



Abbreviated name	Malaria mortality rate
Indicator name	Malaria mortality rate (per 100 000 population)
Domain	Health status
Subdomain	Infectious disease
Associated terms	Mortality by cause
Definition	Number of adults and children who have died due to malaria in a specific year, expressed as a rate per 100 000 population.
Numerator	Number of deaths due to malaria.
Denominator	Number of years of exposure.
Disaggregation/ additional dimension	Age, place of residence, sex, socioeconomic status
Method of measurement	Death registration data using ICD-10; verbal autopsy-based results are also used.
Method of estimation	<p>Modelling, using multiple inputs, is often used to obtain a malaria mortality estimate.</p> <p>WHO compiles information supplied by ministries of health (i.e. the agencies responsible for malaria surveillance in endemic countries). The procedures for adjusting data to allow for international comparability are as follows: The number of malaria deaths is derived by one of two methods:</p> <ol style="list-style-type: none"> 1. by multiplying the estimated number of <i>P. falciparum</i> malaria cases in a country by a fixed case-fatality rate. This method is used for all countries outside the WHO African Region and for countries in the African Region where estimates of case incidence are derived from routine reporting systems and where malaria accounts for less than 5% of all deaths in children under 5 years, as described in the Global Burden of Disease Incremental Revision for 2004. A case fatality rate of 0.45% is applied to the estimated number of <i>P. falciparum</i> cases for countries in the African Region and a case fatality rate of 0.3% for <i>P. falciparum</i> cases in other regions. (In situations where the fraction of all deaths due to malaria 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.) 2. For countries in the African Region where malaria comprises 5% or more of all deaths in children under 5 years, the number of deaths is derived from an estimate of the number of people living at high, low or no risk of malaria. Malaria death rates for these populations are inferred from longitudinal studies of malaria deaths, as recorded in the published literature. <p>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 United Nations Population Division.</p> <p>The adjustment procedures described above aim to take into account underreporting of cases if patients do not use public sector facilities or if there are gaps in public sector reporting systems. For countries that do not undertake laboratory confirmation of cases, the adjustments also aim to correct for over-diagnosis of malaria. Where data from surveillance systems are not available, or are considered to be of insufficient quality, incidence is derived from estimated levels of malaria risk and will chiefly be from sources other than locally-available estimates.</p> <p>Predominant type of statistics: predicted.</p> <p>Age standardization is done for comparability over time and between populations.</p>
Measurement frequency	Annual
Monitoring and evaluation framework	Impact
Preferred data sources	Civil registration with full coverage and medical certification of cause of death
Other possible data sources	Routine facility information systems, household surveys with verbal autopsy, special studies
Further information and related links	<p>Household Survey Indicators for Malaria Control. Measure Evaluation/Measure DHS/President's Malaria Initiative/Roll Back Malaria Partnership/ UNICEF/WHO. 2013 (http://www.malariasurveys.org/documents/Household%20Survey%20Indicators%20for%20Malaria%20Control.pdf, accessed 15 April 2015).</p> <p>Indicators for monitoring the Millennium Development Goals: definitions, rationale, concepts and sources. New York (NY): United Nations; 2012 (http://mdgs.un.org/unsd/mi/wiki/MainPage.aspx, accessed 29 March 2015).</p> <p>Roll Back Malaria Partnership/WHO. Disease surveillance for malaria control: an operations manual. Geneva: World Health Organization; 2012 (http://www.who.int/malaria/publications/atoz/9789241503341/en/, accessed 29 March 2015).</p> <p>World Health Assembly governing body documentation: official records. Geneva: World Health Organization (http://apps.who.int/gb/or/, accessed 29 March 2015).</p>