The WHO Reference Group on Global Health Statistics (RGHS) provides advice on population-health related statistics of relevance to WHO, with particular focus on mortality and causes of death. The second RGHS meeting took place on 14-15 March 2016, attended experts and UN agencies.

**Implications of health-related SDG for WHO**

- The SDG 2016-2030 include one health goal with 13 targets and at least a dozen health related targets in the other 16 goals. There are 26 indicators for the targets of the health goal. There has not been much discussion about indicators at the goal level. WHO is the only agency that cuts across all health and health-related SDGs and the World Health Assembly is likely to request annual reporting of progress, which can also inform the overall monitoring process led by the High Level Political forum under the auspices of ECOSOC.
- Within the health targets Universal Health Coverage is central, as a target that underpins all other health targets. WHO, in collaboration with the World Bank, is developing an assessment of the current situation in countries using a UHC coverage index with an inequality score and financial protection indicators.
- Interim targets have not been discussed in the SDG context, but would be useful for SDG monitoring. The SDG will be discussed in the UN General Assembly in 2019.

**Recommendations for WHO**

- Provide metadata for the SDG health indicators (building upon the Global Reference List of 100 Core Health Indicators) and develop standardized data collection tools for the key indicators, such as survey modules, facility assessments, cause of death related instruments; generate a “best practice” guidance document for data collection and analysis on each SDG health indicator;
- Develop and provide tools for countries to facilitate analysis and reproduction of estimates (e.g. for the UHC index) and invest in developing standardized processes that help understand (lack of) progress;
- Focus on strengthening country health information systems, in collaboration with partners through the Health Data Collaborative;
- Reporting on country progress should only be annual for indicators with sufficient new data, otherwise once every two years may be sufficient; World Health Assembly could focus on regional and global summaries or on a particular topic in alternate years;
- Continued work on the UHC index and financial protection indicators.

**GATHER**

- Following the last RGHS meeting a working group was formed and produced GATHER. The Lancet and PLoS Medicine are currently reviewing the paper. The implementation of the GATHER checklist will be challenging for all and is likely to be an incremental process. This will also have to be taken into account in planning/funding, allowing better systematic documentation of all steps in the estimation process.
- GATHER places additional financial burden on estimates producers. This implies that funders should include funding for GATHER compliance. Journals are one way of enforcing implementation, but it is not clear what other ways can be used.
**Recommendations for WHO:**

- Develop a website to present GATHER and associated materials. Document best reporting practices on the website as they are published.
- Widely disseminate GATHER through multiple channels following its publication and consider translation of the document and development of online aids for authors.
- Seek endorsement of GATHER by EQUATOR network, journals, other UN agencies, and funding agencies.
- Consider further specifying “place” in GATHER.
- Review the implications of GATHER for the current clearance process and assess what the technical and resource implications are for WHO’s estimation work. WHO will need to invest in strengthening the capacity of WHO departments on GATHER compliance.

**Utility of global health estimates for countries**

- Many countries do not use global estimates. Some only use global health estimates if the results are favorable, others challenge WHO if they do not like the results which may have a political motive. The investment of WHO in engaging with countries in the estimation process is too low. More efforts are needed to engage countries in the whole process, provide user-friendly estimation tools that go beyond replication, ensure longer periods of interaction during the consultation phase and strengthen capacity to assess data quality and analyze in general.
- Uncertainty intervals are little used in countries. Retrospective updating of baselines and time series is a major source of confusion. Communication of estimates remains a major challenge. Visualization tools including maps have greatly helped but are not enough.
- In addition, greater investments are required from all key actors in global health estimates (e.g. life tables) in analytical capacity strengthening of researchers (such as INDEPTH).

**Recommendations for WHO**

- Ensure more time in the estimation and country consultation for country engagement through multi-country workshop and other mechanisms.
- Make it easier for countries to understand and use global estimates, including the development of tools that can be used to replicate and make estimates, even if complex methods underlie the estimation process, and better visualization methods.
- Enhance data quality assessment and analytical capacity in countries, with Ministries and National Bureau of Statistics, as well as the research community.
- Explore multiple ways to communicate uncertainty intervals.
- Consider making greater use of the cloud and other innovative methods as low cost approaches to providing technical support and interaction.

**Subnational reporting and estimates**

With the introduction of the SDG greater attention is needed for the subnational level. This requires better subnational data. Estimates can help. Geospatial analysis aims to build up from the pixel level (5 x 5km) up to administrative areas / populations, building upon the malaria experience. New work involves child mortality, and other work is planned on TB, pneumonia, diarrhea and eradicable NTDs.

Research is needed to continue collation and geo-positioning survey data on global scale, with statistical work, communication of uncertainty, parsing out the error that comes from the data and from the model, merging geospatial with GBD data.

**Recommendations for WHO**
• Normative guidelines on geospatial data collection are needed; metadata standards, GPS collection and dissemination as standard for surveys, provision of administrative maps if data collection is admin unit based, data sharing (including retrospective information); promote higher spatial resolution recording and utilization of routine reporting, keeping data at the finest resolution possible.

• Advocate for open data, especially with countries and researchers (“data aggregators”)
• Develop standards for health facility information, promote public access to geo-referenced health facility data and sharing of routine health facility data in DHIS2 and other systems
• Be more strategic about guidance for future data collection by enhancing coordination of international survey programmes to identify data gaps.

Mortality and causes of death: data collection and reporting

• CRVS system strengthening is higher on the international and country agenda. Many initiatives have been established and there is some progress, but there is a need to better align other initiatives in countries, especially as it is becoming evident that many countries appear to be more interested in developing ID systems than CRVS systems.
• Sample registration systems, with verbal autopsy, are an important intermediate method to obtain vital statistics in countries with poor death registration coverage. Progress has been made in several countries (e.g. Indonesia, Zambia, Tanzania, Malawi) and at least two more countries will be able to initiate SRS through the CHAMPS project.
• Progress is being made in improving the quality of cause of death data from hospitals. A WHO simplified mortality list is now being incorporated in DHIS 2.0 a web based platform for health facility information systems that many countries use. This needs to be combined with improving medical certification and reporting. The shortlist (107 causes) is compatible with the VA cause of death list (64 causes).
• WHO is engaged in the 11th revision of the ICD to incorporate advances in medicine and information technology. For statistics, the compatibility with ICD-10 is a central piece. Only a small proportion of the 40,000 entries are codes used for statistics.

Recommendations for WHO

• Improve hospital cause of death information through (1) develop electronic training modules for medical certification, (2) enhance coding within DHIS 2.0 using a shortlist of mortality codes in DHIS 2.0 or other electronic systems for coding, (3) promote better reporting (transparent within country, reporting to WHO) (4) assess the bias of hospital cause distributions compared to community cause of death patterns;
• Contribute to global and regional efforts to support countries in strengthening CRVS systems, through advocacy, alignment, standards, technical assistance, and mobilization of resources.
• Ensure statistical continuity of the ICD-11, keeping it as simple as possible, minimizing the chapters and codes where possible and relevant for better global implementation.

Verbal autopsy

The VA working group progressed and produced a 2014 WHO VA instrument which revised and expanded the 2012 version. Work is ongoing on an interviewer manual, tablet version, manual for use in routine data collection systems (e.g. CRVS) under development; guidelines for evaluation of the performance of the VA system under development; compatibility with Tariff2, InterVA, InSilicoVA. IHME withdrew from the working group and has independently developed a SmartVA (slightly shorter than 2014 WHO VA). A recent comparison shows that a full working group – including IHME – should be able to reconcile the differences and develop a single global VA instrument that works with all analytical tools. The Gates Foundation’s CHAMPS project is
implementing Research to improve quality of COD ascertainment using Minimally Invasive Tissue Sampling. The project is still in early stages.

**Recommendations for WHO**

- Reconcile as a matter of urgency differences between current versions of WHO 2014 and SmartVA and ensure that there is one recommended global instrument through the VA Working Group
- Ensure that all analytical tools work well with recommended questionnaire
- Support the development of a ‘crowd sourced’, publicly-available ‘silver standard’ VA data archive that includes deaths with VA and causes assigned through various methods from a wide variety of places continuously through time
- Remain engaged in the autopsy research (MITS) to improve cause of death ascertainment

**All-cause mortality and life tables**

- The modeling for child and neonatal mortality estimation by the IGME is regularly updated and discussed, and the models are available in CME info. Future work includes age-specific child mortality, disaggregated estimates (e.g. wealth quintile), subnational estimates, child mortality beyond age 5 and data quality assessment (index).
- WHO needs annual life table time series to provide envelopes for several indicators and report on life expectancy and related measures. Basic data are extrapolated from the UN Population Division 5 yearly life tables. The life table working group focuses on challenges such as how to deal with high HIV mortality (21 countries, all in Africa) and with mortality shocks. There are also substantial differences in estimation of completeness of death registration in multiple countries which need to be addressed.
- UN Population Division aims for a public use consolidated research data set by 2020, with all input empirical mortality data, unadjusted (incrementally released by region), as well as single year life tables. Methodological agenda includes development of several R packages related to mortality estimation.
- IHME has updated the documentation of its mortality estimation methods, partly in order to comply with GATHER. Capacity strengthening for researchers, e.g. in the INDEPTH network, is critical and needs more attention (and modest investments).

**Recommendations for WHO**

- The life table working group, involving all key actors in this field, should continue (accelerate) its work to address the HIV mortality issue and mortality shocks; improve estimates of completeness; improve the systematic use of survey methods for mortality estimation. More detailed discussions are needed related to measurement of conflict-related mortality (now a SDG) that cut across all actors.
- Support the strengthening of the capacity of researchers to apply the models

**Estimating causes of death**

- Work is advancing in several areas around estimating causes of death, such as child causes of death (JHU, in collaboration with WHO and others), IHME, maternal mortality (MMEIG). In general, efforts are focused on maximizing the use of VR and survey data (including heavy reliance on VA), definitional issues (such as in/exclusion of late maternal deaths), more systematic attention for data quality, more flexible statistical models that follow the country data points more closely, better estimation of uncertainty, and providing tools for in-country use (e.g. CME), or use scaled down versions of the model for one country which can run online (e.g. EPP for HIV, or example of family planning – [www.fpet.track2020.org](http://www.fpet.track2020.org)).
WHO produces a large number of topic specific reports on a regular basis, but with different time frames. The number of reports has increased, and there is more demand for lives saved estimates, linked to specific interventions. There are also a large number of interagency collaborations on SDG monitoring and global health estimates, as well as multiple other demands. The comprehensive updating combines the WHO inputs for different diseases and draws upon the IHME GBD for several causes and YLD.

There has been some progress in collaboration between UN agencies, and also between IHME and WHO, but there is still a lot to be done. Investments in estimation work should be global public goods. Multiple methods are useful, but differences need to be understood.

**Recommendations for WHO**

- Promote (and develop) tools that allow countries to produce estimates, combined with capacity strengthening on especially input data.
- Find ways to further improve the collaboration of WHO with other UN agencies and with IHME
- Ensure that investments in global health estimates, where standards, data sets or methods, become global public goods.