

Tuberculosis mortality

Rationale for use

Prevalence and mortality are direct indicators of the burden of tuberculosis (TB), indicating the number of people suffering from the disease at a given point in time, and the number dying each year. Furthermore, prevalence and mortality respond quickly to improvements in control, as timely and effective treatment reduce the average duration of disease (thus decreasing prevalence) and the likelihood of dying from the disease (thus reducing disease-specific mortality).

Millennium Development Goal 6 is "to combat HIV/AIDS, malaria and other diseases" [including TB]. This goal is linked to target 8 – "to have halted by 2015 and begun to reverse the incidence of malaria and other major diseases" – and indicator 24 – "prevalence and mortality rates associated with TB". The Stop TB Partnership has endorsed the related targets of reducing per capita TB prevalence and mortality by 50% relative to 1990, by the year 2015. There are few good data with which to establish TB prevalence and mortality, particularly for the baseline year of 1990. However, current best estimates suggest that implementation of the Global Plan to Stop TB 2006–2015 will halve 1990 prevalence and mortality rates globally and in most regions by 2015, though not in Africa and Eastern Europe.

Definition

Estimated number of deaths due to TB in given time period. Expressed in this database as deaths per 100 000 population per year. Includes deaths from all forms of TB, and deaths from TB in people with HIV.

Definition of associated terms

All forms: pulmonary (smear-positive and smear-negative) and extrapulmonary tuberculosis.

Sources

Vital registration data where available (few countries with high burdens of TB have complete vital registration systems with good coverage). Elsewhere, mortality is estimated from incidence.

Methods of estimation

Estimates of TB incidence, prevalence and mortality are based on a consultative and analytical process in WHO and are published annually (see reference 5).

The methods used to estimate TB mortality rates are described in detail elsewhere (references 3–5). Country-specific estimates of TB mortality are, in most instances, derived from estimates of incidence, combined with assumptions about the case fatality rate. The case fatality rate is assumed to vary according to whether the disease is smear-positive or not; whether the individual receives treatment in a DOTS programme or non-DOTS programmes, or is not treated at all; and whether the individual is infected with HIV.

Disaggregation

Estimates are routinely disaggregated into smear-positive and other forms of disease, and by HIV status (in adults 15–49 yrs).

References

- The Stop TB Strategy: building on and enhancing DOTS to meet the TB-related Millennium Development Goals. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.37).
- The Global Plan to Stop TB, 2006–2015. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).
- Dye C et al. Global burden of tuberculosis: estimated incidence, prevalence and mortality by country. *Journal of the American Medical Association* 1999, 282:677–686.
- Corbett EL et al. The growing burden of tuberculosis: global trends and interactions with the HIV epidemic. *Archives of Internal Medicine* 2003, 163:1009–1021.
- Global tuberculosis control: surveillance, planning, financing. WHO report 2006. Geneva, World Health Organization (WHO/HTM/TB/2006.362).

Database

- Global TB database: (http://www.who.int/tb/country/global_tb_database)
- United Nations Millennium Development Goals indicator database: (http://unstats.un.org/unsd/mi/mi_goals.asp)

Comments

TB mortality can be measured directly only where there is a good vital registration system, with accurate coding of cause-of-death. The number of patients dying while on TB treatment (as reported in routine follow-up of cohorts of TB patients) is not an indication of true TB mortality, 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 a potential source of improved estimates of TB mortality.