Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

Indicator 3.3.2: Tuberculosis incidence per 100,000 population

Institutional information

Organization(s):

World Health Organization (WHO)

Concepts and definitions

Definition:

The tuberculosis incidence per 100,000 population as defined as the estimated number of new and relapse TB cases (all forms of TB, including cases in people living with HIV) arising in a given year, expressed as a rate per 100 000 population.

Concepts:

Direct measurement requires high-quality surveillance systems in which underreporting is negligible, and strong health systems so that under-diagnosis is also negligible; otherwise indirect estimates are based on notification data and estimates of levels of underreporting and under-diagnosis.

Rationale:

Following two years of consultations, a new post-2015 global tuberculosis strategy was endorsed by the World Health Assembly in May 2014. Known as the End TB Strategy, it covers the period 2016-2035. The overall goal is to “End the global tuberculosis epidemic”, and correspondingly ambitious targets for reductions in tuberculosis deaths and cases are set for 2030 (80% reduction in incidence rate compared with the level of 2015) and 2035 (90% reduction in incidence rate), in the context of the SDGs.

The tuberculosis incidence rate was selected as an indicator for measuring reductions in the number of cases of disease burden. Although this indicator was estimated with considerable uncertainty in most countries in 2014, notifications of cases to national authorities provide a good proxy if there is limited under-reporting of detected cases and limited under or over-diagnosis of cases.

Comments and limitations:

TB incidence has been used for over a century as a main indicator of TB burden, along with TB mortality. The indicator allows comparisons over time and between countries. Improvement in the quality of TB surveillance data result in reduced uncertainty about indicator values.

Methodology

Computation method:

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 information from death (vital) registration systems.

Estimates of incidence for each country are derived, using one or more of the following approaches depending on available data: (i) incidence = case notifications/estimated proportion of cases detected; (ii) capture-recapture modelling, (iii) incidence = prevalence/duration of condition.

Uncertainty bounds are provided in addition to best estimates.

Details are available from TB impact measurement: policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control and from the online technical appendix to the WHO global tuberculosis report 2017 and https://arxiv.org/abs/1603.00278

Treatment of missing values:

- At country level

Details available in the following publicly available paper:

https://arxiv.org/ftp/arxiv/papers/1603/1603.00278.pdf

- At regional and global levels

Details available in the following publicly available paper:

https://arxiv.org/ftp/arxiv/papers/1603/1603.00278.pdf

Regional aggregates:

Country estimates of case counts are aggregated. Uncertainty is propagated assuming independence of country estimates.

Sources of discrepancies:

Population denominators may differ between national sources and UNPD. WHO uses UNPD population estimates.

Data sources

Description:

Details about data sources and methods are available in the following publicly available paper:

https://arxiv.org/ftp/arxiv/papers/1603/1603.00278.pdf

Collection process:

National TB Programmes report every year between March and June their annual TB data to WHO using a standardized online data reporting system maintained at WHO. The system includes real-time checks for data consistency. Estimates of TB burden are prepared in July-August and communicated with countries. In selected countries with new survey data, estimates are updated separately during the year. All estimates are communicated in August-September and revisions are done based on feedback. The final set of estimates is reviewed in WHO before publication in October, for compliance with specific international standards and harmonization of breakdowns for age and sex groups.

Data availability

Description:

All countries

Time series:

2000 onwards

Disaggregation:

The indicator is disaggregated by country, sex and age (children vs adults).

Calendar

Data collection:

current: March-June each year

Data release:

October each year

Data providers

National TB Programmes, Ministries of Health

Data compilers

WHO

References

URL:

http://www.who.int/tb/country/data/download/en/

References:

WHO global tuberculosis report 2017: (http://www.who.int/tb/publications/global_report/en/, accessed 09 January 2018).

Methods used by WHO to estimate the Global burden of TB disease: https://arxiv.org/ftp/arxiv/papers/1603/1603.00278.pdf

Definitions and reporting framework for tuberculosis – 2013 revision (WHO/HTM/TB/2013.2). Geneva: World Health Organization; 2013 (http://www.who.int/tb/publications/definitions/en/, accessed 21 June 2016).

World Health Assembly governing body documentation: official records. Geneva: World Health Organization (http://apps.who.int/gb/or/, accessed 21 June 2016).