



# Institute for Health Metrics and Evaluation

## Data Release Information Sheet

### **Data Summary**

Dataset name: Global Fertility, Mortality, Migration, and Population Forecasts 2017-2100

Date of release: July 14, 2020

Summary:

IHME researchers forecasted population from 2018 to 2100 for 195 countries and territories. They produced these using estimates from the Global Burden of Disease Study (GBD) 2017 and forecasts for fertility, migration, and mortality rates. This dataset includes the following: past estimates for population and deaths; forecasts for population, deaths, life expectancy, live births, total fertility rate (TFR), and migration; and annual life tables for 2018-2100. The projections for population, deaths, life expectancy, live births, total fertility rate (TFR) each include a reference scenario as well as four alternative scenarios that reflect faster or slower trajectories for two key drivers of fertility rates: education of females and access to modern reproductive health services, measured using contraceptive met need.

[Click here](#) to access the [life tables](#).

Relevant publications and visualizations:

Vollset SE, Goren E, Yuan C, Cao J, Smith AE, Hsaio T, et al. Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the Global Burden of Disease Study. *The Lancet*. 14 Jul 2020.

### **Acknowledgements**

Contributing organizations:

- Institute for Health Metrics and Evaluation (IHME)

Funders:

- Bill and Melinda Gates Foundation (BMGF)

Suggested Citation:

Institute for Health Metrics and Evaluation (IHME). Global Fertility, Mortality, Migration, and Population Forecasts 2017-2100. Seattle, United States of America: Institute for Health Metrics and Evaluation (IHME), 2020.

## ***File Inventory***

<b>File Name</b>	<b>Description</b>	<b>Version Date</b>
IHME_POP_2017_2100_POP_PAST_Y2020_M05D01.CSV	Population estimates: 1950-2017	May 01, 2020
IHME_POP_2017_2100_POP_REFERENCE_Y2020_M05D01.CSV	Population forecast, reference scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_POP_SLOWER_Y2020_M05D01.CSV	Population forecast, slower met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_POP_FASTER_Y2020_M05D01.CSV	Population forecast, faster met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_POP_FASTEST_Y2020_M05D01.CSV	Population forecast, fastest met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_POP_SDG_Y2020_M05D01.CSV	Population, SDG met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_POP_BOTH_SEX_ALL_AGE_Y2020_M05D01.CSV	Population forecast, all scenarios, all ages and both sexes: 2018-2100	May 01, 2020
IHME_POP_2017_2100_DEATH_PAST_Y2020_M05D01.CSV	Death estimates: 1990-2017	May 01, 2020
IHME_POP_2017_2100_DEATH_REFERENCE_Y2020_M05D01.CSV	Deaths forecast, reference scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_DEATH_SLOWER_Y2020_M05D01.CSV	Deaths forecast, slower met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_DEATH_FASTER_Y2020_M05D01.CSV	Deaths forecast, faster met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_DEATH_FASTEST_Y2020_M05D01.CSV	Deaths forecast, fastest met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_DEATH_SDG_Y2020_M05D01.CSV	Deaths forecast, SDG met need and education scenario: 2018-2100	May 01, 2020
IHME_POP_2017_2100_LIFE_EXPECTANCY_Y2020_M05D01.CSV	Life expectancy retrospective estimates and forecasts, all scenarios: 1990-2100	May 01, 2020

File Name	Description	Version Date
IHME_POP_2017_2100_LIFE_TABLES.zip	Life tables, annual, all locations: 2018-2100 [Note: the unarchived file is ~4GB]	May 01, 2020
IHME_POP_2017_2100_TFR_Y2020_M05D01.CSV	Total fertility rate (TFR) retrospective estimates and forecasts, all scenarios: 1950-2100	May 01, 2020
IHME_POP_2017_2100_LIVE_BIRTHS_Y2020_M05D01.CSV	Live births retrospective estimates and forecasts, all scenarios: 1950-2100	May 01, 2020
IHME_POP_2017_2100_MIGRATION_Y2020_M05D01.CSV	Migration forecast: 2018-2100	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_POP_PAST_Y2020_M05D01.CSV	Codebook - Population estimates: 1950-2017	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_POP_Y2020_M05D01.CSV	Codebook - Population forecasts: 2018-2100	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_DEATH_PAST_Y2020_M05D01.CSV	Codebook - Death estimates: 1990-2017	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_DEATH_Y2020_M05D01.CSV	Codebook - Death forecasts: 2018-2100	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_LIFE_EXPECTANCY_Y2020_M05D01.CSV	Codebook - Life expectancy retrospective estimates and forecasts: 1990-2100	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_LIFE_TABLES_Y2020_M05D01.CSV	Codebook - Life tables: 2018-2100	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_TFR_Y2020_M05D01.CSV	Codebook - Total fertility rate (TFR) retrospective estimates and forecasts: 1950-2100	May 01, 2020
IHME_POP_2017_2100_CODEBOOK_LIVE_BIRTHS_Y2020_M05D01.CSV	Codebook - Live births retrospective estimates and forecasts: 1950-2100	May 01, 2020

File Name	Description	Version Date
IHME_POP_2017_2100_CODEBOOK_MIGRATION_Y2020_M05D01.CSV	Codebook - Migration forecast: 2018-2100	May 01, 2020
IHME_POP_2017_2100_INFO_SHEET_Y2020_M05D01.CSV	Data Release Information Sheet	May 01, 2020

## Data Files Information

### Reference and Alternate Scenarios

In addition to the reference scenario, four alternative scenarios were developed that reflect faster or slower trajectories for two key drivers of fertility rates: education of females and access to modern reproductive health services, measured using contraceptive met need. The slower, faster, and fastest alternate scenarios were derived by setting the annualized rate of change for education and met need for contraception to their respective 15th, 85th, 99th percentile rates of change across locations in the period 1990–2017. For the United Nations Sustainable Development Goal (SDG) pace alternate scenario, a rate of change was set to one that would allow all locations to meet the SDG targets for educational attainment (universal secondary education by 2030) and contraceptive met need (universal coverage by 2030). Those rates were held constant past 2030 in the education SDG scenario, and met need for contraception at 100% coverage was held past 2030.

### Life Table Measures

- $m_x$  = mortality rate
- $a_x$  = mean person-years lived in an age interval among those who die in that age interval
- $l_x$  = number of persons left alive at age  $x$
- $nL_x$  = person-years lived between age  $x$  and  $x+n$
- $e_x$  = life expectancy at age  $x$

### Variable Information

Variable	Variable Label	Variable Definition
location_ID	Location ID	Unique numeric identifier for the location generated and stored in an IHME database of data dimensions.
location_name	Location Name	Location of the estimate/forecast.
sex_ID	Sex ID	Unique numeric identifier for the sex generated and stored in an IHME database of data dimensions.

<b>Variable</b>	<b>Variable Label</b>	<b>Variable Definition</b>
sex_name	Sex	Gender for the estimate/forecast.
age_group_ID	Age Group ID	Unique numeric identifier for the age group generated and stored in an IHME database of data dimensions.
age_group_name	Age Group Name	Age group estimated/forecasted.
year	Year	Time period of estimate/forecast.
measure_id	Measure ID	Unique numeric identifier for the measure generated and stored in an IHME database of data dimensions.
measure_name	Measure Name	The measure (indicator) of the estimate/forecast.
metric_ID	Metric ID	Unique numeric identifier for the metric.
metric	Metric	Metric/unit of measure for the estimate/forecast.
scenario	Scenario	Unique numeric identifier for the scenario.
scenario_name	Scenario Name	Reference or one of four alternate scenarios for the indicator of interest forecasted.
mean	Mean	Mean estimate.
lower	95% uncertainty interval (lower bound)	2.5% percentile estimate.
upper	95% uncertainty interval (upper bound)	97.5% percentile estimate.

## ***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.