financing reports, actuarial and financial reports of private health insurance schemes. Additional sources are: economic censuses and budgetary documents, central bank reports, academic studies and data provided by central statistical offices and ministries on official web sites and statistical yearbooks. Other possible data sources include household surveys. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions.
Disaggregation	
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on all private insurance schemes.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	This indicator is the only one on prepayment among private agents, thus complementary to compulsory health insurance.
Contact person	

Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (%)

Indicator ID	21
Indicator name	Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (%)
Name abbreviated	Population with comprehensive correct knowledge of HIV/AIDS
Data Type Representation	Percent
Indicator group	Risk factors
Rationale	HIV epidemics are perpetuated through primarily sexual transmission of infection to successive generations of young people. Sound knowledge about HIV and AIDS is an essential pre-requisite — albeit, often an insufficient condition — for adoption of behaviours that reduce the risk of HIV transmission. The purpose of this indicator is to assess progress towards universal knowledge of the essential facts about HIV transmission.
Definition	Percentage of young people aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission
Associated terms	Human Immunodeficiency Virus (HIV) : A virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death.
Preferred data sources	Household surveys
Other possible data sources	
Method of measurement	Data are collected through household surveys, such as Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS), reproductive and health surveys, and behavioural surveillance surveys. Respondents are asked to answer to the following five questions: 1. Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners? 2. Can a person reduce the risk of getting HIV by using a condom every time they have sex? 3. Can a healthy-looking person have HIV? 4. Can a person get HIV from mosquito bites? 5. Can a person get HIV by sharing food with someone who is infected? The indicator is calculated by dividing the Number of respondents aged 15–24 years who gave the correct answers to all of the five questions, by the number of all respondents aged 15–24. (2008 Report on the Global AIDS epidemics, Annex 2)
Method of estimation	Estimates derived from household surveys (DHS, MICS) are presented here, as compiled and reported by UNAIDS in the 2008 Report on the Global AIDS epidemics, Annex 2 (UNAIDS, 2008). Predominant type of statistics: adjusted
M&E Framework	Output
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of population aged 15-24 for the reference year in each country as the weight. No figures are reported if less than 50 per cent of the population aged 15-24 in the region are covered.
Disaggregation	Sex Age
Unit of Measure	N/A
Unit Multiplier	

Expected frequency of data dissemination	Biennial (Two years)
Expected frequency of data collection	Every 3-5 years
Limitations	
Links	DHS
Comments	The belief that a healthy-looking person cannot be infected with HIV is a common misconception that can result in unprotected sexual intercourse with infected partners. Correct knowledge about false beliefs of possible modes of HIV transmission is as important as correct knowledge of true modes of transmission. For example, the belief that HIV is transmitted through mosquito bites can weaken motivation to adopt safer sexual behaviour, while the belief that HIV can be transmitted through sharing food reinforces the stigma faced by people living with AIDS. This indicator is particularly useful in countries where knowledge about HIV and AIDS is poor because it allows for easy measurement of incremental improvements over time. However, it is also important in other countries because it can be used to ensure that pre-existing high levels of knowledge are maintained. (UNAIDS, 2009)
Contact person	

Social security expenditure on health as a percentage of general government expenditure on health

Indicator ID	121
Indicator name	Social security expenditure on health as a percentage of general government expenditure on health
Name abbreviated	SSHE as % of GGHE
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. This indicator contributes to understanding the relative weight of prepaid pooled schemes in GGHE. This indicator refers to the health expenditures by government social security schemes and other schemes of compulsory health insurance. Any donor (external) funds channeled through these institutions are included.
Definition	Level of social security funds expressed as a percentage of general government expenditure on health.
Associated terms	General government expenditure on health (GGHE) : The sum of health outlays paid for in cash or supplied in kind by government entities, such as the Ministry of Health, other ministries, parastatal organizations or social security agencies (without double counting government transfers to social security and extrabudgetary funds). It includes all expenditure made by these entities, regardless of the source, so includes any donor funding passing through them. It includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. It includes current and capital expenditure. Social security funds : The expenditure on health by social security institutions. Social security or national health insurance schemes are imposed and controlled by government units for the purpose of providing health services to members of the community as a whole or to particular segments of the community. They include payments to medical care providers and to suppliers of medical goods as well as reimbursements to households and the direct outlays on supply of services in kind to the enrollees. It includes current and capital expenditure. Any donor (external) funds channeled through these institutions are included.
Preferred data sources	National Health Accounts Administrative reporting system
Other possible data sources	
Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. In this indicator resources are tracked for all compulsory health insurance schemes acting as financing agents: managing health funds and purchasing or paying for health goods and services. The NHA strategy is to track records of transactions, without double counting and in order to reaching a comprehensive coverage. Specially, it aims to be consolidated not to double count government transfers to social security and reimbursements to households. Monetary and non monetary transactions are accounted for at purchasers' values. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).

Method of estimation	These data are generated from sources that WHO has been collecting for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have or update national health accounts and in these instances, data is obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to NHA framework. Missing values are estimated using various accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, International Monetary Fund (IMF), government financial statistics and international financial statistics; OECD health data; and the United Nations national accounts statistics. National sources include National health accounts (NHA) reports, national accounts (NA) reports, general government (GG) accounts, Public Expenditure Reviews (PER), government expenditure by purpose reports (COFOG), institutional reports of public entities involved in health care provision or financing, notably social security and other health insurance compulsory agencies and Ministry of Finance (MoF) reports. Other possible data sources include executed budgets of compulsory health insurance and social security schemes. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions
Disaggregation	
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	Data on estimated health expenditure are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the government expenditure on health and social security and compulsory health insurance schemes. Some figures may be underestimated when it is not possible to obtain data on expenditure for all compulsory health insurance schemes..
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000)
Comments	This indicator provides data on compulsory prepaid pooled resources of health insurance schemes.
Contact person	

Stillbirth rate (per 1000 total births)

Indicator ID	2444
Indicator name	Stillbirth rate (per 1000 total births)
Name abbreviated	Stillbirth rate
Data Type Representation	Rate
Indicator group	Mortality
Rationale	Stillbirths can occur antepartum or intrapartum. In many cases, stillbirths reflect inadequacies in antenatal care coverage or good quality intrapartum care.
Definition	For international comparison purposes, stillbirths are defined as third trimester fetal deaths (> or = 1000 grams or > or = 28 weeks).
Associated terms	Total births : Total births is defined as the sum of live births and still births.
Preferred data sources	Civil registration Population-based surveys
Other possible data sources	Administrative reporting system Special studies Health facility assessments
Method of measurement	Data from civil registration: the number of still births divided by the number of total births. Data from surveys: the number of pregnancy losses during or after the seventh month of pregnancy for the 5 years preceding the interview, divided by the sum of live births and late pregnancy losses in the same time period. Data from administrative reporting systems/registries: the number of still births divided by the number of total births. Data from health facilities: the number of stillbirths divided by the number of total births documented in the facility.
Method of estimation	For data from countries with civil registration and good coverage, data meeting definition criteria of greater than or equal to 1000 g or 28 completed weeks gestation, are taken directly from civil registration without adjustment. For all other countries, stillbirth rates were estimated using the following model: Log(SBRij) = a + b(log(NMRij)) +c(log(LBWij)) + d(log(GNIij)) + h(data_typeij) + j(stillbirth_definitionij) + k(regionij) + uj + eij where for each observation i, within country j : SBRij = stillbirth rate; NMRij = neonatal mortality rate; LBWij = low-birth-weight rate; GNIij = Gross national income purchasing parity power per capita; b(), c() and d() = restricted cubic spline functions each involving 2 parameters; h() = a 5 parameter function associated with 5 dummy variables representing different data source types; j() = a 2 parameter function associated with 2 dummy variables representing different stillbirth definitions; k() = a 2 parameter function associated with 2 dummy variable representing different regions; uj = country-specific random effects, assumed to be independent normally distributed with constant variance; eij = individual data point-level residuals, assumed to be independent normally distribute with constant variance. (see table 2 and web appendix of paper in link)
M&E Framework	Impact
Method of estimation of global and regional aggregates	Stillbirths per 1000 total births

Disaggregation	
Unit of Measure	Deaths per 1000 total births
Unit Multiplier	
Expected frequency of data dissemination	Every 3-5 years
Expected frequency of data collection	Continuous
Limitations	The reliability of estimates of stillbirths depends on the accuracy and completeness of reporting and recording of births and deaths. Underreporting of stillbirths is common.
Links	Cousens S et al. National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. Lancet, 2011, 377: 1319-1330.
Comments	
Contact person	Lale Say, MD (sayl@who.int)

Total expenditure on health as a percentage of gross domestic product

Indicator ID	122
Indicator name	Total expenditure on health as a percentage of gross domestic product
Name abbreviated	THE as % of GDP
Data Type Representation	Percent
Indicator group	Health systems resources
Rationale	This is a core indicator of health financing systems. It provides information on the level of resources channeled to health relative to a country's wealth.
Definition	Level of total expenditure on health (THE) expressed as a percentage of gross domestic product (GDP).
Associated terms	General government expenditure on health (GGHE) : The sum of health outlays paid for in cash or supplied in kind by government entities, such as the Ministry of Health, other ministries, parastatal organizations or social security agencies (without double counting government transfers to social security and extrabudgetary funds). It includes all expenditure made by these entities, regardless of the source, so includes any donor funding passing through them. It includes transfer payments to households to offset medical care costs and extrabudgetary funds to finance health services and goods. It includes current and capital expenditure. Gross domestic product (GDP) : The value of all goods and services provided in a country without regard to their allocation among domestic and foreign claims. We use expenditure-based GDP reported in National Health Accounts (NHA), which is the total final expenditure at purchasers' prices. Private expenditure on health : The sum of outlays for health by private entities, such as households, commercial or mutual health insurance, non-profit institutions serving households, resident corporations and quasi-corporations with a health services delivery or financing function. It includes expenditures from all sources, so includes any donor funding passing through these "financing agents". Total expenditure on health (THE) : The sum of all outlays for health maintenance, restoration or enhancement paid for in cash or supplied in kind. It is the sum of General Government Expenditure on Health and Private Expenditure on Health.
Preferred data sources	National Health Accounts
Other possible data sources	Special studies

Method of measurement	National health accounts (NHA) indicators are based on expenditure information collected within an internationally recognized framework. NHA synthesize the financing flows of a health system, recorded from the origin of the resources (sources), to the purchasing agents (financing schemes), which distribute their funds between providers, to pay for selected health goods and services to benefit individuals. Beneficiaries are analysed across geographical, demographic, socioeconomic and epidemiological dimensions. Total expenditure on health (THE) is measured as the sum of all financing agents managing funds to purchase health goods and services. The NHA strategy is to track records of transactions, without double counting in order to reach a comprehensive coverage. Monetary and non monetary transactions are accounted for at purchasers' values. Guides to producing national health accounts exist. (OECD, 2000; WHO-World Bank-USAID, 2003).
Method of estimation	These data are generated from sources consulted by WHO for over ten years. The most comprehensive and consistent data on health financing is generated from national health accounts. Not all countries have, or update, national health accounts. In these instances, data are obtained through technical contacts in-country or from publicly-available documents and reports and harmonized to the NHA framework. Missing values are estimated using accounting techniques depending on the data available for each country. The principal international references used are the EUROSTAT database, International Monetary Fund (IMF), government financial statistics and international financial statistics; OECD health data; and the United Nations national accounts statistics. National sources include national health accounts reports, national accounts reports, health system's financing reports. Other possible data sources include ad hoc surveys, general government (GG) accounts, Public Expenditure Reviews (PER), expenditure by purpose reports (COFOG, COICOP), household surveys, business surveys, actuarial and financial reports of health insurance institutions, economic censuses. Additional sources are: reports by central banks and nongovernmental organizations; data provided by central statistical offices and ministries on official web sites; statistical yearbooks; executed budget reports; other government reports; and academic studies. WHO sends estimates to the respective Ministries of Health every year for validation.
M&E Framework	Input
Method of estimation of global and regional aggregates	Averages are weighted by population to obtain global and regional averages for income groups (World Bank classification) and for WHO Regions.
Disaggregation	Provider type (public/private)
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual

Limitations	Data on estimated health expenditures are collected by triangulating information from several sources to ensure that the outlays constitute the bulk of the governmental and private expenditure on health. Some figures may be underestimated when it is not possible to obtain data on expenditure for local governments, parastatals, corporations, or nongovernmental organizations. Some governments do not track external (donor) funds passing through the private sector, so those flows might also be underestimated.
Links	National health accounts (NHA) (WHO website) Guide to producing national health accounts – with special applications for low-income and middle-income countries (WHO-World Bank-USAID, 2003) A System of Health Accounts (OECD, 2000) World Health Statistics 2010 (WHO, 2010)
Comments	The most relevant attribute of this indicator is being comprehensive in its content.
Contact person	

Total fertility rate (per woman)

Indicator ID	123
Indicator name	Total fertility rate (per woman)
Name abbreviated	Total fertility rate
Data Type Representation	Rate
Indicator group	Demographic and socio-economic statistics
Rationale	
Definition	The 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. It is expressed as children per woman.
Associated terms	
Preferred data sources	Civil registration Population census
Other possible data sources	
Method of measurement	Total fertility rate is directly calculated as the sum of age-specific fertility rates (usually referring to women aged 15 to 49 years), or five times the sum if data are given in five-year age groups. An age- or age-group-specific fertility rate is calculated as the ratio of annual births to women at a given age or age-group to the population of women at the same age or age-group, in the same year, for a given country, territory, or geographic area. Population data from the United Nations correspond to mid-year estimated values, obtained by linear interpolation from the corresponding United Nations fertility medium-variant quinquennial population projections.
Method of estimation	Population data are taken from the most recent United Nations Population Division's "World Population Prospects".
M&E Framework	Determinant
Method of estimation of global and regional aggregates	
Disaggregation	
Unit of Measure	Children per woman
Unit Multiplier	
Expected frequency of data dissemination	
Expected frequency of data collection	
Limitations	
Links	United Nations Population Division World Population Prospects: The 2008 Revision (UN Population Division, 2009)
Comments	
Contact person	

Tuberculosis case detection rate for new smear-positive cases (%)

Indicator ID	331
Indicator name	Tuberculosis case detection rate for new smear-positive cases (%)
Name abbreviated	Tuberculosis detection rate
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	The proportion of estimated new smear-positive cases of TB detected (diagnosed and then notified to WHO) by national TB control programmes provides an indication of the effectiveness of national TB programmes in finding and diagnosing people with TB. MDG Indicator 6.9 is the "proportion of tuberculosis cases detected and cured under DOTS". The Stop TB Partnership has endorsed the targets, linked to the MDGs, to diagnose at least 70% of people with sputum smear-positive TB (i.e. under the Stop TB strategy), and cure at least 85%. These are targets set by the World Health Assembly of WHO.
Definition	The proportion of estimated new smear-positive tuberculosis (TB) cases detected under the internationally recommended tuberculosis control strategy. 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 to WHO.
Associated terms	New case of tuberculosis : Tuberculosis (TB) in a patient who has never received treatment for TB, or who has taken anti-TB drugs for less than 1 month. Notification (in the context of reporting tuberculosis cases to WHO) : The process of reporting diagnosed TB cases to WHO. This does not refer to the systems in place in some countries to inform national authorities of cases of certain "notifiable" diseases. Smear-positive tuberculosis : A case of TB where Mycobacterium tuberculosis bacilli are visible in the patient's sputum when examined under the microscope. For exact definition, see Global tuberculosis control : epidemiology, strategy, financing : WHO report 2009 (WHO, 2009). Tuberculosis (TB) : An infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. TB is treatable with a six-month course of antibiotics.
Preferred data sources	Surveillance systems
Other possible data sources	
Method of measurement	

Method of estimation	The detection rate for new smear-positive cases is calculated as the number of new smear-positive cases treated in national TB control programmes and notified to WHO, divided by the estimated number of incident smear-positive cases for the same year, expressed as a percentage. Uncertainty bounds are provided in addition to best estimates. Numerator The number of new smear-positive cases detected by national TB control programmes is collected as part of the routine surveillance. Denominator Estimates of incidence are based on a consultative and analytical process lead by the WHO and are published annually. For additional details, please refer to the TB incidence indicator metadata.
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional and global estimates are produced by aggregating national estimates, e.g. to calculate the global case detection rate of new smear-positive cases for a given year, the sum of number of new smear-positive cases reported by national TB control programmes of individual countries is divided by the sum of estimate of new smear-positive TB cases for the same countries and year multiplied by 100.
Disaggregation	
Unit of Measure	
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	
Limitations	
Links	The Stop TB Strategy: building on and enhancing DOTS to meet the TB-related Millennium Development Goals (WHO, 2006) The United Nations' official site for the MDG indicators WHO TB data Global tuberculosis control report Frequently asked questions about case detection rates
Comments	This indicator was dropped in 2010 and replaced by case detection rate for all forms of tuberculosis. See Frequently asked questions about case detection rates.
Contact person	TB data enquiries (tbdata@who.int)

Under-five mortality rate (probability of dying by age 5 per 1000 live births)

Indicator ID	7
Indicator name	Under-five mortality rate (probability of dying by age 5 per 1000 live births)
Name abbreviated	Under-five mortality rate
Data Type Representation	Ratio
Indicator group	Health status
Rationale	Under-five mortality rate measures child survival. It also reflects the social, economic and environmental conditions in which children (and others in society) live, including their health care. Because data on the incidences and prevalence of diseases (morbidity data) frequently are unavailable, mortality rates are often used to identify vulnerable populations. Under-five mortality rate is an MDG indicator.
Definition	The 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. Under-five mortality rate as defined here is strictly speaking not a rate (i.e. the number of deaths divided by the number of population at risk during a certain period of time) but a probability of death derived from a life table and expressed as rate per 1000 live births.
Associated terms	Live birth : The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. (ICD-10)
Preferred data sources	Civil registration with complete coverage
Other possible data sources	Household surveys Population census
Method of measurement	
Method of estimation	WHO produces trend of under-5 mortality rate with standardized methodology by group of countries depending on the type and quality of source of data available. For developed countries where civil registration is complete, under-5 mortality rate is computed directly from data of the civil registry if the data of the year to be estimated is available. Otherwise, for each country, whenever possible, nationally representative empirical data from different sources (civil registration, household surveys, censuses) are consolidated to obtain estimates of the level and trend in under-five mortality by fitting a curve to the observed mortality points. It should be noted that in most countries without annual data from civil registry, the estimate of current year are based on projections derived from data points which refer back to at least 3-4 years. The Inter-agency Group for Child Mortality of Estimation which includes representatives from Unicef, WHO, the World Bank and the United Nations Population Division, is actively working to harmonize and carry out joint estimation. Predominant type of statistics: adjusted and predicted
M&E Framework	Impact
Method of estimation of global and regional aggregates	Global and regional estimates are derived from numbers of estimated deaths and population for age groups 0 year and 1-4 year, aggregated by relevant region.

Disaggregation	Age
	Sex
	Location (urban/rural)
	Education level : Maternal education
	Wealth : Wealth quintile
	Boundaries : Administrative regions
	Boundaries : Health regions
Unit of Measure	Deaths per 1000 live births
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Annual
Limitations	
Links	WHO Mortality Database
	Childinfo: Monitoring the Situation of Children and Women (UNICEF)
	Demographic and Health Surveys (DHS)
	Modified logit life table system: principles, empirical validation and application (WHO)
	The World Health Report 2005: Make every mother and child count (WHO, 2005)
	Levels and Trends of Child Mortality in 2006 (UNICEF, WHO, World Bank, UN Population Division, 2007)
	The State of the World's Children (UNICEF)
Comments	
Contact person	

Unmet need for family planning (%)

Indicator ID	6
Indicator name	Unmet need for family planning (%)
Name abbreviated	Unmet need for family planning
Data Type Representation	Percent
Indicator group	Health service coverage
Rationale	Unmet need for family planning provides a measurement of the ability of women in achieving their desired family size and birth spacing. It also provides an indication of the success of reproductive health programmes in addressing demand for services. Unmet need complements the contraceptive prevalence rate by indicating the additional extent of need to delay or limit births. Unmet need is a rights-based measure that helps determine how well a country's health system and social conditions support the ability of women to realize their stated preference to delay or limit births.
Definition	The proportion of women of reproductive age (15-49 years) who are married or in union and who have an unmet need for family planning, i.e. who do not want any more children or want to wait at least two years before having a baby, and yet are not using contraception.
Associated terms	
Preferred data sources	Household surveys
Other possible data sources	

Method of measurement	Unmet need for family planning = (Women who are married or in a consensual union who have an unmet need for family planning / Total number of women of reproductive age (15-49 years) who are married or in consensual union) x 100 Included in the numerator: • All pregnant women (married or in consensual union) whose pregnancies were unwanted or mistimed at the time of conception. • All postpartum amenorrheic women (married or in consensual union) who are not using family planning and whose last birth was unwanted or mistimed. • All fecund women (married or in consensual union) who are neither pregnant nor postpartum amenorrheic, and who either do not want any more children (limit), or who wish to postpone the birth of a child for at least two years or do not know when or if they want another child (spacing), but are not using any contraceptive method. Excluded from the numerator of the unmet need definition are pregnant and amenorrheic women who became pregnant unintentionally due to contraceptive method failure (these women are assumed to be in need of a better contraceptive method). Also excluded from the unmet need definition are infecund women. Women are assumed to be infecund if: 1) they have been married for five or more years AND 2) there have been no births in the past five years AND 3) they are not currently pregnant AND 4) they have never used any kind of contraceptive method OR 5) they self-report that they are infecund, menopausal or have had a hysterectomy. Women who are married or in a consensual union are assumed as sexually active. If unmarried women are to be included in the calculation of UMN (in national monitoring), as a standard measure, they are assumed to be sexually active (and thus included in the numerator) if they have had intercourse in the month prior to the survey interview. Data to measure this indicator are collected in household surveys, including Demographic and Health Surveys (DHS), Reproductive Health Surveys (RHS), Fertility and Family Surveys (FFS), and other national survey efforts incorporating the DHS methodology (e.g. in India).
Method of estimation	The United Nations Population Division compiles and updates unmet need for family planning (UMN) data. Data are obtained from surveys including Demographic and Health Surveys (DHS), Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS) and national surveys based on similar methodologies. When the information needed to calculate UMN is not available, the indicator is not estimated. Predominant type of statistics: adjusted
M&E Framework	Outcome
Method of estimation of global and regional aggregates	Regional estimates are weighted averages of the country data, using the number of of women of reproductive age (15-49) who are married or in consensual union for the reference year in each country as the weight. No figures are reported if less than 50 per cent of of women of reproductive age (15-49) who are married or in consensual union in the region are covered.
Disaggregation	
Unit of Measure	N/A
Unit Multiplier	
Expected frequency of data dissemination	Annual
Expected frequency of data collection	Every 3-5 years
Limitations	
Links	Demographic and Health Surveys (DHS) World Contraceptive Use 2007 (United Nations, 2008)

Links	World Contraceptive Use 2010 (United Nations, 2011)
Comments	According to the standard definition, women who are using a traditional method of contraception are not considered as having an unmet need for family planning. As traditional methods are considerably less effective than modern methods, additional analyses often distinguish between traditional and modern methods and also report on unmet need for effective contraception. In some countries DHS samples do not include non-married or non-consensual union women. These women are not considered to be sexually active, while married women are assumed to be sexually active and at risk of pregnancy. The assumption of universal exposure among married women increases the estimate. (Additional questions probing reasons for non-use of family planning often elicit reports of low risk due to infrequent sexual activity, including spousal separation resulting from labor migration.) In some instances, it might be possible, in particular at low levels of contraceptive prevalence that, when contraceptive prevalence increases, unmet need for family planning also increase. Such a trend shows increased demand in a population where contraceptive supply cannot keep up with. Both indicators therefore need to be interpreted together.
Contact person	