

## **Memorandum of Understanding**

between

**the World Health Organization (“WHO”)**

and

**the Institute for Health Metrics and Evaluation (“IHME”)**

Whereas, WHO, which includes its Headquarters, Regional, and Country Offices, is a public inter-governmental organization and a specialized agency of the United Nations specializing in the field of health and, through its Department for Health Statistics and Information Systems, aims to monitor health and providing technical assistance to its Member States; Whereas, the WHO Health Metrics and Measurement (HMM) Cluster is the responsible technical Cluster within WHO to track the progress on the health-related Sustainable Development Goals by measuring progress on the ‘triple billion’ targets, which is a joint target of Member States, partners and the WHO Secretariat through the WHO Impact Framework and the monitoring of health trends and their determinants globally. The HMM Cluster performs a critical role to support and consult with Member States to harmonize and improve their health information systems, data analytics, and reporting of the evidence-based decision-making process and its impact.

Whereas, IHME is an independent research center identifying the best strategies to build a healthier world, and by measuring health, tracking program performance, finding ways to maximize health system impact, and developing innovative measurement systems, IHME aims to provide a foundation for informed decision-making to improve health for people worldwide; and

Whereas WHO and IHME (hereinafter each referred to as a “**Party**”, and together, the “**Parties**”) enter into this Memorandum of Understanding to set forth the terms on which they plan to collaborate on certain activities relating to improve the quality and use of global health estimates, including global, regional, national, or subnational estimates for health indicators, such as estimates of total and cause-specific mortality, incidence and prevalence of diseases and injuries, or burden of disease and health determinants, such as exposure to risk factors or intervention coverage; Pursuant to the WHO General Programme of Work 2019-2023 (GPW 13) which states that WHO will-- “Work with relevant institutions, including academic institutions and networks, non-State actors and think tanks in the collection, analysis and strategic use of health information. Examples of this type of initiative include various ongoing and proposed “Countdown” efforts, the Global Burden of Disease Collaboration, led by the Institute for Health Metrics and Evaluation, and WHO collaborating centres”—the activities described in this Memorandum of Understanding will strengthen the collaboration to serve this action.

Now, therefore, the Parties agree to enter into this Memorandum of Understanding for the purpose of setting forth their understanding and agreement with respect to the following:

**1. Activities Under this Memorandum of Understanding**

Towards the GPW 13 strategic priority to promote healthier populations, the Parties intend to collaborate on the following activities and topical areas, pursuant to the terms of this Memorandum of Understanding:

**a. Support the GPW 13 Targets and Indicators Measurement**

WHO and IHME will work together to provide strategic support and technical assistance to measure key targets and indicators as defined by the WHO Impact and Outcome Framework (2019-2023), Sustainable Development Goals, and WHA Resolution/Action Plan. Drawing from IHME's annual assessments including GBD, Local Burden of Disease (5x5km assessment), and future health scenarios projected 25 years, IHME will advise on indicator measurement, and where applicable, provide the indicator estimates.

**b. Joint Publication of results from the Global Burden of Disease (GBD)**

Pursuant to the GPW 13, WHO and IHME will collaborate on the GBD and pursue joint publications. Refer to Appendix A, for the working arrangements on GBD.

**c. Policy dialogue and country capacity building**

The Parties agree that while estimates and models are important when data gaps exist for projecting future trends and undertaking complex analyses, estimates are no replacement for data from strong surveillance systems. WHO and IHME will collaborate to strengthen country capacity to review, assess and improve national health data systems, analysis and reporting. WHO, in collaboration with IHME, will help countries identify, and possible strategies to fill, data gaps.

The Parties will collaborate to facilitate the use of global health estimates for decision-making through policy dialogue. WHO, supported by IHME, will equip policymakers with superior tools for decision making and guide policy dialogues.

IHME will share annual assessments from the GBD including data quality and gap assessments and GBD estimates with uncertainty intervals. These analyses may highlight opportunities for country data system strengthening and the further improvement of global health estimates as a result.

**d. Data sharing**

In accordance with and subject to their respective policies, WHO and IHME will share with each other data, metadata and analytical methods that they possess which has been

provided to them by countries and other data providers whenever they are each legally entitled to share as provided herein.

WHO and IHME will encourage public sharing of data by Member States, online, through WHO's databases and the Global Health Data Exchange (GHDx) based on their respective institutional policies.

Where possible and appropriate, WHO and IHME will provide support to facilitate negotiations with countries for access to additional data to improve global health estimates.

All provisions relating to the sharing of software, data and metadata in this Memorandum of Understanding are subject to each Party's applicable policies and other limitations, including software and data use or licensing agreements. Each Party will, to the extent possible and appropriate, endeavor to minimize the scope of those limitations in any future software and data use or licensing agreements they enter into which relate to data and metadata which would, absent limitations, be shared with the other Party pursuant to this Memorandum of Understanding.

## **2. Other agreements**

WHO and IHME may also pursue other agreements with one another that could involve the transfer of funds or other resources for specific projects or programs of mutual interest. Agreements of this kind shall include each Party's responsibilities; duration of the Agreement; budget; financing; payment mechanisms; reporting and evaluation; and any other mutually agreed upon terms.

## **3. Collaborative activities**

Any collaborative activity as outlined in Article 1 above shall be subject to the availability of sufficient financial and human resources for that purpose, as well as each Party's programme of work, priority activities, internal rules, regulations, policies, administrative procedures and practices. Each collaborative activity shall thus be agreed on a case-by case-basis, subject to a separate exchange of letters or agreement.

## **4. Funding**

- 4.1 Each Party hereto shall be fully responsible for the funding of its activities under this Memorandum of Understanding, except as may otherwise expressly be agreed in any subsequent letter of agreement.
- 4.2 Each Party shall administer the funds handled by it in accordance with its financial regulations, rules and administrative practices.

## **5. Confidentiality**

When information provided in the context of this Memorandum of Understanding is described by the Party providing it as confidential, the receiving Party shall take all reasonable measures to keep the information confidential and shall only use the information for the purpose for which it was provided. The receiving Party shall ensure that any of its employees and/or consultants having access to the said information shall be made aware of and be bound by the obligations of the receiving Party hereunder. However, there shall be no obligation of confidentiality or restriction on use where:

- (i) the information is publicly available, or becomes publicly available otherwise than by action of the receiving Party; or
- (ii) the information was already known to the receiving Party (as evidenced by its written records) prior to its receipt; or
- (iii) the information was received from a third party not in breach of an obligation of confidentiality owed to the disclosing Party.

Unless another period is stipulated by the Party providing the information, the obligations of this Article 5 shall survive the termination of this Memorandum of Understanding and continue in full force and effect without any expiration period applying,

## **6. Publications**

- 6.1 The Parties are encouraged to publish the results of their joint work pursuant to this Memorandum of Understanding in a collaborative fashion, including by having the staff and affiliates of the Parties co-author articles in peer-reviewed journals when the Parties deem appropriate. Guidelines for authorship of major, international, peer-reviewed journals will be used to establish authorship of collaborative publications. Refer to Appendix A for further detail on GBD publications.
- 6.2 Copyright of any work prepared by one of the Parties on its own shall be vested in that Party, who may publish the work provided that the other Party has been given the opportunity to comment on the work and any references to that other Party before publication, which comments shall be given due consideration by the publishing Party.
- 6.3 Unless otherwise agreed by the Parties, copyright in any jointly prepared work shall be vested in WHO. Publications produced by the GBD Collaboration on the GBD results would not be considered joint publications unless otherwise agreed upon by the Parties. For joint publications, WHO shall be the lead publishing Party. In this capacity, WHO shall serve as copyright administrator and will act as the contact for third parties with regard to requests to reproduce or make use of the publications, or portions thereof, in any form or medium in all languages. WHO hereby grants IHME

a perpetual and irrevocable, non-exclusive, world-wide, royalty-free, sub-licensable license to use such jointly prepared work, or parts thereof, for public health purposes.

6.4 The collaboration of the Parties shall be duly acknowledged in any publication resulting from the collaboration under this Memorandum of Understanding, unless a Party does not wish to be associated with the publication. The wording of the acknowledgement shall be agreed between the Parties.

6.5 No publication or other work resulting from the collaboration under this Memorandum of Understanding shall contain commercial advertising or be used for the promotion of any commercial product or service.

As further mentioned in Appendix A, WHO/HMM and IHME will develop a joint communication strategy to disseminate products arising from this collaboration.

## **7. Liability**

Each Party shall be solely responsible for the manner in which it carries out its part of the collaborative activities under this Memorandum of Understanding. Thus, a Party shall not be responsible for any loss, accident, damage or injury suffered or caused by the other Party, or that other Party's staff or sub-contractors, in connection with, or as a result of, the collaboration under this Memorandum of Understanding.

## **8. Use of the Parties' names**

Except as explicitly provided in this Memorandum of Understanding, neither Party shall, in any statement or material of a promotional nature, refer to the relationship of the other Party to the collaboration pursuant to this Memorandum of Understanding, or otherwise use the other Party's name, acronym and/or emblem, without the prior written consent of the other Party.

## **9. Relationship of the Parties**

For the purposes of this Memorandum of Understanding, each Party is an independent contractor and not the joint venturer, agent or employee of the other Party. Neither Party shall have authority to make any statements, representations, or commitments of any kind, or to take any action which shall be binding on the other Party, except as may be explicitly provided for in this Memorandum of Understanding or authorized in writing by the other Party.

## **10. Notices**

All notices to be given under this Memorandum of Understanding must be in writing and sent to the address or fax number of the intended recipient set out hereinafter or to any other address or fax number which the intended recipient may designate by notice given in accordance with this Article.

If to WHO: World Health Organization  
Attention: Dr Lubna A Al-Ansary  
Assistant Director-General for Health Metrics and Measurement  
(ADG - HMM)  
20, Avenue Appia  
CH-1211 Geneva 27  
Switzerland  
Tel: 41227913100 / Email: [alansaril@who.int](mailto:alansaril@who.int)

If to IHME: Institute for Health Metrics and Evaluation  
Attention: Christopher JL Murray  
2301 Fifth Ave. Suite 600  
Seattle, WA 98121  
USA  
Tel: +1-206-897-2815  
Fax: +1-206-897-2899

**11. Term and Termination**

This Memorandum of Understanding comes into force on its last signature, and may be terminated by either Party, subject to one month's advance written notice to the other Party. Notwithstanding the foregoing, it is agreed that any termination of this Memorandum of Understanding shall be without prejudice to: (i) the orderly completion of any ongoing collaborative activity; and (ii) any other rights and obligations of the Parties accrued prior to the date of termination of this Memorandum of Understanding.

**12. Amendments**

This Memorandum of Understanding may only be amended in writing by mutual consent of the Parties.

**13. Conflict of Terms**

If and to the extent any of the terms of Appendix A to this Memorandum of Understanding and/or of any subsequent exchange of letters or agreement conflicts or is otherwise inconsistent with the terms this Memorandum of Understanding, the terms of this Memorandum of Understanding shall take precedence.

**14. Settlement of disputes**

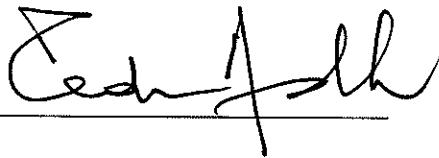
Any dispute relating to the interpretation or execution of this Memorandum of Understanding, or of any subsequent exchange of letters or agreement with respect to individual collaborative activities shall, unless amicably settled, be subject to conciliation. In the event of failure of the latter, the dispute shall be settled by arbitration. The arbitration shall be conducted in accordance with the modalities to be agreed upon by the Parties, or in the absence of agreement, in accordance with the rules of arbitration of the International Chamber of Commerce. The Parties shall accept the arbitral award as final.

**15. Privileges and Immunities of WHO**

Nothing contained herein shall be construed as a waiver of any of the privileges and immunities enjoyed by WHO under national or international law, and/or as submitting WHO to any national court jurisdiction.

Agreed and accepted:

For the World Health Organization

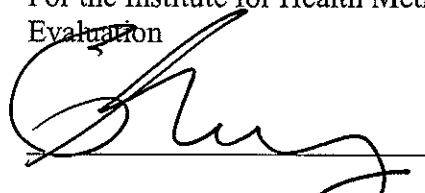


Name: Tedros Adhanom Ghebreyesus

Title: Director General

Date: 05/22/18

For the Institute for Health Metrics and  
Evaluation



Name: Christopher JL Murray

Title: Director

Date: 05/22/18

## **APPENDIX A: WHO and IHME collaboration to strengthen the GBD and enhance policy use of the GBD findings**

### **Context**

WHO's quintessential function is to ensure access to authoritative and strategic information on matters that affect peoples' health. The purpose of doing so is to influence the actions of others in ways that can be shown to improve health outcomes and well-being. WHO serves as the neutral broker and steward of the best evidence on health. The monitoring of health trends and their determinants is a core function of WHO alongside shaping the research agenda and articulating evidence for policy options – all underpinned by the highest ethical standards and with the ultimate goal of producing the best health outcomes in an equitable manner everywhere. It is in acknowledgement of the increased demand for data, measurement and metrics that can lead to decisions to improve peoples' health, all underpinned by international standards, appropriate research and ethical values, in this changing global landscape, that WHO has created new cluster on Health Metrics and Measurement (HMM).

To achieve WHO's vision and mission, and to implement the 13th General Programme of Work (GPW 13), the HMM Cluster performs a critical role to support Member States to harmonize and improve their health information systems, data analytics, reporting the evidence-based decision-making process and its impact. As the technical focal point within WHO, the Cluster tracks the progress on the health-related Sustainable Development Goals by measuring progress on the 'triple billion' targets, which is a joint target of Member States, partners and the WHO Secretariat through the WHO Impact Framework.

HMM strives to work with member states and with all partners within and outside WHO to ensure that it provides the most trusted health and health-related data that is up-to-date, appropriately disaggregated and disseminated in an open manner. It encourages wide use of the data and aims to provide a transparent audit trail for these data. HMM's mission is to support and strengthen the generation and collection, analysis, use and dissemination of data and evidence and promote better evidence-informed decision-making in Member States. It aims to build capacity in member states to monitor the health of their populations and the impact of health interventions and to synthesize data and research evidence to inform policy decisions.

The GBD is a systematic, scientific effort to quantify the comparative magnitude of health loss due to diseases, injuries, and risk factors by age, sex, and geographic locations comprehensively encompassing the globe over time. The goal of the GBD is to provide to decision makers at the local, regional, national, and global level the best and most up-to-date evidence on trends in, and drivers of, population health so that decisions are ultimately more evidence-based.



GBD is based on the idea that decision makers need timely, local, and valid estimates of every quantity of interest, whether or not recent data are available for a disease, injury, or risk factor in a particular population. For that reason, since 2015, the GBD enterprise has been updated annually. The shift to annual assessments released in the same month each year has increased the relevance of GBD as a tool of surveillance and monitoring of global and national health goals, going well beyond the original academic undertaking. Annual assessments also contribute in two ways: to follow the pace of change rather than the differences in levels, and facilitating a culture of accountability on health, particularly in the era of the Sustainable Development Goals.

The GBD is produced by a global collaboration of investigators from over 140 countries. Currently, the GBD collaboration is made up of more than 3150 collaborators from more than 1100 Universities, research centers and government units. The majority of these collaborators are from low and middle-income countries. IHME serves as the coordinating center for this large multi-national collaborative undertaking. Collaborators identify new data sources, refine the models used for estimation, ground truth the results, write manuscripts, provide invaluable feedback and critique to the overall enterprise and results, and promote the use of the GBD in national decision-making.

Currently the GBD enterprise (2017) covers 195 countries and territories, with subnational assessments for 16 countries, calculated for each year since 1990. It is deliberately comprehensive: 355 diseases and injuries, 2,982 sequelae of these diseases and injuries, and 89 risks or combination of risks are included. To estimate such a broad set of quantities of interest, many data are necessary. The latest round of the GBD, GBD 2016, was based on over 100,000 specific data sources. Input data to the GBD and affiliated projects are compiled through continuous extraction of studies from the literature, survey, census and administrative data systems. The GBD is committed to open release of all results as well as transparency on sources and open posting of all analytical code. As such, it has committed itself to complying with the GATHER guidelines.

### **Opportunity to Strengthen the GBD through WHO and IHME Collaboration**

While the GBD represents the collaborative efforts from a very wide range of scientists from more than 1000 research institutions and government units, there are many opportunities to further strengthen the GBD and enhance its policy relevance and ultimate use through closer collaboration with WHO. There are multiple strategic opportunities. First, WHO convenes global expertise in a number of areas and some of these experts are not currently part of the GBD effort. Second, WHO plays a unique role in setting standards for data collection and reporting; data gaps identified in the GBD analysis can be a useful input into identifying new directions for data collection and collation. Third, publication of GBD results by WHO would likely lead to enhanced policy uptake in many countries who look to WHO for strategic guidance. Fourth, WHO in some areas undertakes its own estimation exercises (e.g. maternal mortality, tuberculosis, malaria) and a closer exchange of methods and data on these areas would enhance the quality of the GBD analysis.

## General GBD principles

The GBD provides a particular comprehensive, internally consistent, and comparable assessment of multiple health outcomes by location, age, sex and cause. It is not the only relevant assessment. Country reported data are also an important output for many applications. The GBD's utility is largely for comparisons across locations and over time. In order to generate, rigorous and comparable assessments, a number of concepts, definitions and methods have been developed over the 25 years of the GBD enterprise. These concepts and principles are useful in distinguishing the GBD outputs from other useful health information products.

- A. **Traditional metrics and summary measures.** The quantities of interest of the GBD annual enterprise includes: disease and injury incidence and prevalence by cause and by sequelae; cause-specific mortality; all-cause mortality; risk factor prevalence; and relative risks for risk-outcome pairs. In addition to these more traditional epidemiological measures, the GBD produces summary measures including: years lived with disability (YLDs); years of life lost due to premature mortality (YLLs); Disability adjusted life years (DALYs); life expectancy; healthy life expectancy (HALE) and summary exposure values (SEVs).
- B. **Consistent time series.** To help inform decision-making, the GBD estimates in each annual cycle a complete time series from 1990 to the latest year of estimation. In future work, to enhance the ability to detect and interpret longer-term trends, future iterations of the GBD may cover a longer historical period. Already some components cover the period 1950 to present such as all-cause mortality.
- C. **Comprehensive estimates.** In each annual cycle of estimation the GBD generates estimates for all quantities of interest in the study for each age, sex, location and year. Estimates are produced regardless of data availability for a location or quantity of interest using modeling techniques that use covariates and borrow strength over age, time and space.
- D. **Comparability** is a major focus of the GBD. Every effort is undertaken to correct for known bias and adjust measurements to common units and standards.
- E. **Uncertainty intervals.** All quantities of interest including population and all-cause mortality are estimated with uncertainty. Estimation produces a complete posterior distribution for each quantity of interest and publications report 95% uncertainty intervals.
- F. The GBD enterprise is compliant with the Guidelines on Accurate and Transparent Health Estimate Reporting (GATHER). In addition, all analytical code is made publicly available.
- G. **Data sources.** Estimation for each quantity of interest begins with a review of all available data sources; any sources excluded from the analysis on the basis of quality are transparently identified.
- H. **Scientific review and publication.** The GBD is a scientific collaboration whose results must be published in scientific journals first to meet the appropriate standards of reporting and accountability expected by the scientific community. GBD estimates are subject to broad scientific review. Feedback loops are not only

embedded within the annual cycle, but strongly encouraged from a wide range of actors.

- I. **Coherent estimates.** Estimates of underlying causes of death for each age, sex, year and location must sum to estimates of all-cause mortality for the same age, sex, year and location.
- J. **Cause list.** The GBD cause list is mutually exclusive and collectively exhaustive at each level of the cause hierarchy.
- K. **Geographic locations.** The locations for the GBD collectively encompass the entire globe. The estimates for higher-level geographies must equal the sum of the estimates for more granular locations contained within their borders.
- L. **Disability weights.** For global comparisons, the GBD uses a universal set of disability weights in all locations for each unique health state based on the general public's assessment of the health loss associated with each health state.

### **WHO-IHME collaboration on the GBD**

The goal of the WHO-IHME collaboration on the production of the GBD would be to improve the timeliness, policy-relevance and validity of the GBD for national and local decision-making. Through this collaboration, WHO would make full use of the GBD data and analyses and publish summary GBD estimates in WHO publication policy documents, where appropriate. The WHO would decide on an annual basis on whether the GBD estimates for that year would be published in an appropriate report.

Differences in estimates in these cases help identify weaknesses in the approaches and data for both sets of analyses. Exploring the differences can be useful to strengthen the estimation for these important outcomes. Both Parties commit to work together to identify and resolve issues that emerge from this careful comparison of data and methods over the coming years. Both parties commit to responding to queries, including those related to input data and analytical methods, in a timely manner to allow for country consultations. Until these issues are resolved, both estimates may be used by WHO with appropriate disclaimers.

To achieve this goal a number of efforts would be undertaken.

- 1) WHO would continue its long tradition of setting standards for data collection and reporting, promote new primary data collection, and encourage member states to report a diverse set of health data useful for the GBD and many other applications. Through the WHO-IHME collaboration, the GBD could be used as a guide for highlighting data gaps and opportunities for measurement standardization.
- 2) Subject to WHO's applicable data sharing policies, data reported by Member States to WHO and all data identified by IHME and GBD collaborators through literature searches and other mechanisms would be shared between the parties for use in the GBD analyses.
- 3) GBD estimation would follow the GBD study protocol. WHO technical input on data sources, estimation methods and interpretation of results for each disease and risk area

would be encouraged. To enhance transparency and encourage broader engagement in the GBD collaboration, all GBD Scientific Council meetings would be live streamed with open access for all to listen to the proceedings. Digital recordings of the Council meetings would be publicly available. WHO would assist in identifying qualified candidates for participation in the GBD collaboration and GBD Scientific Council.

4) Estimates produced by the GBD Collaboration would continue to be published each year in a series of publications authored by GBD collaborators in peer-reviewed journals. In each cycle, a series of capstone papers summarizing high-level findings would be published in *The Lancet*. Additional articles on specific diseases, injuries, and risk factors would be published in a variety of peer-reviewed journals. In parallel with the release of the articles in *The Lancet*, WHO would publish GBD estimates subject to the annual approval of the Director-General. Depending on circumstances, GBD estimates for a particular indicator may be published alongside other estimates and/or data reported by Member States in WHO reports. WHO would also publish and use the GBD estimates in a variety of other documents and reports as deemed relevant.

5) There are select diseases for which there is an extensive effort already underway to estimate burden both by WHO and the GBD collaboration including malaria, tuberculosis, causes of child death, maternal mortality, and HIV (with UNAIDS). Differences in estimates would be managed as stated earlier.

6) The Parties agree that nomenclature, references to sensitive geographical areas and maps in relation to any collaborative activities, including in particular any joint publications, will be in accordance with applicable WHO policies and practices.

### **Annual calendar of production**

The GBD results would be released each year in May through publication in the Lancet capstone papers, taking advantage of the World Health Assembly and including side events for the release. An annual production timeline would be followed and adhered to guaranteeing production and release in May of each year. WHO would publish subject to the annual approval of the Director-General summary results in relevant reports.

Broad review by the scientific community and by governments would be encouraged. A specific calendar for receiving comments would be part of the annual calendar.

Results of the annual GBD will be available in dynamic data visualizations on the IHME website. IHME and WHO will work together to explore other visualizations of the same GBD data which may be hosted on the WHO website and/or link to the IHME data visualizations.

GBD follows the principles of authorship, disclosure and scientific integrity from the relevant journal for each publication. Those criteria will be used to establish authorship of collaborative publications. All eligible authors will need to submit an authorship form in accordance with the journal regulations in order to be included. For joint publications

between WHO and the GBD Collaboration, the parties will agree in advance on mutually acceptable principles for authorship.

Pursuant to this Memorandum of Understanding, WHO/HMM and IHME will develop a joint communication strategy to effectively communicate the products that will be the result of this collaboration.