



Institute for Health Metrics and Evaluation

Data Release Information Sheet

Data Summary

Dataset name: Pre-Vaccine Era COVID-19 Infection Fatality Ratio Estimates by Age, Time, and Location 2020-2021

Date of release: February 24, 2022

Summary:

This dataset contains estimates of the COVID-19 infection-fatality ratio (IFR) for global populations during the period April 15, 2020 to January 1, 2021. IFR is defined as the probability of an individual dying from COVID-19 once infected with the SARS-CoV-2 virus. In these files, IFR is expressed as a percent: deaths divided by infections multiplied by 100. Location-specific estimates include 190 countries and territories, as well as subnational locations in 11 countries and territories. Specific time points for each location include April 15, 2020; July 15, 2020; October 15, 2020; and January 1, 2021. The age-specific IFR estimates are time-invariant and pool data from all locations with age-stratified data; only data from prior to vaccine introduction in each location was used for the age-specific estimates. The analytic process that produced these estimates accounted for several known biases, such as under-reporting of COVID-19 deaths and the waning sensitivity of SARS-CoV-2 antibody tests.

Relevant publications and visualizations:

COVID-19 Forecasting Team. Variation in the COVID-19 infection-fatality ratio by age, time, and geography during the pre-vaccine era. *The Lancet*. 24 February 2022.

Acknowledgements

Contributing organizations:

- Institute for Health Metrics and Evaluation (IHME)

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Data Files Information

File Name	Description	Version Date
IHME_COVID_19_IFR_2020_2021_LOCATION_DATE_Y2022M02D21.CSV	Location- and time-specific IFR estimates	February 23, 2022
IHME_COVID_19_IFR_2020_2021_AGE_Y2022M02D21.CSV	Age-specific IFR estimates	February 23, 2022
IHME_COVID_19_IFR_2020_2021_CODEBOOK_LOCATION_DATE_Y2022M02D21.CSV	Codebook - Location- and time-specific IFR estimates	February 23, 2022
IHME_COVID_19_IFR_2020_2021_CODEBOOK_AGE_Y2022M02D21.CSV	Codebook - Age-specific IFR estimates	February 23, 2022
IHME_COVID_19_IFR_2020_2021_SOURCES_DEATHS_Y2022M02D23.XLSX	Data Input Sources - Deaths	February 23, 2022
IHME_COVID_19_IFR_2020_2021_SOURCES_ALLAGE_SEROLOGY_Y2022M02D23.XLSX	Data Input Sources - Serology	February 23, 2022
IHME_COVID_19_IFR_2020_2021_SOURCES_AGESPECIFIC_DEATHS_AND_SEROLOGY_Y2022M02D23.XLSX	Data Input Sources - Age-specific deaths and serology	February 23, 2022
IHME_COVID_19_IFR_2020_2021_CODE_COVID_HISTORICAL_MODEL_Y2022M02D24.ZIP	Code - IHME empirical model of past COVID-19 infections, confirmed cases, hospitalizations, and deaths.	February 24, 2022
IHME_COVID_19_IFR_2020_2021_CODE_COVID_AGE_PATTERNS_Y2022M02D24.ZIP	Code – IHME model of COVID-19 age patterns	February 24, 2022
IHME_COVID_19_IFR_2020_2021_INFO_SHEET_Y2022M02D23.PDF	Data Release Information Sheet	February 24, 2022

Variable Information

Location-Specific Estimates

Variable	Variable Label	Variable Definition
location_id	Location ID	A unique numeric identifier for the location generated and stored in an IHME database of data dimensions. (Country locations are nested within Global Burden of Disease Study (GBD) regions, and regions are nested within GBD super-regions.)
location_name	Location Name	A descriptive label identifying the location.
parent_id	Parent ID	The 'location_id' value for the location one level higher in the GBD location hierarchy (i.e., the parent location).
level	Location Level	Level in the GBD location hierarchy for the given location; '3' indicates countries and territories and '4' indicates sub-national regions.
gbd_region_id	GBD Region ID	A unique numeric identifier for the location generated and stored in an IHME database of data dimensions.
gbd_region_name	GBD Region Name	A descriptive label identifying the GBD region.
gbd_super_region_id	GBD Super-region ID	A unique numeric identifier for the location generated and stored in an IHME database of data dimensions.
gbd_super_region_name	GBD Super-region Name	A descriptive label identifying the GBD super-region.
date	Date	The date corresponding to the location- and time-specific IFR estimate.
measure_name	Measure Name	The measure (indicator) for the estimate.
metric_id	Metric ID	A unique numeric identifier for the metric.
metric_name	Metric Name	The metric/unit of measure for the estimate.
ifr_allage_mean	All-age IFR, Mean	Mean of the IFR estimate, not age-standardized.

Variable	Variable Label	Variable Definition
ifr_allage_lower	All-age IFR, Lower Bound	Lower bound for the 95% uncertainty interval of the IFR estimate, not age-standardized.
ifr_allage_upper	All-age IFR, Upper Bound	Upper bound for the 95% uncertainty interval of the IFR estimate, not age-standardized.
ifr_agestandardized_mean	Age-standardized IFR, Mean	Mean of the IFR estimate, age-standardized.
ifr_agestandardized_lower	Age-standardized IFR, Lower Bound	Lower bound for the 95% uncertainty interval of the IFR estimate, age-standardized.
ifr_agestandardized_upper	Age-standardized IFR, Upper Bound	Upper bound for the 95% uncertainty interval of the IFR estimate, age-standardized.

Age-Specific Estimates

Variable	Variable Label	Variable Definition
age_years	Age in Years	The age (in years) corresponding to the IFR estimate.
measure_name	Measure Name	The measure (indicator) for the estimate.
metric_id	Metric ID	A unique numeric identifier for the metric.
metric_name	Metric Name	The metric/unit of measure for the estimate.
ifr_agespecific_mean	Age-specific IFR, Mean	Mean of the IFR estimate.
ifr_agespecific_lower	Age-specific IFR, Lower Bound	Lower bound for the 95% uncertainty interval of the IFR estimate.
ifr_agespecific_upper	Age-specific IFR, Upper Bound	Upper bound for the 95% uncertainty interval of the IFR estimate.

Additional Information

Terms and Conditions

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

Contact Information

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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.