ANALYSIS AND USE OF HEALTH FACILITY DATA

Core health facility indicators

WORKING DOCUMENT

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World Health Organization

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Core health facility indicators

Routine health facility data are collected at clinics, hospitals and other health service points (public; private-for-profit; private-non-profit; etc.) at the time that services are provided. These data are processed at the health facility and summary reports are sent at regular intervals to the appropriate administrative authority.

The system for collection, management and reporting on these routine data is commonly referred to as the Routine Health Information System (RHIS) or the Health Management Information System (HMIS).

Routine health facility data are compiled and analyzed at various levels of the health system, for example, at facility, district, province and national levels.

This document provides a core list of indicators that can be calculated using routine health facility data. The list consists of the core health facility indicators defined in the following modules of the WHO toolkit for Analysis and Use of Health Facility Data:

- Guidance for national and district planners and managers
- Guidance for HIV programme managers
- Guidance for malaria programme managers
- Guidance for tuberculosis programme managers
- Guidance for immunization programme managers

Indicators for the module “Guidance for Reproductive, maternal, newborn, child and adolescent health programme managers” will be available in the next iteration of this document.

Contents

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Mortality

Core Indicators	Definition	Disaggregation*
Mortality Levels		
Institutional mortality rate	Institutional deaths (all causes) per 1000 admissions N: Number of inpatient deaths x 1000 D: Number of admissions (or discharges + deaths) (Institutional deaths = deaths in health facilities = inpatient deaths)	• Age (all, <5, ≥ 5) • Sex • Cause of death
Neonatal mortality rate in health facilities	Neonatal deaths (first 28 days of life) per 1000 live births in health facilities N: Number of neonatal deaths in health facilities x 1000 D: Number of live births in health facilities (Includes any neonatal death in a facility that occurred in the first 28 days: pre-discharge after birth or upon re-admission for an illness)	• Cause of death
Stillbirth rate in health facilities	Stillbirths as a percentage of all births in health facilities N: Number of stillbirths in health facilities x 100 D: Number of live births + still births in health facilities (Stillbirth: baby born with no sign of life and weighing at least 1000g or born after 28 weeks of gestation)	• Fresh, macerated
Maternal deaths in health facilities	Number of maternal deaths in health facilities	• Age (10-14, 15-19, 20+) • Cause of death
Leading Causes of Death		
Distribution of causes of death in health facilities (Proportionate mortality)	Distribution of the leading causes of death in health facilities as a percentage of all inpatient deaths N: Number of inpatient deaths by cause x 100 D: Total number of inpatient deaths	• Age (<5, ≥ 5) • Sex
Mortality due to specific causes		
Case fatality rates (CFR) for major causes	Cause-specific inpatient deaths per 100 admissions for major causes N: Number of inpatient deaths by cause x 100 D: Number of admissions by cause (admissions = discharges + deaths)	• Age (<5, ≥ 5) • Sex
Population Incidence of inpatient mortality (e.g. malaria)	Number of inpatient malaria deaths per 100,000 population at risk of malaria N: Number of inpatient deaths due to malaria x 100,000 D: Estimated total population of areas at risk of malaria	• Age (<5 vs ≥ 5)
Perioperative mortality rate	All-cause death rate prior to discharge among patients having one or more procedures in an operating theatre during the relevant admission N: Number of deaths prior to discharge among inpatients that had a surgical procedure x 1000 D: Number of inpatients that had a surgical procedure	• Procedure • Emergency, elective • Age

*Geographic location is not presented as a disaggregation type in these tables. All data are expected to be analyzed by geographic location.

Morbidity

Core Indicators	Definition	Disaggregation*
Leading Causes of Morbidity		
Leading inpatient discharge diagnoses (rate per 1000 population and percentage distribution)	a. Discharge diagnoses of inpatients (main diagnostic categories) in health facilities per 1000 population N: Number of discharges and deaths by diagnosis x 1000 D: Total population b. Discharge diagnoses of inpatients (main diagnostic categories) in health facilities expressed as percentage distribution of total discharges N: Number of discharges and deaths by diagnosis x 100 D: Total number of discharges and deaths	• Age (<5, ≥ 5) • Sex
Leading outpatient diagnosis (rate per 1000 population and percentage distribution)	a. Discharge diagnoses of inpatients (main diagnostic categories) in health facilities per 1000 population N: Number of discharges and deaths by diagnosis x 1000 D: Total population b. Discharge diagnoses of inpatients (main diagnostic categories) in health facilities expressed as percentage distribution of total discharges N: Number of discharges and deaths by diagnosis x 100 D: Total number of discharges and deaths	• Age (<5, ≥ 5) • Sex
Morbidity due to specific causes		
Inpatient incidence rate and proportional contribution due to specific conditions	This indicator has the same definition as indicator 1, but presents a limited number of specific conditions as defined by the country, e.g. malaria (confirmed/ presumed diagnosis), vaccine-preventable diseases (new cases), (IHR)- notifiable diseases, neglected tropical diseases, cancer new cases, myocardial infarction new cases, stroke new cases, adverse events following immunization (number) Refer to relevant modules for further details.	• Age (<5, ≥ 5) • Sex
Outpatient incidence rate and proportional contribution due to specific conditions	This indicator has the same definitions as indicator 2, but presents a limited number of specific conditions as defined by the country, e.g. malaria (confirmed/ presumed diagnosis), vaccine-preventable diseases (new cases), (IHR-) notifiable diseases, neglected tropical diseases, cancer new cases; hypertension new cases, diabetes new cases, adverse events following immunization (number), etc. Refer to relevant modules for further details.	• Age (<5, ≥ 5) • Sex

*Geographic location is not presented as a disaggregation type in these tables. All data are expected to be analyzed by geographic location

Access, Coverage and Quality

Core Indicators	Definition	Disaggregation*
	ACCESS	
Service-specific availability	1) Number of health facilities offering specific services per 10 000 population N: number of facilities offering the service x 10 000 D1: total population OR 2) Percentage of facilities offering the service N: number of facilities offering the service x 100 D2: total number of facilities (Specific service may include: general outpatient curative services; specific services: e.g. HIV; TB; NCD; mental health; general maternal child health services, immunization, basic emergency obstetric and neonatal care (BEmONC), comprehensive emergency obstetric and neonatal care (CEmONC); basic and comprehensive surgical care, etc.)	• Facility type • Facility ownership
Outpatient service utilization	Number of outpatient department (OPD) visits per person per year N: Number of new and re-visits to OPD in a year D: Population	• Age (<5, >5) • Sex
Hospital admission rate (Inpatient utilization)	Number of hospital admissions per 100 population per year N: Number of hospital new and re-admissions in a year x 100 D: Population	• Age (<5, >5) • Sex
Caesarean section rates	Percentage of deliveries by caesarean section a) Population C-section rate: N: Number of caesarean sections x 100 D1: Estimated number of live births in the population b) Facility C-section rate*: N: Number of caesarean sections x 100 D2: Number of deliveries in health facilities (*also indicator of quality of care)	• Age (10-14;15-19; 20+)
Surgical volume	Number of surgical procedures undertaken in an operating theatre per 100 000 population per year N: Number of surgical procedures in a year x 100 000 D: Population (A surgical procedure is defined as the incision, excision, or manipulation of tissue that needs regional or general anaesthesia, or profound sedation to control pain.)	• Procedure type; • Emergency, elective

*Geographic location is not presented as a disaggregation type in these tables. All data are expected to be analyzed by geographic location

Core Indicators	Definition	Disaggregation*
COVERAGE		
Contraception first time users (UHC proxy)	Persons who accept for the first time in their lives a contraceptive method N: Number of persons who accept a modern family planning method for the 1st time	• Age (10-14, 15-19, 20+) • Sex
Antenatal client 1st visit before 12 weeks	Percentage of antenatal clients with 1st visit before 12 weeks gestation N: Number of antenatal client 1st visits before 12 weeks D: Number of antenatal client 1st visits	• Age (10-14, 15-19, 20+)
DPT3 coverage (UHC) Also coverage of other vaccines	Percentage of the target population that received the third dose of DPT3 containing vaccine N: Number of infants less than one year of age receiving the third dose of diphtheria-tetanus-pertussis vaccine x 100 D: Estimated number of infants less than one year of age (surviving infants)	• By vaccine / dose of vaccine • Age (<1 year, ≥ 1 year for infant immunizations; ≤ 2 years, ≥ 2 years for toddler immunizations) • Status (pregnant women, others) for TT
Antiretroviral therapy (ART) coverage (UHC)	Percentage of persons living with HIV that are currently receiving ART (at the end of the specified reporting period) among the estimated number of PLHIV N: Number of adults and children who are currently receiving ART at end of the reporting period x 100 D: Estimated number of adults and children living with HIV	• Age (<15; 15+) • Sex (m, f, TG) • Key populations
TB notification rate (UHC related)	TB cases notified in a specified time period, usually one year, per 100,000 population N: Number of TB cases notified in a specified time period x 100,000 D: Estimated population in the same time period	• By case type: pulmonary: bacterio-logically confirmed or pulmonary clinically diagnosed; • By treatment history: new and relapse (incident cases) or previously treated, excluding relapse
Malaria diagnostic testing ratio	Percentage of suspected malaria cases that had a diagnostic test for malaria N: Number of malaria tests performed x 100 D: Number of suspected malaria cases (Malaria tests = Number of RDT + number of microscopy Suspected malaria cases = Number of malaria tests performed + Number of presumed cases of malaria reported)	• Microscopy , RDT • Age (<5, 5-14, 15+)
Hypertension treatment initiation (UHC related)	INDICATOR PRESENTED AS DRAFT FOR DISCISSION: Number of people started on treatment for hypertension	• Age • Sex
Diabetes treatment initiation (UHC related)	INDICATOR PRESENTED AS DRAFT FOR DISCUSSION: Number of people started on treatment for diabetes	• Age • Sex
Cervical cancer screening (UHC related)	RHIS INDICATOR IN DEVELOPMENT Number of women aged 30-49 years that were screened for cervical cancer in a reporting period	• Age

UHC: Universal Health Coverage

Core Indicators	Definition	Disaggregation*
QUALITY, SAFETY and EFFICIENCY		
Antenatal client syphilis screening	Percentage of antenatal clients screened for syphilis N: Number of antenatal clients screened for syphilis x 100 D: Number of antenatal client 1st visits	• Age (10-14, 15-19, 20+)
Immunization drop-out rates	Percentage of infants who received DPT1 but did not receive DPT3 vaccination N: (DPT1 doses – DPT3 doses) x 100 D: DPT1 doses Percentage of infants who received BCG but did not receive the first dose of measles vaccination N: (BCG doses – MCV1 doses) x 100 D: BCG doses Percentage of infants who received MCV1 but did not receive MCV2 N: (MCV1 doses - MCV2 doses) x 100 D: MCV1 doses	
HIV clinical cascade	Number of persons newly diagnosed with HIV vs Number of persons newly diagnosed with HIV that initiated ART vs Number of persons retained on ART after a specified time period among those that initiated ART	• Age (<1, >1) • Sex (M,F, TG) • Special populations (KPs) • Specified duration (current/ever, 12, 24, 36, 48, 60 months)
TB treatment success rate (UHC proxy)	Percentage of TB cases successfully treated (cured plus treatment completed) among TB cases notified to national health authorities during a specified time period, usually one year. N: Number of TB cases notified in a specified period time period that were successfully treated x 100 D: Number of TB cases notified in same period	• Refer to TB module for recommended disaggregations
Confirmed malaria cases treated with ACT (UHC proxy)	Percentage of confirmed cases of malaria that receive first-line antimalarial treatment: artemisinin-based combination therapy (ACT) N: Number of confirmed cases of malaria treated with ACT x 100 D: Number of confirmed cases of malaria (Number of confirmed cases = number of RDT positive cases + number of microscopy positive cases)	• RDT, microscopy; • Age (<5, 5-14, 15+); • Geographic area / residence / focus; Facility/community
Bed occupancy rate (BOR)	Percentage of available beds that were occupied over a specified time period N: Number of occupied bed-days x 100 D: Total number of available bed-days	• Facility type
Average length of stay (ALOS)	Average number of days that patients spend in hospital over a specified time period N: Number of occupied bed-days D: Number of admissions (Admissions = discharges + deaths)	• Facility type

UHC – Universal Health Coverage indicator

Health Services Inputs

Core Indicators	Definition	Disaggregation
Infrastructure		
Health facility density	Total number of health facilities per 10 000 population (Total number of hospitals per 100 000 population)	• Facility type (hospital, health center, etc.) • Managing authority (public, private, etc.) • Specific services
Hospital bed density (UHC)	Total number of hospital beds per 10 000 population	• Type of bed • Managing authority (public, private, etc.)
Density of medical devices and essential technologies (UHC)	Density of medical equipment/essential technologies per million population	• By type (MRI, CT scanners, etc)
Health workforce		
Health worker density and distribution (UHC)	Number of health workers per 1000 population	• Cadre: core professionals (physicians, nurses, midwives); specific cadres: specialists (surgeons, psychiatrists, etc.); other cadres (dentists, pharmacists, laboratory technicians) • Distribution: Place of employment (urban/rural; PHC/hospital)
Medicines and commodities		
Availability of essential medicines and commodities (UHC)	Percentage of health facilities with no-stock of a set of tracer essential medicines and commodities	• Facility type (hospital, health center, etc.) • Managing authority (public, private, etc.) • Specific type of medicine/commodity (e.g. vaccines, family planning, TB, HIV, NCD, antibiotics, etc.)
Health information		
Completeness of reporting	Percentage of facilities that submit reports within the required deadline	• Facility type
Management		
Supervisory visits	Percentage of facilities that received a supervisory visit in the last 3 months	• Facility type

HIV

Core Indicators[1]	Definition	Disaggregation
HIV tests performed	Number of HIV tests	• Sex (Male, female, TG) • Special pops (KPs, pregnant women)
PLHIV newly diagnosed	Number of confirmed HIV positive tests	• Age (<1, >1) • Sex (Male, female, TG) • Special pops (KPs, pregnant women)
HIV test positivity	N: Number of confirmed HIV positive tests D: Number of HIV tests	• Sex (Male, female, TG) • Special pops (KPs, pregnant women)
Newly on ART	Number of PLHIV who initiate ART	• Age (<1, >1) • Sex (Male, female, TG) • Special pops (KPs, pregnant women)
Currently on ART	Number PLHIV currently receiving ART	• Age (<15. 15+) • Sex (Male, female, TG) • Special pops (KPs)
ART coverage rate (current)	N: Number PLHIV currently receiving ART D: Estimated number of PLHIV	• Age (<15. 15+) • Sex (Male, female, TG) • Special pops (KPs)
ART retention rate	N: Number of PLHIV retained on ART – for specified duration D: Number of PLHIV who initiated ART prior to (and during) the specified duration	• Age (<1, >1) • Sex (Male, female, TG) • Special pops (KPs) • Specified duration (currently/ever, 12, 24, 36, 48, 60 months)*
VL testing coverage rate (annualized)**	N: Number of PLHIV tested for viral load x 12 D: Number of PLHIV currently receiving ART	• Age (<15. 15+) • Sex (Male, female, TG) • Special pops (KPs)
HIV viral load suppression rate	N: Number of PLHIV who are on ART who have suppressed viral load (<1000 copies /mL) D: Number of people receiving a viral load test during reporting period	• Age (define groups) • Sex (Male, female, TG) • Special pops (KPs) • Time of initiation (currently/ever, 12 m)*
PLHIV on newly enrolled in HIV care started on TB preventive therapy	N: Total number of PLHIV newly enrolled in HIV care who are started on treatment for latent TB infection D: Total number of persons newly enrolled in HIV care, that is, registered in the pre-ART or ART register	• Age (define groups) • Sex (Male, female, TG) • Special pops (KPs)
PMTCT testing coverage rate	N: Number of pregnant women attending ANC and/or who had a facility-based delivery who were tested for HIV during pregnancy or already knew they were HIV- positive. D: Number of pregnant women who attended ANC or had a facility- based delivery	HIV status/test results: 1. known HIV infection at ANC entry 2. tested HIV-positive at ANC during current pregnancy 3. tested HIV-negative at ANC during current pregnancy Total identified HIV-positive women = 1+2. Optional disaggregation: Pregnant women who inject drugs.

1. Several TB/HIV and PMTCT indicators are also included in the core HMIS list, but are integrated into the analyses of other programme areas.

*Note: Specified duration refers to both numerator and denominator, e.g. # retained on ART at 12 months/# initiated on ART 12 months prior to the reporting period; # currently retained on ART / # ever initiated on ART.

**Note: The VL testing coverage rate is not part of the 100 Core indicators, but is included in the dashboards as a critical indicator for interpretability of the VL suppression rate.

Malaria

Core Indicators	Definition	Disaggregation
Surveillance in burden reduction settings		
Monitoring malaria morbidity and mortality		
Number of patients tested for malaria	Number of outpatient malaria tests	• Age (<5, 5-14, 15+) • Geographic area/residence • Method of confirmation (microscopy; RDT) • Detected by facility versus community • Detected by public versus private • Detected passively versus actively
Confirmed outpatient malaria diagnoses	Number of confirmed outpatient diagnoses of malaria	• Age (<5, 5-14, 15+) • Geographic area/residence • Method of confirmation (microscopy; RDT) • Detected by facility versus community • Detected by public versus private • Detected passively versus actively
% of positive tests with *P. falciparum*	(Number of malaria positive slides and RDTs with *P. falciparum*) x 100 / Number of malaria positive slides+RDTs	• Age (<5, 5-14, 15+) • By health facility • Geographic area
Incidence of outpatient malaria	(Annual number of confirmed outpatient diagnoses of malaria) x 1,000 /(Estimated total population of areas at risk of malaria)	• Age (<5, 5-14, 15+) • Geographic area/residence • Method of confirmation (microscopy; RDT)
Presumed outpatient malaria diagnoses	Number of suspected outpatients diagnosed as having malaria without any laboratory confirmation	• Age (<5, 5-14, 15+) • Geographic area • Detected by facility versus community
Outpatient proportional morbidity • Confirmed malaria • Presumed malaria • Non-malaria [Excluding actively detected cases]	• (Number of confirmed outpatient diagnoses of malaria) x 100/ Total outpatient diagnoses • (Number of presumed outpatient diagnoses of malaria) x 100/ Total outpatient diagnoses • (Number of non-malaria outpatient diagnoses) x 100/ Total outpatient diagnoses	• Age (<5, 5-14, 15+) • Geographic area/residence • Method of confirmation (microscopy; RDT) • Detected by facility versus community • Detected by public versus private
Malaria test positivity rate	(Number of positive malaria tests) x 100/ Number of malaria tests	• Age (<5, 5-14, 15+) • Geographic area/residence • Method of confirmation (microscopy; RDT)
Inpatient malaria diagnoses	Number of inpatients with a discharge diagnosis of malaria	• Age (<5, 5-14, 15+) • Geographic area
Incidence of malaria admissions	(Annual number of patients hospitalized with malaria) x 10,000 /(Estimated total population of areas at risk of malaria)	• Age (<5, 5-14, 15+) • Geographic area/residence • Method of confirmation (microscopy; RDT)
Inpatient proportional morbidity • Malaria • Non-malaria	• (Number of discharge diagnoses of malaria) x 100/ Total discharge diagnoses • (Number of discharge diagnoses other than malaria) x 100/ Total discharge diagnoses	• Age (<5, 5-14, 15+) • Geographic area/residence
Inpatient malaria deaths	Number of inpatient deaths due to malaria	• Age (<5, 5-14, 15+) • Geographic area/residence

Core Indicators	Definition	Disaggregation
Incidence of inpatient malaria mortality	(Annual number of inpatient deaths due to malaria) x 100,000 /(Estimated total population of areas at risk of malaria)	• Age (<5, 5-14, 15+)/residence • Geographic area
Inpatient proportional mortality • Malaria • Non-malaria	- (Number of inpatient deaths due to malaria) x 100/ Total inpatient deaths - (Number of inpatient deaths due to causes other than malaria) x 100/ Total inpatient deaths	• Age (<5, 5-14, 15+) • Geographic area/residence
Monitoring the completeness and quality of passive malaria surveillance		
Completeness of facility reporting	(Number of reports received) x 100 / number of reports expected *Note –Typically 12 monthly reports are expected from each health facility. Where weekly reporting is the norm, this number of reports expected are same as the number of weeks in a calendar year	• Reports of outpatient diagnoses versus inpatient diagnoses versus inpatient deaths • Type of facility • Geography
Malaria diagnostic testing ratio	(Number of malaria tests performed) x 100/ (Number of suspected malaria cases) [Note: suspected malaria cases = Number of malaria tests performed + Number of presumed cases of malaria reported]	• By microscopy versus RDT • Age (<5, 5-14, 15+) • Geographic area/residence
Annual blood examination rate	(Number of malaria tests performed) x 100 / Estimated total population of areas at risk of malaria	• Age (<5, 5-14, 15+)/residence • Geographic area/residence
Monitoring malaria interventions		
Monitoring prevention of malaria		
Intermittent preventive treatment of malaria during pregnancy (IPTp) coverage	(Number of pregnant women given sulfadoxine/ pyrimethamine for IPT) x 100/ Estimated pregnancies in areas at risk [Note: first ANC visits is sometimes used as the denominator]	• By dose of SP (1, 2, 3, 4) • Geographic area • By type of facility
Facility distribution of mosquito nets	(Number of nets distributed at health facilities) x 100 / Number of target contacts [i.e. first ANC visits, first doses of DTP]	• By target group (pregnant women, infants) • Geographic area • By type of facility
Monitoring treatment of malaria		
Malaria cases given ACT	(Number of malaria cases treated with ACT) x 100/ Number of malaria cases diagnosed	• Confirmed malaria versus presumed malaria • Age (<5, 5-14, 15+) • Geographic area/residence/focus • Facility versus community
Inpatient case fatality rate: • Due to malaria • All cause	• (Number of inpatients deaths due to malaria) x 100/ (Number of inpatient diagnoses of malaria) • (Number of inpatient deaths from all causes) x 100/ (Number of inpatients) •	• Age (<5, 5-14, 15+) • Geographic area/residence/focus
Monitoring the supply of malaria control commodities		
Full availability of malaria control commodities	• (Number of health facilities with no stock out during the period of any tracer malaria control commodity) x 100 / (Number of reporting health facilities in areas at risk of malaria)	• Commodity (vaccine or injection supply) • Geographic region • Type of facility (hospital versus health center versus health post versus community level)

Core Indicators	Definition	Disaggregation
Surveillance for elimination settings (in addition to the indicators for the burden reduction settings)		
Proportion of cases with symptoms diagnosed within 24 hours	Number of malaria cases with symptoms diagnosed within 24 hours / Total malaria confirmed cases	• Age (<5, 5-14, 15+) • Geographic area/residence or focus • Public (health facility, community) versus private • Detected passively versus actively
Proportion of cases notified within 1 day of diagnosis	Number of malaria cases notified within 24 hours / Number of confirmed malaria cases	• Age (<5, 5-14, 15+)) • Geographic area • Public versus private
Proportion of cases investigated	Number of malaria cases investigated / Number of confirmed malaria cases detected passively and actively	• By delay between diagnosis and investigation (≤4 days, more) • Age (<5, 5-14, 15+) • Geographic area/residence/focus • Public versus private • Detected passively versus actively
Proportion of cases classified	Number of malaria cases classified / Number of confirmed malaria cases detected passively and actively	• Age (<5, 5-14, 15+) • Geographic area/residence/focus • Public versus private • Detected passively versus actively
Proportion of cases which are indigenous or versus imported	• Number of cases classified as indigenous / Number of confirmed malaria cases that have been classified • Number of cases classified as imported / Number of confirmed malaria cases that have been classified Note: a 100% classification of cases is expected in elimination settings	• Age (<5, 5-14, 15+) • Geographic area/residence/focus • Public versus private
Number of foci identified	Number of malaria foci identified (list of foci)	• Type of foci (active, residual non-active, cleared) • Geographic area/residence/focus
Proportion of foci investigated	Number of malaria foci investigated within the time limit specified by national guidelines / Number of malaria foci identified	• By delay between diagnosis and investigation (≤ N3 days, more) • Type of foci (active, residual non-active, cleared) • Geographic area/residence/focus
Proportion of foci classified	Number of foci classified / Number of malaria foci identified	• Type of foci (active, residual non-active, cleared) • Geographic area/residence/focus
Proportion of foci with zero local cases	(Number of foci classified as cleared up + number classified as residual non-active) / Number of malaria foci identified	• Type of foci (residual non-active, cleared) • Geographic area/residence/focus
Proportion of foci classified as active	(Number of foci classified as active) / Number of malaria foci identified	• Geographic area/residence/focus

Tuberculosis

Core indicators	Definition	Disaggregation
Notifications (numbers and rates)		
TB notifications	Number of TB cases notified in a specified time period, usually one year	• By case type: pulmonary bacteriologically confirmed or pulmonary clinically diagnosed • By treatment history: new and relapse (incident cases) or previously treated, excluding relapse • Age group (0-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65+, other/unknown) • Sex (male, female, other/unknown)
TB notification rate (per 100,000 population)	TB cases notified in a specified time period, usually one year, per 100,000 population *Numerator:* Number of TB cases notified in a specified time period *Denominator:* Estimated population in *the same* time period *Calculation:* (Numerator/Denominator) x 100, 000	• By case type: pulmonary bacteriologically confirmed or pulmonary clinically diagnosed • By treatment history: new and relapse (incident cases) or previously treated, excluding relapse
Notifications (% and ratios)		
New extrapulmonary TB (%)	*Numerator:* Number of new extrapulmonary TB cases notified in a specified time period, usually one year *Denominator:* All new TB cases notified in *the same* time period *Calculation:* (Numerator/Denominator) x 100	
Previously treated including relapse (all forms TB) (%)	*Numerator:* Number of previously treated TB cases notified in a specified time period, usually one year *Denominator:* All TB cases notified in the same time period *Calculation:* (Numerator/Denominator) x 100	
Ratio male : female (new and relapse, all forms TB)	*Numerator:* Number of male new and relapse TB cases notified in a specified time period, usually one year *Denominator:* Number of female new and relapse TB cases notified in *the same* time period *Calculation:* Numerator/Denominator	
0-14 year olds (new and relapse, all forms TB) (%)	*Numerator:* Number of 0-14 year old new and relapse TB cases notified in a specified time period, usually one year *Denominator:* All new and relapse TB cases notified in the same time period *Calculation:* (Numerator/Denominator) x 100	
Ratio 0-4 : 5-14 year olds (new and relapse, all forms TB)	*Numerator:* Number of 0-4 year old new and relapse TB cases notified in a specified time period, usually one year *Denominator:* Number of 5-14 year old new and relapse TB cases notified in the same time period *Calculation*: Numerator/Denominator	
New pulmonary bacteriologically confirmed TB (%)	*Numerator:* Number of new pulmonary bacteriologically confirmed TB cases notified in a specified time period, usually one year *Denominator*: Number of new TB cases notified in the same time period *Calculation:* (Numerator/Denominator) x 100	

Core indicators	Definition	Disaggregation
Previously treated (including relapses) pulmonary bacteriologically confirmed TB (%)	*Numerator:* Number of previously treated (including relapses) pulmonary bacteriologically confirmed TB cases notified in a specified time period, usually one year *Denominator:* Number of previously treated TB cases notified in *the same* time period *Calculation:* (Numerator/Denominator) x 100	
Outcomes		
TB treatment success rate (%)	Percentage of TB cases successfully treated (cured plus treatment completed) among TB cases notified to national health authorities during in a specified time period, usually one year *Numerator:* Number of TB cases notified in a specified time period that were successfully treated[1] *Denominator*: Number of TB cases notified in *the same* time period[2] *Calculation:* (Numerator/Denominator) x 100	• By treatment outcome: cured, completed, died, failed, lost to follow-up, not evaluated • By case type: bacteriologically confirmed or clinically diagnosed • By treatment history: new and relapse (incident cases) or previously treated, excluding relapse • For TB/HIV positive cases • By drug sensitivity: All (DS +DR), DS-TB and DR-TB
TB treatment success rate in new and relapse HIV positive cases (%)	Percentage of HIV positive TB cases successfully treated (cured plus treatment completed) among TB/HIV positive cases notified to national health authorities during a specified time period, usually one year *Numerator:* Number of new and relapse HIV positive TB cases notified in a specified time period that were successfully treated[3] *Denominator:* Number of new and relapse HIV positive TB cases notified in *the same* time period *Calculation:* (Numerator/Denominator) x 100	• By treatment outcome: cured, completed, died, failed, lost to follow-up, not evaluated
TB treatment success rate in RR-/MDR-TB cases (%)	Percentage of RR-/MDR-TB cases started on second line treatment and successfully treated (cured plus treatment completed) among laboratory confirmed RR-/MDR-TB cases notified to national health authorities during a specified time period, usually one year *Numerator:* Number of laboratory confirmed RR-/MDR-TB cases notified in a specified time period that started on second line treatment and were successfully treated (cured plus treatment completed)[4] *Denominator:* Number of laboratory confirmed RR-/MDR-TB cases notified in *the same* time period that started on second line treatment *Calculation:* (Numerator/Denominator) x 100	• By treatment outcome: cured, completed, died, failed, lost to follow-up, not evaluated • For HIV positive TB cases • For XDR-TB cases
Notifications vs treatment outcome cohort for DS-TB	Number of drug sensitive TB (DS-TB) cases notified during a specified time period whose treatment outcomes were reported (registered with a treatment outcome) vs Number of TB cases (DS and DR-TB) notified during *the same* time period	

[1] Treatment outcomes are defined by the time period of notification, e.g. "2015 cases successfully treated" reflects those for which notifications were reported in 2015, even though treatment may have extended into 2016. For this reason, treatment outcome data follows at a lag of one year.
[2] The number of cases registered with a treatment outcome should equal the number of cases notified for the same time period.
[3] Definitions and reporting framework for tuberculosis- 2013 revision. WHO, Geneva, 2013.
http://www.who.int/tb/publications/definitions/en/
[4] Treatment outcomes are defined by the time period of notification, e.g. "2015 cases successfully treated" reflects those for which notifications were reported in 2015, even though treatment may have extended into 2017. For this reason, treatment outcome data for DR-TB cases follows at a lag of two years.

Core indicators	Definition	Disaggregation
Notifications vs treatment outcome cohort for DS-TB	Number of drug sensitive TB (DS-TB) cases notified during a specified time period whose treatment outcomes were reported (registered with a treatment outcome) vs Number of TB cases (DS and DR-TB) notified during *the same* time period	
Drug Resistant TB (DR-TB)		
Drug susceptibility test (DST) coverage for TB cases (%)	Percentage of TB cases with drug susceptibility test results for at least rifampicin resistance, during a specified time period, usually one year[5] *Numerator:* Number of TB cases notified with drug susceptibility test results for at least rifampicin resistance in a specified time period *Denominator:* Number of TB cases notified in *the same* time period *Calculation:* (Numerator/Denominator) x 100	• By treatment history: new, previously treated, unknown history
TB cases with laboratory confirmed RR-/MDR-TB (%)	Percentage of TB cases with laboratory confirmed rifampicin /multidrug resistant (RR-/MDR) TB among cases with drug susceptibility test results in a specified time period, usually one year *Numerator:* Number of laboratory confirmed RR-/MDR-TB cases notified in a specified time period *Denominator:* Number of TB cases notified with drug susceptibility test results for at least rifampicin resistance in *the same* time period *Calculation:* (Numerator/Denominator) x 100	• For laboratory confirmed MDR-TB cases separately
Laboratory-confirmed RR-/MDR-TB cases started on a second line MDR-TB treatment regimen (%)	Percentage of laboratory confirmed rifampicin/multidrug resistant (RR-/MDR) TB cases notified and started on a second line MDR-TB treatment regimen, among all cases with confirmed RR-/MDR-TB notified in a specified time period, usually one year *Numerator*: Number of laboratory confirmed RR-/MDR-TB cases notified and started on **a** second line MDR-TB treatment regimen in a specified time period *Denominator:* Number of laboratory confirmed RR-/MDR-TB cases notified in *the same* time period *Calculation: (Numerator/Denominator) x 100*	
TB/HIV[6]		
HIV tested new and relapse TB cases with a documented HIV status (%)	Percentage of new and relapse TB cases who had a HIV test result recorded in the TB register among all TB cases notified during a specified time period, usually one year *Numerator:* Number of new and relapse TB cases notified in a specified time period who had a HIV test result recorded in the TB register[7] *Denominator:* Number of new and relapse TB cases notified in *the same* time period *Calculation:* (Numerator/Denominator) x 100	

[5] This indicator includes results from molecular (e.g. Xpert MTB/RIF) as well as conventional phenotypic DST results.

[6] All of these indicators should be a sum of information collected at notification and at treatment outcome in order to capture those who are tested, found to be HIV positive and started on ART or CPT treatment during TB treatment. Currently information displayed in DHIS2 is based on information collected at notification and information collected at treatment outcome is displayed separately for monitoring and evaluation purposes.

Core indicators	Definition	Disaggregation
HIV-positive new and relapse TB cases (%)	Percentage of HIV-positive new and relapse TB cases among TB cases notified in a specified time period, usually one year, with an HIV test result recorded in the TB register *Numerator:* Number of new and relapse TB cases notified in a specified time period that are documented as HIV-positive *Denominator:* Number of new and relapse TB cases notified in *the same* time period with a documented HIV status *Calculation:* (Numerator/Denominator) x 100	
HIV-positive new and relapse TB cases on ART during TB treatment (%)	Percentage of HIV-positive new and relapse TB cases who received antiretroviral therapy (ART) during TB treatment, among all HIV-positive new and relapse TB cases notified in a specified time period, usually one year *Numerator:* Number of HIV-positive new and relapse TB cases notified and started on TB treatment in a specified time period who are already on ART or started ART during TB treatment *Denominator:* Number of HIV-positive new and relapse TB cases notified in the same time period *Calculation:* (Numerator/Denominator) x 100	
HIV-positive new and relapse TB cases on CPT during TB treatment (%)	Percentage of HIV-positive new and relapse TB cases on cotrimoxazole preventive therapy (CPT) during TB treatment among all HIV-positive new and relapse TB cases notified in a specified time period, usually one year *Numerator:* Number of HIV-positive new and relapse TB cases notified and started on TB treatment in a specified time period who are already on CPT or started CPT during TB treatment *Denominator:* Number of HIV-positive new and relapse TB cases notified in *the same* time period *Calculation:* (Numerator/Denominator) x 100	

[7] Results from TB cases newly tested for HIV and those with a known HIV status at the time of TB diagnosis should be included

Immunization

Core indicators	Definition	Disaggregation
Immunization coverage rate by vaccine for each vaccine in the national schedule	N: 100 x Number of children receiving the vaccine) D: Estimated number of target population (e.g. infants less than one year)	• By vaccine / dose of vaccine • Age (<1 year, ≥ 1 year for infant immunizations; ≤ 2 years, ≥ 2 years for toddler immunizations) • Status for TT (pregnant women, others)
Dropout rate for: • first to third dose of DPT containing vaccine • BCG to first dose of measles containing vaccine • first to second dose of measles containing vaccine -	DPT 1 to DPT3 dropout = 100 x (DPT 1 doses – DPT 3 doses)/ DPT 1 doses BCG to MCV1 dropout = 100x (BCG doses – MCV1 doses)/ BCG doses MCV1 to MCV2 dropout = 100x (MCV1-MCV2)/MCV1	
Vial wastage rate (closed and open) by vaccine for each vaccine in the national schedule	Closed vial wastage = percentage of doses that were spoiled due to expiry, heat exposure, freezing or breakage. Open vial wastage = percentage of doses that were discarded after vials were opened.	• By vaccine • Type of spoilage
Full availability of vaccines and supplies	Percentage of health facilities with no stock-outs of any tracer vaccine or injection supply when vaccination is demanded	
Functional Status of Cold Chain Equipment	Number of functional refrigerators	
Temperature Alarms	Number of times the temperature inside cold chain equipment exceeds or drops below a reference range.	
Serious Adverse Events Following Immunization (AEFI)	AEFI cases	• Non-serious, serious
Immunization session completion rate	100 x Number of completed immunization sessions / number of planned sessions	• Outreach versus fixed

World Health Organization
20, Avenue Appia
1211 Geneva 27
Switzerland