# Institute for Health Metrics and Evaluation

# Data Release Information Sheet

## *Data Summary*

Dataset name: Low- and Middle-Income Country Neonatal, Infant, and Under-5 Mortality Geospatial Estimates 2000-2017

Date of release: October 16, 2019

Summary:

Annual estimates were produced for mortality probability and death counts in three age groups – neonates (0-28 days old), infants (under-1 year old), and under-5 (0-5 years old) – at the 5x5 km-level in 99 low- and middle-income countries (LMICs) between 2000-2017. These estimates were produced using data on child mortality and geographical locations from censuses and several household survey series. Survey sources used include the Demographic and Health Survey (DHS) and UNICEF Multiple Indicator Cluster Survey (MICS) series, and other country-specific surveys.

This dataset includes the following:

- GeoTIFF raster files for pixel-level estimates of mortality probability and death counts in 3 age bins
- CSV files of aggregated mortality probability and death count estimates for each country at the zero, first, and second administrative divisions, by age group
- Code files used to generate the estimates

Relevant publications and visualizations:

- Burstein R, Henry JH, Collison ML, Marczak LB, Sligar A, Watson S, et al. Mapping 123 million neonatal, infant, and child deaths between 2000 and 2017. *Nature*. 16 October 2019.
- Local Burden of Disease – U5M

## Acknowledgements

Contributing organizations:

- Institute for Health Metrics and Evaluation (IHME)

## *Data Files Information*

**NOTE**: The estimates for Egypt, Sudan, and the Hala'ib Triangle have been updated since the October 2019 publication.

### CSV files of Aggregated Estimates of mortality probability and death counts

Stored in files named <MEASURE>_<AGE_GROUP>_<LEVEL_OF_AGGREGATION>.CSV

(Example: IHME_LMICS_U5M_2000_2017_Q_UNDER5_ADM2_Y2019M10D16.CSV)

- **Measure**: mortality probability (Q) and death counts (D)
- **Age group**: neonatal (0-28 days old), infant (under-1 year old), and under-5 (0-5 years old)
- **Level of aggregation**: admin0, admin1, or admin2, corresponding to first and second administrative level areas as defined in the Database of Global Administrative Areas (GADM) shapefiles, with adjustments made in some countries. Each row in each table is unique by administrative unit and year

| Variable | Variable Label | Variable Definition |
|---|---|---|
| ADM0_CODE | GADM Admin 0 Code | GADM code identifying the administrative unit |
| ADM0_NAME | Admin 0 Name | Zero level administrative unit (Country) name as found in the GADM shapefile |
| ADM1_CODE | GADM Admin 1 Code | GADM code identifying the administrative unit (Only in the admin1 files) |
| ADM1_NAME | Admin 1 Name | First level administrative unit name as found in the GADM shapefile |
| ADM2_CODE | GADM Admin 2 Code | GADM code identifying the administrative unit (Only in the admin2 files) |
| ADM2_NAME | Admin 2 Name | Second level administrative unit name as found in the GADM shapefile (Only in the admin2 files) |
| year | Year | Time period of estimate. Possible values: years in the range 2000-2017 |
| age_group_id | Age Group ID | Unique numeric identifier for the age group generated and stored in an IHME database of data dimensions. Possible values: 1, 28, 42 |
| age_group_name | Age Group Name | Age group estimated. Possible values: Under 5, <1 year, Neonatal, Infant |
| measure_id | Measure ID | Unique numeric identifier for the measure estimated. Possible values: 1, 27 |

| Variable | Variable Label | Variable Definition |
|---|---|---|
| measure | Measure | The measure (indicator) estimated. Possible values: Deaths, Probability of Death |
| mean | Mean | Mean posterior population-weighted estimate for the administrative unit |
| lower | Lower Confidence Interval | 2.5% population-weighted posterior quantile estimate for the administrative unit |
| upper | Upper Confidence Interval | 97.5% population-weighted posterior quantile estimate for the administrative unit |

## Codebooks

Variable names, labels, and value encoding for admin 0 files can be found in the machine-actionable codebook file **IHME_LMICS_U5M_2000_2017_CODEBOOK_ADMIN_0_Y2019M10D16.CSV**

Variable names, labels, and value encoding for admin 1 files can be found in the machine-actionable codebook file **IHME_LMICS_U5M_2000_2017_CODEBOOK_ADMIN_1_Y2019M10D16.CSV**

Variable names, labels, and value encoding for admin 2 files can be found in the machine-actionable codebook file **IHME_LMICS_U5M_2000_2017_CODEBOOK_ADMIN_2_Y2019M10D16.CSV**

## GeoTIFF Raster Files for Pixel-level Estimates of Mortality Probability and Deaths

Stored in files named <MEASURE>_<AGE_GROUP>_<STAT>.TIF

(Example: IHME_LMICS_U5M_2000_2017_Q_NEONATAL_MEAN_ Y2019M10D16.TIF)

- **Measure:** Probability of death (Q), or death counts (D)
- **Age group:** neonatal (0-28 days old), infant (under-1 year old), and under-5 (0-5 years old)
- **Stat:** mean, upper, or lower summary statistics from the predictive posterior distribution at each pixel. Lower and upper correspond to 2.5% and 97.5% quantiles

Note that rasters mask (i.e., have NA values) for lakes and areas with low population (10 people per 1km and classified as barren/sparsely vegetated). Rasters are stacked, with a layer for each year from 2000-2017. The first layer corresponds to 2000, the 18th layer corresponds to 2017.

## Disputed Territories

Information on disputed territories, including to which countries disputed territories are attributed, is available in this file: **IHME_LMICS_U5M_2000_2017_DISPUTED_TERRITORIES_ Y2019M10D16.XLSX**

## Data Input Sources

This CSV file contains relevant metadata about the input sources as suggested in the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER), a statement that promotes best practices in reporting health estimates:
**IHME_LMICS_U5M_2000_2017_DATA_INPUT_SOURCES_Y2019M10D16.CSV**

## *Additional Information*

## Terms and Conditions

http://www.healthdata.org/about/terms-and-conditions

## Contact information

To request further information about this dataset, please contact IHME:

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These files may be updated periodically, so we appreciate hearing feedback or additional information about how these data are being used.