

Global, regional, and national stillbirths at 20 weeks' gestation or longer in 204 countries and territories, 1990–2021: findings from the Global Burden of Disease Study 2021

GBD 2021 Global Stillbirths Collaborators*



Summary

Background Stillbirth is a devastating and often avoidable adverse pregnancy outcome. Monitoring stillbirth levels and trends—in a comprehensive manner that leaves no one uncounted—is imperative for continuing progress in pregnancy loss reduction. This analysis, completed as part of the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021, methodically accounted for different stillbirth definitions with the aim of comprehensively estimating all stillbirths at 20 weeks or longer for 204 countries and territories from 1990 to 2021.

Methods We extracted data on stillbirths from 11412 sources across 185 of 204 countries and territories, including 234 surveys, 231 published studies, 1633 vital statistics reports, and 10585 unique location-year combinations from vital registration systems. Our final dataset comprised 11 different definitions, which were adjusted to match two gestational age thresholds: 20 weeks or longer (reference) and 28 weeks or longer (for comparisons). We modelled the ratio of stillbirth rate to neonatal mortality rate with spatiotemporal Gaussian process regression for each location and year, and then used final GBD 2021 assessments of fertility and all-cause neonatal mortality to calculate total stillbirths. Secondary analyses evaluated the number of stillbirths missed with the more restrictive gestational age definition, trends in stillbirths as a function of Socio-demographic Index, and progress in reducing stillbirths relative to neonatal deaths.

Findings In 2021, the global stillbirth rate was 23·0 (95% uncertainty interval [UI] 19·7–27·2) per 1000 births (stillbirths plus livebirths) at 20 weeks' gestation or longer, compared to 16·1 (13·9–19·0) per 1000 births at 28 weeks' gestation or longer. The global neonatal mortality rate in 2021 was 17·1 (14·8–19·9) per 1000 livebirths, corresponding to 2·19 million (1·90–2·55) neonatal deaths. The estimated number of stillbirths occurring at 20 weeks' gestation or longer decreased from 5·08 million (95% UI 4·07–6·35) in 1990 to 3·04 million (2·61–3·62) in 2021, corresponding to a 39·8% (31·8–48·0) reduction, which lagged behind a global improvement in neonatal deaths of 45·6% (36·3–53·1) for the same period (down from 4·03 million [3·86–4·22] neonatal deaths in 1990). Stillbirths in south Asia and sub-Saharan Africa comprised 77·4% (2·35 million of 3·04 million) of the global total, an increase from 60·3% (3·07 million of 5·08 million) in 1990. In 2021, 0·926 million (0·792–1·10) stillbirths, corresponding to 30·5% of the global total (3·04 million), occurred between 20 weeks' gestation and 28 weeks' gestation, with substantial variation at the country level.

Interpretation Despite the gradual global decline in stillbirths between 1990 and 2021, the overall number of stillbirths remains substantially high. Counting all stillbirths is paramount to progress, as nearly a third—close to 1 million in total—are left uncounted at the 28 weeks or longer threshold. Our findings draw attention to the differential progress in reducing stillbirths, with a high burden concentrated in countries with low development status. Scarce data availability and poor data quality constrain our capacity to precisely account for stillbirths in many locations. Addressing inequities in universal maternal health coverage, strengthening the quality of maternal health care, and improving the robustness of data systems are urgently needed to reduce the global burden of stillbirths.

Funding Bill & Melinda Gates Foundation.

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Introduction

Improvements in maternal, neonatal, and child health have long been the focus of large-scale global public health efforts.^{1,2} Corresponding mortality reduction targets have been the cornerstones of the global health

agenda put forward in recent decades through both the Millennium Development Goals (MDGs) and the UN Sustainable Development Goals (SDGs).^{3,4} Stillbirth, meanwhile, has not historically received nearly as much attention despite being a potentially devastating and

Lancet 2024; 404: 1955–88

Published Online
November 4, 2024
[https://doi.org/10.1016/S0140-6736\(24\)01925-1](https://doi.org/10.1016/S0140-6736(24)01925-1)

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*Collaborators are listed at the end of the Article

Correspondence to:
Dr Nicholas J Kassebaum,
Institute for Health Metrics and
Evaluation, Hans Rosling Center
for Population Health, Seattle,
WA 98195, USA
nickjk@uw.edu

Research in context

Evidence before this study

In 2014, UNICEF and WHO's Every Newborn Action Plan (ENAP) set a country target of 12 or fewer stillbirths per 1000 births by 2030, thereby emphasising stillbirth as a major global public health issue. One of the challenges of tracking progress towards the ENAP stillbirth targets, as is common in many topics of global health, is the need for clear definitions of who and what should be counted. In the case of stillbirths, gestational age at the time of fetal death is a paramount consideration. A stillbirth cutoff of 28 weeks' completed gestation or longer has been recommended by WHO for international comparison due to poor data availability in many countries, and this is the definition that was used by the *Lancet* Stillbirth Epidemiology Investigator Group (LSEIG), the UN Inter-agency Group for Child Mortality Estimation (UN IGME), and previous iterations of the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD). Unfortunately, stillbirth assessments restricting to 28 weeks' gestation or longer leave many fetal losses uncounted. Although the International Classification of Diseases, version 11 (ICD-11), released in 2022, articulated a definition of stillbirth to include any fetal death at 22 weeks' gestation or longer, it will be quite some time before the world fully transitions to ICD-11-based data collection and reporting. ICD-10, which was released in 1994 and represents the bulk of recent and contemporary data, has defined stillbirth with a cutoff of 20 weeks' gestation or longer. To our knowledge, no previous estimates have been produced to evaluate the global, regional, and national magnitude of stillbirths at 20 weeks' gestation or longer, and to date, there have been no analyses of stillbirths that comprehensively account for heterogeneous case definitions, leverage assessments of reporting completeness, or are internally consistent with data on livebirths and neonatal deaths.

Added value of this study

Here, we provide global estimates of levels of and trends in stillbirths down to 20 weeks' gestation—a time period that is otherwise invisible within previous assessments of pregnancy loss and neonatal mortality. We accomplished this through three important advancements in stillbirth estimation. First, we compiled the largest global dataset on stillbirths, including a total of 11 412 sources from 185 of 204 countries and

territories. Second, we developed and implemented Bayesian meta-regression techniques to evaluate and standardise each of 11 different definitions of stillbirth that appeared in the raw data before modelling, rather than lumping definitions based on gestational age and birthweight together and labelling them as equivalent. Third, our incorporation of stillbirth estimation into GBD 2021 allowed us to leverage comprehensive assessments of age-specific death registration completeness and use these assessments to adjust for likely under-reporting patterns of stillbirths. Additionally, we completed secondary analyses to quantify progress towards WHO ENAP goals, to evaluate the historical relationship between stillbirths and Socio-demographic Index (SDI), and to quantify comparative progress in stillbirths and neonatal mortality, thus providing a clear assessment of progress, opportunities, and challenges for the remaining decade of the UN Sustainable Development Goals (SDG) era.

Implications of all the available evidence

Of the approximately 3·0 million stillbirths that occurred globally after at least 20 weeks' gestation in 2021, nearly a third occurred before 28 weeks' gestation, highlighting the potential undercounting of stillbirths using a 28 weeks or longer threshold. Stillbirths decreased annually, but the total number of stillbirths affecting women and families remained high, and the ratio of stillbirths to neonatal deaths continued to increase. Only 129 (63%) of 204 countries and territories achieved the 2030 ENAP target for stillbirths occurring at 28 weeks or longer in 2021 (≤ 12 stillbirths per 1000 births). This means that 75 countries and territories are still working towards this target, of which 42 are in sub-Saharan Africa. Furthermore, based on the 20 weeks or longer threshold, 26 countries currently achieving the target would no longer be achieving it and should continue to focus on stillbirth prevention. As we consider strategies for continued decreases in stillbirths, addressing inequity in universal access to high-quality maternal care, especially antenatal care and delivery in facilities with skilled providers, must be a central goal of the global health community for all countries to reach the ENAP target by 2030. To accurately track progress and prevent misclassification of stillbirths, it is also necessary to ensure that stillbirth reporting is comprehensive and accurately reflects gestational age.

stigmatising experience for families, and being largely avoidable through improvements in antenatal, pregnancy, and delivery care.^{5,6} This changed when, in 2014, UNICEF and WHO articulated in the Every Newborn Action Plan (ENAP) an absolute goal for every country to reduce their annual stillbirth rate (SBR) to 12 or fewer stillbirths per 1000 livebirths by 2030.^{7–9}

Stillbirth and miscarriage are defined as fetal loss before or during delivery, and their primary differentiation is gestational age at the end of pregnancy;¹⁰ both are differentiated from abortion by intentionality. Conceptually, threshold definitions used for stillbirth

data collection should allow for all pregnancy losses to be counted in a comparable manner, but unfortunately this has not historically been the case. WHO has articulated that 28 weeks or longer of completed gestation (or, if information on gestational age is not available, ≥ 1000 g in birthweight) is the only threshold of stillbirth that should be tracked for international comparison.¹⁰ This threshold definition contrasts with that of the International Classification of Diseases, version 10 (ICD-10), which proposes a stillbirth threshold definition of 20 weeks' gestation or longer, and the more recent ICD-11, which defines stillbirths as fetal deaths at

22 weeks of completed gestation or longer (or, if information on gestational age is not available, ≥ 500 g birthweight).¹¹ Although only reporting on fetal deaths at 28 weeks' completed gestation or longer and counting gestational age and birthweight as equivalent stillbirth criteria might be considered pragmatic, this functionally means all fetal deaths occurring between 20 weeks and less than 28 weeks are left uncounted, creates potential comparability issues in allowing for interchange between birthweight and gestational age, and actively ignores the large volume of data that are available to generate complete and comprehensive estimates of all pregnancy losses. Although the ICD-11 definition might more appropriately reflect the limits of extrauterine viability, the reality is that it will be quite some time before ICD-11 supplants ICD-10 as the primary method of data collection and reporting. In this setting, the most appropriate approach to ensure no unintentional pregnancy losses are missed is a gestational age threshold of 20 weeks or longer, as has been adopted by the US Centers for Disease Control and Prevention and more than 30 other countries and territories in reporting stillbirths.

Numerous efforts have previously estimated levels of and trends in stillbirths. These include work by the *Lancet* Stillbirth Epidemiology Investigator Group (LSEIG), which estimated levels and trends for 195 countries in the years 2000 and 2015, and the UN Inter-agency Group for Child Mortality Estimation (IGME), which published new estimates in January, 2023, for 2000 to 2021.^{12–14} The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) also used a definition of 28 weeks or longer for GBD 2015 and GBD 2016, introduced data definition adjustment, and modelled data in a manner that ensured internal consistency with corresponding estimates of neonatal mortality, but this analysis has not been updated since GBD 2016.^{15,16}

Comprehensive and timely accounting of levels of and trends in stillbirths is crucial for monitoring progress towards ENAP's SBR target of 12 or fewer stillbirths by 2030, complementing other assessments of maternal, neonatal, and child health, and identifying priorities and opportunities for further investment in population health and health system strengthening.¹⁷ We therefore undertook this analysis to update and improve upon previous stillbirth assessments, with an explicit aim of estimating stillbirths with the most inclusive gestation threshold of 20 weeks or longer. In addition to substantially increasing the size of our input dataset, we implemented new methods to account for different stillbirth definitions over time and geography and leveraged the collective advances between GBD 2016 and GBD 2021, including internally consistent estimates of fertility, population, and all-cause mortality, as well as updated completeness assessments for all data sources.^{18,19} To help facilitate comparisons and highlight the importance of full enumeration of fetal loss, we also produced stillbirth estimates at 22 weeks or longer (the ICD-11 threshold)

and 28 weeks or longer (the WHO benchmarking threshold). This manuscript was produced as part of the GBD Collaborator Network and in accordance with the GBD Protocol.²⁰

Methods

Overview

A detailed description of all analytical procedures is given in appendix 1. Below is a summary of each of the main components of our stillbirth analysis. We chose to model the ratio of SBR over neonatal mortality rate (NMR)—where NMR is defined as the number of deaths in the first 28 days over the number of livebirths—to leverage the extensive GBD 2021 efforts to maximise data quality, estimate and correct for completeness, and generate internally consistent estimates of fertility, all-cause mortality, and population size. At the end of this process, NMR data and results are inclusive of all deaths following livebirths so building on this relationship ensures all of these insights are propagated into SBR estimates. Our final estimation spans from 1990 to 2021 and covers 204 countries and territories, including 22 with subnational locations.

This study complies with the GATHER recommendations.²¹ The GATHER checklist is included in appendix 1 (table S1). Input data sources are shown for each reporting location in appendix 2 (figure S4). Input data sources and results are available for download from the Global Health Data Exchange.

Definitions and data seeking

To maximise both the comparability and comprehensiveness of our estimates, our analysis estimated stillbirths for three gestational age thresholds. A model estimating stillbirths at 20 weeks or longer was our primary model representing full enumeration of fetal loss, and we added modelled estimates at both 22 weeks or longer (the ICD-11 threshold) and 28 weeks or longer (the WHO benchmarking threshold) for additional comparisons. A full list of definitions is included in appendix 1 (table S2).

Our data seeking built on the approach used throughout GBD: namely, to identify, review, and extract all available data sources globally. For stillbirths, this included household surveys, national reports, vital registration, sample registration, and any additional sources listed on the Global Health Data Exchange, supplemented with published studies that were representative of the general population, identified through a systematic literature review through PubMed (appendix 1 figure S2).

Data were extracted for the following univariate categorisations of fetal death: completed gestation of 20 weeks or longer, 22 weeks or longer, 24 weeks or longer, 26 weeks or longer, or 28 weeks or longer; and birthweight of 500 g or greater and 1000 g or greater. We also included data reported with a combination of criteria (≥ 22 weeks or ≥ 500 g, ≥ 28 weeks or ≥ 1000 g, ≥ 22 weeks and ≥ 500 g, and ≥ 28 weeks and ≥ 1000 g). Whenever multiple definitions

See Online for appendix 1

See Online for appendix 2

For the Global Health Data Exchange see <http://ghdx.healthdata.org/>

were reported, each was extracted as a separate observation. Uncommonly used thresholds outside those listed above (eg, ≥ 12 weeks, ≥ 32 weeks, and ≥ 2000 g) were excluded. Sources reporting on only lifetime incidence of stillbirth were excluded as well since the stillbirth counts could not be split into annual data. About 20% of reported observations do not have explicit documentation of their case definition, so we manually assigned them in comparison with their closest neighbours in time and space. Most (80%) observations with missing definitions were assigned to the 28 weeks or longer definition, with nearly all the rest (20%) assigned to the 22 weeks or longer definition, rather than the 20 weeks or longer definition, since 22 weeks or longer was more commonly seen among other datasets from the same locations. Of these, only data from eight locations had no other data with a known definition.

In total, we extracted stillbirth data from 11412 sources across 185 of 204 countries and territories, including 234 surveys, 231 published studies, 1633 vital statistics reports, and for 10585 unique location-year combinations of vital registration. The 19 countries with no data were Bhutan, Central African Republic, Chad, Djibouti, Dominica, Equatorial Guinea, Eritrea, Federated States of Micronesia, Laos, Libya, Nauru, Niue, North Korea, São Tomé and Príncipe, Somalia, South Sudan, Syria, Tokelau, and Tuvalu. Appendix 1 (tables S3 and S4) shows the distribution of data by definition and location, and also maps available data by source type (figure S3).

Data processing

We completed several data processing steps to standardise and deduplicate input data before modelling for each definition (appendix 1 figure S1). First, we adjusted surveys reporting only period incidence of stillbirths by applying the ratio of the number of women with a birth in the previous 5 years over the total number of births observed among this group to the reported SBR. Second, we adjusted all SBR data using source type-location-year-specific completeness estimates from the GBD 2021 demographics analysis. Third, we matched each observation of SBR with a GBD 2021 NMR (neonatal [<28 days] deaths per 1000 livebirths) estimate from the same location-year to calculate the SBR to NMR ratio. Next, we developed statistical crosswalk models to standardise all data to each of the three gestational age thresholds (≥ 20 , ≥ 22 , or ≥ 28 weeks). Crosswalks allowed us to impute the implied value of a data point if it were to meet our case definition, thereby rendering it comparable to the other data points in the model and allowing us to incorporate as much input data as possible. This started with excluding observations considered implausible by any of the following criteria: SBR less than 1 (per 1000 births), SBR greater than 200 (per 1000 births), SBR greater than 50 (per 1000 births) for the high-income GBD super-region, observation from a location-year with a major mortality

shock where the with-shock death rate among all ages of the population was more than 500 per 100000 people, and an SBR to NMR ratio less than 0.5 (appendix 1 table S5). Then, for each reference definition (≥ 20 , ≥ 22 , or ≥ 28 weeks), we made direct comparisons by pairing data points with the specified reference definition to data points with alternate definitions based on location-year and source. By calculating the mean ratio of each matched pair and standard error (SE) of the ratio using the delta method, we could adjust the data points with alternate definitions to the reference definition. This process was repeated for indirect comparisons (eg, ≥ 26 weeks to ≥ 24 weeks) to maximise the size of the dataset (appendix 1 tables S6 and S7).²²

Logit-transformed means and SEs were then analysed with a flexible network meta-regression tool called meta-regression Bayesian, regularised, trimmed (MR-BRT) to calculate the pooled difference in the SBR to NMR ratio between the different definitions.²³ We included ordinal priors to ensure relationships between effect sizes (eg, ≥ 22 weeks will have a higher SBR than ≥ 24 weeks) and also a fixed effect of summary exposure values (SEVs) for short gestation for birthweight from GBD 2019 to account for location-specific differences (appendix 1 table S8).²⁴ Appendix 1 (figure S4) illustrates MR-BRT outputs that were used to crosswalk all data to the corresponding reference definitions, including uncertainty, by location, year, and definition. This was followed by another round of systematic removal of outliers following the same criteria as above. Finally, we deduplicated for sources where multiple different definitions were extracted and for location-years covered by both vital registration (preferred) and tabulated vital statistics reports. Appendix 1 (figure S5) maps the final distribution of the proportion of outliers within the dataset and the volume of included data by location.

Modelling the SBR to NMR ratio

We implemented a comprehensive, three-stage modelling process that consisted of an ensemble linear mixed-effects model (stage 1), spatiotemporal smoothing (stage 2), and Gaussian process regression (GPR; stage 3; appendix 1 section 6, appendix 2 figure S1). To enhance the predictive accuracy of the stage 1 model, we use an approach that ranks models built from all possible combinations of candidate covariates and then combines the highest ranked models into a single ensemble. Every combination of ten candidate covariates—selected from among the most predictive and influential for GBD cause-specific mortality models of neonatal and maternal disorders—was tested in the ensemble model, and we retained only those with statistically significant beta coefficients in the pre-specified direction (appendix 1 table S9).^{25,26} The full set of candidate covariates included the proportion of births with one or more visits of antenatal care; four or more visits of antenatal care; in-facility delivery; skilled birth attendance; maternal care and immunisation (a composite metric of

vaccine and maternal care coverage); Healthcare Access and Quality (HAQ) Index; Socio-demographic Index (SDI; a composite of total fertility rate in those aged <25 years, mean years of education for those aged ≥15 years, and per-capita income); maternal education (years per capita); population with at least 12 years of education (among women of reproductive age); and education relative inequality (Gini coefficient). Retained models were ranked by out-of-sample predictive validity, and the top 50 were combined into a final ensemble model to produce initial estimates. The second stage, spatiotemporal smoothing, used time and space weight hyperparameters based on data density, and residuals were combined with stage 1 predictions to better reflect local trends (appendix 1 table S10). The final stage, GPR, incorporated data, data variance, a scale parameter, an amplitude parameter, and a prior to smooth residuals and generate final estimates of the SBR to NMR ratio. NMR estimates were used to transform to SBR, and stillbirth counts were aggregated to produce results for the regional, super-regional, and global locations. Appendix 2 (figure S4) shows a complete set of results and data inputs with definitions for each GBD reporting location.

Uncertainty

These estimates reflect uncertainty in input data, variable sample size, crosswalks from non-reference definitions, and spatiotemporal-GPR results. The model uncertainty was derived by generating 1000 draws of the SBR to NMR ratio for each location. The means of these draw-level estimates were used as the final estimates. The 95% uncertainty intervals (UIs) for our estimates were assigned on the basis of 0·025 and 0·975 quantiles of the draws, which were also used to test for statistical significance.

Count data (ie, total stillbirths) are presented to three significant figures and rates are presented to 1 decimal place.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, writing of the manuscript, or the decision to submit the manuscript for publication.

Results

Total number of stillbirths, SBR, and time trends

Stillbirths and SBR have steadily declined globally over the past three decades (figure 1). The estimated number of stillbirths occurring at 20 weeks' gestation or longer decreased from 5·08 million (95% UI 4·07–6·35) in 1990 to 4·54 million (3·91–5·30) in 2000, 3·61 million (3·23–4·02) in 2015, and 3·04 million (2·61–3·62) in 2021; this corresponds to a decline of 39·8% (31·8–48·0) between 1990 and 2021. SBR similarly declined globally, dropping from 37·1 (30·0–46·0) per 1000 births in 1990 to 33·8 (29·2–39·2) per 1000 births in 2000, 24·8 (22·3–27·6) per 1000 births in 2015, and 23·0 (19·7–27·2) per 1000 births in 2021, corresponding to a total decline of 37·8% (29·9–46·0) between 1990 and 2021. In comparison, the global SBR in 2021 was 22·1 (19·1–26·2) per 1000 births at 22 weeks' gestation or longer and 16·1 (13·9–19·0) per 1000 births at 28 weeks' gestation or longer.

The annualised rate of change was always negative, indicating a decreasing global SBR annually for every year over the past three decades. Although the rate varied by year, SBR declined on average by about 1·5% annually. The first 10-year period, 1990 to 2000, saw an average decrease in the SBR of 0·9% (0·2–2·2) per year. In the early 2000s, there was wide variation in the annual decrease in SBR. This period, 2000 to 2010, had an average annual decrease of 2·1% (1·2–3·0) per year. Most recently, from 2010 to 2021, the SBR continued to decrease at varying levels but averaged at a 1·6% (0·6–2·7) decline per year (figure 1D).

The burden of stillbirths is unequally distributed around the world and concentrated in certain regions

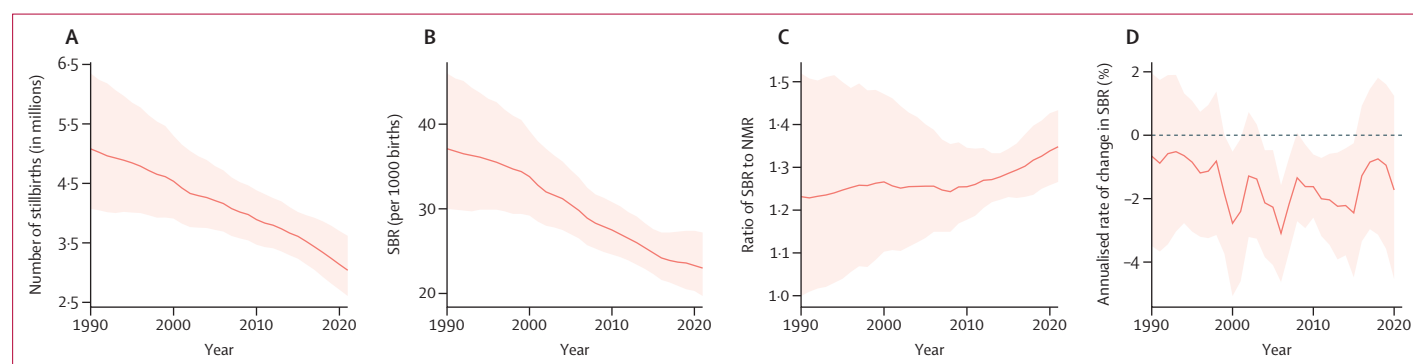


Figure 1: Global trends in the number of stillbirths, SBR, SBR to NMR ratio, and annualised rate of change in SBR, 1990–2021

(A) The solid line represents estimates for the total number of stillbirths (in millions) for the 20 weeks or longer definition, and the shaded area indicates the 95% UI, between 1990 and 2021. (B) The solid line represents the SBR estimates per 1000 births for the 20 weeks or longer definition, and the shaded area indicates the 95% UI, between 1990 and 2021. (C) The solid line represents the SBR to NMR ratio estimates (neonatal deaths per 1000 livebirths) for the 20 weeks or longer definition, and the shaded area indicates the 95% UI, between 1990 and 2021. (D) The solid line represents the annualised rate of change in SBR between adjacent years for the 20 weeks or longer definition, and the shaded area indicates the 95% UI, between 1990 and 2021. NMR=neonatal mortality rate. SBR=stillbirth rate (stillbirths at ≥20 weeks' gestation per 1000 births). UI=uncertainty interval.

	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
Global	5080 (4070–6350)	4540 (3910–5300)	3610 (3230–4020)	3140 (2710–3700)	3040 (2610–3620)	37.1 (30.0–46.0)	33.8 (29.2–39.2)	24.8 (22.3–27.6)	23.3 (20.3–27.4)	23.0 (19.7–27.2)
Low SDI	1420 (1110–1800)	1480 (1250–1750)	1460 (1320–1620)	1390 (1210–1620)	1370 (1180–1610)	60.5 (48.0–75.9)	50.7 (43.2–59.6)	40.7 (37.0–44.9)	37.2 (32.6–43.2)	36.3 (31.5–42.5)
Low-middle SDI	2040 (1600–2580)	1900 (1640–2230)	1340 (1180–1520)	1120 (946–1330)	1070 (904–1300)	51.1 (40.6–63.9)	45.2 (39.1–52.7)	30.9 (27.4–34.9)	27.3 (23.2–32.4)	26.6 (22.5–32.0)
Middle SDI	1150 (919–1450)	844 (714–1010)	616 (534–714)	490 (416–586)	465 (392–560)	27.1 (21.7–33.8)	22.7 (19.3–27.2)	15.8 (13.7–18.2)	14.6 (12.4–17.4)	14.3 (12.1–17.2)
High-middle SDI	370 (302–456)	232 (187–294)	125 (108–148)	86.4 (73.8–103)	79.9 (67.3–95.7)	20.0 (16.4–24.5)	16.0 (12.9–20.2)	8.1 (7.0–9.5)	7.0 (6.0–8.4)	6.8 (5.8–8.2)
High SDI	103 (94.0–114)	78.7 (74.4–83.4)	65.9 (62.4–69.8)	56.0 (50.0–62.7)	53.7 (45.9–62.6)	8.2 (7.5–9.1)	6.9 (6.5–7.3)	5.8 (5.4–6.1)	5.4 (4.8–6.1)	5.2 (4.5–6.1)
Central Europe, eastern Europe, and central Asia	93.4 (85.2–103)	57.3 (54.0–60.6)	67.9 (64.7–71.2)	57.0 (51.7–62.9)	56.0 (48.8–64.1)	13.9 (12.7–15.2)	12.3 (11.6–13.0)	11.7 (11.2–12.3)	11.2 (10.2–12.3)	11.3 (9.8–12.9)
Central Asia	38.8 (33.7–45.5)	29.4 (26.5–32.5)	43.7 (41.5–45.9)	38.9 (34.4–43.6)	38.7 (32.8–45.4)	19.3 (16.8–22.6)	19.6 (17.8–21.7)	20.9 (19.9–21.9)	18.2 (16.2–20.4)	18.3 (15.6–21.4)
Armenia	1.65 (1.51–1.81)	0.872 (0.744–1.02)	1.09 (0.936–1.28)	0.849 (0.741–0.963)	0.801 (0.668–0.958)	21.1 (19.3–23.1)	20.0 (17.1–23.3)	24.3 (20.9–28.5)	22.6 (19.8–25.6)	22.3 (18.7–26.6)
Azerbaijan	5.36 (4.65–6.20)	3.75 (3.41–4.14)	4.23 (3.90–4.58)	2.99 (2.36–3.74)	2.94 (2.19–3.79)	27.6 (24.1–31.9)	27.3 (24.9–30.0)	24.1 (22.2–26.0)	20.4 (16.2–25.4)	20.7 (15.6–26.6)
Georgia	1.67 (1.39–1.97)	1.47 (1.32–1.65)	0.549 (0.492–0.613)	0.478 (0.450–0.506)	0.429 (0.390–0.476)	19.3 (16.1–22.7)	28.9 (26.0–32.1)	9.8 (8.8–10.9)	10.1 (9.5–10.6)	9.4 (8.5–10.4)
Kazakhstan	6.58 (5.84–7.40)	3.86 (3.51–4.24)	4.46 (4.06–4.89)	4.01 (3.39–4.73)	3.78 (2.96–4.81)	17.3 (15.4–19.4)	17.1 (15.6–18.8)	11.1 (10.1–12.2)	9.3 (7.9–11.0)	8.8 (6.9–11.2)
Kyrgyzstan	3.55 (2.48–5.17)	1.74 (1.38–2.20)	2.08 (1.86–2.33)	1.77 (1.56–2.02)	1.70 (1.41–2.03)	25.9 (18.3–37.4)	15.9 (12.6–20.0)	11.8 (10.6–13.3)	10.8 (9.5–12.3)	10.6 (8.8–12.6)
Mongolia	1.78 (1.25–2.64)	0.972 (0.707–1.30)	0.885 (0.822–0.953)	0.651 (0.582–0.728)	0.611 (0.496–0.749)	24.2 (17.2–35.6)	17.9 (13.1–23.8)	10.5 (9.8–11.3)	8.0 (7.1–8.9)	7.6 (6.2–9.3)
Tajikistan	6.35 (5.18–7.70)	6.15 (5.29–7.16)	11.6 (9.86–13.4)	10.1 (7.50–13.1)	10.4 (7.38–14.3)	29.2 (23.9–35.1)	30.3 (26.2–35.1)	39.9 (34.0–45.8)	33.8 (25.4–43.6)	34.9 (25.1–47.5)
Turkmenistan	2.98 (2.72–3.27)	2.32 (1.91–2.79)	2.23 (1.52–3.09)	2.02 (1.43–2.80)	2.01 (1.41–2.80)	23.4 (21.4–25.7)	20.6 (17.1–24.7)	19.3 (13.3–26.6)	17.8 (12.7–24.5)	17.8 (12.6–24.7)
Uzbekistan	8.89 (6.33–12.7)	8.22 (6.23–10.7)	16.5 (15.6–17.5)	16.0 (14.3–17.9)	16.0 (13.0–19.9)	12.4 (8.9–17.7)	14.7 (11.2–19.0)	22.2 (20.9–23.4)	19.7 (17.6–22.0)	19.8 (16.2–24.4)
Central Europe	16.5 (14.0–19.5)	9.63 (9.24–10.1)	6.11 (5.90–6.33)	5.76 (5.36–6.17)	5.34 (4.77–5.97)	9.6 (8.1–11.3)	7.9 (7.6–8.3)	5.3 (5.1–5.5)	5.4 (5.0–5.7)	5.1 (4.6–5.7)
Albania	0.711 (0.507–0.966)	0.526 (0.381–0.727)	0.270 (0.239–0.301)	0.212 (0.174–0.258)	0.20 (0.160–0.247)	8.9 (6.4–12.1)	10.0 (7.3–13.8)	8.4 (7.4–9.3)	7.4 (6.1–9.0)	7.1 (5.7–8.8)
Bosnia and Herzegovina	0.860 (0.803–0.920)	0.364 (0.327–0.404)	0.199 (0.184–0.215)	0.128 (0.114–0.145)	0.114 (0.0971–0.134)	12.8 (11.9–13.6)	9.1 (8.2–10.1)	6.5 (6.0–7.0)	4.7 (4.1–5.3)	4.3 (3.6–5.0)
Bulgaria	0.926 (0.681–1.29)	0.839 (0.776–0.903)	0.688 (0.638–0.741)	0.500 (0.431–0.574)	0.502 (0.391–0.621)	9.1 (6.7–12.6)	11.8 (10.9–12.7)	10.3 (9.6–11.1)	8.3 (7.2–9.5)	8.6 (6.7–10.6)
Croatia	0.348 (0.323–0.377)	0.274 (0.254–0.296)	0.182 (0.169–0.195)	0.149 (0.125–0.176)	0.144 (0.111–0.181)	6.5 (6.0–7.0)	6.4 (5.9–6.9)	4.8 (4.4–5.1)	4.2 (3.5–4.9)	4.1 (3.2–5.2)
Czechia	0.873 (0.797–0.950)	0.367 (0.329–0.406)	0.370 (0.329–0.416)	0.456 (0.398–0.519)	0.428 (0.354–0.513)	6.7 (6.2–7.3)	4.0 (3.6–4.4)	3.3 (2.9–3.7)	4.1 (3.6–4.7)	4.0 (3.3–4.8)
Hungary	1.04 (0.738–1.49)	0.700 (0.630–0.782)	0.574 (0.516–0.639)	0.545 (0.457–0.639)	0.513 (0.400–0.642)	8.3 (5.9–11.8)	7.2 (6.5–8.1)	6.1 (5.5–6.8)	6.0 (5.0–7.0)	5.8 (4.5–7.2)
Montenegro	0.0830 (0.0600–0.114)	0.0597 (0.0499–0.0710)	0.0296 (0.0227–0.0381)	0.0224 (0.0160–0.0308)	0.0214 (0.0153–0.0298)	8.6 (6.2–11.8)	6.8 (5.7–8.1)	3.9 (3.0–5.0)	3.2 (2.3–4.3)	3.1 (2.2–4.3)
North Macedonia	0.559 (0.422–0.718)	0.469 (0.362–0.600)	0.328 (0.292–0.370)	0.248 (0.218–0.282)	0.213 (0.171–0.261)	15.8 (12.0–20.2)	16.6 (12.9–21.2)	14.2 (12.6–16.0)	12.7 (11.2–14.4)	11.3 (9.1–13.8)
Poland	5.43 (3.96–7.18)	2.54 (2.35–2.75)	1.24 (1.13–1.36)	1.36 (1.21–1.54)	1.22 (0.983–1.51)	9.8 (7.2–13.0)	6.8 (6.3–7.4)	3.2 (3.0–3.6)	3.8 (3.4–4.3)	3.6 (2.9–4.4)
Romania	2.89 (2.69–3.09)	1.95 (1.83–2.07)	1.12 (1.05–1.20)	1.06 (0.946–1.18)	0.978 (0.788–1.20)	9.6 (9.0–10.3)	8.7 (8.2–9.3)	5.7 (5.3–6.1)	5.8 (5.2–6.5)	5.5 (4.4–6.7)

(Table continues on next page)

	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
Serbia	1.74 (1.24-2.46)	0.861 (0.748-0.991)	0.558 (0.519-0.597)	0.546 (0.494-0.600)	0.502 (0.432-0.580)	12.0 (8.6-16.9)	8.2 (7.1-9.4)	8.4 (7.8-9.0)	8.7 (7.9-9.5)	8.1 (7.0-9.3)
Slovakia	0.632 (0.479-0.820)	0.429 (0.394-0.466)	0.344 (0.318-0.371)	0.340 (0.312-0.373)	0.329 (0.284-0.378)	7.9 (6.0-10.3)	8.0 (7.4-8.7)	6.0 (5.5-6.5)	5.9 (5.4-6.5)	5.8 (5.0-6.7)
Slovenia	0.166 (0.139-0.195)	0.111 (0.101-0.122)	0.106 (0.0973-0.115)	0.107 (0.0964-0.117)	0.0972 (0.0848-0.112)	7.5 (6.3-8.8)	6.2 (5.6-6.8)	5.1 (4.7-5.5)	5.6 (5.0-6.1)	5.2 (4.5-5.9)
Eastern Europe	38.1 (35.7-40.4)	18.3 (17.3-19.3)	18.1 (16.7-19.6)	12.4 (10.9-14.1)	12.0 (9.64-14.8)	12.7 (12.0-13.5)	9.4 (8.9-10.0)	7.1 (6.6-7.7)	6.6 (5.8-7.5)	6.6 (5.3-8.2)
Belarus	1.46 (1.28-1.66)	0.830 (0.763-0.898)	0.541 (0.504-0.579)	0.397 (0.309-0.501)	0.362 (0.271-0.474)	10.4 (9.1-11.8)	8.9 (8.2-9.7)	4.6 (4.3-4.9)	4.6 (3.6-5.8)	4.4 (3.3-5.7)
Estonia	0.239 (0.204-0.278)	0.0885 (0.0789-0.0987)	0.0493 (0.0444-0.0549)	0.0328 (0.0291-0.0366)	0.0329 (0.0278-0.0387)	11.2 (9.6-13.1)	6.9 (6.1-7.7)	3.5 (3.2-3.9)	2.4 (2.2-2.7)	2.5 (2.1-2.9)
Latvia	0.301 (0.266-0.338)	0.157 (0.145-0.171)	0.125 (0.115-0.135)	0.0970 (0.0856-0.110)	0.0900 (0.0716-0.112)	8.2 (7.3-9.3)	7.8 (7.2-8.5)	5.6 (5.2-6.1)	5.5 (4.9-6.2)	5.3 (4.2-6.6)
Lithuania	0.407 (0.371-0.446)	0.241 (0.222-0.261)	0.147 (0.135-0.158)	0.110 (0.0953-0.126)	0.106 (0.0840-0.132)	7.3 (6.6-7.9)	7.2 (6.6-7.8)	4.7 (4.4-5.1)	4.4 (3.8-5.1)	4.5 (3.5-5.6)
Moldova	1.12 (1.05-1.20)	0.623 (0.556-0.691)	0.312 (0.292-0.334)	0.272 (0.254-0.291)	0.253 (0.225-0.282)	14.0 (13.1-14.9)	14.8 (13.3-16.4)	8.5 (8.0-9.1)	9.1 (8.5-9.8)	8.8 (7.9-9.9)
Russia	25.7 (23.6-27.8)	13.5 (12.5-14.5)	13.5 (12.5-14.4)	9.42 (8.32-10.6)	9.24 (7.39-11.4)	12.9 (11.9-14.0)	10.0 (9.3-10.8)	7.1 (6.5-7.6)	6.6 (5.9-7.5)	6.8 (5.4-8.3)
Ukraine	8.88 (8.21-9.58)	2.86 (2.66-3.07)	3.44 (2.52-4.64)	2.06 (1.44-2.81)	1.87 (1.33-2.57)	13.2 (12.3-14.3)	7.4 (6.9-8.0)	8.3 (6.1-11.1)	7.0 (4.9-9.5)	6.7 (4.8-9.1)
High income	96.5 (88.6-107)	71.3 (69.5-73.3)	59.3 (57.2-61.8)	51.1 (46.2-56.1)	48.9 (42.4-56.3)	7.7 (7.1-8.5)	6.0 (5.8-6.2)	5.1 (4.9-5.3)	4.9 (4.4-5.4)	4.7 (4.1-5.4)
Australasia	3.15 (2.65-3.76)	1.83 (1.74-1.91)	2.69 (2.19-3.34)	2.70 (1.93-3.65)	2.42 (1.70-3.37)	9.9 (8.3-11.8)	6.0 (5.8-6.3)	7.3 (6.0-9.1)	7.6 (5.4-10.2)	6.7 (4.7-9.3)
Australia	2.08 (1.59-2.71)	1.23 (1.16-1.31)	2.13 (1.64-2.79)	2.26 (1.60-3.09)	1.93 (1.35-2.69)	8.1 (6.2-10.5)	5.0 (4.7-5.4)	7.0 (5.4-9.1)	7.6 (5.4-10.3)	6.4 (4.5-8.9)
New Zealand	1.07 (1.02-1.12)	0.595 (0.564-0.625)	0.560 (0.532-0.590)	0.437 (0.323-0.588)	0.483 (0.344-0.669)	17.5 (16.7-18.4)	10.4 (9.9-10.9)	9.3 (8.8-9.8)	7.5 (5.5-10.0)	8.2 (5.8-11.3)
High-income Asia Pacific	10.3 (7.56-13.6)	7.10 (6.39-8.02)	3.88 (3.73-4.03)	2.67 (2.32-3.07)	2.42 (1.98-2.90)	5.2 (3.8-6.9)	3.9 (3.5-4.4)	2.6 (2.5-2.7)	2.2 (1.9-2.6)	2.1 (1.7-2.5)
Brunei	0.0628 (0.0448-0.0891)	0.0595 (0.0521-0.0680)	0.0541 (0.0478-0.0613)	0.0549 (0.0414-0.0715)	0.0519 (0.0387-0.0689)	8.9 (6.4-12.6)	8.2 (7.1-9.3)	8.2 (7.3-9.3)	8.5 (6.4-11.1)	8.1 (6.0-10.7)
Japan	5.69 (4.00-7.67)	4.23 (4.02-4.47)	2.48 (2.35-2.61)	1.74 (1.43-2.11)	1.65 (1.24-2.11)	4.6 (3.3-6.2)	3.6 (3.4-3.8)	2.5 (2.3-2.6)	2.1 (1.7-2.5)	2.0 (1.5-2.5)
Singapore	0.461 (0.331-0.632)	0.307 (0.284-0.331)	0.207 (0.194-0.221)	0.170 (0.159-0.182)	0.171 (0.152-0.192)	8.5 (6.1-11.6)	5.2 (4.8-5.7)	3.4 (3.2-3.6)	3.0 (2.8-3.2)	3.1 (2.7-3.4)
South Korea	4.09 (2.88-5.85)	2.50 (1.85-3.39)	1.14 (1.07-1.22)	0.703 (0.598-0.817)	0.549 (0.453-0.661)	6.0 (4.2-8.5)	4.3 (3.2-5.8)	2.8 (2.6-3.0)	2.5 (2.1-2.9)	2.0 (1.7-2.4)
High-income North America	34.3 (32.7-35.9)	26.9 (25.9-28.0)	24.0 (22.9-25.0)	21.2 (18.7-23.7)	19.9 (16.3-24.1)	7.5 (7.2-7.9)	6.1 (5.9-6.4)	5.5 (5.2-5.7)	5.3 (4.6-5.9)	4.9 (4.0-6.0)
Canada	2.50 (1.97-3.15)	1.62 (1.49-1.76)	2.13 (1.80-2.50)	2.28 (1.85-2.76)	2.11 (1.66-2.64)	6.2 (4.9-7.8)	4.9 (4.5-5.3)	5.6 (4.7-6.5)	6.3 (5.1-7.6)	5.8 (4.6-7.2)
Greenland	0.0236 (0.0170-0.0323)	0.0139 (0.0102-0.0186)	0.00774 (0.00552-0.0109)	0.00725 (0.00513-0.0102)	0.00619 (0.00440-0.00885)	18.6 (13.4-25.2)	14.6 (10.8-19.4)	9.2 (6.6-12.9)	9.0 (6.4-12.6)	7.9 (5.6-11.2)
USA	31.7 (30.3-33.2)	25.3 (24.3-26.4)	21.8 (20.9-22.7)	18.9 (16.6-21.3)	17.8 (14.4-21.7)	7.6 (7.3-8.0)	6.2 (6.0-6.5)	5.5 (5.2-5.7)	5.2 (4.5-5.8)	4.8 (3.9-5.9)
Southern Latin America	15.2 (12.7-18.6)	10.7 (10.2-11.3)	7.43 (7.04-7.82)	5.42 (5.09-5.80)	5.19 (4.70-5.70)	14.5 (12.1-17.7)	10.7 (10.2-11.3)	7.2 (6.8-7.5)	6.9 (6.5-7.4)	6.7 (6.1-7.4)

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	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
Argentina	8.59 (6.16–11.8)	7.45 (6.96–7.95)	5.87 (5.51–6.26)	4.43 (4.16–4.70)	4.29 (3.88–4.75)	12.5 (9.0–17.1)	10.7 (10.0–11.4)	7.8 (7.3–8.3)	8.1 (7.6–8.6)	7.9 (7.2–8.8)
Chile	5.85 (5.31–6.45)	2.52 (2.30–2.77)	1.28 (1.17–1.41)	0.803 (0.629–1.01)	0.723 (0.541–0.939)	19.2 (17.5–21.2)	9.9 (9.0–10.9)	5.4 (4.9–5.9)	4.0 (3.2–5.1)	3.7 (2.7–4.7)
Uruguay	0.784 (0.596–1.03)	0.772 (0.713–0.836)	0.280 (0.259–0.303)	0.196 (0.157–0.242)	0.176 (0.130–0.228)	14.0 (10.6–18.3)	14.4 (13.3–15.6)	5.9 (5.4–6.3)	5.4 (4.4–6.7)	4.9 (3.7–6.4)
Western Europe	33.6 (30.6–37.5)	24.7 (23.9–25.6)	21.4 (19.8–23.3)	19.1 (17.2–21.3)	19.0 (16.6–22.0)	7.3 (6.6–8.1)	5.7 (5.5–5.9)	4.8 (4.5–5.3)	4.6 (4.2–5.2)	4.6 (4.0–5.4)
Andorra	0.00469 (0.00335–0.00658)	0.00257 (0.00216–0.00307)	0.00361 (0.00297–0.00426)	0.00360 (0.00266–0.00473)	0.00213 (0.00151–0.00285)	7.6 (5.4–10.6)	3.6 (3.0–4.3)	5.7 (4.7–6.8)	6.5 (4.8–8.5)	3.9 (2.8–5.2)
Austria	0.539 (0.503–0.578)	0.351 (0.331–0.373)	0.325 (0.306–0.345)	0.351 (0.315–0.388)	0.326 (0.264–0.399)	5.8 (5.4–6.2)	4.5 (4.2–4.8)	3.8 (3.6–4.0)	4.1 (3.7–4.6)	3.8 (3.1–4.6)
Belgium	0.999 (0.710–1.37)	0.712 (0.625–0.812)	0.620 (0.538–0.711)	0.579 (0.440–0.745)	0.578 (0.420–0.762)	7.9 (5.7–10.8)	6.1 (5.3–6.9)	5.1 (4.4–5.8)	5.1 (3.9–6.5)	5.1 (3.7–6.7)
Cyprus	0.181 (0.128–0.247)	0.0877 (0.0636–0.117)	0.0576 (0.0468–0.0696)	0.0518 (0.0402–0.0661)	0.0504 (0.0381–0.0648)	12.2 (8.7–16.6)	7.8 (5.7–10.4)	4.0 (3.2–4.8)	3.4 (2.7–4.4)	3.3 (2.5–4.3)
Denmark	0.454 (0.396–0.520)	0.441 (0.392–0.498)	0.261 (0.229–0.297)	0.224 (0.167–0.294)	0.223 (0.166–0.298)	7.1 (6.2–8.1)	6.6 (5.9–7.5)	4.4 (3.8–5.0)	3.6 (2.7–4.7)	3.5 (2.6–4.7)
Finland	0.315 (0.293–0.340)	0.241 (0.224–0.259)	0.165 (0.154–0.176)	0.134 (0.123–0.145)	0.138 (0.120–0.157)	4.8 (4.5–5.2)	4.3 (4.0–4.6)	3.0 (2.8–3.2)	2.8 (2.6–3.0)	2.8 (2.5–3.2)
France	5.59 (5.23–5.96)	4.49 (4.22–4.78)	4.80 (3.33–6.69)	4.26 (2.94–5.82)	4.17 (2.95–5.76)	7.3 (6.8–7.8)	5.8 (5.4–6.1)	6.3 (4.4–8.8)	6.1 (4.2–8.3)	6.0 (4.2–8.2)
Germany	5.51 (5.18–5.85)	3.73 (3.52–3.95)	3.26 (3.07–3.46)	4.06 (3.83–4.31)	4.04 (3.64–4.49)	6.4 (6.0–6.7)	4.9 (4.6–5.2)	4.3 (4.0–4.5)	5.1 (4.9–5.5)	5.1 (4.6–5.7)
Greece	0.895 (0.751–1.05)	0.818 (0.703–0.943)	0.520 (0.449–0.602)	0.603 (0.497–0.734)	0.540 (0.417–0.697)	8.7 (7.3–10.2)	7.9 (6.8–9.1)	5.5 (4.8–6.4)	7.1 (5.9–8.6)	6.5 (5.0–8.4)
Iceland	0.0243 (0.0212–0.0277)	0.0232 (0.0201–0.0262)	0.0158 (0.0138–0.0179)	0.0197 (0.0172–0.0226)	0.0226 (0.0186–0.0270)	5.2 (4.6–6.0)	5.6 (4.8–6.3)	3.8 (3.3–4.3)	4.3 (3.7–4.9)	4.8 (4.0–5.7)
Ireland	0.406 (0.373–0.440)	0.388 (0.361–0.418)	0.289 (0.268–0.310)	0.219 (0.175–0.272)	0.219 (0.164–0.295)	7.5 (6.9–8.1)	6.7 (6.2–7.2)	4.4 (4.1–4.7)	3.8 (3.0–4.7)	3.8 (2.8–5.1)
Israel	0.691 (0.631–0.751)	0.960 (0.899–1.02)	0.977 (0.911–1.05)	0.892 (0.672–1.17)	0.739 (0.547–0.982)	6.6 (6.1–7.2)	7.0 (6.6–7.5)	5.4 (5.1–5.8)	4.9 (3.7–6.4)	4.0 (3.0–5.3)
Italy	4.36 (3.85–4.89)	2.50 (2.01–3.07)	1.81 (1.64–2.01)	1.34 (1.18–1.51)	1.30 (1.09–1.55)	7.7 (6.8–8.6)	4.6 (3.7–5.6)	3.7 (3.4–4.1)	3.3 (2.9–3.7)	3.3 (2.7–3.9)
Luxembourg	0.0330 (0.0287–0.0378)	0.0324 (0.0284–0.0366)	0.0396 (0.0345–0.0451)	0.0519 (0.0434–0.0623)	0.0514 (0.0397–0.0649)	6.5 (5.7–7.5)	5.7 (5.0–6.5)	6.6 (5.8–7.5)	8.0 (6.7–9.6)	7.7 (6.0–9.7)
Malta	0.0494 (0.0371–0.0648)	0.0266 (0.0238–0.0296)	0.0245 (0.0210–0.0282)	0.0254 (0.0204–0.0312)	0.0229 (0.0173–0.0296)	9.0 (6.8–11.8)	6.3 (5.7–7.1)	5.6 (4.8–6.4)	5.8 (4.6–7.1)	5.3 (4.0–6.8)
Monaco	0.00164 (0.00115–0.00222)	0.00130 (0.000909–0.00184)	0.000903 (0.000662–0.00120)	0.000967 (0.000707–0.00130)	0.000975 (0.000713–0.00133)	5.3 (3.7–7.2)	4.3 (3.0–6.1)	3.1 (2.3–4.1)	3.3 (2.4–4.4)	3.3 (2.4–4.5)
Netherlands	1.81 (1.30–2.47)	1.33 (1.19–1.50)	0.669 (0.620–0.725)	0.541 (0.478–0.608)	0.548 (0.430–0.672)	9.1 (6.5–12.4)	6.4 (5.8–7.3)	3.9 (3.6–4.2)	3.1 (2.7–3.5)	3.1 (2.4–3.8)
Norway	0.448 (0.421–0.475)	0.355 (0.334–0.375)	0.227 (0.215–0.242)	0.168 (0.151–0.188)	0.177 (0.150–0.206)	7.6 (7.2–8.1)	6.1 (5.7–6.4)	3.9 (3.7–4.1)	3.1 (2.8–3.4)	3.2 (2.7–3.7)
Portugal	1.25 (1.17–1.35)	0.758 (0.710–0.808)	0.302 (0.284–0.323)	0.230 (0.185–0.286)	0.212 (0.159–0.276)	10.7 (10.0–11.5)	6.5 (6.1–6.9)	3.5 (3.3–3.7)	2.8 (2.2–3.4)	2.6 (2.0–3.4)
San Marino	0.00288 (0.00205–0.00409)	0.00219 (0.00169–0.00278)	0.00250 (0.00190–0.00316)	0.00327 (0.00242–0.00436)	0.00241 (0.00180–0.00322)	12.4 (8.9–17.6)	7.3 (5.7–9.3)	9.1 (6.9–11.4)	13.3 (9.9–17.6)	9.9 (7.4–13.2)

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	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
Spain	2.63 (1.92-3.67)	1.73 (1.56-1.92)	1.57 (1.45-1.70)	1.10 (0.923-1.29)	1.07 (0.836-1.34)	6.6 (4.8-9.2)	4.3 (3.9-4.8)	3.7 (3.4-4.0)	3.2 (2.7-3.7)	3.2 (2.5-4.0)
Sweden	0.598 (0.551-0.649)	0.465 (0.434-0.498)	0.446 (0.413-0.483)	0.378 (0.332-0.429)	0.361 (0.288-0.446)	4.8 (4.5-5.3)	5.1 (4.7-5.4)	3.9 (3.6-4.2)	3.3 (2.9-3.8)	3.2 (2.5-3.9)
Switzerland	0.462 (0.400-0.534)	0.349 (0.307-0.396)	0.410 (0.359-0.464)	0.382 (0.317-0.465)	0.396 (0.315-0.493)	5.3 (4.6-6.1)	4.5 (4.0-5.1)	4.7 (4.1-5.3)	4.3 (3.6-5.3)	4.4 (3.5-5.5)
UK	6.31 (4.70-8.63)	4.91 (4.71-5.11)	4.54 (4.36-4.71)	3.48 (3.14-3.85)	3.80 (3.15-4.62)	7.9 (5.9-10.8)	7.2 (6.9-7.5)	5.8 (5.6-6.1)	5.1 (4.6-5.6)	5.5 (4.6-6.7)
England	5.24 (3.73-7.43)	4.17 (3.99-4.35)	3.94 (3.77-4.11)	3.01 (2.69-3.36)	3.34 (2.72-4.12)	7.8 (5.6-11.1)	7.3 (6.9-7.6)	5.9 (5.7-6.2)	5.1 (4.6-5.7)	5.7 (4.6-7.0)
Northern Ireland	0.216 (0.195-0.237)	0.141 (0.128-0.155)	0.106 (0.0960-0.117)	0.0723 (0.0539-0.0957)	0.0641 (0.0470-0.0855)	8.2 (7.5-9.0)	6.4 (5.8-7.0)	4.4 (4.0-4.8)	3.4 (2.5-4.5)	3.1 (2.3-4.1)
Scotland	0.574 (0.532-0.616)	0.394 (0.369-0.421)	0.275 (0.259-0.294)	0.230 (0.215-0.246)	0.226 (0.202-0.252)	8.6 (8.0-9.2)	7.3 (6.9-7.9)	5.0 (4.7-5.3)	4.8 (4.5-5.1)	4.7 (4.2-5.2)
Wales	0.281 (0.200-0.398)	0.208 (0.192-0.226)	0.217 (0.200-0.235)	0.168 (0.149-0.189)	0.177 (0.143-0.219)	7.2 (5.1-10.2)	6.5 (6.0-7.0)	6.5 (6.0-7.0)	5.8 (5.2-6.6)	6.2 (5.0-7.6)
Latin America and Caribbean	302 (246-369)	228 (214-243)	131 (119-144)	109 (95.0-125)	102 (87.5-118)	28.1 (23.0-34.2)	20.9 (19.7-22.3)	12.5 (11.4-13.7)	11.3 (9.9-12.9)	10.7 (9.2-12.5)
Andean Latin America	23.8 (21.4-26.8)	21.5 (19.9-23.2)	16.8 (14.5-19.4)	14.2 (11.6-17.1)	13.3 (11.0-16.2)	19.7 (17.7-22.1)	17.4 (16.1-18.8)	13.2 (11.4-15.2)	11.2 (9.2-13.5)	10.6 (8.8-12.8)
Bolivia	6.78 (5.71-8.01)	6.89 (5.97-7.94)	5.50 (4.01-7.34)	4.59 (3.31-6.37)	4.43 (3.20-6.06)	29.0 (24.5-34.0)	27.9 (24.3-32.0)	20.9 (15.3-27.7)	18.3 (13.2-25.2)	17.8 (12.9-24.2)
Ecuador	4.04 (2.85-5.81)	4.19 (3.84-4.58)	2.60 (2.44-2.76)	2.54 (2.39-2.70)	2.39 (2.15-2.65)	13.3 (9.4-19.0)	12.3 (11.3-13.5)	7.6 (7.1-8.1)	7.7 (7.2-8.2)	7.4 (6.6-8.2)
Peru	13.0 (11.7-14.4)	10.5 (9.50-11.5)	8.72 (7.13-10.6)	7.10 (5.25-9.74)	6.48 (4.73-9.02)	19.3 (17.5-21.3)	16.1 (14.7-17.7)	13.0 (10.7-15.8)	10.4 (7.7-14.2)	9.5 (7.0-13.2)
Caribbean	37.8 (29.7-48.0)	29.3 (24.1-35.8)	22.8 (18.0-28.8)	21.4 (16.5-28.7)	21.1 (16.1-28.0)	40.0 (31.7-50.3)	32.9 (27.2-40.0)	26.8 (21.3-33.7)	26.0 (20.2-34.5)	25.7 (19.8-34.0)
Antigua and Barbuda	0.0236 (0.0165-0.0327)	0.0315 (0.0218-0.0445)	0.0215 (0.0151-0.0296)	0.0195 (0.0137-0.0274)	0.0184 (0.0130-0.0259)	19.6 (13.8-27.0)	21.7 (15.1-30.4)	19.0 (13.4-25.9)	18.1 (12.8-25.3)	17.4 (12.4-24.3)
The Bahamas	0.0820 (0.0608-0.108)	0.0581 (0.0529-0.0643)	0.0602 (0.0473-0.0763)	0.0530 (0.0378-0.0754)	0.0525 (0.0373-0.0740)	15.0 (11.2-19.6)	13.0 (11.9-14.4)	14.2 (11.2-17.9)	13.4 (9.6-19.0)	13.4 (9.6-18.8)
Barbados	0.0608 (0.0446-0.0810)	0.0413 (0.0330-0.0505)	0.0318 (0.0224-0.0437)	0.0298 (0.0210-0.0410)	0.0297 (0.0213-0.0410)	14.4 (10.6-19.1)	10.4 (8.4-12.8)	11.0 (7.7-15.0)	11.2 (7.9-15.3)	11.3 (8.1-15.5)
Belize	0.198 (0.144-0.265)	0.161 (0.155-0.167)	0.0873 (0.0773-0.0991)	0.0818 (0.0635-0.105)	0.0794 (0.0607-0.106)	30.1 (22.1-40.1)	23.4 (22.6-24.3)	11.4 (10.1-13.0)	10.7 (8.4-13.7)	10.4 (8.0-13.8)
Bermuda	0.0147 (0.0106-0.0201)	0.00790 (0.00563-0.0111)	0.00446 (0.00345-0.00557)	0.00376 (0.00277-0.00501)	0.00337 (0.00247-0.00451)	16.2 (11.8-22.0)	9.4 (6.7-13.1)	7.6 (5.9-9.5)	7.4 (5.4-9.8)	6.8 (5.0-9.1)
Cuba	2.91 (2.75-3.08)	2.31 (2.18-2.43)	1.33 (1.23-1.43)	1.14 (1.01-1.30)	0.942 (0.804-1.11)	16.2 (15.3-17.1)	15.2 (14.4-16.0)	10.9 (10.1-11.7)	11.0 (9.7-12.4)	9.4 (8.0-11.0)
Dominica	0.0390 (0.0275-0.0542)	0.0282 (0.0201-0.0393)	0.0332 (0.0229-0.0471)	0.0280 (0.0193-0.0407)	0.0275 (0.0192-0.0399)	20.0 (14.2-27.7)	23.0 (16.5-31.9)	39.6 (27.7-55.3)	40.9 (28.6-58.4)	41.2 (29.1-58.7)
Dominican Republic	10.4 (7.27-14.8)	8.61 (6.83-10.9)	4.71 (4.24-5.21)	4.42 (3.47-5.59)	4.38 (3.37-5.66)	43.1 (30.7-60.6)	37.3 (29.8-46.7)	21.9 (19.8-24.2)	20.2 (16.0-25.5)	20.1 (15.5-25.8)
Grenada	0.0706 (0.0514-0.0934)	0.0550 (0.0478-0.0632)	0.0383 (0.0271-0.0525)	0.0319 (0.0226-0.0451)	0.0301 (0.0212-0.0424)	28.2 (20.7-37.0)	23.4 (20.4-26.8)	23.1 (16.5-31.4)	22.3 (15.9-31.2)	21.6 (15.3-30.1)
Guyana	1.12 (0.783-1.59)	0.621 (0.434-0.874)	0.428 (0.297-0.599)	0.403 (0.279-0.580)	0.388 (0.270-0.554)	39.6 (28.0-55.1)	29.8 (21.0-41.5)	26.2 (18.3-36.3)	25.0 (17.4-35.6)	24.6 (17.3-34.9)

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	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
Haiti	17.3 (12.0-24.4)	12.9 (9.09-18.1)	13.4 (9.25-19.0)	13.0 (8.96-18.8)	12.9 (9.02-18.7)	63.3 (44.9-87.4)	44.5 (31.9-61.6)	38.8 (27.2-54.3)	36.4 (25.5-52.0)	36.1 (25.5-51.5)
Jamaica	1.19 (0.901-1.54)	1.51 (1.25-1.82)	0.829 (0.765-0.899)	0.745 (0.602-0.914)	0.713 (0.555-0.901)	20.4 (15.5-26.3)	29.7 (24.6-35.4)	21.8 (20.2-23.6)	21.8 (17.7-26.6)	21.3 (16.6-26.7)
Puerto Rico	1.69 (1.17-2.39)	0.903 (0.704-1.14)	0.267 (0.212-0.326)	0.170 (0.130-0.220)	0.154 (0.114-0.204)	25.2 (17.7-35.3)	15.5 (12.1-19.6)	8.6 (6.8-10.5)	8.5 (6.5-11.0)	8.0 (5.9-10.6)
Saint Kitts and Nevis	0.0310 (0.0215-0.0431)	0.0235 (0.0162-0.0332)	0.0188 (0.0131-0.0260)	0.0160 (0.0112-0.0226)	0.0157 (0.0111-0.0222)	32.6 (22.8-44.7)	27.4 (19.0-38.3)	28.6 (20.2-39.2)	26.6 (18.8-37.2)	26.6 (19.0-37.3)
Saint Lucia	0.0882 (0.0755-0.102)	0.0611 (0.0529-0.0703)	0.0411 (0.0306-0.0555)	0.0319 (0.0230-0.0436)	0.0307 (0.0220-0.0428)	24.3 (20.9-28.0)	21.6 (18.7-24.7)	20.9 (15.7-28.1)	18.2 (13.2-24.8)	18.0 (12.9-24.9)
Saint Vincent and the Grenadines	0.0404 (0.0285-0.0562)	0.0298 (0.0269-0.0331)	0.0401 (0.0356-0.0450)	0.0136 (0.0121-0.0154)	0.0132 (0.0110-0.0154)	15.5 (11.0-21.4)	14.0 (12.6-15.5)	22.8 (20.3-25.6)	10.1 (8.9-11.3)	10.1 (8.4-11.7)
Suriname	0.554 (0.385-0.764)	0.462 (0.396-0.541)	0.369 (0.286-0.470)	0.341 (0.245-0.471)	0.333 (0.238-0.465)	54.6 (38.7-73.9)	46.4 (40.1-54.0)	36.1 (28.3-45.6)	35.8 (26.0-48.9)	35.5 (25.7-49.0)
Trinidad and Tobago	0.723 (0.652-0.802)	0.430 (0.390-0.473)	0.280 (0.200-0.389)	0.206 (0.144-0.283)	0.197 (0.140-0.278)	29.5 (26.7-32.6)	23.6 (21.5-25.9)	15.4 (11.0-21.2)	13.3 (9.4-18.3)	13.2 (9.4-18.5)
Virgin Islands	0.0688 (0.0477-0.0949)	0.0402 (0.0292-0.0534)	0.0167 (0.0146-0.0194)	0.0112 (0.00832-0.0149)	0.00948 (0.00691-0.0125)	28.4 (19.9-38.8)	19.2 (14.0-25.3)	14.2 (12.4-16.5)	13.3 (9.9-17.6)	12.0 (8.8-15.7)
Central Latin America	144 (119-173)	101 (93.5-111)	51.3 (45.3-58.6)	39.4 (32.2-47.9)	36.0 (29.1-44.5)	27.9 (23.2-33.4)	20.2 (18.7-22.1)	10.9 (9.7-12.5)	9.8 (8.0-11.9)	9.2 (7.4-11.3)
Colombia	31.2 (21.5-44.4)	26.8 (20.5-34.1)	11.4 (9.90-13.2)	8.68 (6.97-10.9)	7.07 (5.51-8.99)	32.6 (22.8-45.8)	28.9 (22.3-36.5)	15.7 (13.6-18.0)	12.5 (10.0-15.6)	10.4 (8.1-13.1)
Costa Rica	0.740 (0.685-0.802)	0.619 (0.576-0.665)	0.458 (0.427-0.491)	0.339 (0.301-0.378)	0.315 (0.253-0.387)	9.1 (8.4-9.9)	8.1 (7.5-8.7)	6.4 (6.0-6.9)	5.9 (5.2-6.6)	5.7 (4.6-7.0)
El Salvador	3.39 (2.48-4.54)	2.42 (2.14-2.71)	2.47 (2.31-2.64)	1.73 (1.47-2.03)	1.64 (1.32-2.01)	18.8 (13.8-25.0)	15.4 (13.6-17.3)	18.4 (17.3-19.6)	14.4 (12.3-16.9)	14.0 (11.3-17.1)
Guatemala	44.3 (31.4-60.1)	22.2 (19.1-26.0)	3.69 (3.06-4.38)	2.88 (2.27-3.66)	2.68 (2.01-3.48)	114.3 (84.3-149.6)	54.6 (47.3-63.4)	9.5 (7.9-11.3)	8.2 (6.4-10.4)	7.7 (5.8-10.0)
Honduras	6.13 (4.53-8.28)	4.88 (3.61-6.50)	3.23 (2.37-4.46)	2.72 (1.94-3.80)	2.64 (1.88-3.75)	33.0 (24.6-44.1)	24.6 (18.3-32.5)	14.8 (10.9-20.3)	12.2 (8.7-17.0)	11.8 (8.5-16.7)
Mexico	44.9 (43.0-47.0)	35.1 (33.5-36.9)	20.5 (17.0-24.4)	15.5 (11.7-20.4)	14.8 (11.2-19.6)	17.2 (16.5-18.0)	13.9 (13.3-14.6)	8.9 (7.4-10.5)	8.0 (6.1-10.5)	7.9 (6.0-10.4)
Nicaragua	2.84 (2.05-3.87)	2.40 (1.81-3.10)	1.85 (1.28-2.54)	1.48 (1.05-2.04)	1.39 (0.987-1.93)	19.7 (14.3-26.6)	17.9 (13.5-23.0)	13.5 (9.4-18.4)	11.4 (8.1-15.6)	10.8 (7.7-15.0)
Panama	0.578 (0.415-0.793)	0.763 (0.647-0.907)	0.661 (0.569-0.766)	0.634 (0.507-0.781)	0.604 (0.460-0.774)	9.8 (7.1-13.4)	11.9 (10.1-14.2)	8.7 (7.5-10.1)	8.9 (7.1-10.9)	8.6 (6.5-11.0)
Venezuela	9.92 (7.68-12.4)	6.34 (5.85-6.85)	6.90 (4.92-9.40)	5.41 (3.89-7.50)	4.87 (3.44-6.72)	17.8 (13.8-22.2)	12.1 (11.1-13.0)	11.2 (8.0-15.1)	12.3 (8.9-17.0)	11.7 (8.3-16.0)
Tropical Latin America	96.4 (70.4-130)	75.4 (72.7-78.3)	40.1 (39.0-41.3)	33.6 (31.1-36.3)	31.2 (26.7-36.6)	28.2 (20.8-37.8)	20.1 (19.4-20.8)	10.9 (10.6-11.2)	9.5 (8.8-10.2)	8.9 (7.7-10.5)
Brazil	91.4 (65.7-125)	71.6 (69.0-74.3)	38.3 (37.3-39.5)	31.9 (29.5-34.5)	29.6 (25.1-35.0)	27.8 (20.2-37.8)	19.8 (19.1-20.5)	10.8 (10.5-11.1)	9.3 (8.6-10.1)	8.8 (7.5-10.4)
Paraguay	5.03 (4.26-5.89)	3.80 (3.04-4.63)	1.78 (1.31-2.33)	1.72 (1.25-2.35)	1.63 (1.18-2.20)	37.7 (32.1-43.8)	28.1 (22.6-34.1)	13.1 (9.7-17.1)	13.1 (9.6-17.9)	12.5 (9.1-16.9)
North Africa and Middle East	557 (454-684)	533 (470-614)	326 (280-380)	252 (212-303)	237 (199-286)	47.6 (39.2-58.0)	44.1 (39.1-50.5)	22.8 (19.7-26.5)	19.9 (16.8-23.8)	19.1 (16.1-23.0)
Afghanistan	38.7 (26.5-55.7)	56.0 (39.0-77.7)	56.4 (40.4-78.1)	50.8 (35.9-72.6)	50.2 (35.4-72.7)	79.2 (55.7-110.3)	66.7 (47.4-90.2)	50.4 (36.7-68.6)	41.1 (29.4-57.8)	39.7 (28.4-56.6)
Algeria	30.9 (27.9-34.4)	27.6 (26.0-29.3)	22.3 (21.0-23.6)	17.0 (13.7-20.8)	15.6 (12.0-20.2)	38.5 (34.8-42.7)	40.5 (38.2-43.0)	21.6 (20.4-22.9)	17.8 (14.4-21.7)	16.9 (13.1-21.7)

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	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
Bahrain	0.712 (0.499–0.999)	0.258 (0.197–0.330)	0.255 (0.198–0.321)	0.171 (0.125–0.235)	0.158 (0.113–0.222)	50.5 (35.9–69.5)	20.4 (15.6–25.8)	12.2 (9.5–15.3)	9.7 (7.1–13.3)	9.3 (6.6–13.0)
Egypt	82.4 (59.9–113)	59.0 (44.1–76.9)	37.8 (27.4–51.5)	25.8 (18.2–36.2)	24.3 (17.3–34.6)	41.5 (30.5–56.1)	29.2 (22.0–37.7)	11.9 (8.7–16.2)	9.5 (6.8–13.3)	9.2 (6.6–13.1)
Iran	41.2 (28.7–56.2)	23.4 (16.3–33.5)	18.4 (13.2–24.9)	6.35 (4.58–8.77)	4.25 (3.06–5.83)	26.1 (18.3–35.2)	20.6 (14.5–29.3)	12.1 (8.7–16.3)	5.7 (4.1–7.9)	4.1 (3.0–5.6)
Iraq	23.7 (16.9–32.1)	26.1 (18.5–37.5)	18.4 (14.1–23.2)	14.0 (10.6–18.2)	13.1 (9.85–17.3)	30.5 (22.0–41.0)	27.2 (19.4–38.6)	17.3 (13.3–21.7)	14.5 (11.0–18.9)	13.9 (10.4–18.2)
Jordan	4.75 (3.43–6.42)	3.67 (2.73–4.73)	3.08 (2.26–4.07)	2.57 (1.85–3.52)	2.53 (1.82–3.53)	34.3 (25.1–45.9)	23.9 (17.9–30.6)	14.4 (10.6–19.0)	12.0 (8.6–16.4)	11.8 (8.5–16.4)
Kuwait	0.931 (0.666–1.29)	1.03 (0.926–1.14)	1.36 (1.23–1.50)	1.43 (1.30–1.58)	1.57 (1.35–1.81)	26.3 (19.0–36.1)	24.4 (22.0–27.0)	22.8 (20.6–25.0)	26.9 (24.5–29.6)	29.9 (25.9–34.4)
Lebanon	1.04 (0.727–1.44)	0.905 (0.637–1.30)	0.658 (0.505–0.851)	0.502 (0.380–0.656)	0.474 (0.353–0.626)	11.7 (8.2–16.1)	9.8 (6.9–14.0)	6.3 (4.8–8.1)	5.9 (4.4–7.6)	5.8 (4.3–7.6)
Libya	5.07 (3.55–7.09)	3.46 (2.46–4.84)	2.28 (1.59–3.22)	1.98 (1.38–2.86)	1.87 (1.31–2.69)	36.6 (26.0–50.5)	27.2 (19.5–37.6)	22.9 (16.0–32.1)	23.6 (16.6–33.8)	23.1 (16.3–32.9)
Morocco	106 (76.1–144)	121 (110–134)	50.5 (47.7–53.8)	43.8 (40.0–48.3)	39.8 (33.9–46.9)	115.9 (86.5–152.0)	126.6 (116.3–138.7)	61.1 (57.9–64.8)	61.6 (56.5–67.5)	58.0 (49.8–67.6)
Oman	1.20 (1.13–1.28)	0.750 (0.654–0.861)	0.757 (0.694–0.827)	1.07 (0.973–1.17)	0.985 (0.863–1.12)	16.1 (15.2–17.1)	13.2 (11.5–15.1)	9.4 (8.6–10.3)	12.7 (11.6–14.0)	11.9 (10.4–13.5)
Palestine	2.33 (1.65–3.20)	2.39 (1.79–3.08)	1.59 (1.24–1.99)	0.981 (0.761–1.27)	0.954 (0.727–1.25)	25.8 (18.4–35.2)	20.0 (15.1–25.6)	12.1 (9.5–15.1)	8.0 (6.2–10.3)	7.9 (6.0–10.3)
Qatar	0.374 (0.286–0.479)	0.365 (0.278–0.464)	0.467 (0.337–0.661)	0.592 (0.410–0.822)	0.523 (0.367–0.721)	31.2 (24.0–39.6)	26.9 (20.6–33.9)	13.8 (10.0–19.5)	15.5 (10.8–21.5)	13.5 (9.6–18.6)
Saudi Arabia	11.0 (10.4–11.7)	10.2 (8.39–12.3)	6.92 (6.09–7.85)	4.65 (3.27–6.30)	4.43 (3.10–6.09)	21.0 (19.8–22.3)	20.2 (16.7–24.2)	13.1 (11.6–14.8)	9.7 (6.9–13.1)	9.5 (6.7–13.0)
Sudan	51.0 (36.0–71.1)	65.2 (53.3–79.9)	30.0 (22.7–39.1)	24.5 (17.3–34.1)	23.1 (16.2–32.8)	52.8 (37.8–72.1)	54.0 (44.6–65.3)	23.7 (18.0–30.7)	20.2 (14.4–28.0)	19.4 (13.7–27.3)
Syria	16.4 (11.5–23.0)	9.31 (6.63–13.0)	5.54 (3.85–7.79)	2.54 (1.77–3.65)	2.39 (1.68–3.41)	34.7 (24.7–48.0)	18.4 (13.2–25.5)	17.8 (12.4–24.9)	12.5 (8.8–17.9)	12.0 (8.5–17.1)
Tunisia	6.41 (5.93–6.91)	4.25 (3.38–5.29)	4.99 (4.65–5.39)	4.55 (4.22–4.91)	4.35 (3.87–4.89)	28.3 (26.3–30.5)	22.2 (17.8–27.6)	24.3 (22.7–26.2)	25.7 (23.8–27.6)	25.5 (22.7–28.5)
Türkiye	79.5 (56.5–114)	43.6 (32.6–57.7)	14.4 (13.0–16.0)	8.79 (7.59–10.2)	7.99 (6.55–9.68)	49.8 (36.0–69.7)	29.3 (22.1–38.5)	11.1 (10.0–12.3)	7.9 (6.9–9.2)	7.5 (6.2–9.1)
United Arab Emirates	0.916 (0.647–1.31)	0.615 (0.454–0.833)	0.787 (0.726–0.849)	0.507 (0.433–0.597)	0.423 (0.344–0.517)	18.6 (13.2–26.3)	12.3 (9.1–16.6)	7.8 (7.2–8.4)	6.4 (5.5–7.5)	5.7 (4.6–6.9)
Yemen	52.2 (43.0–63.1)	73.7 (62.4–86.1)	48.8 (35.3–67.4)	39.0 (27.9–54.2)	37.5 (26.9–52.5)	73.2 (61.1–87.2)	79.4 (68.1–91.5)	44.3 (32.5–60.3)	37.7 (27.3–51.7)	36.5 (26.4–50.4)
South Asia	1760 (1380–2240)	1620 (1340–1960)	1170 (1000–1350)	963 (800–1170)	922 (764–1130)	51.1 (40.6–64.3)	44.4 (37.1–53.2)	32.9 (28.5–37.9)	28.8 (24.1–34.7)	28.0 (23.3–34.0)
Bangladesh	313 (225–419)	266 (220–318)	112 (90.0–138)	52.7 (41.1–66.5)	51.9 (39.2–67.9)	69.8 (51.3–91.6)	61.4 (51.3–72.4)	32.6 (26.4–40.0)	18.0 (14.1–22.6)	18.1 (13.8–23.6)
Bhutan	2.23 (1.53–3.19)	1.38 (0.964–1.96)	0.523 (0.362–0.741)	0.387 (0.268–0.559)	0.365 (0.255–0.525)	90.6 (64.3–125.0)	71.8 (51.4–99.3)	35.4 (24.8–49.6)	29.2 (20.4–41.7)	28.1 (19.8–40.0)
India	923 (721–1170)	874 (702–1090)	711 (599–834)	599 (495–738)	567 (466–700)	37.9 (29.8–47.4)	33.3 (26.9–41.1)	28.5 (24.1–33.2)	25.7 (21.3–31.5)	24.7 (20.4–30.3)
Nepal	76.3 (54.8–108)	37.3 (33.1–42.0)	16.3 (13.7–19.3)	13.9 (11.2–17.1)	14.4 (11.5–17.8)	87.4 (64.6–119.3)	45.6 (40.6–51.0)	24.7 (20.8–29.2)	21.1 (17.1–25.9)	21.9 (17.6–26.9)
Pakistan	444 (304–633)	438 (320–581)	327 (267–395)	297 (225–381)	289 (216–379)	95.1 (67.4–130.8)	87.0 (65.2–112.6)	51.4 (42.3–61.4)	45.7 (35.0–58.1)	44.5 (33.7–57.7)
Southeast Asia, east Asia, and Oceania	966 (709–1300)	634 (489–830)	345 (268–441)	256 (198–338)	244 (190–318)	25.9 (19.2–34.6)	21.8 (16.9–28.4)	11.6 (9.0–14.7)	10.6 (8.2–13.9)	10.6 (8.3–13.8)
East Asia	634 (449–881)	387 (276–537)	163 (115–227)	91.8 (65.6–130)	80.9 (57.8–114)	26.0 (18.5–35.8)	23.3 (16.8–32.1)	9.4 (6.7–13.0)	7.4 (5.3–10.4)	7.2 (5.1–10.1)

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	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
China	621 (438-863)	373 (266-519)	156 (110-219)	86.8 (61.3-124)	76.1 (54.1-108)	26.5 (18.9-36.5)	23.7 (17.0-32.7)	9.3 (6.6-13.0)	7.3 (5.2-10.4)	7.1 (5.0-10.0)
North Korea	10.7 (7.56-14.9)	9.77 (6.96-13.6)	4.22 (2.94-5.93)	2.89 (2.02-4.15)	2.68 (1.89-3.83)	19.1 (13.5-26.3)	18.4 (13.2-25.4)	11.9 (8.3-16.6)	9.3 (6.5-13.3)	8.9 (6.3-12.6)
Taiwan (province of China)	1.81 (1.26-2.50)	3.62 (2.57-5.08)	2.50 (2.24-2.76)	1.96 (1.71-2.24)	1.96 (1.66-2.30)	5.6 (3.9-7.7)	13.1 (9.4-18.4)	11.9 (10.7-13.1)	11.9 (10.4-13.6)	12.4 (10.5-14.4)
Oceania	8.97 (6.38-12.5)	9.54 (6.84-13.2)	10.8 (7.56-15.1)	12.1 (8.53-17.4)	12.3 (8.71-17.7)	38.2 (27.5-52.5)	33.2 (24.1-45.5)	27.2 (19.2-37.7)	27.9 (19.8-39.5)	27.8 (19.8-39.4)
American Samoa	0.0343 (0.0298-0.0394)	0.0314 (0.0260-0.0376)	0.00908 (0.00725-0.0113)	0.00969 (0.00728-0.0128)	0.00744 (0.00545-0.0100)	18.8 (16.4-21.5)	18.3 (15.2-21.8)	8.6 (6.9-10.7)	11.8 (8.9-15.6)	9.5 (7.0-12.7)
Cook Islands	0.00602 (0.00476-0.00755)	0.00520 (0.00411-0.00632)	0.00215 (0.00188-0.00244)	0.00239 (0.00199-0.00284)	0.00245 (0.00200-0.00301)	13.7 (10.9-17.1)	14.8 (11.8-18.0)	9.0 (7.9-10.3)	10.8 (9.0-12.8)	11.2 (9.1-13.6)
Federated States of Micronesia	0.0803 (0.0565-0.112)	0.0597 (0.0425-0.0833)	0.0309 (0.0215-0.0435)	0.0269 (0.0187-0.0386)	0.0260 (0.0183-0.0372)	24.9 (17.7-34.4)	21.2 (15.2-29.4)	15.0 (10.5-21.0)	14.1 (9.8-20.1)	13.8 (9.7-19.6)
Fiji	0.190 (0.135-0.259)	0.191 (0.134-0.273)	0.198 (0.136-0.274)	0.186 (0.132-0.258)	0.182 (0.129-0.254)	10.0 (7.1-13.7)	10.6 (7.4-15.1)	10.3 (7.1-14.2)	10.8 (7.7-14.9)	10.8 (7.7-15.0)
Guam	0.0879 (0.0615-0.125)	0.0676 (0.0498-0.0902)	0.0470 (0.0425-0.0520)	0.0438 (0.0375-0.0508)	0.0394 (0.0313-0.0496)	22.2 (15.6-31.2)	18.0 (13.3-23.9)	14.0 (12.7-15.4)	15.5 (13.3-18.0)	14.4 (11.4-18.0)
Kiribati	0.0845 (0.0594-0.118)	0.0720 (0.0512-0.101)	0.0682 (0.0474-0.0961)	0.0683 (0.0475-0.0985)	0.0679 (0.0476-0.0975)	30.0 (21.3-41.4)	26.8 (19.2-37.1)	22.5 (15.7-31.4)	22.7 (15.9-32.5)	22.6 (16.0-32.2)
Marshall Islands	0.0302 (0.0214-0.0424)	0.0348 (0.0256-0.0456)	0.0259 (0.0199-0.0327)	0.0226 (0.0162-0.0311)	0.0218 (0.0155-0.0307)	19.9 (14.2-27.7)	20.8 (15.4-27.1)	19.6 (15.2-24.7)	18.8 (13.5-25.7)	18.4 (13.1-25.7)
Nauru	0.00768 (0.00541-0.0107)	0.00896 (0.00637-0.0125)	0.00652 (0.00453-0.00919)	0.00608 (0.00423-0.00876)	0.00600 (0.00421-0.00861)	21.0 (14.9-28.9)	24.1 (17.3-33.3)	20.7 (14.5-28.9)	20.3 (14.2-29.0)	20.1 (14.2-28.6)
Niue	0.00109 (0.000765-0.00151)	0.000857 (0.000609-0.00120)	0.000599 (0.000416-0.000846)	0.000605 (0.000420-0.000873)	0.000604 (0.000423-0.000869)	23.5 (16.7-32.5)	27.6 (19.8-38.1)	24.7 (17.3-34.6)	25.9 (18.1-37.0)	26.0 (18.3-37.0)
Northern Mariana Islands	0.0474 (0.0333-0.0682)	0.0541 (0.0383-0.0751)	0.00754 (0.00657-0.00874)	0.00807 (0.00612-0.0103)	0.00754 (0.00561-0.00992)	37.5 (26.7-53.2)	21.5 (15.3-29.5)	11.5 (10.0-13.3)	13.7 (10.4-17.4)	12.8 (9.6-16.8)
Palau	0.00545 (0.00390-0.00765)	0.00555 (0.00411-0.00721)	0.00683 (0.00542-0.00861)	0.00467 (0.00337-0.00628)	0.00448 (0.00325-0.00606)	17.3 (12.5-24.2)	16.6 (12.4-21.5)	28.7 (22.9-36.0)	24.3 (17.7-32.5)	24.2 (17.7-32.5)
Papua New Guinea	7.10 (4.96-9.96)	7.74 (5.48-10.9)	9.32 (6.46-13.2)	10.7 (7.40-15.5)	10.9 (7.62-15.7)	45.8 (32.5-63.3)	38.4 (27.5-53.1)	30.2 (21.1-42.2)	30.6 (21.4-43.8)	30.6 (21.6-43.5)
Samoa	0.0623 (0.0442-0.0870)	0.0509 (0.0359-0.0706)	0.0447 (0.0317-0.0605)	0.0453 (0.0317-0.0648)	0.0449 (0.0318-0.0642)	11.2 (8.0-15.5)	9.0 (6.4-12.4)	7.5 (5.3-10.1)	7.3 (5.1-10.4)	7.1 (5.1-10.2)
Solomon Islands	0.431 (0.303-0.601)	0.432 (0.308-0.604)	0.321 (0.224-0.452)	0.300 (0.209-0.431)	0.297 (0.209-0.425)	30.0 (21.3-41.4)	24.0 (17.2-33.3)	16.1 (11.3-22.5)	14.5 (10.2-20.8)	14.2 (10.1-20.3)
Tokelau	0.000691 (0.000487-0.000961)	0.000491 (0.000350-0.000683)	0.000196 (0.000137-0.000275)	0.000185 (0.000129-0.000266)	0.000183 (0.000129-0.000262)	19.1 (13.5-26.3)	16.4 (11.8-22.7)	10.5 (7.4-14.7)	10.4 (7.3-14.8)	10.2 (7.2-14.6)
Tonga	0.0706 (0.0487-0.0977)	0.0644 (0.0474-0.0847)	0.0524 (0.0436-0.0620)	0.0458 (0.0344-0.0602)	0.0445 (0.0333-0.0586)	20.9 (14.5-28.6)	19.7 (14.6-25.7)	16.1 (13.5-19.0)	15.0 (11.3-19.6)	14.7 (11.0-19.2)
Tuvalu	0.0136 (0.00954-0.0190)	0.00737 (0.00524-0.0103)	0.00466 (0.00324-0.00656)	0.00445 (0.00310-0.00640)	0.00438 (0.00308-0.00628)	34.6 (24.6-47.8)	25.7 (18.4-35.5)	17.4 (12.2-24.4)	15.9 (11.1-22.8)	15.6 (11.0-22.1)

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	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
Vanuatu	0.145 (0.102–0.201)	0.156 (0.111–0.218)	0.129 (0.0900–0.182)	0.133 (0.0928–0.192)	0.132 (0.0925–0.189)	22.8 (16.2–31.4)	21.0 (15.1–29.1)	15.1 (10.5–21.1)	15.1 (10.6–21.6)	14.8 (10.5–21.1)
Southeast Asia	323 (257–404)	238 (201–285)	171 (143–205)	152 (124–188)	151 (123–189)	25.6 (20.5–31.8)	19.6 (16.7–23.4)	14.2 (11.9–17.0)	13.3 (10.9–16.4)	13.3 (10.9–16.6)
Cambodia	18.9 (12.8–26.2)	11.3 (8.17–15.3)	6.08 (4.35–8.37)	5.85 (4.12–8.22)	5.78 (4.01–8.23)	41.9 (28.9–57.1)	30.1 (21.9–40.3)	16.4 (11.7–22.4)	15.4 (10.9–21.6)	15.3 (10.7–21.6)
Indonesia	138 (108–171)	110 (87.1–138)	79.3 (64.5–97.3)	68.5 (53.8–88.1)	67.5 (52.7–87.9)	28.7 (22.8–35.5)	22.9 (18.2–28.5)	17.0 (13.8–20.7)	15.3 (12.0–19.5)	15.1 (11.9–19.6)
Laos	11.4 (7.90–16.1)	8.67 (6.13–12.2)	4.23 (2.94–5.97)	3.80 (2.64–5.47)	3.72 (2.61–5.34)	61.6 (43.7–85.0)	42.9 (30.8–59.4)	23.3 (16.3–32.5)	20.9 (14.6–29.8)	20.5 (14.5–29.2)
Malaysia	5.11 (4.56–5.70)	2.68 (2.49–2.87)	3.36 (3.05–3.69)	3.34 (2.97–3.71)	3.12 (2.51–3.84)	10.3 (9.2–11.5)	5.1 (4.7–5.4)	6.7 (6.1–7.4)	7.0 (6.2–7.7)	6.5 (5.3–8.0)
Maldives	0.512 (0.371–0.712)	0.199 (0.173–0.227)	0.0994 (0.0907–0.109)	0.0665 (0.0534–0.0813)	0.0657 (0.0520–0.0825)	55.2 (40.7–75.2)	31.7 (27.6–36.0)	14.3 (13.1–15.7)	10.7 (8.6–13.0)	10.8 (8.6–13.6)
Mauritius	0.615 (0.567–0.663)	0.405 (0.376–0.437)	0.191 (0.178–0.206)	0.196 (0.173–0.221)	0.176 (0.141–0.218)	26.1 (24.1–28.1)	19.7 (18.3–21.1)	14.5 (13.5–15.6)	14.9 (13.2–16.8)	13.7 (11.0–16.9)
Myanmar	44.3 (31.4–61.1)	34.2 (24.3–49.2)	23.1 (17.1–30.3)	20.6 (14.8–27.8)	20.2 (14.7–27.4)	38.1 (27.3–51.9)	31.4 (22.5–44.5)	21.0 (15.6–27.4)	18.8 (13.5–25.2)	18.4 (13.5–24.9)
Philippines	32.4 (25.5–41.3)	27.0 (25.6–28.4)	23.9 (22.7–25.2)	23.9 (19.9–28.4)	26.1 (21.2–31.5)	15.8 (12.4–20.0)	12.0 (11.4–12.6)	10.0 (9.5–10.5)	10.8 (9.0–12.8)	11.8 (9.6–14.2)
Seychelles	0.0333 (0.0245–0.0454)	0.0161 (0.0125–0.0202)	0.0164 (0.0139–0.0192)	0.0145 (0.0119–0.0174)	0.0142 (0.0114–0.0173)	19.7 (14.5–26.6)	11.0 (8.5–13.7)	9.9 (8.4–11.5)	9.0 (7.4–10.8)	8.9 (7.1–10.8)
Sri Lanka	3.43 (2.65–4.39)	5.07 (3.93–6.53)	1.67 (1.48–1.89)	1.53 (1.17–2.02)	1.40 (1.03–1.91)	9.5 (7.3–12.1)	14.4 (11.2–18.5)	4.9 (4.3–5.5)	5.0 (3.8–6.6)	4.7 (3.4–6.4)
Thailand	18.6 (13.1–25.8)	9.10 (6.50–12.6)	3.42 (2.39–4.80)	2.61 (1.83–3.74)	2.52 (1.78–3.60)	17.7 (12.6–24.5)	10.4 (7.4–14.3)	5.1 (3.6–7.1)	4.4 (3.1–6.3)	4.4 (3.1–6.2)
Timor-Leste	1.98 (1.38–2.78)	1.22 (0.862–1.70)	0.631 (0.439–0.888)	0.639 (0.445–0.919)	0.646 (0.454–0.925)	50.5 (35.8–69.7)	31.7 (22.8–43.9)	17.1 (11.9–23.9)	15.7 (11.0–22.5)	15.5 (10.9–22.1)
Viet Nam	47.7 (33.4–65.8)	27.4 (21.9–33.9)	24.5 (18.2–32.2)	21.0 (15.0–28.9)	19.6 (14.1–27.4)	24.2 (17.1–33.1)	17.7 (14.1–21.7)	14.3 (10.7–18.7)	13.1 (9.4–18.0)	12.5 (9.1–17.4)
Sub-Saharan Africa	1310 (1020–1690)	1390 (1190–1660)	1510 (1400–1650)	1450 (1280–1670)	1430 (1240–1660)	55.4 (43.8–70.5)	47.5 (40.6–56.2)	39.9 (37.0–43.2)	37.3 (33.0–42.8)	36.5 (31.9–42.2)
Central sub-Saharan Africa	126 (91.9–171)	137 (110–168)	152 (120–193)	146 (109–200)	142 (107–194)	46.2 (34.3–61.8)	39.7 (32.0–48.2)	33.1 (26.3–41.5)	31.7 (23.8–43.0)	30.8 (23.5–41.8)
Angola	24.7 (17.5–34.4)	25.9 (18.3–36.5)	20.5 (19.7–21.4)	19.9 (15.6–25.0)	20.0 (15.4–25.8)	46.5 (33.5–63.7)	35.2 (25.1–48.8)	18.1 (17.4–18.8)	16.5 (13.0–20.6)	16.4 (12.6–21.0)
Central African Republic	12.2 (8.37–17.4)	12.7 (8.91–18.1)	6.95 (4.81–9.85)	8.01 (5.53–11.6)	7.85 (5.47–11.4)	86.6 (61.4–119.5)	73.5 (52.7–101.7)	34.7 (24.3–48.5)	40.2 (28.1–57.4)	39.4 (27.8–56.1)
Congo (Brazzaville)	3.90 (2.73–5.47)	4.81 (3.40–6.75)	2.82 (1.96–3.97)	3.12 (2.17–4.50)	3.05 (2.14–4.38)	40.6 (28.8–56.0)	38.6 (27.7–53.4)	19.1 (13.4–26.7)	23.4 (16.4–33.5)	23.1 (16.3–32.9)
DR Congo	82.2 (57.9–114)	90.6 (71.7–113)	120 (90.4–156)	112 (79.0–161)	109 (77.6–155)	43.4 (31.0–59.3)	38.6 (30.8–47.6)	39.5 (30.2–51.1)	37.7 (26.8–53.1)	36.6 (26.5–51.5)
Equatorial Guinea	1.09 (0.763–1.54)	1.33 (0.937–1.87)	0.886 (0.615–1.25)	1.18 (0.817–1.71)	1.17 (0.816–1.68)	50.7 (36.0–70.0)	45.0 (32.3–62.3)	22.3 (15.6–31.1)	30.5 (21.3–43.5)	30.2 (21.4–43.1)
Gabon	1.62 (1.10–2.22)	1.78 (1.25–2.56)	1.50 (1.25–1.80)	1.25 (1.14–1.39)	1.19 (1.04–1.37)	42.9 (29.6–58.2)	40.2 (28.7–57.0)	30.7 (25.7–36.5)	27.8 (25.3–30.7)	26.7 (23.3–30.6)
Eastern sub-Saharan Africa	566 (441–728)	552 (483–632)	484 (446–531)	461 (387–559)	456 (380–562)	58.9 (46.5–74.5)	46.7 (41.1–53.1)	34.7 (32.1–37.9)	32.6 (27.5–39.3)	32.0 (26.8–39.2)
Burundi	19.4 (13.6–27.0)	17.7 (13.0–23.8)	24.7 (22.9–26.6)	22.5 (18.0–27.7)	22.0 (17.1–28.0)	69.5 (49.7–94.5)	61.6 (45.8–81.0)	53.2 (49.6–57.1)	46.4 (37.4–56.5)	44.8 (35.2–56.3)

(Table continues on next page)

	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
Comoros	1.82 (1.25-2.59)	1.51 (1.06-2.15)	0.896 (0.617-1.28)	0.774 (0.534-1.13)	0.758 (0.528-1.10)	81.9 (58.1-113.1)	69.3 (49.7-95.9)	46.6 (32.6-65.1)	42.6 (29.8-60.9)	41.9 (29.6-59.6)
Djibouti	0.861 (0.599-1.22)	0.993 (0.700-1.40)	0.947 (0.655-1.34)	0.783 (0.543-1.13)	0.751 (0.525-1.08)	58.9 (41.8-81.3)	50.0 (35.8-69.2)	34.5 (24.2-48.3)	29.8 (20.9-42.6)	28.9 (20.4-41.2)
Eritrea	8.61 (6.00-12.1)	6.50 (4.59-9.13)	5.57 (3.86-7.87)	5.19 (3.60-7.49)	5.14 (3.60-7.39)	55.0 (39.0-76.0)	41.7 (29.9-57.7)	28.4 (19.9-39.7)	26.0 (18.2-37.1)	25.6 (18.1-36.4)
Ethiopia	175 (123-244)	171 (125-228)	90.6 (84.3-97.3)	86.7 (69.6-106)	87.0 (68.1-110)	67.2 (48.0-91.3)	52.9 (39.4-69.6)	27.0 (25.2-29.0)	24.5 (19.8-29.8)	24.2 (19.1-30.5)
Kenya	45.5 (33.6-60.2)	53.3 (47.7-60.1)	42.6 (35.3-51.4)	35.9 (27.7-47.2)	34.8 (26.7-46.4)	43.8 (32.7-57.2)	42.1 (37.8-47.2)	31.4 (26.1-37.6)	29.0 (22.5-37.7)	28.5 (22.0-37.6)
Madagascar	26.3 (19.0-37.0)	29.8 (25.6-34.7)	39.5 (32.0-48.5)	40.1 (37.2-43.3)	39.2 (36.2-42.1)	47.5 (34.8-65.7)	41.3 (35.7-47.7)	41.9 (34.2-50.9)	43.5 (40.4-46.8)	42.8 (39.6-45.8)
Malawi	43.0 (33.0-55.4)	19.6 (18.3-20.9)	17.8 (16.8-18.9)	15.9 (12.4-20.3)	15.5 (11.9-20.4)	77.9 (60.9-98.2)	34.1 (32.0-36.3)	29.4 (27.8-31.2)	26.9 (21.2-34.2)	26.3 (20.3-34.4)
Mozambique	40.0 (27.9-56.2)	40.4 (34.0-47.2)	57.5 (50.9-64.8)	52.3 (39.6-69.5)	50.7 (38.0-68.8)	60.2 (42.8-82.7)	46.7 (39.6-54.2)	52.1 (46.5-58.4)	45.7 (35.0-59.8)	43.8 (33.2-58.7)
Rwanda	20.7 (14.6-29.9)	15.0 (13.8-16.3)	8.49 (8.08-8.96)	10.5 (9.09-12.1)	10.2 (8.35-12.3)	61.1 (43.9-85.9)	41.3 (38.3-44.8)	22.7 (21.6-23.9)	27.5 (24.0-31.7)	26.6 (21.9-31.9)
Somalia	27.2 (18.8-38.4)	29.2 (20.5-41.2)	32.5 (22.4-46.1)	34.9 (24.2-50.7)	35.4 (24.7-51.2)	64.7 (45.9-89.4)	54.4 (39.0-75.3)	39.3 (27.5-55.0)	36.2 (25.3-51.7)	35.5 (25.1-50.6)
South Sudan	24.5 (16.9-35.0)	28.4 (19.8-40.5)	32.5 (22.2-46.7)	27.5 (18.8-40.4)	28.2 (19.5-41.4)	86.8 (61.6-119.8)	79.5 (57.0-110.0)	69.8 (48.9-97.7)	68.7 (48.1-98.2)	68.3 (48.2-97.2)
Tanzania	62.5 (44.3-86.5)	63.3 (58.9-68.0)	72.0 (66.7-77.4)	70.7 (55.1-91.1)	69.8 (53.5-92.0)	48.7 (35.0-66.3)	39.3 (36.6-42.1)	36.6 (34.0-39.2)	35.8 (28.2-45.7)	35.4 (27.3-46.2)
Uganda	55.1 (40.5-73.2)	57.6 (53.5-61.9)	38.7 (37.2-40.3)	40.4 (32.0-50.7)	39.9 (31.1-51.1)	55.6 (41.5-72.6)	43.7 (40.7-46.8)	24.2 (23.3-25.2)	24.8 (19.8-31.0)	24.5 (19.2-31.1)
Zambia	15.0 (10.5-20.7)	17.5 (13.4-22.5)	19.0 (17.2-20.9)	16.1 (13.7-18.8)	15.8 (13.0-18.9)	36.9 (26.2-50.3)	35.8 (27.7-45.5)	29.3 (26.6-32.1)	25.7 (22.0-29.9)	25.3 (20.9-30.3)
Southern sub-Saharan Africa	76.8 (57.5-104)	65.6 (58.1-74.2)	59.4 (53.7-65.6)	58.1 (45.4-73.8)	57.2 (44.3-73.9)	44.9 (34.0-59.8)	38.3 (34.1-43.1)	32.5 (29.5-35.8)	33.8 (26.6-42.6)	33.7 (26.4-43.2)
Botswana	1.84 (1.44-2.30)	1.39 (1.15-1.65)	1.32 (1.09-1.60)	1.25 (0.977-1.60)	1.25 (0.958-1.66)	37.8 (29.9-47.0)	28.0 (23.4-33.2)	26.2 (21.7-31.5)	25.0 (19.6-31.7)	25.1 (19.3-32.9)
Eswatini	1.22 (0.865-1.71)	1.13 (0.827-1.50)	0.873 (0.622-1.23)	0.740 (0.523-1.05)	0.724 (0.511-1.04)	36.1 (25.9-49.9)	30.5 (22.4-40.0)	26.0 (18.6-36.2)	24.2 (17.2-33.9)	24.0 (17.1-34.2)
Lesotho	2.08 (1.46-2.88)	1.93 (1.39-2.70)	1.96 (1.50-2.49)	1.91 (1.35-2.58)	1.90 (1.36-2.61)	36.8 (26.2-50.4)	36.0 (26.1-49.7)	40.8 (31.5-51.1)	42.5 (30.5-56.8)	42.8 (31.0-57.8)
Namibia	1.39 (0.970-1.95)	1.27 (0.937-1.68)	1.05 (0.796-1.39)	0.965 (0.698-1.34)	0.956 (0.683-1.34)	26.4 (18.6-36.7)	21.8 (16.2-28.7)	17.1 (13.0-22.5)	16.3 (11.8-22.4)	16.2 (11.6-22.7)
South Africa	55.4 (38.4-79.8)	41.7 (35.8-48.3)	36.2 (32.2-40.8)	36.5 (25.6-50.3)	35.6 (24.9-49.3)	50.0 (35.3-70.6)	38.9 (33.7-44.8)	31.9 (28.4-35.8)	34.9 (24.8-47.5)	34.8 (24.6-47.5)
Zimbabwe	14.9 (11.2-19.4)	18.2 (14.6-22.6)	17.9 (14.7-21.9)	16.7 (12.5-22.3)	16.7 (12.3-22.8)	36.3 (27.5-46.7)	40.9 (33.0-50.3)	36.1 (29.7-43.7)	34.3 (26.0-45.3)	34.3 (25.5-46.4)
Western sub-Saharan Africa	539 (415-707)	640 (514-805)	818 (764-880)	786 (711-872)	775 (696-871)	56.3 (44.0-72.6)	51.6 (41.9-64.1)	46.7 (43.7-50.0)	42.7 (38.8-47.1)	41.7 (37.5-46.5)
Benin	9.35 (6.39-13.1)	11.3 (8.42-14.9)	15.3 (14.6-16.0)	15.0 (14.4-15.8)	15.0 (13.9-16.3)	38.0 (26.3-52.6)	35.4 (26.5-46.0)	31.7 (30.4-33.1)	28.5 (27.3-29.8)	27.9 (25.9-30.3)
Burkina Faso	17.6 (13.7-21.8)	21.1 (18.7-23.9)	21.6 (16.6-27.4)	22.1 (16.0-30.5)	22.3 (16.1-31.5)	36.8 (29.0-45.2)	34.2 (30.4-38.6)	24.9 (19.3-31.4)	23.2 (16.8-31.7)	22.9 (16.6-32.0)
Cabo Verde	0.615 (0.466-0.823)	0.455 (0.401-0.516)	0.196 (0.189-0.203)	0.142 (0.118-0.169)	0.132 (0.106-0.162)	46.6 (35.7-61.4)	34.6 (30.6-39.0)	18.9 (18.3-19.6)	16.0 (13.3-19.0)	15.3 (12.3-18.7)
Cameroon	23.1 (16.2-32.5)	24.7 (17.2-34.5)	35.0 (29.6-41.4)	33.8 (29.1-39.3)	33.4 (27.8-39.8)	46.2 (32.8-63.7)	37.4 (26.5-51.7)	33.9 (28.9-39.9)	31.9 (27.6-36.9)	31.4 (26.2-37.2)
Chad	17.8 (12.4-25.0)	21.1 (14.9-29.6)	30.1 (20.8-42.8)	32.8 (22.7-47.6)	33.5 (23.4-48.5)	52.2 (37.0-72.1)	45.8 (32.8-63.3)	41.0 (28.7-57.3)	37.9 (26.6-54.2)	37.5 (26.5-53.4)
Côte d'Ivoire	22.3 (17.7-28.3)	26.7 (20.7-33.6)	28.9 (20.5-40.9)	25.7 (18.3-36.8)	25.3 (17.8-35.3)	38.8 (31.0-48.6)	37.3 (29.2-46.5)	30.6 (21.9-42.8)	26.5 (19.0-37.5)	25.9 (18.4-35.8)

(Table continues on next page)

	Total stillbirths (in thousands)					Stillbirth rate (per 1000 births)				
	1990	2000	2015	2020	2021	1990	2000	2015	2020	2021
(Continued from previous page)										
The Gambia	2.63 (1.83–3.76)	3.06 (2.31–4.02)	3.00 (2.88–3.12)	3.15 (2.83–3.52)	3.06 (2.63–3.53)	53.6 (38.0–75.0)	47.5 (36.3–61.4)	38.0 (36.6–39.5)	39.2 (35.3–43.7)	37.8 (32.7–43.4)
Ghana	32.4 (23.1–46.0)	33.6 (31.3–36.0)	24.4 (23.3–25.5)	20.0 (15.8–25.1)	19.6 (15.0–25.4)	50.7 (36.7–70.5)	47.8 (44.6–50.9)	25.2 (24.1–26.3)	20.3 (16.1–25.4)	19.9 (15.2–25.6)
Guinea	15.5 (10.8–22.0)	15.4 (12.3–19.0)	16.7 (14.4–19.2)	16.0 (13.5–18.7)	15.8 (13.0–19.0)	50.9 (36.0–71.0)	41.6 (33.4–50.9)	34.9 (30.3–40.0)	31.7 (27.0–36.8)	30.9 (25.5–37.0)
Guinea-Bissau	2.87 (2.00–4.05)	3.21 (2.26–4.54)	2.85 (1.97–4.04)	2.40 (1.66–3.47)	2.33 (1.63–3.37)	58.9 (41.8–81.3)	55.9 (40.1–77.4)	38.9 (27.2–54.3)	32.3 (22.6–46.2)	31.4 (22.1–44.6)
Liberia	6.58 (4.48–9.09)	5.03 (3.48–7.18)	4.12 (3.42–4.97)	3.40 (3.04–3.79)	3.31 (2.86–3.82)	51.7 (35.8–70.1)	36.8 (25.8–51.9)	23.8 (19.8–28.5)	20.4 (18.3–22.6)	19.8 (17.2–22.8)
Mali	32.4 (27.6–37.8)	28.0 (22.7–34.2)	33.8 (29.3–38.9)	34.5 (29.8–40.6)	35.0 (28.8–42.8)	66.6 (57.5–77.0)	47.8 (39.1–58.0)	36.3 (31.7–41.7)	32.3 (28.0–37.8)	31.8 (26.4–38.7)
Mauritania	3.04 (2.41–3.78)	3.31 (2.58–4.21)	5.48 (4.48–6.59)	4.55 (4.07–5.09)	4.34 (3.72–5.02)	33.5 (26.7–41.3)	30.7 (24.1–38.7)	38.4 (31.7–45.9)	32.4 (29.1–36.2)	31.1 (26.8–35.8)
Niger	23.6 (16.8–33.3)	33.0 (28.0–38.3)	53.1 (50.9–55.4)	53.7 (42.7–66.1)	54.5 (42.2–68.4)	50.4 (36.5–69.7)	50.2 (43.0–57.8)	52.9 (50.8–55.0)	45.3 (36.4–55.2)	44.3 (34.7–55.0)
Nigeria	246 (183–331)	321 (239–430)	490 (453–532)	481 (435–537)	472 (416–535)	55.9 (42.2–73.9)	53.3 (40.3–70.2)	57.4 (53.3–62.0)	54.9 (49.9–60.9)	53.6 (47.6–60.3)
São Tomé and Príncipe	0.0943 (0.0665–0.131)	0.109 (0.0777–0.152)	0.0749 (0.0522–0.105)	0.0503 (0.0351–0.0721)	0.0479 (0.0337–0.0685)	19.8 (14.1–27.4)	18.8 (13.4–26.0)	13.3 (9.3–18.6)	10.0 (7.0–14.3)	9.6 (6.8–13.7)
Senegal	12.7 (9.47–16.2)	13.9 (11.2–16.8)	24.2 (23.2–25.5)	22.3 (19.1–25.7)	21.1 (17.3–25.4)	35.1 (26.5–44.6)	32.5 (26.4–39.0)	47.3 (45.4–49.6)	44.3 (38.2–50.7)	42.2 (34.8–50.4)
Sierra Leone	59.1 (38.0–90.7)	62.4 (41.6–95.2)	19.3 (17.0–21.9)	6.78 (6.08–7.54)	6.65 (5.73–7.66)	221.5 (156.2–306.7)	232.1 (169.3–318.1)	64.0 (56.8–72.0)	22.2 (19.9–24.6)	21.5 (18.6–24.7)
Togo	11.3 (7.78–16.2)	12.5 (9.46–16.4)	9.90 (8.20–11.8)	8.22 (6.14–11.1)	7.91 (5.84–10.9)	66.1 (46.4–92.2)	59.3 (45.6–76.2)	37.4 (31.2–44.4)	32.4 (24.4–43.3)	31.4 (23.4–42.9)

Numbers in parentheses are 95% uncertainty intervals. Super-regions, regions, and countries are listed in alphabetical order. Total stillbirths are presented to three significant figures and stillbirth rates are presented to 1 decimal place. SDI=Socio-demographic Index.

Table: Global, SDI quintile, super-regional, regional, and country-level stillbirth counts and rates for 20 weeks' gestation or longer in 1990, 2000, 2015, 2020, and 2021

(table; appendix 2 figures S1 and S2). While south Asia contributed almost a third (30.3%) of the total number of stillbirths at 20 weeks' gestation or longer in 2021 (0.922 [95% UI 0.764–1.13] of 3.04 million), the region was ranked fifth highest in terms of SBR compared with other regions. Together, the regions of western and eastern sub-Saharan Africa contributed more than another third, (25.5% [0.775 of 3.04 million] for western sub-Saharan Africa and 15.0% [0.456 of 3.04 million] for eastern sub-Saharan Africa), and were ranked first and third, respectively, according to SBR. The global reduction in SBR between 1990 and 2021 was 39%, but only 36% in sub-Saharan Africa and 20% in central Europe, eastern Europe, and central Asia.

Quantifying stillbirths at any gestational age besides 20 weeks or longer misses a substantial number of fetal deaths; complete results for all thresholds are shown in appendix 2 (figure S2, tables S1 and S2). In 2021, there were approximately 1.4 times more stillbirths for the 20 weeks or longer threshold (3.04 million [95% UI 2.61–3.62]) than for the 28 weeks or longer threshold (2.11 million [1.82–2.51]) and 1.04 times more stillbirths than for the 22 weeks or longer threshold (2.93 million

[2.51–3.48]). In 2021, 0.926 million (0.792–1.10) of 3.04 million stillbirths occurred globally between 20 weeks' gestation or longer and less than 28 weeks' gestation, representing 30.5% of all stillbirths; this is a slight increase from 29.3% (1.49 of 5.08 million stillbirths) in 1990. Moreover, in 2021, 0.109 million stillbirths occurred between 20 weeks' and 22 weeks' gestation (3.6% of the global total), down from 0.195 million in the same gestational range in 1990. By region, Oceania had the lowest percentage of stillbirths between 20 weeks' gestation or longer and less than 28 weeks' gestation, at 22.9% (2820 of 12 300), while southern sub-Saharan Africa had the highest percentage, at 46.2% (26 400 of 57 200). At the country level, we estimated that the average contribution of stillbirths occurring between 20 weeks' gestation or longer and less than 28 weeks' gestation ranged from 19.4% (520 of 2680) in North Korea and 19.5% (2520 of 12 900) in Haiti to 75.6% (395 of 523) in Qatar and 77.2% (1210 of 1570) in Kuwait (figure 2C).

Stillbirths were unequally distributed by country when evaluating SBR (per 1000 births) in 2021 (figure 2). The smallest estimated SBRs for the 20 weeks or longer threshold were 2.0 (95% UI 1.5–2.5) per 1000 births in

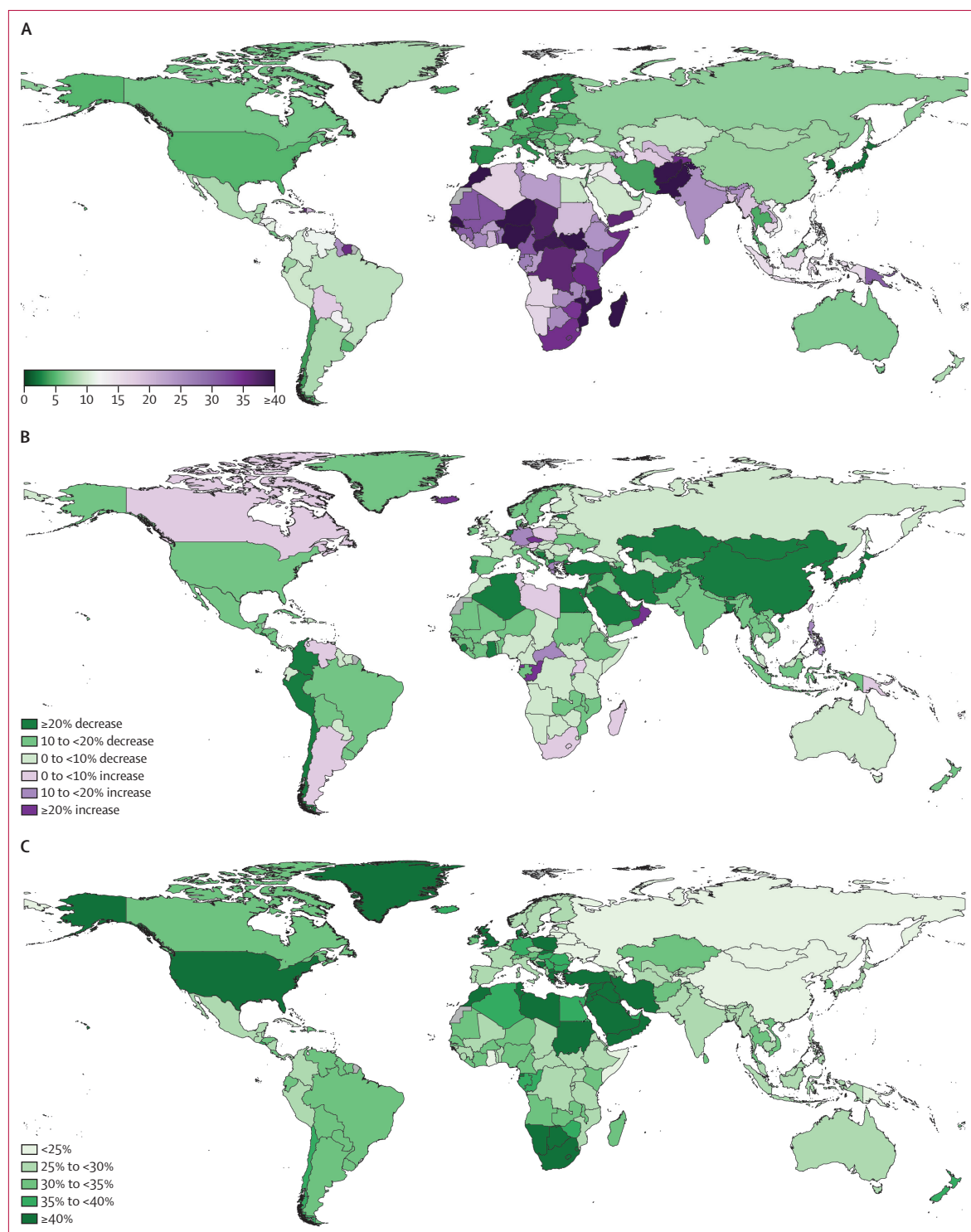


Figure 2: Maps of SBR, percentage change in SBR between 2015 and 2021, and percentage of stillbirths between 20 weeks' and less than 28 weeks' gestation in 2021

(A) The map shows SBR (per 1000 births) in 2021 for the 20 weeks or longer stillbirth definition. The colour scale diverges at an SBR of 12 to indicate whether countries met the ENAP target of 12 or fewer stillbirths per 1000 births in 2021. (B) The map shows the percentage change in SBR since the ENAP target was published, from 2015 to 2021. The colour scale diverges on the basis of whether SBR increased (purple) or decreased (green), with darker colours indicating a larger change in the respective direction. (C) The map shows the percentage of stillbirths that occurred between 20 weeks' and less than 28 weeks' gestation in 2021. Countries with a larger percentage of stillbirths between 20 weeks' and less than 28 weeks' gestation are darker in colour. ENAP=Every Newborn Action Plan. SBR=stillbirth rate (stillbirths at ≥20 weeks' gestation per 1000 births).

Japan, 2.0 (1.7–2.4) per 1000 births in South Korea, 2.5 (2.1–2.9) per 1000 births in Estonia, 2.6 (2.0–3.4) per 1000 births in Portugal, and 2.8 (2.5–3.2) per 1000 births in Finland. Alternatively, the largest estimated SBRs for the 20 weeks or longer threshold were 68.3 (48.2–97.2) per 1000 births in South Sudan, 58.0 (49.8–67.6) per 1000 births in Morocco, 53.6 (47.6–60.3) per 1000 births in Nigeria, 44.8 (35.2–56.3) per 1000 births in Burundi, and 44.5 (33.7–57.7) per 1000 births in Pakistan (figure 2A; appendix 2 figure S2A).

The two countries or territories that showed the largest decreases in SBR per 1000 births between 2015 and 2021 for the 20 weeks or longer threshold were Iran with a 66.3% (95% UI 59.4–72.8) decrease and Sierra Leone with a 65.6% (56.1–73.6) decrease corresponding to declining annualised rates of 17.9% (13.7–22.2) and 18.2% (15.0–21.7), respectively. We estimated that the largest increases were seen in Kuwait [31.5% (10.0–56.9)] and Equatorial Guinea [37.0% (5.8–76.8)], where SBR increased annually, on average, by 4.5% (1.6–7.5) in Kuwait and by 5.1% (0.9–9.5) in Equatorial Guinea (figure 2B).

With just 9 years remaining from 2021 to 2030, only slightly more than half the countries (103 of 204) are estimated to have already met the ENAP target threshold of fewer than 12 stillbirths per 1000 births based on the more inclusive 20 weeks or longer threshold. Even with the threshold of 28 weeks or longer, this number increased to only 129 countries and territories with an SBR under the ENAP threshold in 2021, which corresponds to a total of 135 countries and territories estimated by GBD 2021 to have already met the SDG 3.2 target for neonatal mortality (<12 neonatal deaths per 1000 livebirths) and 138 countries and territories estimated by GBD 2021 to have met the SDG 3.2 target for under-5 mortality (<25 under-5 deaths per 1000 livebirths).²⁰ Of the 101 countries not meeting the ENAP SBR target for 2030 based on the 20 weeks or longer definition, 45 are in sub-Saharan Africa; 21 are in southeast Asia, east Asia, and Oceania; and 15 are in Latin America and the Caribbean. At the regional level, (14 of 21 regions had at least one country still above the ENAP threshold in 2021, and four regions (central sub-Saharan Africa, eastern sub-Saharan Africa, southern sub-Saharan Africa, and south Asia) had all countries above the threshold. For the longer than 22 weeks threshold, the number was in the middle, with 106 countries and territories under the ENAP target level in 2021.

SBR versus NMR and SDI

Between 1990 and 2021, the SBR to NMR ratio stayed relatively constant, from 1.23 (95% UI 1.00–1.53) in 1990 to 1.27 (1.10–1.47) in 2000, 1.26 (1.12–1.41) in 2010, and 1.34 (1.15–1.59) in 2021 (figure 1; appendix 2 tables S3A and S3B). Although there was a slight

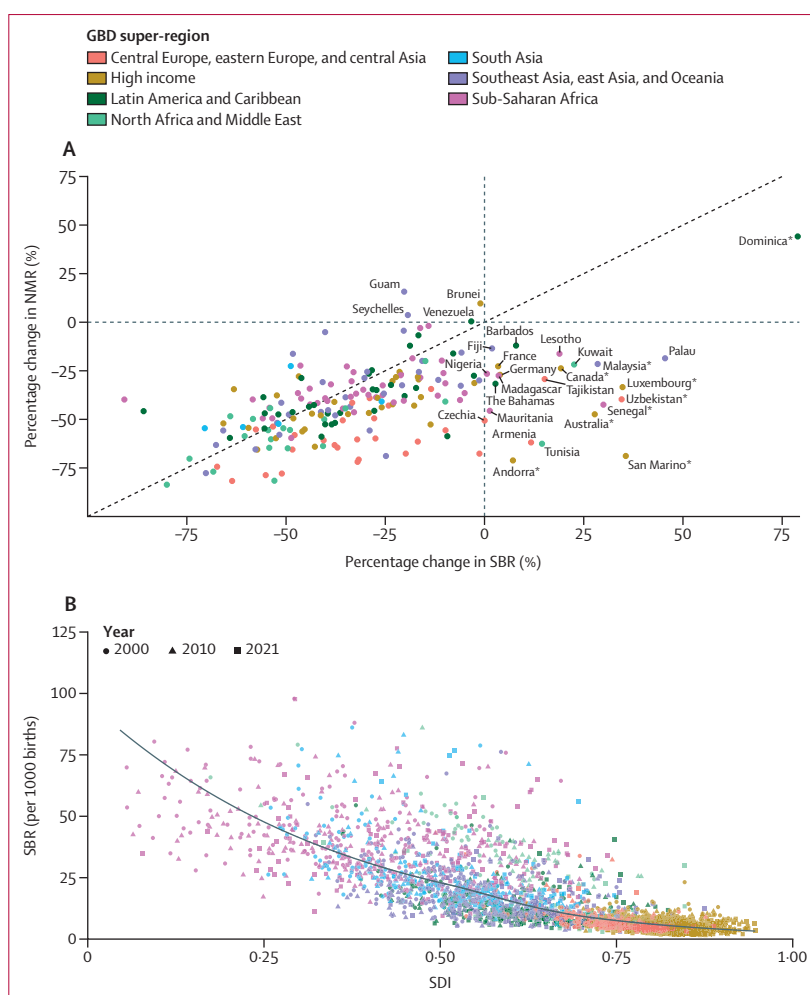
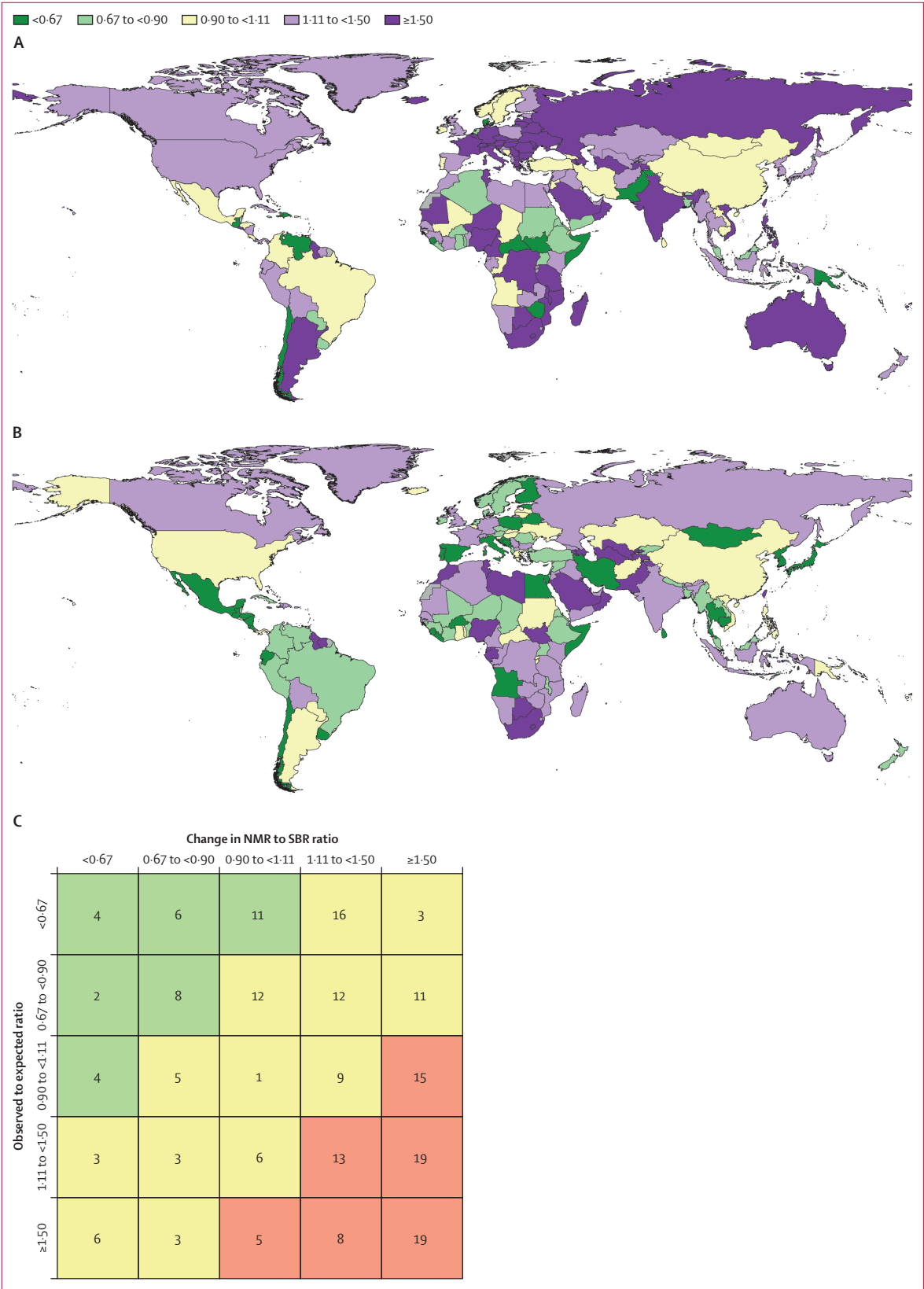


Figure 3: Comparative improvement in SBR and NMR and the historical association between SBR and SDI from 2000 to 2021

(A) Data points compare the percentage change in SBR and the percentage change in NMR for the 20 weeks or longer definition between 2000 and 2021 by GBD super-region, indicated by colour. Between 2000 and 2021, points in the bottom left quadrant had decreases in both SBR and NMR; points in the top left quadrant had a decrease in SBR but an increase in NMR; points in the top right quadrant had increases in both SBR and NMR; and points in the bottom right quadrant had an increase in SBR but a decrease in NMR. The diagonal line depicts where the change in SBR and NMR between 2000 and 2021 was equal. All data points not in the bottom left quadrant are labelled. (B) The scatter plot shows the spline fit between SBR and SDI, where each point represents a location. Point shape indicates year, and colour indicates GBD super-region. GBD=Global Burden of Diseases, Injuries, and Risk Factors Study. NMR=neonatal mortality rate (neonatal deaths per 1000 livebirths). SBR=stillbirth rate (stillbirths at ≥ 20 weeks' gestation per 1000 births). SDI=Socio-demographic Index. *Locations that had statistically significant increases in SBR.

decrease in the SBR to NMR ratio in the 2000s, this rebounded in the 2010s.

Progress was unequal between stillbirths and neonatal deaths, as shown in figure 3A and figure 4A. While 180 countries had a decrease in SBR per 1000 births for the 20 weeks or longer threshold between 2000 and 2021, 24 countries had an increase. Of the countries with an increase, 22 had data available during the 2000–21 period. A larger decline in SBR than NMR was observed for 61 of the 204 countries and territories between 2000 and 2021. In 176 countries and territories both SBR



and NMR decreased, in 23 SBR increased while NMR decreased, in four (Brunei, Guam, Seychelles, and Venezuela) SBR decreased while NMR increased, and in one (Dominica) both SBR and NMR increased. In 2021, the global NMR was 17.1 (95% UI 14.8–19.9) per 1000 livebirths, corresponding to 2.19 million (1.90–2.55) neonatal deaths. Globally, there was a 45.6% (36.3–53.1) reduction in neonatal deaths, with 4.03 million (3.86–4.22) neonatal deaths having occurred in 1990. The correlation between SBR (for the ≥ 20 weeks threshold) and NMR in 2021 was 0.85. Among the countries with declining SBRs, 142 had a relative decline in SBR greater than 20% and 45 had a relative decline greater than 50% over the 21-year period. Statistically significant increases in SBR were seen in Andorra, Australia, Canada, Dominica, Luxembourg, Malaysia, San Marino, Senegal, and Uzbekistan.

Locations with the lowest SDI status have had an increasing proportion of stillbirth burden over time. SDI has an established historical relationship with under-5 mortality, and we also estimated a correlation of -0.77 between SDI and SBR estimates at 20 weeks' gestation or longer over the entire time series, indicating that lower SDI is associated with a higher stillbirth burden (figure 3B). In addition to the overall negative correlation between SDI and stillbirth, we observed a rapidly increasing concentration of stillbirth burden in the lowest two SDI quintiles from 1990 to 2021. In 2021, 80.3% (2.44 of 3.04 million) of global stillbirths occurred in the low and low-middle SDI quintiles, up from 77.6% (2.80 of 3.61 million) in 2015, 74.5% (3.38 of 4.54 million) in 2000, and 67.9% (3.45 of 5.08 million) in 1990. This is comparable to trends in neonatal mortality, where 82.6% (1.81 of 2.19 million) of neonatal deaths occurred in the two lowest SDI quintiles in 2021, up from 67.7% (2.73 of 4.03 million) in 1990.¹⁸ Fertility also is correlated with SDI, but the trend in livebirths has been far less striking than that in stillbirths and neonatal deaths. In 2021, 58.4% (75.5 of 129 million) of livebirths occurred in low and low-middle SDI quintiles, up from 53.9%

(76.5 of 142 million) in 2015, 52.3% (67.8 of 130 million) in 2000, and 45.3% (59.8 of 132 million) in 1990.¹⁹

Among the 204 countries and territories included in this study, 100 had an observed SBR lower than what would be expected based on the historical relationship with SDI. The country with the smallest observed to expected ratio based on the historical relationship with SDI was Portugal, with an observed to expected ratio of 0.34. The country with the largest observed to expected ratio based on the historical relationship with SDI was Kuwait, with an observed to expected ratio of 5.96 (figure 4B).

Differential progress was observed in relation to NMR and SDI between 2000 and 2021 (figure 4C). Chile (34.5% decrease in NMR; 63.1% decrease in SBR) and Guatemala (45.8% decrease in NMR; 85.9% decrease in SBR) were doing well with respect to SBR specifically, while Armenia (61.9% decrease in NMR; 11.7% increase in SBR) and Antigua and Barbuda (38.0% decrease in NMR; 20.1% decrease in SBR) were doing poorly. Dominica (44.1% increase in NMR; 78.9% increase in SBR) and Palau (18.6% decrease in NMR; 45.5% increase in SBR) were among the countries where SBR has a long way to go. Notably, China showed improvements in SBR and NMR (77.7% decrease in NMR; 70.2% decrease in SBR) in parallel. In Italy (46.7% decrease in NMR; 29.1% decrease in SBR; observed to expected ratio of 0.55) and Belarus (77.9% decrease in NMR; 51.1% decrease in SBR; observed to expected ratio of 0.66), stillbirths were comparatively low for the SDI level, but progress has not kept pace with NMR. Appendix 2 (table S5) displays the full list of countries present in each group.

Discussion

Stillbirth remains a major global public health concern. Although the worldwide number of stillbirths has declined gradually since 1990, the overall number of stillbirths is still substantially high. For 2021, we estimated 3.04 million stillbirths (corresponding to approximately 8328 per day; one every 10 s) according to the 20 weeks or longer threshold, nearly a third of which—926 000 in total—would have been missed by using the threshold of 28 weeks or longer and 110 000 would have been missed using the 22 weeks or longer threshold. The global SBR in 2021 was above the ENAP 2030 target threshold of 12 or fewer stillbirths per 1000 births for all three gestational time designations, with an estimated SBR of 23.0 per 1000 births (one in 44 births) for 20 weeks' gestation or longer, 22.1 per 1000 births (one in 45 births) for 22 weeks' gestation or longer, and 16.1 per 1000 births (one in 62 births) for 28 weeks' gestation or longer. Considerable variation in SBR was observed across countries and territories, ranging from 2.0 to 68.3 per 1000 births for 20 weeks' gestation or longer.

Stillbirth thresholds vary across countries, with gestational age cutoffs of 22 weeks or longer being particularly common in high-income nations where enhanced

Figure 4: Country-specific relative changes in SBR and NMR between 2000 and 2021, ratio of observed to expected SBR based on SDI in 2021, and distribution of countries based on stillbirth performance

(A) The map shows the ratio of absolute change in SBR over absolute change in NMR between 2000 and 2021. The colour scale diverges at a ratio of 1 based on whether the change in NMR was larger (purple) or change in SBR was larger (green), with darker colours indicating greater disparity in the change. (B) The map shows the ratio of the observed SBR for the 20 weeks or longer definition in 2021 compared to what SBR would be expected according to SDI, by country. The colour scale diverges at an observed to expected ratio of 1 according to whether SBR is smaller than expected (green) or larger than expected (purple). (C) The table depicts the number of countries in 25 scenarios based on their observed to expected ratio of SBR and the change in NMR to SBR ratio. The green boxes indicate countries where SBR improvements are greater than those in NMR and SDI, yellow boxes indicate where all three are similar, and red boxes indicate where SBR is not keeping up with NMR and SDI. NMR=neonatal mortality rate (neonatal deaths per 1000 livebirths). SBR=stillbirth rate (stillbirths ≥ 20 weeks' gestation per 1000 births). SDI=Socio-demographic Index.

neonatal intensive care has made survival possible at earlier timepoints.^{27,28} Although a stillbirth threshold of 28 weeks or longer does arguably have public health relevance by focusing on late gestation stillbirths and also allowing for international comparison in tracking progress, for example, towards the ENAP 2030 target, it is important to stress to individual countries that the insufficient data on the 20 weeks or longer (full enumeration) and 22 weeks or longer (ICD-11) thresholds need to be improved to address early gestation stillbirths as well. Smith and colleagues²⁹ estimated that, in 2015, 32% of stillbirths (occurring at ≥ 22 weeks and < 28 weeks) in developed countries were overlooked when using the 28 weeks or longer gestational age designation; this is even larger than our global estimate of 30·5% of all stillbirths occurring at 22 weeks' gestation or longer and less than 28 weeks' gestation in 2021. The adoption of a lower completed gestational age cutoff for stillbirths not only reflects current improvements in medical care that are possible in some high-income countries, but it indicates the trajectory that is needed to address stillbirths in many countries over time and provides a crucial piece of information to help understand the full burden of perinatal mortality and fetal losses.

Regardless of the gestational cutoff, countries in sub-Saharan Africa and south Asia collectively accounted for almost three-quarters of all stillbirths—a pattern also documented in a separate global assessment in 2019.³⁰ The majority of stillbirths in these high-burden regions take place in rural areas with low HAQ Indices.^{31,32} Structural inequalities such as reduced total health spending per capita and lowered health system inputs result in restricted access to and utilisation of medical services, including midwifery care, emergency obstetric care, and family planning services. A related contributor to disparities in SBRs is the poor focus on the quality of pre-conception, antenatal, and intrapartum care services. Correspondingly, our analyses indicate that the reduction in SBRs over the past 30 years has been slower in sub-Saharan Africa (36%), as well as central Europe, eastern Europe, and central Asia (20%), compared to globally (39%). Of notable concern is our observation that, over time, low SDI countries have been contributing an increasingly large proportion of stillbirths to the global total. As we consider strategies for continued decreases in stillbirths, universal access to high-quality medical care—especially antenatal care—must be a central goal.

Global reductions in stillbirths have not kept pace with declines in neonatal mortality and under-5 mortality, signifying insufficient attention and resource allotment towards improvements in the quality and coverage of antenatal care services and intrapartum care services—crucial pathways towards ending preventable stillbirths.^{33–36} Stillbirth research has received minimal funding in both high-income countries and low-income and middle-income countries (LMICs). Direct investment

in LMIC-led research is recommended to accelerate the slow global progress on stillbirth prevention.³⁷ A recent review of policies from 155 countries highlighted that the current policy environment in many countries is not supportive for identifying stillbirths and recording causes of death, compared with that for neonatal and under-5 deaths, which is likely to contribute to continued slow progress in stillbirth reduction in these countries.³⁸ Similarly, a recent analysis from India highlighted the invisibility of stillbirths in data collection in the sample registration system used to track perinatal mortality, compared with household surveys.³⁹ Calls have been made to improve the counting of every stillbirth, along with neonatal deaths, through mortality audits to improve the quality of care for every pregnant woman and her baby, and to systematically capture and review the causes and avoidable factors linked to these deaths in order to effect change.⁴⁰ Further insights can be gained from community-level assessments of the causes of stillbirths, allowing for focused efforts to promote maternal care and survival of newborns. In rural Ghana, a community-based verbal autopsy tool was used to identify infections (eg, syphilis, malaria, and HIV) as a major cause of death in the antepartum period, while labour and delivery (the intrapartum period) were documented as the riskiest timeframe for stillbirth occurrence.⁴¹ Additionally, population surveys in India have highlighted that the absence of timely care from a health-care provider and poor knowledge and performance on the part of the health-care provider are key risk factors associated with stillbirths, along with deferred and referred deliveries.^{42,43} Studies such as these allow for evidence-based health interventions and policy strategies that are tailored to the unique circumstances of a particular setting.

There is mixed evidence of the impact of the COVID-19 pandemic on SBRs. The available literature captures SBRs in pregnant women with COVID-19, SBRs in pregnant women without COVID-19 during the same period, and population-level SBRs in pre-pandemic and pandemic periods, with a further breakdown of the pandemic between lockdown and post-lockdown periods. The reported data on SBRs during the pandemic have, however, been inconsistent, with some high-income countries and LMICs reporting a rise and others reporting no change.^{44–50} Additional population-level data are needed, particularly from LMICs, to better understand the observed increase in SBRs and the associated implications for reaching the ENAP target.

Two other sets of global estimates of stillbirths are available. The first is from the LSEIG, which used the thresholds of 28 weeks or longer or 1000 g or greater to model SBRs directly for 1995 and 2009,^{12,51} and also compared data from 2000 and 2015 with a 28 weeks or longer stillbirth threshold.¹² The total number of stillbirths for the 28 weeks or longer threshold in 2015 was 2·62 million, compared with 2·55 million presented in this study. A comparison of each set of estimates is

shown in appendix 2 (figure S3; table S5). We calculated a correlation of 0·87 in country-specific estimates between the SBR estimates from the two analyses for the year 2015, with the greatest absolute differences in Djibouti and Angola (LSEIG estimates larger than GBD estimates) and Mozambique and South Sudan (LSEIG estimates smaller than GBD estimates).

The second set of stillbirth estimates is available from the UN IGME, from 2000 to 2021 for 195 countries.^{13,14} The UN IGME estimated 1·9 million (90% UI 1·8–2·0) stillbirths for the 28 weeks or longer threshold in 2021, corresponding to an SBR of 13·9 (13·3–15·1) per 1000 births. At the country level, the calculated correlation was 0·84, with the largest percentage differences in Liberia and Sudan (UN IGME estimates larger than GBD estimates) and Morocco and South Sudan (UN IGME estimates smaller than GBD estimates). Appendix 2 (figure S3, table S5) also illustrates a comparison between UN IGME and the GBD 2021 SBR estimates for 2021.

Although all analyses generally agree that stillbirths are a major problem globally, with the number of stillbirths of roughly equal magnitude to the total number of neonatal deaths, there are some important differences between the various analyses. First, the LSEIG and UN IGME estimates use only the 28 weeks or longer threshold, whereas GBD 2021 estimated for the 20 weeks or longer threshold in addition to the 28 weeks or longer threshold (and ≥ 22 weeks for comparison). Second, the LSEIG and UN IGME estimates are based on a statistical model to estimate SBR directly, whereas we modelled the SBR to NMR ratio, which allows us to directly leverage all the insights of the GBD demographics analysis to generate estimates that are internally consistent with other disease burden assessments. Relatedly, although the UN IGME estimates are reportedly adjusted for all data to a reference threshold of 28 weeks or longer, neither dataset adjusted data where gestational age and birthweight were considered equivalent and neither systematically accounted for known under-reporting or completeness of vital statistics. Fourth, the GBD 2021 dataset used for modelling included 11412 source-location-years of data, which is much larger than the 2207 datapoints used in LSEIG estimates and 1531 datapoints used in UN IGME estimates.^{12,52}

We acknowledge several limitations to this analysis. First, as we worked within the framework of GBD 2021, our findings share the limitations of this broader research effort—most notably, those of GBD fertility and neonatal mortality estimates on which this analysis depends and makes an assumption that SBR completeness tracks with NMR, which might not always be the case. Second, the precision of our modelled estimates is hindered by a comparative sparsity of primary data on stillbirths, especially in sub-Saharan Africa and south Asia, where the estimated burden is the highest. Data also tend to be sparser in recent years, given the time required for countries to finalise and release data. Third, although we

have undertaken extensive efforts to correct for biases and standardise data (especially with respect to stillbirth definitions), these adjustments are limited because not all data sources provide documentation on the definitions used, documentation in a foreign language could have been misinterpreted, we cannot fully control for potential misrepresentation of abortions as stillbirths in administrative locations where abortion is restricted, and our statistical approaches do not account for potential measurement error in gestational ages or weights used to inform adjustments. Household surveys remain an important source of stillbirth data in many countries, and classifying an adverse pregnancy outcome as stillbirth requires accurate reporting of vital status at birth, gestational age, or birthweight for every pregnancy by participating women. Addressing the issues identified in misclassification and misreporting of these parameters is a limitation, which is beyond the scope of the present analysis.^{39,42,53,54} Fourth, in concentrating on maximising the comparability and comprehensiveness of stillbirth estimates for all gestational ages of 20 weeks or longer, we did not attempt to add estimates for other dimensions of stillbirth statistics including underlying cause, timing (ie, intrapartum *vs* antepartum), or preventable versus non-preventable stillbirths. Although we believe complete enumeration is an important prerequisite, addition of these other dimensions to stillbirth statistics in the future is likely to be very valuable in informing local policy, research, education, and clinical practice.

The burden of stillbirths is immense and unevenly distributed across the world. Including stillbirths from 20 weeks and beyond in our analysis allowed us to gauge more fully the magnitude of the problem; yet sparse data availability and poor data quality continue to constrain our capacity to make precise estimates for many locations. Expanded investment in recognising and counting each stillbirth is central to not only quantifying the burden of stillbirths but also to appropriately investing in stillbirth prevention. Detailed information on the timing, location, and possible cause of stillbirth, alongside demographic characteristics, will facilitate the prioritisation of regions, countries, and populations that are most in need of life-saving interventions. Further progress towards reaching the ENAP 2030 target rate of stillbirths will require enhanced access to and utilisation of high-quality health care during the antenatal period and the stages of labour and delivery.

GBD 2021 Global Stillbirths Collaborators

Haley Comfort, Theresa A McHugh, Austin E Schumacher, Ashley Harris, Erin A May, Katherine R Paulson, William M Gardner, John E Fuller, Meghan E Frisch, Heather Jean Taylor, Andrew T Leever, Corey Teply, Nicholas Alexander Verghese, Tahiya Alam, Yohannes Habtegiorgis Abate, Hedayat Abbastabar, Samar Abd ElHafeez, Michael Abdelmasseh, Sherief Abd-Elsalam, Daba Abdissa, Meriem Abdoun, Rizwan Suliankatchi Abdulkader, Mesfin Abebe, Aidin Abedi, Hassan Abidi, Olumide Abiodun, Richard Gyan Aboagye, Hassan Abolhassani, Michael R M Abrigo, Eman Abu-Gharbieh, Niveen ME Abu-Rmeileh, Mesafint Molla Adane, Isaac Yeboah Addo, Bulcha Guye Adema, Miracle Ayomikun Adesina,

- Charles Oluwaseun Adetunji, Daniel Adedayo Adeyinka, Qorinah Estiningtyas Sakilah Adnani, Saira Afzal, Suneth Buddhika Agampodi, Antonella Agodi, Williams Agyemang-Duah, Bright Opoku Ahinkorah, Aqeel Ahmad, Danish Ahmad, Ali Ahmadi, Ayman Ahmed, Haroon Ahmed, Luai A Ahmed, Marjan Ajami, Karolina Akinosoglou, Syed Mahfuz Al Hasan, Ziyad Al-Aly, Khurshid Alam, Fahad Mashhour Alanezi, Turki M Alanzi, Mohammed Albashtawy, Sharifullah Aleami, Abdelazeem M Algammal, Adel Ali Saeed Al-Gheethi, Abid Ali, Liaqat Ali, Mohammed Usman Ali, Sheikh Mohammad Alif, Syed Mohamed Aljunid, Joseph Uy Almazan, Hesham M Al-Mekhlafi, Louay Almidani, Sami Almoustanyir, Khalid A Altirkawi, Hany Aly, Safwat Aly, Reza Amami, Edward Kwabena Ameyaw, Abebe Feyissa Amhare, Tarek Tawfik Amin, Sohrab Amiri, Catalina Liliana Andrei, Tudorel Andrei, Amir Anoushiravani, Adnan Ansar, Davood Anvari, Razique Anwer, Francis Appiah, Morteza Arab-Zozani, Aleksandr Y Aravkin, Demelash Areda, Brhane Berhe Aregawi, Anton A Artamonov, Umesh Raj Aryal, Zatollah Asemi, Mulu Tiruneh Asemu, Akeza Awealoom Asgedom, Tahira Ashraf, Melash Belachew Asresie, Daniel Atlaw, Maha Moh'd Wahbi Atout, Alok Atreya, Madhu Sudhan Atteraya, Avinash Aujayeb, Beatriz Paulina Ayala Quintanilla, Haleh Ayatollahi, Seyed Mohammad Ayyoubzadeh, Sina Azadnajafabad, Rui M S Azevedo, Ahmed Y Azzam, Darshan B B, Mahsa Babaei, Muhammad Badar, Ashish D Badiye, Nayereh Baghchehi, Soroush Baghdadi, Nasser Bagheri, Sara Bagherieh, Farshad Bahrami Asl, Ruhai Bai, Ravleen Kaur Bakshi, Kiran Bam, Maciej Banach, Aduragbemi Banke-Thomas, Hansi Bansal, Berihun Bantie Bantie, Martina Barchitta, Mainak Bardhan, Azadeh Bashiri, Afisu Basiru, Pritish Baskaran, Kavita Batra, Mojtaba Bayani, Nebiyu Simegnaw Bayleyegn, Neeraj Bedi, Tahmina Begum, Amir Hossein Behnoud, Uzma Iqbal Belgaumi, Amiel Nazer C Bermudez, Kebede A Beyene, Bharti Bhandari, Dinesh Bhandari, Nikha Bhardwaj, Pankaj Bhardwaj, Sonu Bhaskar, Suraj Bhattarai, Virginia Bodolica, Dejana Braithwaite, Hermann Brenner, Yasser Bustanji, Nadeem Shafique Butt, Zahid A Butt, Abdul Cadri, Ismael Campos-Nonato, Maria Sofia Cattaruzza, Francieli Cembranel, Ester Cerin, Pamela Roxana Chacón-Uscamaita, Jaykaran Charan, Vijay Kumar Chattu, Dhun Chauhan, Malizgani Paul Chavula, Simiao Chen, Gerald Chi, Abdulaal Chittheer, William C S Cho, Sonali Gajanan Choudhari, Dinh-Toi Chu, Natalia Cruz-Martins, Omid Dadras, Gizachew Worku Dagnew, Maxwell Ayindenaba Dalaba, Lalit Dandona, Aso Mohammad Darwesh, Jai K Das, Saswati Das, Nihar Ranjan Dash, Claudio Alberto Dávila-Cervantes, Kairat Davletov, Berhanu Gidisa Debela, Aklilu Tamire Debele, Mgsanaw Derese, Kebede Deribe, Emina Dervišević, Anteneh Mengist Dessie, Arkadeep Dhali, Vishal R Dhulipala, M Ashworth Dirac, Wanyue Dong, Bezabih Terefe Dora, Haneil Larson Dsouza, Andre Rodrigues Duraes, Sulagna Dutta, Arkadiusz Marian Dziedzic, Abdelaziz Ed-Dra, Kristina Edvardsson, Ebrahim Eini, Michael Ekholuenetale, Maysaa El Sayed Zaki, Islam Y Elgendy, Muhammed Elhadi, Mohammed Elshaer, Ibrahim Elsohaby, Theophilus I Emeto, Luchuo Engelbert Bain, Hawi Leul Esayas, Babak Eshtrati, Francesco Esposito, Adeniyi Francis Fagbamigbe, Ildar Ravisovich Fakhraiyev, Ali Faramarzi, Andre Faro, Ali Fatehizadeh, Ginenus Fekadu, Florian Fischer, Artem Alekseevich Fomenkov, Takeshi Fukumoto, Peter Andras Gaal, Abhay Motiramji Gaidhane, Márió Gajdács, Yaseen Galali, Silvano Gallus, Balasankar Ganesan, Federica Gazzelloni, Mesfin Gebrehiwot, Amanuel Tesfay Gebremedhin, Teferi Gebru Gebremeskel, Yohannes Fikadu Geda, Kebede Embaye Gezae, Mohammed-Reza Ghasemi, Ramy Mohamed Ghazy, Gloria Gheno, Alessandro Gialluisi, Mika Gissler, James C Glasbey, Logan M Glasstetter, Mahaveer Golechha, Pouya Goleij, Davide Golinelli, Michal Grivna, Avirup Guha, Stefano Guicciardi, Hanbing Guo, Sapna Gupta, Veer Bala Gupta, Vivek Kumar Gupta, Sebastian Haller, Rabi Halwani, Samer Hamidi, Alexis J Handal, Josep Maria Haro, Nicholas Nathaniel Hartman, Taufiq Hasan, Ali Hasanpour- Dehkordi, Md Saquib Hasnain, Soheil Hassanipour, Wen-Qiang He, Mohammad Heidari, Brenda Yuliana Herrera-Serna, Claudiu Herteliu, Kamran Hessami, Kamal Hezam, Yuta Hiraike, Ramesh Holla, Md Mahbub Hossain, Hassan Hosseinzadeh, Mehdi Hosseinzadeh, Mihaela Hostiu, Sorin Hostiu, Chengxi Hu, Junjie Huang, M Mamun Huda, Md Nazmul Huda, Hong-Han Huynh, Bing-Fang Hwang, Pulwasha Maria Iftikhar, Olayinka Stephen Ilesanmi, Irena M Ilic, Milena D Ilic, Mustapha Immurana, Arad Iranmehr, Farideh Iravanpour, Masao Iwagami, Chidozie Declan Iwu, Assefa N Iyasu, Jalil Jaafari, Abdollah Jafarzadeh, Haitham Jahrami, Manthan Dilipkumar Janodia, Nilofer Javadi, Tahereh Javaheri, Sathish Kumar Jayapal, Alealign Tasew Jema, Mohammad Jokar, Nitin Joseph, Charity Ehimwenma Joshua, Mikk Jürisson, Ali Kabir, Zubair Kabir, Ibraheem M Karaye, Hanie Karimi, Hengameh Kasraei, Joonas H Kauppila, Evie Shoshannah Kendal, Mohammad Keykhaei, Nauman Khalid, Faham Khamesipour, M Nuruzzaman Khan, Maseer Khan, Yusra H Khan, Khaled Khatab, Haitham Khatatbeh, Moawiah Mohammad Khatatbeh, Sorour Khateri, Hamid Reza Khayat Kashani, Moein Khormali, Min Seo Kim, Thanh V Kim, Yun Jin Kim, Ruth W Kimokoti, Adnan Kisa, Sezer Kisa, Sonali Kochhar, Ali-Asghar Kolahi, Farzad Kompani, Hamid Reza Koohestani, Soewarta Kosen, Ai Koyanagi, Kewal Krishan, Vijay Krishnamoorthy, Barthelemy Kuate Defo, Raja Amir Hassan Kuchay, Mohammed Kuddus, G Anil Kumar, Om P Kurmi, Carlo La Vecchia, Ben Lacey, Chandrakant Lahariya, Tri Laksono, Dharmesh Kumar Lal, Savita Lasrado, Kamaluddin Latief, Kaveh Latifinaibin, Thao Thi Thu Le, Munjae Lee, Sang-woong Lee, Wei-Chen Lee, Yo Han Lee, Jacopo Lenzi, Ming-Chieh Li, Shanshan Li, Virendra S Ligade, Stephen S Lim, Gang Liu, Jue Liu, Xuefeng Liu, László Lorenzovici, Masoud Lotfizadeh, Ahmed M Affi, Aurea M Madureira-Carvalho, Laura A Magee, Azeem Majeed, Elaheh Malakan Rad, Kashish Malhotra, Ahmad Azam Malik, Iram Malik, Tauqeer Hussain Mallhi, Joemer C Maravilla, Santi Martini, Francisco Rogerlândio Rogerlândio Martins-Melo, Miquel Martorell, Melvin Barrientos Marzan, Yasith Mathangasinghe, Rita Mattiello, Andrea Maugeri, Mahsa Mayeli, Maryam Mazaheri, Rishi P Mediratta, Kamran Mehrabani-Zeinabad, Gebrekios Gebremichael Meles, Hadush Negash Meles, Max Alberto Mendez-Lopez, Walter Mendoza, Ritesh G Menezes, Atte Meretoja, Tuomo J Meretoja, Irmina Maria Michalek, Le Huu Nhat Minh, Reza Mirfakhraie, Mojgan Mirghafourvand, Andreea Mirica, Erkin M Mirrakhimov, Moonis Mirza, Eric Mishio Bawa, Sanjeev Misra, Biru Abdisa Mizana, Nouh Saad Mohamed, Sakineh Mohammad-Alizadeh-Charandabi, Ghada Mohammed, Salahuddin Mohammed, Shafiu Mohammed, Ali H Mokdad, Sabrina Molinaro, Sara Momtazmanesh, Lorenzo Monasta, Mohammad Ali Moni, AmirAli Moodi Ghalibaf, Paula Moraga, Negar Morovatdar, Abbas Mosapour, Simin Mouidi, Parsa Mousavi, Ulrich Otto Mueller, Faraz Mughal, Admir Mulita, Francesk Mulita, Moses K Muriithi, Tapas Sadasivan Nair, Hastyar Hama Rashid Najmuldeen, Gopal Nambi, Vinay Nangia, Gustavo G Nascimento, Javaid Nauman, Seyed Aria Nejadghaderi, Mohammad Hadi Nematollahi, Georges Nguefack-Tsague, Josephine W Ngunjiri, Dang H Nguyen, Hau Thi Hien Nguyen, Hien Quang Nguyen, Phat Tuan Nguyen, Robina Khan Niazi, Ali Nikoobar, Lawrence Achilles Nnyanzi, Efaq Ali Noman, Shuhei Nomura, Mamoon Noreen, Dieta Nurrika, Chimezie Igwegbe Nzopotam, Ogochukwu Janet Nzopotam, Bogdan Oancea, Kehinde O Obamiro, Ropo Ebenezer Ogunsakin, Sylvester Reuben Okeke, Akinkunmi Paul Okekunle, Osaretin Christabel Okonji, Patrick Godwin Okwute, Andrew T Olagunju, Babayemi Oluwaseun Olakunde, Matthew Idowu Olatubi, Isaac Iyinoluwa Olufadewa, Bolajoko Olubukunola Olusanya, Michal Ordak, Doris V Ortega-Altamirano, Wael M S Osman, Uchechukwu Levi Osuagwu, Adrian Otoi, Nikita Ostavnov, Stanislav S Ostavnov, Amel Ouyahia, Mayowa O Owolabi, Alicia Padron-Monedero, Jagadish Rao Padubidri, Adrian Pana, Prayag Paramita Parija, Romil R Parikh, Ava Pashaei, Sangram Kishor Patel, Shankargouda Patil, Shrikant Pawar, Paolo Pedersini, Veincent Christian Filipino Pepito, Prince Peprah, Gavin Pereira, Jeevan Pereira, Marcos Pereira, Maria Odete Pereira, Arokiasamy Perianayagam, Norberto Perico, Konrad Pesudovs, Ionela-Roxana Petcu, Fanny Emily Petermann-Rocha,

Parmida Sadat Pezeshki, Tom Pham, My Kieu Phan, Anil K Philip, Manon Pigeolet, Zahra Zahid Piracha, Vivek Podder, Dimitri Poddighe, Pranil Man Singh Pradhan, Hadi Raeisi Shahraiki, Pankaja Raghav, Mosiur Rahman, Wahid Rahmanian, Ivano Raimondo, Shakthi Kumar Ramasamy, Chhabhi Lal Ranabhat, Nemanja Rancic, Chythra R Rao, Sowmya J Rao, Davide Rasella, Ahmed Mustafa Rashid, Reza Rawassizadeh, Elrashdy Moustafa Mohamed Redwan, Giuseppe Remuzzi, Kannan RR Rengasamy, Andre M N Renzaho, Nazila Rezaei, Negar Rezaei, Mohsen Rezaeian, Hannah Elizabeth Robinson-Oden, Leonardo Roever, Peter Rohloff, Luca Ronfani, Godfrey M Rwegerera, Aly M A Saad, Zahra Saadatian, Siamak Sabour, Basema Ahmad Saddik, Malihe Sadeghi, Mohammad Reza Saeb, Umar Saeed, Amene Saghazadeh, Dominic Sagoe, Fatemeh Saheb Sharif-Askari, Narjes Saheb Sharif-Askari, Amirhossein Sahebkar, Harihar Sahoo, Soumya Swaroop Sahoo, Mohamed A Saleh, Sana Salehi, Marwa Rashad Salem, Abdallah M Samy, Rama Krishna Sanjeev, Yaser Sariikhan, Sachin C Sarode, Maheswar Satpathy, Monika Sawhney, Ganesh Kumar Saya, Mete Saylan, Markus P Schlaich, Ione Jayce Ceola Schneider, Art Schuermans, Pallav Sengupta, Subramanian Senthilkumaran, Sadaf G Sepanlou, Dragos Serban, SeyedAhmad SeyedAlinaghi, Allen Seylani, Mahan Shafie, Jaffer Shah, Pritik A Shah, Samiah Shahid, Masood Ali Shaikh, Sunder Sham, Mohd Shanawaz, Mohammed Shannawaz, Mequanent Melaku Sharew, Manoj Sharma, Adithi Shetty, B Suresh Kumar Shetty, Pavanchand H Shetty, Rahman Shiri, Reza Shirkoohi, Siddharudha Shivalli, Sina Shool, Seyed Afshin Shorofi, Kanwar Hamza Shuja, Kerem Shuval, Migbar Mekonnen Sibhat, Negussie Boti Sidamo, João Pedro Silva, Colin R Simpson, Jasvinder A Singh, Paramdeep Singh, Surjit Singh, Natia Skhvitariidze, Bogdan Socea, Abdullah Al Mamun Sohag, Hamidreza Soleimani, Yonatan Solomon, Suhang Song, Yi Song, Michael Spartalis, Chandrashekar T Sreeramareddy, Andy Stergachis, Muhammad Suleman, Saima Sultana, Haitong Zhe Sun, Jing Sun, Mindy D Szeto, Rafael Tabarés-Seisdedos, Shima Tabatabai, Mohammad Tabish, Majid Taheri, Moslem Taheri Soodejani, Jacques Lukenze Tamuzi, Ker-Kan Tan, Ingan Ukur Tarigan, Razieh Tavakoli Oliaee, Birhan Tsegaw Taye, Yibekal Manaye Tefera, Mohamad-Hani Temsah, Masayuki Teramoto, Wegen Beyene Tesfamariam, Enoch Teye-Kwado, Samar Tharwat, Aravind Thavamani, Nihal Thomas, Mariya Vladimirovna Titova, Amir Tiyyuri, Roman Topor-Madry, Marcos Roberto Tovani-Palone, Jaya Prasad Tripathy, Samuel Joseph Tromans, Chukwudi S Ubah, Muhammad Umair, Srikanth Umakanthan, Brigid Unim, Asokan Govindaraj Vaithinathan, Sahel Valadan Tahbaz, Mario Valenti, Rohollah Valizadeh, Jef Van den Eynde, Shoban Babu Varthya, Massimiliano Veroux, Georgios-Ioannis Verras, Leonardo Villani, Francesco S Violante, Vasily Vlassov, Mandarar Tariku Walde, Fang Wang, Shu Wang, Yangqing Wang, Yanzhong Wang, Emebet Gashaw Wassie, Kosala Gayan Weerakoon, Asrat Arja Wolde, Xiaoyue Xu, Vikas Yadav, Lin Yang, Yuichiro Yano, Sisay Shewasinad Yehualashet, Siyan Yi, Arzu Yigit, Vahit Yigit, Paul Yip, Naohiro Yonemoto, Nazar Zaki, Giulia Zamagni, Burhan Abdullah Zaman, Michael Zastrozhin, Haijun Zhang, Yunquan Zhang, Zhi-Jiang Zhang, Hanqing Zhao, Claire Chenwen Zhong, Magdalena Zielińska, Lilik Zuhriyah, Simon I Hay, Mohsen Naghavi, Christopher J L Murray, Rakhi Dandona, and Nicholas J Kassebaum.

Affiliations

Institute for Health Metrics and Evaluation (H Comfort MPH, T A McHugh PhD, A E Schumacher PhD, A Harris, E A May MS, K R Paulson MPH, W M Gardner MPH, J E Fuller MLIS, M E Frisch BA, H J Taylor BA, A T Leever BS, C Teply MS, N A Verghese BA, T Alam MPH, A Y Aravkin PhD, Prof L Dandona MD, M A Dirac MD, Prof S S Lim PhD, Prof A H Mokdad PhD, T Pham BS, H E Robinson-Oden MLIS, A A Wolde MPH, Prof S I Hay FMedSci, Prof M Naghavi PhD, Prof C J L Murray DPhil, Prof R Dandona PhD, N J Kassebaum MD), Department of Applied Mathematics (A Y Aravkin PhD), Department of Health Metrics Sciences, School of Medicine (M A Dirac MD, Prof S S Lim PhD, Prof A H Mokdad PhD, Prof A Stergachis PhD, Prof S I Hay FMedSci, Prof M Naghavi PhD,

Prof C J L Murray DPhil), Department of Epidemiology (H Guo MPH), School of Health Systems and Public Health (C Iwu MPH), Department of Global Health (S Kochhar MD), Department of Anesthesiology & Pain Medicine (V Krishnamoorthy MD, N J Kassebaum MD), Department of Pharmacy (Prof A Stergachis PhD), University of Washington, Seattle, WA, USA; Department of Clinical Governance and Quality Improvement (Y H Abate MSc), Aleta Wondo General Hospital, Aleta Wondo, Ethiopia; Advanced Diagnostic and Interventional Radiology Research Center (H Abbastabar PhD), Research Center for Immunodeficiencies (H Abolhassani PhD, A Saghazadeh MD), Digestive Diseases Research Institute (A Anoushiravani MD, S G Sepanlou MD), Department of Health Information Management (S Ayyoubzadeh PhD), Neurosciences Institute (M Babaei MD), School of Medicine (A Behnouth BS, H Karimi MD, M Mayeli MD, S Momtazmanesh MD), Iranian Research Center for HIV/AIDS (IRCHA) (O Dadras PhD), Department of Neurosurgery (A Iranmehr MD), Non-communicable Diseases Research Center (M Keykhaei MD, S Momtazmanesh MD, P Mousavi MD, N Rezaei MD, N Rezaei PhD), Students' Scientific Research Center (SSRC) (M Keykhaei MD), Sina Trauma and Surgery Research Center (M Khormali MD, S Shool MD), Children's Medical Center (Prof F Kompani MD), Department of Pediatric Cardiology (Prof E Malakan Rad MD), Department of Internal Medicine (P Pezeshki BMedSc), Department of Master of Public Health (P Pezeshki BMedSc), Endocrinology and Metabolism Research Institute (N Rezaei PhD), Iranian Research Center for HIV/AIDS (Prof S SeyedAlinaghi PhD), Department of Neurology (M Shafie MD), Cancer Research Center (R Shirkoohi PhD), Cancer Biology Research Center (R Shirkoohi PhD), Tehran University of Medical Sciences, Tehran, Iran; Department of Epidemiology (S Abd ElHafeez DrPH), Tropical Health Department (R M Ghazy PhD), Alexandria University, Alexandria, Egypt; Department of Surgery (M Abdelmasseh MD), Marshall University, Huntington, WV, USA; Department of Tropical Medicine and Infectious Diseases (S Abd-Elsalam PhD), Tanta University, Tanta, Egypt; Department of Public Health (D Abdissa MSc), Department of Health, Jimma, Ethiopia; Department of Health (D Abdissa MSc), Diabetes Research Center, Jimma, Ethiopia; Department of Medicine (Prof M Abdoun PhD), University of Setif Algeria, Sétif, Algeria; Department of Health, Sétif, Algeria (Prof M Abdoun PhD); National Institute of Epidemiology (Prof M Abdulkader PhD), Indian Council of Medical Research, Chennai, India; Department of Midwifery (M Abebe MSc), Department of Public Health (B G Debela MPH), Department of Pediatrics and Child Health Nursing (M M Sibhat MSc), Dilla University, Dilla, Ethiopia; Department of Neurosurgery (A Abedi MD), Keck School of Medicine (A Abedi MD), Mark and Mary Stevens Neuroimaging and Informatics Institute (S Salehi MD), University of Southern California, Los Angeles, CA, USA; Laboratory Technology Sciences Department (H Abidi PhD), Yasuj University of Medical Sciences, Yasuj, Iran; Department of Community Medicine (Prof O Abiodun MPH), Department of Medical Physiology (P G Okwute MSc), Babcock University, Ilesha-Remo, Nigeria; Department of Family and Community Health (R G Aboagye MPH), Institute of Health and Allied Sciences (M A Dalaba PhD), Institute of Health Research (M Immurana PhD), University of Health and Allied Sciences, Ho, Ghana; Department of Medical Biochemistry and Biophysics (H Abolhassani PhD), Department of Molecular Medicine and Surgery (Prof J H Kauppila MD), Karolinska Institute, Stockholm, Sweden; Philippine Institute for Development Studies, Quezon City, Philippines (M R M Abrigo PhD); Department of Clinical Sciences (Prof E Abu-Gharbieh PhD), Department of Basic Biomedical Sciences (Prof Y Bustanji PhD), Clinical Sciences Department (N R Dash MD, Prof R Halwani PhD, G Mohammed FRCOG, N Saheb Sharif-Askari PhD), College of Medicine (Prof R Halwani PhD, Prof B A Saddik PhD, Prof M A Saleh PhD), Sharjah Institute of Medical Sciences (F Saheb Sharif-Askari PhD), University of Sharjah, Sharjah, United Arab Emirates (K A Altirkawi MD); Department of Biopharmaceutics and Clinical Pharmacy (Prof E Abu-Gharbieh PhD), University of Jordan, Amman, Jordan; Institute of Community and Public Health (Prof N M Abu-Rmeileh PhD), Birzeit University, Ramallah, Palestine; College of Medicine and Health Sciences (M M Adane PhD), School of Public Health (M B Asresie MPH),

- Department of Reproductive Health (G W Dagnew MPH), Bahir Dar University, Bahir Dar, Ethiopia; School of Medicine (I Y Addo PhD), Faculty of Medicine and Health (W He PhD), Department of Public Health (M Khan PhD), School of Chemical & Biomolecular Engineering (E A Noman PhD), University of Sydney, Sydney, NSW, Australia (S R Okeke PhD); Centre for Social Research in Health (I Y Addo PhD, S R Okeke PhD), Ingham Institute for Applied Medical Research (M Huda PhD), School of Optometry and Vision Science (Prof K Pesudovs PhD), School of Population Health (Prof B A Saddik PhD, X Xu PhD), University of New South Wales, Sydney, NSW, Australia; Department of Nursing (B G Adema MSc), Wolaita Sodo University, Wolaita Sodo, Ethiopia; Slum and Rural Health Initiative Research Academy (M A Adesina BPT, I I Olufadewa MHS), Slum and Rural Health Initiative, Ibadan, Nigeria; Department of Physiotherapy (M A Adesina BPT), Department of Epidemiology and Medical Statistics (A F Fagbamigbe PhD), College of Medicine (A P Okeunle PhD), Faculty of Public Health (I I Olufadewa MHS), Department of Medicine (Prof M O Owolabi DrM), University of Ibadan, Ibadan, Nigeria; Department of Microbiology (Prof C O Adetunji PhD), Edo State University Uzairue, Iyamho, Nigeria; Department of Community Health and Epidemiology (D A Adeyinka PhD), University of Saskatchewan, Saskatoon, SK, Canada; Department of Public Health (D A Adeyinka PhD), Federal Ministry of Health, Abuja, Nigeria; Department of Public Health (Q Adnani PhD), Universitas Padjadjaran (Padjadjaran University), Bandung, Indonesia; Department of Community Medicine (Prof S Afzal PhD), King Edward Memorial Hospital, Lahore, Pakistan; Department of Public Health (Prof S Afzal PhD), Public Health Institute, Lahore, Pakistan; Department of New Initiatives (Prof S B Agampodi MD), International Vaccine Institute, Seoul, South Korea; Department of Medical and Surgical Sciences and Advanced Technologies "GF Ingrassia" (Prof A Agodi PhD, M Barchitta PhD, A Maugeri PhD, Prof M Veroux PhD), University of Catania, Catania, Italy; Department of Public Health Sciences (W Agyemang-Duah PhD), Queen's University, Kingston, ON, Canada; School of Public Health (B O Ahinkorah MPhil), School of Life Sciences (G Liu PhD), University of Technology Sydney, Sydney, NSW, Australia; Department of Medical Biochemistry (A Ahmad PhD), Department of Pharmacology (M Tabish MPharm), Shaqra University, Shaqra, Saudi Arabia; School of Medicine and Psychology (D Ahmad PhD), Australian National University, Canberra, ACT, Australia; Public Health Foundation of India, Gandhinagar, India (D Ahmad PhD); Department of Epidemiology and Biostatistics (A Ahmadi PhD), Community-Oriented Nursing Midwifery Research Center (M Heidari PhD), Department of Community Health (M Lotfzadeh PhD), Social Determinants of Health Research Center (M Lotfzadeh PhD), Shahrekord University of Medical Sciences, Shahrekord, Iran; Department of Epidemiology (A Ahmadi PhD, Prof S Sabour PhD), National Nutrition and Food Technology Research Institute (M Ajami PhD), Department of Neurosurgery (H Khayat Kashani MD), Social Determinants of Health Research Center (A Kolahi MD, A Nikoobar BSc), Center for Comprehensive Genetic Services (M Ghasemi PhD), Department of Medical Genetics (M Ghasemi PhD, R Mirfakhraie PhD), Department of Medical Education (S Tabatabai PhD), Medical Ethics and Law Research Center (M Taheri PhD), Shahid Beheshti University of Medical Sciences, Tehran, Iran; Institute of Endemic Diseases (A Ahmed MSc), University of Khartoum, Khartoum, Sudan; Swiss Tropical and Public Health Institute (A Ahmed MSc), University of Basel, Basel, Switzerland; Department of Biosciences (H Ahmed PhD), COMSATS Institute of Information Technology, Islamabad, Pakistan; Institute of Public Health (Prof L A Ahmed PhD, Prof M Grivna PhD), College of Medicine and Health Sciences (J Nauman PhD), Department of Computer Science and Software Engineering (Prof N Zaki PhD), United Arab Emirates University, Al Ain, United Arab Emirates; Department of Internal Medicine (K Akinosoglou PhD), University of Patras, Patras, Greece; Department of Internal Medicine and Infectious Diseases (K Akinosoglou PhD), University General Hospital of Patras, Patras, Greece; Division of Public Health Sciences (S Al Hasan PhD), Department of Research and Development (Z Al-Aly MD), Department of Surgery (S Azadnajaabad MD), Washington University in St. Louis, St. Louis, MO, USA; Clinical Epidemiology Center (Z Al-Aly MD), US Department of Veterans Affairs (VA), St. Louis, MO, USA; Murdoch Business School (K Alam PhD), Murdoch University, Perth, WA, Australia; Department of Health Information Management and Technology (T M Alanzi PhD), Division of Forensic Medicine (Prof R G Menezes MD), Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia (F M Alanezi PhD); Department of Community and Mental Health (Prof M Albashtawy PhD), Al al-Bayt University, Mafraq, Jordan; Global Health Entrepreneurship (S Alemi PhD), Tokyo Medical and Dental University, Tokyo, Japan; Department of Bacteriology, Immunology, and Mycology (Prof A M Algammal PhD), Suez Canal University, Ismailia, Egypt; Global Centre for Environmental Remediation (A A S Al-Gheethi PhD), University of Newcastle, Newcastle, NSW, Australia; Cooperative Research Centre for Contamination Assessment and Remediation of the Environment, Newcastle, NSW, Australia (A A S Al-Gheethi PhD); Department of Zoology (A Ali PhD), Abdul Wali Khan University Mardan, Mardan, Pakistan; Department of Biological Sciences (L Ali PhD), National University of Medical Sciences (NUMS), Rawalpindi, Pakistan; Department of Medical Rehabilitation (Physiotherapy) (M U Ali MSc), University of Maiduguri, Maiduguri, Nigeria; Department of Rehabilitation Sciences (M U Ali MSc), Hong Kong Polytechnic University, Hong Kong Special Administrative Region, China; Institute of Health and Wellbeing (S M Alif PhD), Federation University Australia, Melbourne, VIC, Australia; School of Public Health and Preventive Medicine (S M Alif PhD, S Li PhD), Monash University, Melbourne, VIC, Australia; Department of Public Health and Community Medicine (Prof S M Aljunid PhD, Prof C T Sreeramareddy MD), International Medical University, Kuala Lumpur, Malaysia; International Centre for Casemix and Clinical Coding (Prof S M Aljunid PhD), National University of Malaysia, Bandar Tun Razak, Malaysia; Department of Medicine (J U Almazan PhD), Nazarbayev University, Astana, Kazakhstan; Department of Parasitology (Prof H M Al-Mekhlafi PhD), University of Malaya, Kuala Lumpur, Malaysia; Department of Parasitology (Prof H M Al-Mekhlafi PhD), Sana'a University, Sana'a, Yemen; Wilmer Eye Institute (L Almidani MSc), Department of International Health (H Zhang MS), Johns Hopkins University, Baltimore, MD, USA; Doheny Image Reading and Research Lab (DIRRL) (L Almidani MSc), Department of Orthopedics (S Baghdadi MD), University of California Los Angeles, Los Angeles, CA, USA; College of Medicine (S Almustanyir MD), Alfaisal University, Riyadh, Saudi Arabia; Ministry of Health, Riyadh, Saudi Arabia (S Almustanyir MD); Department of Pediatrics (Prof H Aly MD), Lerner Research Institute (X Liu PhD), Cleveland Clinic, Cleveland, OH, USA; Department of Pediatric Cardiology (S Aly MD), Department of Pediatric Orthopedic Surgery (M Pigeolet MD), Boston Children's Hospital, Boston, MA, USA; Department of Pediatrics (S Aly MD), Division of Cardiovascular Medicine (G Chi MD), Division of Cardiology (I Y Elgendy MD), Maternal Fetal Care Center (K Hessami MD), Department of Global Health and Social Medicine (M Pigeolet MD), T.H. Chan School of Public Health (P M S Pradhan MD), Department of Global Health and Population (P Rohloff MD), Harvard University, Boston, MA, USA; Interdisciplinary Graduate Program in Human Toxicology (R Amani DVM), University of Iowa, Iowa City, IA, USA; Holden Comprehensive Cancer Center (R Amani DVM), University of Iowa Hospitals and Clinics, Iowa City, IA, USA; School of Graduate Studies (E K Ameyaw MPhil), Lingnan University, Hong Kong Special Administrative Region, China; Department of Public Health (A Amhare MSc), Salale University, Fitche, Ethiopia; School of Public Health (A Amhare MSc), Xi'an Jiaotong University, Xi'an, China; Public Health and Community Medicine Department (Prof T T Amin MD), Cairo University, Cairo, Egypt; Quran and Hadith Research Center (S Amiri PhD), Baqiyatallah University of Medical Sciences, Tehran, Iran; Department of Cardiology (Prof C Andrei PhD), Department of Internal Medicine (M Hostiuic PhD), Department of Legal Medicine and Bioethics (Prof S Hostiuic PhD), Department of General Surgery (D Serban PhD, B Socea PhD), Carol Davila University of Medicine and Pharmacy, Bucharest, Romania; Department of Statistics and Econometrics (Prof T Andrei PhD, Prof C Herteliu PhD, A Mirica PhD, A Otoiui PhD, I Petcu PhD), Bucharest University of Economic Studies, Bucharest, Romania; School of Nursing and Midwifery (A Ansar PhD), The Judith Lumley Centre (B Ayala Quintanilla PhD), Centre for Alcohol

Policy Research (CAPR) (M B Marzan MSc), La Trobe University, Melbourne, VIC, Australia; Special Interest Group International Health (A Ansar PhD), Public Health Association of Australia, Canberra, ACT, Australia; Department of Parasitology (D Anvari PhD), Iranshahr University of Medical Sciences, Iranshahr, Iran; Department of Pathology (R Anwer PhD), Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia; Department of Social Sciences (F Appiah MPhil), Berekum College of Education, Berekum, Ghana; School of Public Health (F Appiah MPhil), Kwame Nkrumah University of Science and Technology, Kumasi, Ghana; Social Determinants of Health Research Center (M Arab-Zozani PhD), Faculty of Medicine (A Moodi Ghalibaf MD), Department of Epidemiology and Biostatistics (A Tiyuri PhD), Birjand University of Medical Sciences, Birjand, Iran; Department of Health Metrics Sciences, School of Medicine (A Y Aravkin PhD, Prof R Dandona PhD, N J Kassebaum MD), Department of Family Medicine (M A Dirac MD), University of Washington, Seattle, WA, USA (A Y Aravkin PhD, M A Dirac MD, Prof R Dandona PhD, N J Kassebaum MD); College of Art and Science (D Areda PhD), Ottawa University, Surprise, AZ, USA; School of Life Sciences (D Areda PhD), Arizona State University, Tempe, AZ, USA; College of Medicine and Health Sciences (B B Aregawi PhD), Department of Medical Laboratory Sciences (H N Meles MSc), Adigrat University, Adigrat, Ethiopia; Institute for Biomedical Problems (A A Artamonov PhD), K.A. Timiryazev Institute of Plant Physiology (M V Titova PhD), Russian Academy of Sciences, Moscow, Russia; Department of Research (U R Aryal PhD), Nepal Health Research Council, Kathmandu, Nepal; Research Center for Biochemistry and Nutrition in Metabolic Diseases (Z Asemi PhD), Kashan University of Medical Sciences, Kashan, Iran; Department of Public Health (M T Asemu MSc, A M Dessie MPH), Department of Comprehensive Nursing (B B Bantie MSc), Debre Tabor University, Debre Tabor, Ethiopia; Department of Environmental Health (A A Asgedom PhD), Department of Biostatistics (K Gezae MSc), School of Public Health (G G Meles MPH), Department of Medical Biochemistry and Molecular Biology (W B Tesfamariam MSc), Mekelle University, Mekelle, Ethiopia; University Institute of Radiological Sciences and Medical Imaging Technology (T Ashraf MS), Institute of Molecular Biology and Biotechnology (S Shahid PhD), Research Centre for Health Sciences (RCHS) (S Shahid PhD), The University of Lahore, Lahore, Pakistan; Department of Biomedical Science (D Atlaw MSc), Madda Walabu University, Bale Robe, Ethiopia; Faculty of Nursing (M M W Atout PhD), Philadelphia University, Amman, Jordan; Department of Forensic Medicine (A Atreya MD), Lumbini Medical College, Palpa, Nepal; Department of Social Welfare (M S Atteraya PhD), Keimyung University, Daegu, South Korea; Northumbria HealthCare NHS Foundation Trust, Newcastle upon Tyne, UK (A Aujayeb MBBS); Universidad de San Martín de Porres, Lima, Peru (B Ayala Quintanilla PhD); Health Management and Economics Research Center (H Ayatollahi PhD), Department of Health Information Management (H Ayatollahi PhD), Preventive Medicine and Public Health Research Center (B Eshtrati PhD), Minimally Invasive Surgery Research Center (A Kabir MD), Eye Research Center (H Kasraei MD), Research Center of Pediatric Infectious Diseases (F Khamesipour PhD), Department of Anesthesiology (K Latifinaibin MD), Center for Technology and Innovation in Cardiovascular Informatics (S Shool MD), Trauma and Injury Research Center (M Taheri PhD), Department of Epidemiology and Biostatistics (A Tiyuri PhD), Iran University of Medical Sciences, Tehran, Iran; Leeds Institute of Rheumatic and Musculoskeletal Medicine (S Azadnajafabad MD), University of Leeds, Leeds, UK; Department of Sciences (Prof R M S Azevedo PhD), Cooperativa de Ensino Superior Politécnico e Universitário (Polytechnic and University Higher Education Cooperative), Gandra, Portugal; ASIDE Healthcare, Lewes, DE, USA (A Azzam MD); Faculty of Medicine (A Azzam MD), October 6 University, 6th of October City, Egypt; Kasturba Medical College, Mangalore (D B B MD, R Holla MD), Department of Pharmaceutical Regulatory Affairs and Management (V S Ligade PhD), Department of Community Medicine (C R Rao MD), Manipal Academy of Higher Education, Manipal, India (H L Dsouza MD); Department of Medicine (M Babaei MD), Division of Pediatric Hospital Medicine (R P Mediratta MD), Stanford University, Palo Alto, CA, USA; Gomal Center of Biochemistry and Biotechnology (M Badar PhD), Gomal University, Dera Ismail Khan, Pakistan; Department of Forensic Science (A D Badiye PhD), Government Institute of Forensic Science Nagpur, Nagpur, India; Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, India (A D Badiye PhD); Department of Nursing (N Baghcheghi PhD), Social Determinants of Health Research Center (H Koohestani PhD), Saveh University of Medical Sciences, Saveh, Iran; Orthopedic Institute for Children, Los Angeles, CA, USA (S Baghdadi MD); Health Research Institute (Prof N Bagheri PhD), University of Canberra, Canberra, ACT, Australia; School of Medicine (S Bagherieh BSc, N Javadi MD), Department of Pediatrics (N Javadi MD), Department of Epidemiology and Biostatistics (K Mehrabani-Zeinabad PhD), Isfahan University of Medical Sciences, Isfahan, Iran; Department of Environmental Health Engineering (F Bahrami Asl PhD), Urmia University of Medical Sciences, Urmia, Iran (R Valizadeh PhD); School of Public Affairs (R Bai MD), Nanjing University of Information Science and Technology, Nanjing, China; Maternal and Child Health Unit (R K Bakshi MD), Indian Council of Medical Research, New Delhi, India (D K Lal MD); Department of Medicine (K Bam MPH), School of Nursing and Midwifery (D Bhandari PhD), Department of Anatomy and Developmental Biology (Y Mathangasinghe PhD), Monash University, Clayton, VIC, Australia; Department of Hypertension (Prof M Banach PhD), Medical University of Lodz, Lodz, Poland; Polish Mothers' Memorial Hospital Research Institute, Lodz, Poland (Prof M Banach PhD); Infectious Disease Epidemiology (A Banke-Thomas PhD), Department of Clinical Research (S Bhattarai MD), Department of Non-Communicable Disease Epidemiology (M Iwagami PhD), Medical Statistics Department (S Shivalli MD), London School of Hygiene & Tropical Medicine, London, UK; Department of Human Sciences (A Banke-Thomas PhD), University of Greenwich, London, UK; Department of Forensic Science (H Bansal MSc), Government Institute of Forensic Science, Nagpur, India; Miller School of Medicine (M Bardhan MD), University of Miami, Miami, FL, USA; Health Information Management (A Bashiri PhD), Student Research Committee (A Faramarzi MD), Department of Otolaryngology (A Faramarzi MD), Maternal Fetal Medicine Research Center (K Hessami MD), Basic Science Laboratory (F Iravanpour PhD), Health Policy Research Center (H Kasraei MD, Y Sarikhani PhD), Department of Epidemiology and Biostatistics (H Raeisi Shahraki PhD), Non-communicable Disease Research Center (S G Sepanlou MD), Basic Sciences in Infectious Diseases Research Center (R Tavakoli Oliaee PhD), Shiraz University of Medical Sciences, Shiraz, Iran; Department of Veterinary Physiology and Biochemistry (A Basiru PhD), University of Ilorin, Ilorin, Nigeria; Department of Community Medicine (P Baskaran MD), Sri Manakula Vinayagar Medical College and Hospital, Puducherry, Puducherry, India; Department of Medical Education (K Batra PhD), Department of Social and Behavioral Health (Prof M Sharma PhD), University of Nevada Las Vegas, Las Vegas, NV, USA; School of Dentistry (M Bayani DMD), Arak University of Medical Sciences, Arak, Iran; Department of Surgery (N S Bayleyegn MD), Department of Midwifery (B A Mizana MSc), Jimma University, Jimma, Ethiopia; School of Public Health (Prof N Bedi MD), Dr. D.Y. Patil Vidyapeeth, Mumbai, India; Department of Epidemiology (M Khan MD), College of Nursing and Health Sciences (M Shanawaz MD), Jazan University, Jazan, Saudi Arabia (Prof N Bedi MD); Center of Research Excellence in Stillbirth (T Begum PhD), Institute for Social Science Research (M Huda PhD), School of Public Health (J C Maravilla PhD), The University of Queensland, Brisbane, QLD, Australia (M Moni PhD); Health System and Population Studies Division (T Begum PhD), International Center for Diarrhoeal Disease Research, Dhaka, Bangladesh; Department of Epidemiology (S Nejadghaderi MD, H Soleimani MD), Non-Communicable Diseases Research Center (NCDRC), Tehran, Iran (A Behnouth BS); Department of Oral Pathology and Microbiology (U I Belgaumi MD), Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, India; Department of Epidemiology and Biostatistics (A C Bermudez MD), University of the Philippines Manila, Manila, Philippines; Department of Epidemiology (A C Bermudez MD), Brown University, Providence, RI, USA; Department of Pharmaceutical and Administrative Sciences (K A Beyene PhD), University of Health Sciences and Pharmacy in St. Louis, St. Louis, MO, USA; School of Pharmacy (K A Beyene PhD), University of Auckland, Auckland, New

Zealand; Department of Physiology (B Bhandari MD), Government Institute of Medical Sciences, Greater Noida, India; School of Public Health (D Bhandari PhD), The University of Adelaide, Adelaide, SA, Australia; Department of Anatomy (N Bhardwaj MD), Department of Community Medicine and Family Medicine (Prof P Bhardwaj MD, Prof P Raghav MD), School of Public Health (Prof P Bhardwaj MD), Department of Pharmacology (J Charan MD, S Singh MD, S B Varthya MD), Department of Surgical Oncology (Prof S Misra MCh), All India Institute of Medical Sciences, Jodhpur, India; Global Health Neurology Lab (S Bhaskar MD), NSW Brain Clot Bank, Sydney, NSW, Australia; Division of Cerebrovascular Medicine and Neurology (S Bhaskar MD), National Cerebral and Cardiovascular Center, Suita, Japan; Global Health Division (S Bhattarai MD), Global Health Research and Medical Interventions for Development, Kathmandu, Nepal; School of Business Administration (Prof V Bodolica PhD), American University of Sharjah, Sharjah, United Arab Emirates; Department of Epidemiology (D Braithwaite PhD), University of Florida, Gainesville, FL, USA; Cancer Population Sciences Program (D Braithwaite PhD), University of Florida Health Cancer Center, Gainesville, FL, USA; Division of Clinical Epidemiology and Aging Research (Prof H Brenner MD), German Cancer Research Center, Heidelberg, Germany; School of Pharmacy (Prof Y Bustanji PhD), The University of Jordan, Amman, Jordan; Department of Family and Community Medicine (Prof N S Butt PhD), Rabigh Faculty of Medicine (Prof A Malik PhD), King Abdulaziz University, Jeddah, Saudi Arabia; School of Public Health Sciences (Z A Butt PhD), University of Waterloo, Waterloo, ON, Canada; Al Shifa School of Public Health (Z A Butt PhD), Al Shifa Trust Eye Hospital, Rawalpindi, Pakistan; Department of Family Medicine (A Cadri MPH), McGill University, Montreal, QC, Canada; Department of Public Health (A Cadri MPH), University of Ghana, Accra, Ghana; Center for Nutrition and Health Research (I Campos-Nonato PhD), Center for Health Systems Research (D V Ortega-Altamirano EdD), National Institute of Public Health, Cuernavaca, Mexico; Department of Public Health and Infectious Diseases (M S Cattaruzza PhD), La Sapienza University, Rome, Italy; Department of Nutrition (Prof F Cembranel DSc), Federal University of Santa Catarina, Florianópolis, Brazil; Mary MacKillop Institute for Health Research (Prof E Cerin PhD), Australian Catholic University, Melbourne, VIC, Australia; School of Public Health (Prof E Cerin PhD), Centre for Suicide Research and Prevention (Prof P Yip PhD), Department of Social Work and Social Administration (Prof P Yip PhD), University of Hong Kong, Hong Kong Special Administrative Region, China; Carolina Health Informatics Program (P Chacón-Uscamaita DDS), University of North Carolina Chapel Hill, Chapel Hill, NC, USA; Temerty Faculty of Medicine (V Chattu MD), University of Toronto, Toronto, ON, Canada; Department of Community Medicine (V Chattu MD), Datta Meghe Institute of Medical Sciences, Sawangi, India; Department of Orthopaedic Surgery (D Chauhan BS), Oakland University William Beaumont School of Medicine, Auburn Hills, MI, USA; Department of Orthopaedic Surgery (D Chauhan BS), Henry Ford Health System, Detroit, MI, USA; School of Public Health (M P Chavula MPH), University of Zambia, Lusaka, Zambia; Department of Epidemiology and Global Health (M P Chavula MPH), Umeå University, Umeå, Sweden; Heidelberg Institute of Global Health (HIGH) (S Chen DSc, Prof S Mohammed PhD), Heidelberg University, Heidelberg, Germany; Iraq Field Epidemiology Training Program (I-FETP) (A Chitheer MD), Ministry of Health, Baghdad, Iraq; Department of Clinical Oncology (W C S Cho PhD), Queen Elizabeth Hospital, Hong Kong Special Administrative Region, China; Department of Community Medicine (Prof S G Choudhari MD), Jawaharlal Nehru Medical College, Wardha, India; The Interdisciplinary Research Group on Biomedicine and Health (D Chu PhD), Faculty of Applied Sciences (D Chu PhD), VNU International School (VNUIS), Hanoi, Viet Nam; Department of Diagnostic and Therapeutic Technologies (Prof N Cruz-Martins PhD), Cooperativa de Ensino Superior Politécnico e Universitário (Polytechnic and University Higher Education Cooperative), Vila Nova de Famalicão, Portugal; Institute for Research and Innovation in Health (i3S) (Prof N Cruz-Martins PhD), Research Unit on Applied Molecular Biosciences (UCIBIO) (J Silva PhD), University of Porto, Porto, Portugal; Department of Global Public Health and Primary Care (O Dadrás PhD), Department of Psychosocial Science (Prof D Sagoe PhD), University of Bergen, Bergen, Norway; Public Health Foundation of India, Gurugram, India (Prof L Dandona MD, G Kumar PhD, Prof R Dandona PhD); Indian Council of Medical Research, New Delhi (Prof L Dandona MD); India, (Prof L Dandona MD); Department of Information Technology (A M Darwesh PhD), University of Human Development, Sulaymaniyah, Iraq; Division of Women and Child Health (J K Das MD), Aga Khan University, Karachi, Pakistan; Department of Biochemistry (S Das MD), Ministry of Health and Welfare, New Delhi, India; Department of Population and Development (C A Dávila-Cervantes PhD), Latin American Faculty of Social Sciences Mexico, Mexico City, Mexico; Health Research Institute (Prof K Davletov PhD), Director of the Scientific and Technological Park (I R Fakhradiyev PhD), Kazakh National Medical University, Almaty, Kazakhstan; Department of Health Policy and Management (A T Debele MSc), Department of Psychiatry (M T Walde MSc), Haramaya University, Harar, Ethiopia; Department of Nursing (M Derese MSc), Mizan-Tepi University, Mizan-Aman, Ethiopia; Wellcome Trust Brighton and Sussex Centre for Global Health Research (K Deribe PhD), Brighton and Sussex Medical School, Brighton, UK; School of Public Health (K Deribe PhD), Addis Ababa University, Addis Ababa, Ethiopia; Department of Forensic Medicine (E Dervišević PhD), University of Sarajevo, Sarajevo, Bosnia and Herzegovina; Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK (A Dhali MBBS); The Zena and Michael A. Wiener Cardiovascular Institute (V R Dhulipala MD), Icahn School of Medicine at Mount Sinai, New York, NY, USA; School of Elderly Care Services and Management (W Dong MD), Nanjing University of Chinese Medicine, Nanjing, China; Department of Midwifery (B T Dora MSc, H L Esayas MSc), School of Public Health (N Sidamo PhD), Arba Minch University, Arba Minch, Ethiopia; Department of Forensic Medicine and Toxicology (H L Dsouza MD), Kasturba Medical College Mangalore, Mangalore, India; School of Medicine (Prof A R Duraes PhD), Institute of Collective Health (Prof M Pereira PhD, Prof D Rasella PhD), Federal University of Bahia, Salvador, Brazil; Department of Internal Medicine (Prof A R Duraes PhD), Escola Bahiana de Medicina e Saúde Pública (Bahiana School of Medicine and Public Health), Salvador, Brazil; College of Medicine (S Dutta PhD), Ajman University, Ajman, United Arab Emirates; Department of Conservative Dentistry with Endodontics (A M Dziedzic DSc), Medical University of Silesia, Katowice, Poland; Higher School of Technology (Prof A Ed-Dra PhD), Sultan Moulay Slimane University, Beni Mellal, Morocco; School of Nursing and Midwifery (K Edvardsson PhD), La Trobe University, Bundoora, VIC, Australia; Private Orthodontist, Ahvaz, Iran (E Eini MSD); Faculty of Science and Health (M Ekholuenetale PhD), University of Portsmouth, Hampshire, UK; Department of Clinical Pathology (Prof M El Sayed Zaki PhD, Prof M Elshaer PhD), Faculty of Pharmacy (Prof M A Saleh PhD), Rheumatology and Immunology Unit (Prof S Tharwat MD), Mansoura University, Mansoura, Egypt; Division of Cardiovascular Medicine (I Y Elgendy MD), University of Kentucky, Lexington, KY, USA; Faculty of Medicine (M Elhadi MD), University of Tripoli, Tripoli, Libya; Houston Methodist Hospital, Houston, TX, USA (M Elhadi MD); Department of Infectious Diseases and Public Health (I Elsohaby PhD, G Fekadu PhD), City University of Hong Kong, Hong Kong Special Administrative Region, China; Department of Animal Medicine (I Elsohaby PhD), Cardiovascular Department (Prof A M A Saad MD), Zagazig University, Zagazig, Egypt; Department of Public Health and Tropical Medicine (T I Emeto PhD), James Cook University, Townsville, QLD, Australia (K O Obamiro PhD); Lincoln International Institute for Rural Health (L Engelbert Bain PhD), University of Lincoln, Lincoln, UK; Department of Biomedical and Neuromotor Sciences (DIBINEM) (F Esposito MD, J Lenzi PhD), Department of Biomedical and Neuromotor Sciences (S Guicciardi MD), Department of Medical and Surgical Sciences (Prof F S Violante MD), University of Bologna, Bologna, Italy; Research Centre for Healthcare and Community (A F Fagbamigbe PhD), Faculty of Health and Life Sciences (O P Kurmi PhD), Coventry University, Coventry, UK; Department of Psychology (A Faro PhD), Federal University of Sergipe, São Cristóvão, Brazil; School of Engineering (A Fatehizadeh PhD), Edith Cowan University, Joondalup, WA, Australia; Department of Pharmacy (G Fekadu PhD), Wollega University, Nekemte, Ethiopia; Institute of Public Health (F Fischer PhD), Charité Medical University Berlin,

Berlin, Germany; Department of Cell Biology and Biotechnology (A A Fomenkov PhD), K.A. Timiryazev Institute of Plant Physiology, Moscow, Russia; Department of Dermatology (T Fukumoto PhD), Kobe University, Kobe, Japan; Health Services Management Training Centre (Prof P A Gaal PhD), Semmelweis University, Budapest, Hungary; Department of Applied Social Sciences (Prof P A Gaal PhD), Sapientia Hungarian University of Transylvania, Târgu-Mureş, Romania; Department of Community Medicine (Prof A M Gaidhane MD), Datta Meghe Institute of Medical Sciences, Wardha, India; Department of Oral Biology and Experimental Dental Research (M Gajdacs PhD), University of Szeged, Szeged, Hungary; Department of Food Technology (Y Galali ResM), Salahaddin University-Erbil, Erbil, Iraq; Department of Nutrition and Dietetics (Y Galali ResM), Cihan University-Erbil, Erbil, Iraq; Department of Medical Epidemiology (S Gallus PhD), Mario Negri Institute for Pharmacological Research, Milan, Italy; Institute of Health and Wellbeing (B Ganesan PhD), Federation University Australia, Churchill, VIC, Australia; Institute and Faculty of Actuaries, London, UK (F Gazzelloni BSc); Department of Environmental Health (M Gebrehiwot DSc), Wollo University, Dessie, Ethiopia; School of Nursing and Midwifery (A T Gebremedhin MPH), Edith Cowan University, Perth, WA, Australia; School of Population Health (A T Gebremedhin MPH), Curtin University, Perth, WA, Australia; Department of Reproductive and Family Health (T G Gebremeskel PhD), Axum College of Health Science, Axum, Ethiopia; College of Medicine and Public Health (T G Gebremeskel PhD), Department of Nursing and Health Sciences (S Shorofi PhD), Flinders University, Adelaide, SA, Australia; Department of Midwifery (Y F Geda MSc), Wolkite University, Wolkite, Ethiopia; Family and Community Medicine Department (R M Ghazy PhD), King Khalid University, Abha, Saudi Arabia; Department of Statistics (G Gheno PhD), Ronin Institute, Montclair, NJ, USA; Department of Epidemiology and Prevention (A Gialluisi PhD), IRCCS Neuromed, Pozzilli, Italy; Information Services Department (Prof M Gissler PhD), THL Finnish Institute for Health and Welfare, Helsinki, Finland; Department of Neurobiology, Care Sciences, and Society (Prof M Gissler PhD), Karolinska Institute, Sweden, Sweden; NIHR Global Health Research Unit on Global Surgery (J C Glasbey MSc), Institute of Applied Health Research (K Malhotra MBBS), University of Birmingham, Birmingham, UK; National Human Genome Research Institute (L M Glasstetter BS), National Institute of Health, Bethesda, MD, USA; Department of Health Systems and Policy Research (Prof M Golechha PhD), Indian Institute of Public Health, Gandhinagar, India; Department of Genetics (P Goleij MSc), Sana Institute of Higher Education, Sari, Iran; Universal Scientific Education and Research Network (USERN) (P Goleij MSc), Kermanshah University of Medical Sciences, Kermanshah, Iran; Department of Life Sciences, Health and Healthcare Professions (Prof D Golinelli MD), Link Campus University, Rome, Italy; Health Services Research, Evaluation and Policy Unit (Prof D Golinelli MD), AUSL della Romagna, Ravenna, Italy; Department of Public Health and Preventive Medicine (Prof M Grivna PhD), Charles University, Prague, Czech Republic; Harrington Heart and Vascular Institute (A Guha MD), Department of Quantitative Health Science (X Liu PhD), Department of Pediatrics (A Thavamani MD), Division of Pediatric Gastroenterology (A Thavamani MD), Case Western Reserve University, Cleveland, OH, USA; Division of Cardiovascular Medicine (A Guha MD), Ohio State University, Columbus, OH, USA; Department of the Health Directorate (S Guicciardi MD), Local Health Authority of Bologna, Bologna, Italy; Department of Toxicology (S Gupta MSc), Shriram Institute for Industrial Research, Delhi, India; School of Medicine (V Gupta PhD), Deakin University, Geelong, VIC, Australia; Faculty of Medicine Health and Human Sciences (Prof V K Gupta PhD), Australian Institute of Health Innovation (P Praph MSc), Macquarie University, Sydney, NSW, Australia; Department of Infectious Disease Epidemiology (S Haller MD), Robert Koch Institute, Berlin, Germany; Department of Public Health (S Haller MD), Charité Institute of Public Health, Berlin, Germany; School of Health and Environmental Studies (Prof S Hamidi DrPH), Hamdan Bin Mohammed Smart University, Dubai, United Arab Emirates; Department of Epidemiology (A J Handal PhD), University of Michigan School of Public Health, Ann Arbor, MI, USA; Research Unit (J M Haro MD), Parc Sanitari Sant Joan de Deu, Barcelona, Spain; Department of Mental Health (J M Haro MD),

Carlos III Health Institute (Prof R Tabarés-Seisdedos PhD), Biomedical Research Networking Center for Mental Health Network (CiberSAM), Madrid, Spain; University of Tulsa College of Law (N N Hartman BS), University of Tulsa, Tulsa, OK, USA; Department of Economics & Statistics (N N Hartman BS), Department of Anesthesiology (V Krishnamoorthy MD), Duke University, Durham, NC, USA; Biomedical Engineering Department (T Hasan PhD), Bangladesh University of Engineering and Technology, Dhaka, Bangladesh; Department of Medical Surgical (Prof A Hasanpour-Dehkordi PhD), Shahrood University of Medical Sciences, Shahrood, Iran; Department of Pharmacy (Prof M S Hasnain PhD), Marwadi University, Rajkot, India; Gastrointestinal and Liver Diseases Research Center (S Hassanipour PhD), Caspian Digestive Disease Research Center (S Hassanipour PhD), Department of Environmental Health Engineering (J Jaafari PhD), Guilan University of Medical Sciences, Rasht, Iran; Departamento de Salud Oral (Department of Oral Health) (B Y Herrera-Serna PhD), Universidad Autónoma de Manizales (Autonomous University of Manizales), Manizales, Colombia; Babes-Bolyai University, Cluj-Napoca, Romania (Prof C Herteliu PhD); Department of Microbiology (K Hezam PhD), Faculty of Applied Sciences (E A Noman PhD), Taiz University, Taiz, Yemen; School of Medicine (K Hezam PhD), Nankai University, Tianjin, China; Graduate School of Medicine (Y Hiraike PhD), Department of Global Health Policy (Prof S Nomura PhD), University of Tokyo, Tokyo, Japan; Department of Decision and Information Sciences (M Hossain DrPH), University of Houston, Houston, TX, USA; Public Health Research Group (M Hossain DrPH), Nature Study Society of Bangladesh, Khulna, Bangladesh; School of Health and Society (H Hosseinzadeh PhD), University of Wollongong, Wollongong, NSW, Australia; School of Computer Science (Prof M Hosseinzadeh PhD), Faculty of Medicine (H T H Nguyen MD), Institute for Research and Training in Medicine, Biology and Pharmacy (H T H Nguyen MD), Duy Tan University, Da Nang, Viet Nam; Jadara University Research Center (Prof M Hosseinzadeh PhD), Jadara University, Irbid, Jordan; Department of Clinical Legal Medicine (Prof S Hostiuć PhD), National Institute of Legal Medicine Mina Minovici, Bucharest, Romania; Department of Psychology (C Hu PhD), Tsinghua University, Beijing, China; Faculty of Medicine (J Huang MD), Jockey Club School of Public Health and Primary Care (C Zhong PhD), The Chinese University of Hong Kong, Hong Kong Special Administrative Region, China; Rural Health Research Institute (M Huda PhD, Prof J Sun PhD), Charles Sturt University, Orange, NSW, Australia; Research Division (M Huda PhD), ARCED Foundation, Dhaka, Bangladesh; International Master Program for Translational Science (H Huynh BS), Department of Global Health and Health Security (K Latief PhD), International Ph.D. Program in Medicine (L Minh MD), Research Center for Artificial Intelligence in Medicine (L Minh MD), Taipei Medical University, Taipei, Taiwan; Department of Occupational Safety and Health (Prof B Hwang PhD), China Medical University, Taichung, Taiwan; Department of Occupational Therapy (Prof B Hwang PhD), Asia University, Taichung, Taiwan; Health Policy and Management Department (P M Ifikhar MD), City University of New York, New York, NY, USA; West Africa RCC (O S Ilesanmi PhD), Africa Centre for Disease Control and Prevention, Abuja, Nigeria; Department of Community Medicine (O S Ilesanmi PhD), Department of Medicine (Prof M O Owolabi DrM), University College Hospital, Ibadan, Nigeria; Faculty of Medicine (I M Ilic PhD), University of Belgrade, Belgrade, Serbia; Faculty of Medical Sciences (Prof M D Ilic PhD), University of Kragujevac, Kragujevac, Serbia; Department of Health Services Research (M Iwagami PhD), University of Tsukuba, Tsukuba, Japan; Department of Nursing (A N Iyasu MSc), Aksum University, Aksum, Ethiopia; Department of Immunology (Prof A Jafarzadeh PhD), HIV/STI Surveillance Research Center (S Nejadghaderi MD), Applied Cellular and Molecular Research Center (M Nematollahi PhD), Kerman University of Medical Sciences, Kerman, Iran; Department of Immunology (Prof A Jafarzadeh PhD), Department of Epidemiology and Biostatistics (Prof M Rezaeian PhD), Rafsanjan University of Medical Sciences, Rafsanjan, Iran; College of Medicine and Medical Sciences (H Jahrami PhD), Arabian Gulf University, Manama, Bahrain; Ministry of Health, Manama, Bahrain (H Jahrami PhD); School of Pharmaceutical Management (Prof M D Janodia PhD), IIHMR

- University, Jaipur, India; Health Informatic Lab (T Javaheri PhD), Department of Computer Science (R Rawassizadeh PhD), Boston University, Boston, MA, USA; Centre of Studies and Research (S Jayapal PhD), Ministry of Health, Muscat, Oman; Department of Public Health (A Jema MPH), Madda Walabu University, Goba, Ethiopia; Faculty of Veterinary Medicine (M Jokar DVM), Department of Oncology (L Yang PhD), University of Calgary, Calgary, AB, Canada; Young Researchers and Elite Club (M Jokar DVM), Islamic Azad University, Karaj, Iran; Department of Community Medicine (N Joseph MD), Department of Forensic Medicine and Toxicology (Prof J Padubidri MD), Prof B K Shetty MD, P H Shetty MD), Department of Obstetrics and Gynaecology (A Shetty MS), Manipal Academy of Higher Education, Mangalore, India; Department of Economics (C E Joshua BSc), National Open University, Benin City, Nigeria; Institute of Family Medicine and Public Health (M Jürisson PhD), University of Tartu, Tartu, Estonia; School of Public Health (Z Kabir PhD), University College Cork, Cork, Ireland; School of Health Professions and Human Services (I M Karaye MD), Hofstra University, Hempstead, NY, USA; Department of Anesthesiology (I M Karaye MD), Montefiore Medical Center, Bronx, NY, USA; Surgery Research Unit (Prof J H Kaupilla MD), University of Oulu, Oulu, Finland; Department of Health Sciences and Biostatistics (E S Kendal PhD), Swinburne University of Technology, Hawthorn, VIC, Australia; College of Health Sciences (N Khalid PhD), Abu Dhabi University, Adu Dhabi, United Arab Emirates; Halal Research Center of the Islamic Republic of Iran (IRI) (F Khamesipour PhD), Iran Food and Drug Administration, Tehran, Iran; Population Science Department (M Khan PhD), Jatiya Kabi Kazi Nazrul Islam University, Mymensingh, Bangladesh; Department of Clinical Pharmacy (Y H Khan PhD, T Mallhi PhD), Jouf University, Sakaka, Saudi Arabia; College of Health, Wellbeing and Life Sciences (Prof K Khatab PhD), Sheffield Hallam University, Sheffield, UK; College of Arts and Sciences (Prof K Khatab PhD), Ohio University, Zanesville, OH, USA; Faculty of Nursing (H Khatatbeh PhD), Department of Basic Medical Sciences (Prof M M Khatatbeh PhD), Yarmouk University, Irbid, Jordan; School of Medicine (S Khateri MD), Kurdistan University of Medical Sciences, Sanandaj, Iran; Broad Institute of MIT and Harvard, Cambridge, MA, USA (M Kim MD); Division of Cardiology (D H Nguyen BS), Cardiovascular Research Center (A Schuermans BSc), Massachusetts General Hospital, Boston, MA, USA (M Kim MD); Department of Epidemiology (T V Kim MD), Pham Ngoc Thach University of Medicine, Ho Chi Minh City, Viet Nam; Center of Excellence for Liver Disease in Viet Nam (T V Kim MD), Johns Hopkins University, Ho Chi Minh City, Viet Nam; School of Traditional Chinese Medicine (Y Kim PhD), Xiamen University Malaysia, Sepang, Malaysia; Millennium Prevention, Westwood, MA, USA (R W Kimokoti MD); School of Health Sciences (Prof A Kisa PhD), Kristiania University College, Oslo, Norway; Department of International Health and Sustainable Development (Prof A Kisa PhD), Tulane University, New Orleans, LA, USA; Department of Nursing and Health Promotion (S Kisa PhD), Oslo Metropolitan University, Oslo, Norway; Global Healthcare Consulting, New Delhi, India (S Kochhar MD); Independent Consultant, Jakarta, Indonesia (S Kosen MD); San Juan de Dios Sanitary Park, Barcelona, Spain (A Koyanagi MD); Department of Anthropology (Prof K Krishan PhD), Panjab University, Chandigarh, India; Department of Demography (Prof B Kuate Defo PhD), Department of Social and Preventive Medicine (Prof B Kuate Defo PhD), University of Montreal, Montreal, QC, Canada; Department of Biotechnology (R H Kuchay PhD), Baba Ghulam Shah Badshah University, Jammu and Kashmir, India; Department of Biochemistry (Prof M Kuddus PhD), University of Hail, Hail, Saudi Arabia; Department of Medicine (O P Kurmi PhD), Department of Psychiatry and Behavioural Neurosciences (A T Olagunju MD), McMaster University, Hamilton, ON, Canada; Department of Clinical Sciences and Community Health (Prof C La Vecchia MD), University of Milan, Milan, Italy; Nuffield Department of Population Health (B Lacey DPhil), University of Oxford, Oxford, UK; National Institute for Health Research (NIHR) Oxford Biomedical Research Centre, Oxford, UK (B Lacey DPhil); Integrated Department of Epidemiology, Health Policy, Preventive Medicine and Pediatrics (Prof C Lahariya MD), Foundation for People-centric Health Systems, New Delhi, India; Centre for Health: The Specialty Practice, New Delhi, India (Prof C Lahariya MD); Department of Physiotherapy (T Laksono MS), Universitas Aisyiyah Yogyakarta, Yogyakarta, Indonesia; Institute of Allied Health Sciences (T Laksono MS), National Cheng Kung University, Tainan, Taiwan; Department of Otorhinolaryngology (S Lasrado MS), Father Muller Medical College, Mangalore, India; Centre for Family Welfare (K Latief PhD), University of Indonesia, Depok, Indonesia; University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Viet Nam (T T Le MD); Department of Medical Science (M Lee PhD), Ajou University School of Medicine, Suwon, South Korea; Pattern Recognition and Machine Learning Lab (Prof S Lee PhD), Gachon University, Seongnam, South Korea; Department of Family Medicine (W Lee PhD), University of Texas Medical Branch, Galveston, TX, USA; Department of Preventive Medicine (Prof Y Lee PhD), Korea University, Seoul, South Korea; Department of Health Promotion and Health Education (M Li PhD), National Taiwan Normal University, Taipei, Taiwan; Department of Epidemiology and Biostatistics (Prof J Liu PhD), Institute of Child and Adolescent Health (Y Song PhD), School of Public Health (H Zhang MS), Peking University, Beijing, China; Department of Health Economics (L Lorenzovici MSc), Syreon Research Romania, Targu Mures, Romania; Department of Doctoral Studies (L Lorenzovici MSc), George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Targu Mures, Romania; Department of Surgery (A M Afifi MD), Baylor College of Medicine, Toledo, OH, USA; Toxicology Research Unit (TOXRUN) (Á M Madureira-Carvalho PhD), Cooperativa de Ensino Superior Politécnico e Universitário (CESPU) (University Polytechnic Higher Education Cooperative), Gandra, Portugal; Laboratório de Farmacognosia (LAQV) (Associated Laboratory for Green Chemistry (Á M Madureira-Carvalho PhD), Universidade do Porto (University of Porto), Porto, Portugal; Department of Women and Children's Health (Prof L A Magee MD), School of Life Course and Population Sciences (Prof Y Wang PhD), King's College London, London, UK; Department of Obstetrics and Gynaecology (Prof L A Magee MD), School of Nursing (A Pashaei MSc), University of British Columbia, Vancouver, BC, Canada; Department of Primary Care and Public Health (Prof A Majeed MD), Imperial College London, London, UK; Rama Medical College Hospital and Research Centre, Uttar Pradesh, India (K Malhotra MBBS); Department of Electrical Engineering (I Malik PhD), Department of Health and Rehabilitation Sciences (Prof G Nambi PhD), Prince Sattam bin Abdulaziz University, Al Kharj, Saudi Arabia; Far Eastern University, Manila, Philippines (J C Maravilla PhD); Faculty of Public Health (Prof S Martini PhD), Universitas Airlangga (University of Airlangga), Surabaya, Indonesia; Indonesian Public Health Association, Surabaya, Indonesia (Prof S Martini PhD); Campus Fortaleza (F R Martins-Melo PhD), Federal Institute of Education, Science and Technology of Ceará, Fortaleza, Brazil; Department of Nutrition and Dietetics (M Martorell PhD), Centre for Healthy Living (M Martorell PhD), University of Concepción, Concepción, Chile; Department of Anatomy, Genetics and Biomedical Informatics (Y Mathangasinghe PhD), University of Colombo, Colombo, Sri Lanka; Department of Social Medicine (R Mattiello PhD), Federal University of Rio Grande do Sul, Porto Alegre, Brazil; Department of Social Medicine and Family (M Mazaheri PhD), Dezfoul University of Medical Sciences, Dezfoul, Iran; Department of Medical Oncology and Hematology (M A Mendez-Lopez PhD), Kantonsspital St. Gallen, St. Gallen, Switzerland; Universidad Nacional Mayor de San Marcos, Lima, Peru (W Mendoza MD); General Administration Department (A Meretoja MD), Comprehensive Cancer Center (T J Meretoja MD), Helsinki University Hospital, Helsinki, Finland; School of Health Sciences (A Meretoja MD), University of Melbourne, Melbourne, VIC, Australia; University of Helsinki, Helsinki, Finland (T J Meretoja MD); National Cancer Registry (I Michalek PhD), Department of Pathology (I Michalek PhD), Maria Skłodowska-Curie National Research Institute of Oncology, Warsaw, Poland; Faculty of Nursing and Midwifery (Prof M Mirghafourvand PhD), Social Determinants of Health Research Center (Prof S Mohammad-Alizadeh-Charandabi PhD), Midwifery Department (Prof S Mohammad-Alizadeh-Charandabi PhD), Tabriz University of Medical Sciences, Tabriz, Iran; Internal Medicine Programme (Prof E M Mirrakhimov PhD), Kyrgyz State Medical Academy, Bishkek, Kyrgyzstan; Department of Atherosclerosis and Coronary Heart Disease (Prof E M Mirrakhimov PhD), National Center

of Cardiology and Internal Disease, Bishkek, Kyrgyzstan; Department of Hospital Administration (M Mirza MD), Department of Community Medicine and Family Medicine (S S Sahoo MD), Department of Radiodiagnosis (P Singh MD), All India Institute of Medical Sciences, Bathinda, India; Department of Epidemiology and Biostatistics (E Mishio Bawa MPHIL), University of South Carolina, Columbia, SC, USA; Molecular Biology Unit (N S Mohamed MSc), Bio-Statistical and Molecular Biology Department (N S Mohamed MSc), Sirius Training and Research Centre, Khartoum, Sudan; Obstetrics and Gynecology (G Mohammed FRCOG), University Hospital Sharjah, Sharjah, United Arab Emirates; Department of Pharmaceutical Sciences (S Mohammed PhD), Notre Dame of Maryland University, Baltimore, MD, USA; Department of Pharmacy (S Mohammed PhD), Mizan-Tepi University, Mizan, Ethiopia; Health Systems and Policy Research Unit (Prof S Mohammed PhD), Ahmadu Bello University, Zaria, Nigeria; Institute of Clinical Physiology (S Molinaro PhD), National Research Council, Pisa, Italy; Clinical Epidemiology and Public Health Research Unit (L Monasta DSc, L Ronfani PhD, G Zamagni MSc), Burlo Garofolo Institute for Maternal and Child Health, Trieste, Italy; AI & Cyber Futures Institute (M Moni PhD), Charles Sturt University, Bathurst, NSW, Australia; Computer, Electrical, and Mathematical Sciences and Engineering Division (P Moraga PhD), King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; Clinical Research Development Unit (N Morovatdar MD), Biotechnology Research Center (Prof A Sahebkar PhD), Mashhad University of Medical Sciences, Mashhad, Iran; Department of Clinical Biochemistry (A Mosapour PhD), Social Determinants of Health Research Center (S Mouodi PhD), Babol University of Medical Sciences, Babol, Iran; Department of Clinical Biochemistry (A Mosapour PhD), Tarbiat Modares University, Tehran, Iran; Federal Institute for Population Research, Wiesbaden, Germany (Prof U O Mueller MD); Center for Population and Health, Wiesbaden, Germany (Prof U O Mueller MD); School of Medicine (F Mughal FRCGP), Keele University, Keele, UK; Division of Psychology and Mental Health (F Mughal FRCGP), University of Manchester, Manchester, UK; Department of Medicine (A Mulita PhD), Democritus University of Thrace, Alexandroupolis, Greece; Department of Surgery (F Mulita PhD), General University Hospital of Patras, Patras, Greece; Faculty of Medicine (F Mulita PhD), University of Thessaly, Larissa, Greece; School of Economics (M K Muriithi PhD), University of Nairobi, Nairobi, Kenya; Department of Community Medicine (T S Nair MD), MOSC Medical College, Kolenchery, India; Department of Medical Laboratory Analysis (H H Najmuldeen PhD), Cihan University Sulaymaniya, Sulaymaniyah, Iraq; Suraj Eye Institute, Nagpur, India (V Nangia MD); National Dental Research Institute Singapore (G G Nascimento PhD), Duke-NUS Medical School, Singapore, Singapore; Department of Circulation and Medical Imaging (J Nauman PhD), Norwegian University of Science and Technology, Trondheim, Norway; Department of Public Health (G Nguefack-Tsague PhD), University of Yaoundé I, Yaoundé, Cameroon; Department of Biological Sciences (J W Ngunjiri PhD), University of Embu, Embu, Kenya; Department of Medical Engineering (D H Nguyen BS), University of South Florida, Tampa, FL, USA; Cardiovascular Research Department (H Q Nguyen MD), Methodist Hospital, Merrillville, IL, USA; Department of Surgery (P T Nguyen MD), Danang Family Hospital, Da Nang, Viet Nam; International Islamic University Islamabad, Islamabad, Pakistan (R K Niazi PhD); Center for Public Health (L A Nyanzi PhD), Teesside University, Middlesbrough, UK; Global Research Institute (Prof S Nomura PhD), Keio University, Tokyo, Japan; Department of Microbiology and Molecular Genetics (M Noreen PhD), The Women University Multan, Multan, Pakistan; Department of Public Health (D Nurrikan PhD), Banten School of Health Science, South Tangerang, Indonesia; Ministry of Research, Technology and Higher Education (D Nurrikan PhD), Higher Education Service Institutions (LL-DIKTI) Region IV, Bandung, Indonesia; Center of Excellence in Reproductive Health Innovation (CERHI) (C I Nzopotam MPH), University of Benin, Benin City, Nigeria; Department of Physiology (O J Nzopotam PhD), University of Benin, Edo, Nigeria; Department of Physiology (O J Nzopotam PhD), Benson Idahosa University, Benin City, Nigeria; Department of Applied Economics and Quantitative Analysis (Prof B Oancea PhD), University of Bucharest, Bucharest, Romania; School of Health Systems & Public Health (R E Ogunsakin PhD), University of Pretoria, Pretoria, South Africa; Department of Food and Nutrition (A P Okekunle PhD), Seoul National University, Seoul, South Korea; School of Pharmacy (O C Okonji MSc), University of the Western Cape, Cape Town, South Africa; Department of Medical Physiology (P G Okwute MSc), Department of Psychiatry (A T Olagunju MD), University of Lagos, Lagos, Nigeria; Department of Population and Community Health (B O Olakunde PhD), University of North Texas Health Science Center, Fort Worth, TX, USA; Department of Nursing Science (M I Olatubi PhD), Bowen University, Iwo, Nigeria; Executive Director (B O Olusanya PhD), Centre for Healthy Start Initiative, Lagos, Nigeria; Department of Pharmacotherapy and Pharmaceutical Care (M Ordak PhD), Department of Biochemistry and Pharmacogenomics (M Zielińska MPharm), Medical University of Warsaw, Warsaw, Poland; Department of Biology (W M S Osman PhD), Khalifa University, Abu Dhabi, United Arab Emirates; School of Medicine (U L Osuagwu PhD), Western Sydney University, Bathurst, NSW, Australia; Department of Optometry and Vision Science (U L Osuagwu PhD), University of KwaZulu-Natal, KwaZulu-Natal, South Africa; Laboratory of Public Health Indicators Analysis and Health Digitalization (N Ostavnov BA, S S Ostavnov PhD), Moscow Institute of Physics and Technology, Dolgoprudny, Russia; Department of Project Management (S S Ostavnov PhD), Department of Health Care Administration and Economics (Prof V Vlassov MD), National Research University Higher School of Economics, Moscow, Russia; Faculty of Medicine (Prof A Ouyahia PhD), University Ferhat Abbas of Setif, Setif, Algeria; Division of Infectious Diseases (Prof A Ouyahia PhD), University Hospital of Setif, Setif, Algeria; National School of Public Health (A Padron-Monedero PhD), Institute of Health Carlos III, Madrid, Spain; Department of Public Health (A Pana PhD), Babes Bolyai University, Cluj Napoca, Romania; Department of Health Metrics (A Pana PhD), Center for Health Outcomes & Evaluation, Bucharest, Romania; Department of Community Medicine and Family Medicine (P P Parija MD), All India Institute of Medical Sciences, Jammu, India; Department of Epidemiology and Community Health (R R Parikh MD), University of Minnesota, Minneapolis, MN, USA; Department of Research and Training (S K Patel PhD), Population Council Institute, New Delhi, India; College of Dental Medicine (Prof S Patil PhD), Roseman University of Health Sciences, South Jordan, UT, USA; Centre of Molecular Medicine and Diagnostics (COMMAND) (Prof S Patil PhD), Saveetha Dental College and Hospitals (K Rengasamy PhD, M Tovani-Palone PhD), Center for Global Health Research (Prof A Sahebkar PhD), Saveetha University, Chennai, India; Department of Genetics (S Pawar PhD), Yale University, New Haven, CT, USA; Clinical Research Department (P Pedersini MSc), IRCCS Fondazione Don Carlo Gnocchi, Milan, Italy; Center for Research and Innovation (V F Pepito MSc), Ateneo De Manila University, Pasig City, Philippines; School of Population Health (Prof G Pereira PhD), Curtin University, Bentley, WA, Australia; Centre for Fertility and Health (Prof G Pereira PhD), Norwegian Institute of Public Health, Oslo, Norway; Department of Orthopedics (J Pereira MS), Yenepoya Medical College, Mangalore, India; Department of Applied Nursing (Prof M O Pereira PhD), Federal University of Minas Gerais, Belo Horizonte, Brazil; Social and Economic Survey Research Institute (Prof A Perianayagam PhD), Qatar University, Doha, Qatar; Mario Negri Institute for Pharmacological Research, Bergamo, Italy (N Perico MD, Prof G Remuzzi MD); Facultad de Medicina (F E Petermann-Rocha PhD), Universidad Diego Portales (Diego Portales University), Santiago, Chile; School of Cardiovascular and Metabolic Health (F E Petermann-Rocha PhD), University of Glasgow, Glasgow, UK; Faculty of Medicine of Nam Can Tho University (M K Phan MD), University of Medicine, Nam Can Tho University, Viet Nam; School of Pharmacy (A K Philip PhD), University of Nizwa, Nizwa, Oman; International Center of Medical Sciences Research, Islamabad, Pakistan (Z Z Piracha PhD); Medical College (V Podder HSC), Tairunnessa Memorial Medical College and Hospital, Gazipur, Bangladesh; School of Public Health (V Podder HSC), University of Adelaide, Adelaide, SA, Australia; College of Health Sciences (CHS) (Prof D Poddighe PhD), VinUniversity, Hanoi, Kazakhstan; Clinical Academic Department of Pediatrics (Prof D Poddighe PhD), University Medical Center (UMC), Astana, Kazakhstan; Department of Community

Medicine (P M S Pradhan MD), Tribhuvan University, Kathmandu, Nepal; Department of Population Science and Human Resource Development (Prof M Rahman DrPH), University of Rajshahi, Rajshahi, Bangladesh; Department of Public Health (V Rahmanian PhD), Torbat Jam Faculty of Medical Sciences, Torbat Jam, Iran; Department of Medical, Surgical and Experimental Sciences (I Raimondo MD), University of Sassari, Sassari, Italy; Gynecology and Breast Care Center (I Raimondo MD), Mater Olbia Hospital (Qatar Foundation Endowment and Policlinico Universitario Agostino Gemelli IRCCS Foundation), Olbia, Italy; Department of Radiology (S Ramasamy MD), Stanford University, Stanford, CA, USA; Department of Research (C L Ranabhat PhD), Eastern Scientific LLC, Richmond, KY, USA; Department of Health Promotion and Administration (C L Ranabhat PhD), Eastern Kentucky University, Richmond, KY, USA; Centre for Clinical Pharmacology (N Rancic PhD), University of Defence in Belgrade, Belgrade, Serbia; Centre for Clinical Pharmacology (N Rancic PhD), Medical College of Georgia at Augusta University, Belgrade, Serbia; Department of Oral Pathology, Microbiology and Forensic Odontology (S Rao Other), Sharavathi Dental College and Hospital, Shimoga, India; Barcelona Institute for Global Health, Barcelona, Spain (Prof D Rasella PhD); Department of Medicine (A M Rashid MD), Jinnah Sindh Medical University, Karachi, Pakistan; Baylor University, Dallas, TX, USA (A M Rashid MD); Department of Biological Sciences (Prof E M M Redwan PhD), King Abdulaziz University, Jeddah, Egypt; Department of Protein Research (Prof E M M Redwan PhD), Research and Academic Institution, Alexandria, Egypt; Centre for Excellence in Pharmaceutical Sciences (K Rengasamy PhD), North-West University, Potchefstroom, South Africa; School of Medicine (Prof A M N Renzaho PhD), Western Sydney University, Campbelltown, NSW, Australia; Translational Health Research Institute (Prof A M N Renzaho PhD), Burnet Institute, Campbelltown, NSW, Australia; Department of Clinical Research (Prof L Roever PhD), University of Sao Paulo, Ribeirão Preto, Brazil; Gilbert and Rose-Marie Chagoury School of Medicine (Prof L Roever PhD), Lebanese American University, Beirut, Lebanon; Center for Indigenous Health Research (P Rohloff MD), Wuqu' Kawoq Maya Health Alliance, Tecpan, Guatemala; Department of Internal Medicine (G M Rweggera MD), University of Botswana, Gaborone, Botswana; Faculty of Medicine (Z Saadatian PhD), Infectious Diseases Research Center (Z Saadatian PhD), Gonabad University of Medical Sciences, Gonabad, Iran; Health Information Management (M Sadeghi PhD), Semnan University of Medical Sciences, Semnan, Iran; Department of Pharmaceutical Chemistry (Prof M Saeb PhD), International Medical University, Gdańsk, Poland; Clinical and Biomedical Research Center (Prof U Saeed PhD), Foundation University Islamabad, Islamabad, Pakistan; International Center of Medical Sciences Research (ICMSR), Islamabad, Pakistan (Prof U Saeed PhD); Department of Family and Generations (H Sahoo PhD), International Institute for Population Sciences, Mumbai, India; Public Health and Community Medicine Department (M R Salem MD), Cairo University, Giza, Egypt; Department of Entomology (A M Samy PhD), Medical Ain Shams Research Institute (MASRI) (A M Samy PhD), Ain Shams University, Cairo, Egypt; Department of Pediatrics (Prof R K Sanjeev MD), SRM University, Chennai, India; Department of Public Health (Y Sarikhani PhD), Jahrom University of Medical Sciences, Jahrom, Iran; Department of Oral Pathology and Microbiology (Prof S C Sarode PhD), Dr D Y Patil Vidyapeeth, Pune, India; UGC Centre of Advanced Study in Psychology (M Satpathy PhD), Utkal University, Bhubaneswar, India; Udyam-Global Association for Sustainable Development, Bhubaneswar, India (M Satpathy PhD); Department of Public Health Sciences (M Sawhney PhD), University of North Carolina at Charlotte, Charlotte, NC, USA; Department of Preventive and Social Medicine (G Saya MD), Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India; Psychiatry Clinic (M Saylan MD), Holy Savior Armenian Hospital, Istanbul, Türkiye; Dobney Hypertension Centre (Prof M P Schlaich MD), The University of Western Australia, Perth, WA, Australia; Hypertension and Kidney Disease Laboratory (Prof M P Schlaich MD), Baker Heart and Diabetes Institute, Melbourne, VIC, Australia; Department of Health Sciences (I J C Schneider PhD), Federal University of Santa Catarina, Araranguá, Brazil; Department of Cardiovascular Sciences (A Schuermans BSc, J Van den Eynde BSc), Katholieke Universiteit Leuven, Leuven, Belgium; Department of Biomedical Sciences (P Sengupta PhD), Gulf Medical University, Ajman, United Arab Emirates; Emergency Department (S Senthilkumaran PhD), Manian Medical Centre, Erode, India; Fourth Department of General Surgery (D Serban PhD), Emergency University Hospital Bucharest, Bucharest, Romania; National Heart, Lung, and Blood Institute (A Seylani BS), National Institutes of Health, Rockville, MD, USA; Ophthalmology (J Shah BS), Weill Cornell Medicine, New York, NY, USA; Department of Microbiology (P A Shah MBBS), Rajiv Gandhi University of Health Sciences, Bangalore, India; Independent Consultant, Karachi, Pakistan (M A Shaikh MD); Department of Pathology and Laboratory Medicine (S Sham MD), Northwell Health, New York, NY, USA; Amity Institute of Public Health (M Shannawaz PhD), Amity University, Noida, India; Institute of public health (M M Sharew MPH), University of Gondar, Gondar, Ethiopia; Finnish Institute of Occupational Health, Helsinki, Finland (R Shiri PhD); Department of Medical-Surgical Nursing (S Shorofi PhD), Mazandaran University of Medical Sciences, Sari, Iran; Psychology Department (K Shuja MS), National University of Modern Languages, Islamabad, Pakistan; The Cooper Institute, Dallas, TX, USA (K Shuval PhD); School of Health (Prof C R Simpson PhD), Victoria University of Wellington, Wellington, New Zealand; Usher Institute (Prof C R Simpson PhD), College of Medicine and Veterinary Medicine (G Verras MD), University of Edinburgh, Edinburgh, UK; School of Medicine (Prof J A Singh MD), Baylor College of Medicine, Houston, TX, USA; Department of Medicine Service (Prof J A Singh MD), US Department of Veterans Affairs (VA), Houston, TX, USA; Global and European Health Education and Study Institute (N Skhvitardze MBA), University of Georgia, Tbilisi, Georgia; NCDC (N Skhvitardze MBA), National Center for Disease Control and Public Health, Tbilisi, Georgia; Department of Surgery (B Socea PhD), "Sf. Pantelimon" Emergency Clinical Hospital Bucharest, Bucharest, Romania; School of Health and Biomedical Science (A Sohag MSc), Royal Melbourne Institute of Technology (RMIT) University, Melbourne, VIC, Australia; Department of Nursing (Y Solomon MSc), Department of Public Health (Y M Tefera MPH), Dire Dawa University, Dire Dawa, Ethiopia; Department of Health Policy and Management (S Song PhD), University of Georgia College of Public Health, Athens, GA, USA; 3rd Department of Cardiology (M Spartalis PhD), University of Athens, Athens, Greece; Center for Biotechnology and Microbiology (M Suleman PhD), University of Swat, Swat, Pakistan; School of Life Sciences (M Suleman PhD), Xiamen University, Xiamen, China; Department of Maternal and Child Health (S Sultana MPH), Projahmo Research Foundation, Dhaka, Bangladesh; Yusuf Hamied Department of Chemistry (H Z Sun PhD), University of Cambridge, Cambridge, UK; Institute of Integrated Intelligence and Systems (Prof J Sun PhD), Griffith University, Brisbane, QLD, Australia; Northwestern University, Chicago, IL, USA (M D Szeto MS); Department of Medicine (Prof R Tabarés-Seisdedos PhD), University of Valencia, Valencia, Spain; Department of Biostatistics and Epidemiology (M Taheri Soodejani PhD), Shahid Sadoughi University of Medical Sciences, Yazd, Iran; Department of Epidemiology (J L J Tamuzi MSc), Department of Industrial Psychology (E Teye-Kwadjo PhD), Stellenbosch University, Cape Town, South Africa; Department of Medicine (J L J Tamuzi MSc), Northlands Medical Group, Omuthiya, Namibia; Department of Surgery (K Tan PhD), Saw Swee Hock School of Public Health (Prof S Yi PhD), National University of Singapore, Singapore, Singapore; National Research and Innovation Agency, Jakarta, Indonesia (I U Tarigan PhD); School of Nursing and Midwifery (B Teye MSc), Department of Pediatrics and Child Health Nursing (S S Yehualashet MSc), Debre Berhan University, Debre Berhan, Ethiopia; Pediatric Intensive Care Unit (Prof M Temsah MD), King Saud University, Riyadh, Saudi Arabia; Department of Epidemiology and Biostatistics (M Teramoto MD), Department of Bioengineering and Therapeutic Sciences (Prof M Zastrozhin PhD), University of California San Francisco, San Francisco, CA, USA; Department of Psychology (E Teye-Kwadjo PhD), University of Ghana, Legon, Ghana; Department of Endocrinology, Diabetes and Metabolism (Prof N Thomas PhD), Christian Medical College and Hospital (CMC), Vellore, India; Laboratory of Public Health Indicators Analysis and Health Digitalization (M V Titova PhD), Moscow Institute of Physics and

Technology, Moscow, Russia; Institute of Public Health (R Topor-Madry PhD), Jagiellonian University Medical College, Kraków, Poland; Agency for Health Technology Assessment and Tariff System, Warsaw, Poland (R Topor-Madry PhD); Department of Community Medicine and Family Medicine (J P Tripathy MD), All India Institute of Medical Sciences, Nagpur, India; Department of Health Sciences (S J Tromans PhD), University of Leicester, Leicester, UK; Adult Learning Disability Service (S J Tromans PhD), Leicestershire Partnership National Health Service Trust, Leicester, UK; Department of Public Health (C S Ubah DrPH), Brody School of Medicine, Greenville, NC, USA; College of Public Health (C S Ubah DrPH), Temple University, Philadelphia, PA, USA; Medical Genomics Research Department (Prof M Umair PhD), King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Life Sciences (Prof M Umair PhD), University of Management and Technology, Lahore, Pakistan; Department of Paraclinical Sciences (S Umakanthan MD), University of the West Indies, St. Augustine, Trinidad and Tobago; Department of Cardiovascular, Endocrine-metabolic Diseases and Aging (B Unim PhD), National Institute of Health, Rome, Italy; College of Health and Sport Sciences (A G Vaithinathan MSc), University of Bahrain, Zallaq, Bahrain; Clinical Cancer Research Center (S Valadan Tahbaz PhD), Milad General Hospital, Tehran, Iran; Department of Microbiology (S Valadan Tahbaz PhD), Islamic Azad University, Tehran, Iran; Department of Biomedical Sciences (M Valenti MD), Humanitas University, Milan, Italy; Dermatology Unit (M Valenti MD), IRCCS Humanitas Research Hospital, Milan, Italy; Department of Surgery (G Verras MD), University of Southampton, Southampton, UK; Department of Health Science and Public Health (L Villani MD), Università Cattolica del Sacro Cuore (Catholic University of Sacred Heart), Rome, Italy; Occupational Medicine Unit (Prof F S Violante MD), Sant'Orsola Malpighi Hospital, Bologna, Italy; School of Public Health (F Wang PhD), Xuzhou Medical University, Xuzhou, China; Department of Neurosurgery (S Wang MD), Capital Medical University, Beijing, China; Department of Neurosurgery (S Wang MD), Beijing Tiantan Hospital, Beijing, China; Department of Basic Biomedical Sciences (Y Wang MD), Shandong University, Jinan, China; Department of Neuroscience (Y Wang MD), Mount Sinai Health System, New York, USA; Department of Human Nutrition and Food Sciences (E G Wassie MSc), Debre Markos University, Debre Markos, Ethiopia; Department of Parasitology (Prof K G Weerakoon PhD), Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka; National Data Management Center for Health (NDMC) (A A Wolde MPH), Ethiopian Public Health Institute, Addis Ababa, Ethiopia; Cardiovascular Program (X Xu PhD), The George Institute for Global Health, Sydney, NSW, Australia; Environmental Health and Epidemiology (V Yadav MD), National Institute for Research in Environmental Health, Bhopal, India; Department of Cancer Epidemiology and Prevention Research (L Yang PhD), Alberta Health Services, Calgary, AB, Canada; Faculty of Medicine (Y Yano MD), Department of Public Health (Prof N Yonemoto PhD), Juntendo University, Tokyo, Japan; KHANA Center for Population Health Research, Phnom Penh, Cambodia (Prof S Yi PhD); Department of Health Management (A Yiğit PhD, V Yiğit PhD), Süleyman Demirel University, Isparta, Türkiye; Department of Biostatistics (Prof N Yonemoto PhD), University of Toyama, Toyama, Japan; Basic Sciences Department (B A Zaman PhD), University of Duhok, Duhok, Iraq; Department of Administration (Prof M Zastrozhin PhD), PGxAI, San Francisco, CA, USA; School of Public Health (Y Zhang PhD), Wuhan University of Science and Technology, Wuhan, China; School of Public Health (Prof Z Zhang PhD), Wuhan University, Wuhan, China; College of Traditional Chinese Medicine (H Zhao MD), Hebei University, Baoding, China; Department of Public Health (L Zuhriyah PhD), Universitas Brawijaya, Malang, Indonesia.

Contributors

Please see appendix 1 (pp 91–120) for more detailed information about individual author contributions to the research, divided into the following categories: managing the overall research enterprise; writing the first draft of the manuscript; primary responsibility for applying analytical methods to produce estimates; primary responsibility for seeking, cataloguing,

extracting, or cleaning data; designing or coding figures and tables; providing data or critical feedback on data sources; developing methods or computational machinery; providing critical feedback on methods or results; drafting the manuscript or revising it critically for important intellectual content; and managing the estimation or publications process. Members of the core research team for this topic area had full access to the underlying data used to generate estimates presented in this Article. All other authors had access to and reviewed estimates as part of the research evaluation process, which includes additional stages of formal review.

Declaration of interests

S Afzal reports support for the present manuscript from King Edward Medical University, which provided study material, research articles, valid data sources, and authentic real-time information for this manuscript; reports payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from King Edward Medical University and collaborative partners including University of Johns Hopkins, University of California, University of Massachusetts, King Edward Medical College Alumni Association of North America (KEMCAANA), and Kings Edward Medical College Alumni Association UK (KEMCA-UK), as well as participation in international scientific conferences, webinars, and meetings; support for attending meetings or travel, or both, from King Edward Medical University to discuss findings and gather the latest information from various sources; participation on a Data Safety Monitoring Board or Advisory Board with the National Bioethics Committee Pakistan, the King Edward Medical University Ethical Review Board, the Ethical Review Board Fatima Jinnah Medical University and Sir Ganga Ram Hospital, and the Technical Working Group on Infectious Diseases to formulate guidelines; leadership or fiduciary roles in board, society, committee, or advocacy groups paid or unpaid with the Pakistan Association of Medical Editors, the Society of Prevention, Advocacy, and Research at King Edward Medical University (SPARK), and the Pakistan Society of Infectious Diseases, as well as being a Fellow of the Faculty of Public Health Royal Colleges UK (FFPH); other support from serving as Dean of Public Health and Preventive Medicine and Chief Editor of the Annals of King Edward Medical University since 2014, Director of the Quality Enhancement Cell at King Edward Medical University, Advisory Board Member and Chair of the Scientific Session at KEMCA-UK, and Chairperson of the International Scientific Conference at KEMCAANA; other support from membership in the Research and Publications Committee of the Higher Education Commission (HEC) Pakistan, the Research and Journals Committee at the Pakistan Medical and Dental Council, and the National Bioethics Committee Pakistan; other support from serving on the Corona Experts Advisory Group, the Technical Working Group on Infectious Diseases, the Dengue Experts Advisory Group, and as Chair of the Punjab Residency Program Research Committee; all outside the submitted work. R Bai reports support for the present manuscript from the Social Science Fund of Jiangsu Province (grant number 21GLD008) and the Fundamental Research Funds for the Central Universities (grant number 30923011101). S Bhaskar reports grants or contracts from the Japan Society for the Promotion of Science (JSPS), Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT), including Grant-in-Aid for Scientific Research (KAKENHI) (P23712), and the JSPS and the Australian Academy of Science JSPS International Fellowship (P23712); leadership or fiduciary roles in board, society, committee, or advocacy groups paid or unpaid with Rotary District 9675, Sydney, Australia (District Chair, Diversity, Equity & Inclusion), Global Health & Migration Hub Community, Global Health Hub Germany, Berlin, Germany (Chair, Founding Member, and Manager), *PLOS One*, *BMC Neurology*, *Frontiers in Neurology*, *Frontiers in Stroke*, *Frontiers in Public Health*, *Journal of Aging Research*, and *BMC Medical Research Methodology* (Editorial Board Member), College of Reviewers, Canadian Institutes of Health Research (CIHR), Government of Canada (Member), World Headache Society, Bengaluru, India (Director of Research), Cariplo Foundation, Milan, Italy (Expert Adviser/Reviewer), National Cerebral and Cardiovascular Center, Department of Neurology, Suita, Osaka, Japan (Visiting Director), and Cardiff University Biobank, Cardiff, UK (Member, Scientific Review Committee); all outside the submitted work. A A Fomenkov reports

support for the present manuscript from research carried out within the state assignment of the Ministry of Science and Higher Education of the Russian Federation (theme number 122042600086-7). A Guha reports grants or contracts from the American Heart Association and the US Department of Defense; consulting fees from Pfizer and Novartis; and leadership or fiduciary roles in board, society, committee, or advocacy groups paid or unpaid with ZERO Prostate Cancer Health Equity Task Force; all outside the submitted work. C Herteliu reports grants or contracts from the Romanian Ministry of Research, Innovation and Digitalization through UEFISCDI for the project “Analysis of the impact of Covid-19 on the main demographic indicators in Romania and the Republic of Moldova by using econometric modeling” (code PN-IV-P8-8.3-ROMD-2023-0208); a grant from the European Commission Horizon 4P-CAN (Personalised Cancer Primary Prevention Research through Citizen Participation and Digitally Enabled Social Innovation); the European Union – NextGenerationEU and Romanian Government under the National Recovery and Resilience Plan for Romania for the projects “Societal and Economic Resilience within multi-hazards environment in Romania” (contract number 760050/23.05.2023, cod PNRR-C9-I8-CF 267/29.11.2022) and “A better understanding of socio-economic systems using quantitative methods from Physics” (contract number 760034/23.05.2023, cod PNRR-C9-I8-CF 255/29.11.2022) within Component 9, Investment I8; all outside the submitted work. I M Ilic reports support for the present manuscript from the Ministry of Education, Science and Technological Development, Republic of Serbia, project number 175042, 2011–2023. M D Ilic reports support for the present manuscript from the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (number 451-03-47/2023-01/200111). B Lacey reports support for the present manuscript from UK Biobank, funded largely by the UK Medical Research Council and Wellcome; and reports employment with the University of Oxford, with the post funded by a grant from UK Biobank; all outside the submitted work. M Lee reports support for the present manuscript from the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2023S1A3A2A05095298). M-C Li reports support for the present manuscript from the National Science and Technology Council, Taiwan (NSTC 113-2314-B-003-002); and reports leadership or fiduciary roles in other board, society, committee, or advocacy groups, paid or unpaid with the *Journal of the American Heart Association* as Technical Editor; all outside the submitted work. L Monasta reports support for the present manuscript from the Italian Ministry of Health (Ricerca Corrente 34/2017), with payments made to the Institute for Maternal and Child Health IRCCS Burlo Garofolo. F Mughal reports support for the present manuscript from NIHR Doctoral Fellow, 300957, with payments made to Keele University. S Nomura reports support for the present manuscript from the Ministry of Education, Culture, Sports, Science and Technology of Japan (24H00663) and the Precursory Research for Embryonic Science and Technology from the Japan Science and Technology Agency (JPMJPR22R8). A P Okekunle reports support for the present manuscript from the National Research Foundation of Korea funded by the Ministry of Science and ICT (2020H1D3A1A04081265); and reports support for attending meetings or travel, or both, from the National Research Foundation of Korea funded by the Ministry of Science and ICT (2020H1D3A1A04081265); all outside the submitted work. M Pigeolet reports grants or contracts from the Belgian Kids’ Fund for Pediatric Research. L Ronfani reports support for the present manuscript from the Italian Ministry of Health (Ricerca Corrente 34/2017), with payments made to the Institute for Maternal and Child Health IRCCS Burlo Garofolo. J P Silva reports support for the present manuscript from the Portuguese Foundation for Science and Technology, with payment of salary under the contract reference 2021.01789.CEECIND/CP1662/CT0014. C R Simpson reports grants or contracts from the Health Research Council (HRC) of New Zealand, the New Zealand Ministry of Health, the Ministry of Business, Innovation and Employment (MBIE) of New Zealand, the Chief Scientist Office of the UK, and the UK Medical Research Council; and leadership or fiduciary roles in board, society, committee, or advocacy groups, paid or unpaid with the New Zealand Government Data Ethics Advisory Group (Chair, remunerated under the NZ Cabinet Fees Framework); all outside the submitted work. J A Singh reports consulting fees from ROMTech, Atheneum, Clearview Healthcare Partners, American College of

Rheumatology, Yale, Hulo, Horizon Pharmaceuticals, DINORA, ANI/Exeltis USA, Frictionless Solutions, Schipher, Crealta/Horizon, Medisys, Fidia, PK Med, Two Labs, Adept Field Solutions, Clinical Care Options, Putnam Associates, Focus Forward, Navigant Consulting, Spherix, MediQ, Jupiter Life Science, UBM LLC, Trio Health, Medscape, WebMD, Practice Point Communications, and the US National Institutes of Health, with consultant fees paid directly for each entity; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from the speakers bureau of Simply Speaking; support for attending meetings or travel, or both, from OMERACT, as a past steering committee member and received support to attend meetings every 2 years; participation on a Data Safety Monitoring Board or Advisory Board with the FDA Arthritis Advisory Committee, as a member without financial support; leadership or fiduciary roles in board, society, committee, or advocacy groups paid or unpaid with OMERACT (an international organisation developing clinical trial measures funded at arm’s length by pharmaceutical companies, with J A Singh previously receiving meeting support), as Chair of the Veterans Affairs Rheumatology Field Advisory Committee (without financial support), and as Editor and Director of the UAB Cochrane Musculoskeletal Group Satellite Center on Network Meta-analysis (without financial support); and stock or stock options in Atai Life Sciences, Kintara Therapeutics, Intelligent Biosolutions, Acumen Pharmaceutical, TPT Global Tech, Vaxart Pharmaceuticals, Atyu Biopharma, Adaptimmune Therapeutics, GeoVax Labs, Pieris Pharmaceuticals, EnzoLytics, Seres Therapeutics, Tonix Pharmaceuticals Holding Corp., Aebona Pharmaceuticals, and Charlotte’s Web Holdings, with previous stock ownership in Amarin, Viking, and Moderna Pharmaceuticals; all outside the submitted work. S J Tromans reports grants or contracts from NHS Digital via the Department of Health and Social Care for the 2023 Adult Psychiatric Morbidity Survey, with payments made to the University of Leicester; and reports leadership or fiduciary roles in board, society, committee, or advocacy groups paid or unpaid with the Neurodevelopmental Psychiatry Special Interest Group, the Faculty of Psychiatry of Intellectual Disability (both Royal College of Psychiatrists), and editorial board roles with *BMC Psychiatry*, *Advances in Mental Health and Intellectual Disabilities*, *Advances in Autism*, and *Progress in Neurology and Psychiatry*; all outside the submitted work. G Zamagni reports support for the present manuscript from the Italian Ministry of Health (Ricerca Corrente 34/2017), with payments made to the Institute for Maternal and Child Health IRCCS Burlo Garofolo. M Zielińska reports other financial or non-financial interests as an employee of AstraZeneca; all outside the submitted work. All other authors declare no competing interests.

Data sharing

To download the data used in these analyses and corresponding results, please visit the Global Health Data Exchange at <http://ghdx.healthdata.org>.

Acknowledgments

This project was supported by the Bill & Melinda Gates Foundation.

Editorial note: The Lancet Group takes a neutral position with respect to territorial claims in published maps and institutional affiliations.

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