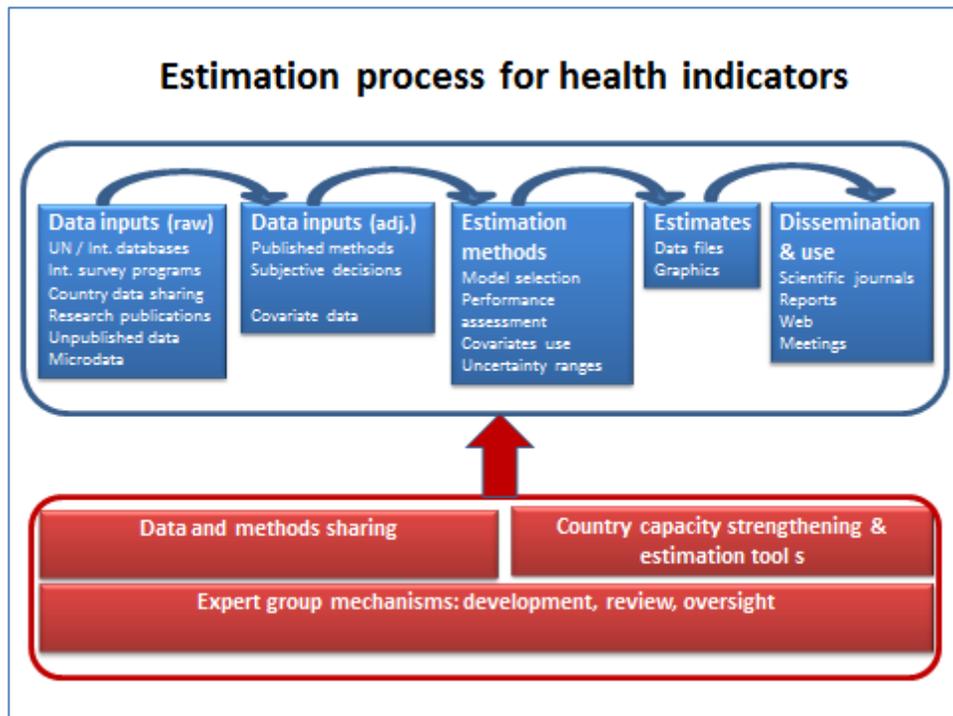


# Global Health Estimates: Proposals on the way forward

*Summary of a Technical Meeting*

*WHO, Geneva, 13-14 February 2013*



Global, regional, and country statistics on population and health indicators are important for assessing development and health progress and for guiding resource allocation. The demand is growing for timely data to monitor progress in health outcomes such as age- and cause-specific mortality rates, prevalence of disease and risk factors, and measures that combine mortality and disability. Much of the current focus is on monitoring progress towards the targets of the (health-related) MDGs, including time series and country-level estimates that are regularly updated. But increasingly, the demand is for comprehensive estimates across the full spectrum, including noncommunicable diseases and injuries.

Because of the major data gaps and measurement issues for mortality and health statistics, adjustments and predictions are needed to transform raw or crude data to comprehensive and comparable estimates. Time series estimates for child and adult mortality and priority causes, including HIV, TB, malaria, maternal mortality and major causes of child deaths have been published by UN agencies. For many mortality and health indicators there are now at least two sets of estimates. The recently published Institute for Health Metrics and Evaluation (IHME) GBD 2010 comprises estimates of child and adult mortality by cause for three time periods based on a range of new methods.

More than 60 experts and UN agency staff met to take a broad view of estimation practices with the following objectives:

- To take stock of current and new approaches related to global health estimation
- To discuss and agree upon ways in which current estimation practices can be improved, including data availability, country capacity strengthening, model selection, data sharing, methods and tools development and sharing.

The meeting, chaired by Peter Piot and Hans Rosling, was organized according to a series of sessions that were introduced by a panel of speakers who presented different viewpoints on the topic. The session topics included current practices in global health estimates (general), country capacity for development and use of estimates, model selection and statistical issues, and sharing of data and methods. In the final session the participants discussed and agreed upon a series of proposals for the way forward.

## Proposals on the way forward

1. Global, regional, and country estimates of health indicators are needed to transform raw data to comprehensive and comparable estimates and to fill data gaps.
  - a. Considerable progress has been made in the field of global health estimation, but much work remains to be done to strengthen country data and capacity, improve transparency, and allow debate on methods.
  - b. The presence of multiple actors in the field of global health estimates can be a healthy basis for continuous improvement of estimates. The plurality of estimates will be most productive if accompanied by regular interaction and cooperation between major actors in order to share methods and identify and communicate reasons for differences in estimates.

- c. We propose the establishment of an overall platform, with global representation, that focuses on overall mortality rates, causes of death, risk factors and burden, and facilitates interaction between multilateral development institutions, IHME and other independent academic groups, and WHO expert groups in specific subject areas.
2. Greater investment in **country health information systems**, as part of health systems strengthening, is necessary to improve health estimates, to reduce reliance on statistical models for prediction, and to provide a solid empirical basis for monitoring health trends. The focus should be on:
    - a. Birth and death registration, including medical certification and ICD coding of cause of death, with verbal autopsy as an interim strategy; We propose that a target on civil registration and vital statistics be included in the post-2015 development agenda.
    - b. Household health surveys that include mortality modules, as well as biological and clinical data collection, with sufficient sample size for subnational estimates.
    - c. Other sources of health information, including disease surveillance systems, health facility/hospital data, and disease registries.
  3. Greater investment in **country capacity** in estimation work should be a priority, including data analysis and production, interpretation, and use of estimates:
    - a. Multilateral institutions, academia, donor agencies, and national governments all have an important role in strengthening capacity through substantial and sustained investments focusing on country institutions.
    - b. Timely and responsive consultation with countries on estimates is an important quality control measure that can improve estimates, but also builds country capacity and facilitates data improvement and use for national policy formulation. Consultations should be technical in scope with a focus on appropriate use of data and methods.
    - c. When estimates are made for a specific country, the goal is to strive for strong participation of personnel at local institutions. This is often not feasible for estimates that are made for many countries at the same time.
  4. Global health estimation work should meet agreed standards of **transparency**:
    - a. All major global investments in systematically gathering data to inform estimates should lead to publicly accessible up-to-date databases and estimation tools, including input data, adjusted data, software and final estimates. Funding agencies should contribute by requiring data and methods sharing as part of their investment in health research. Users of shared data and software have the responsibility to appropriately attribute the data sources.
    - b. Better communication of estimation work is essential, including user-friendly estimation tools, commentaries in journals, and training materials.
    - c. Published data and estimates should be freely available (ideally with open access if published in peer-review journals) so there are no unnecessary barriers to access.
    - d. UN entities, research funders and scientific journals should advocate for the sharing of microdata and aggregated data by countries, researchers and others, building upon a code of conduct for research data sharing developed by researcher funders with WHO in 2010

- e. Scientific journals should continue to strengthen requirements to share data and methods on publication, as well as making all materials available to peer reviewers.
- f. A standard checklist for reporting global health estimates should be developed. All producers of global health estimates should aim to follow these reporting guidelines when publishing new estimates (see box below for elements that may be included in such a checklist).

**Box**

**Elements of documentation accompanying estimates**

- a. a complete listing of data sources used in the analysis, with relevant metadata;
- b. decision rules for inclusion of data points, including identification of outliers, use of quality-related weighting, and use of subnational data;
- c. explanation and justification of adjustments to incomplete or inaccurate data, including mathematical formulae;
- d. explanation of alternative models considered during the model selection process, including covariates evaluated;
- e. description of the statistical model(s) finally used to impute missing values and predict estimates from multiple data points, including mathematical formulae;
- f. systematic evaluation of model performance, including but not necessarily limited to out-of-sample predictive validity measures; and
- g. specification of the precision of the estimates, ideally in the form of uncertainty ranges.