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Global, regional, and national levels of neonatal, infant, and under-5 mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013

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Summary

Background Remarkable financial and political efforts have been focused on the reduction of child mortality during the past few decades. Timely measurements of levels and trends in under-5 mortality are important to assess progress towards the Millennium Development Goal 4 (MDG 4) target of reduction of child mortality by two thirds from 1990 to 2015, and to identify models of success.

Methods We generated updated estimates of child mortality in early neonatal (age 0–6 days), late neonatal (7–28 days), postneonatal (29–364 days), childhood (1–4 years), and under-5 (0–4 years) age groups for 188 countries from 1970 to 2013, with more than 29 000 survey, census, vital registration, and sample registration datapoints. We used Gaussian process regression with adjustments for bias and non-sampling error to synthesise the data for under-5 mortality for each country, and a separate model to estimate mortality for more detailed age groups. We used explanatory mixed effects regression models to assess the association between under-5 mortality and income per person, maternal education, HIV child death rates, secular shifts, and other factors. To quantify the contribution of these different factors and birth numbers to the change in numbers of deaths in under-5 age groups from 1990 to 2013, we used Shapley decomposition. We used estimated rates of change between 2000 and 2013 to construct under-5 mortality rate scenarios out to 2030.

Findings We estimated that 6·3 million (95% UI 6·0–6·6) children under-5 died in 2013, a 64% reduction from 17·6 million (17·1–18·1) in 1970. In 2013, child mortality rates ranged from 152·5 per 1000 livebirths (130·6–177·4) in Guinea-Bissau to 2·3 (1·8–2·9) per 1000 in Singapore. The annualised rates of change from 1990 to 2013 ranged from −6·8% to 0·1%. 99 of 188 countries, including 43 of 48 countries in sub-Saharan Africa, had faster decreases in child mortality during 2000–13 than during 1990–2000. In 2013, neonatal deaths accounted for 41·6% of under-5 deaths compared with 37·4% in 1990. Compared with 1990, in 2013, rising numbers

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of births, especially in sub-Saharan Africa, led to 1·4 million more child deaths, and rising income per person and maternal education led to 0·9 million and 2·2 million fewer deaths, respectively. Changes in secular trends led to 4·2 million fewer deaths. Unexplained factors accounted for only –1% of the change in child deaths. In 30 developing countries, decreases since 2000 have been faster than predicted attributable to income, education, and secular shift alone.

Interpretation Only 27 developing countries are expected to achieve MDG 4. Decreases since 2000 in under-5 mortality rates are accelerating in many developing countries, especially in sub-Saharan Africa. The Millennium Declaration and increased development assistance for health might have been a factor in faster decreases in some developing countries. Without further accelerated progress, many countries in west and central Africa will still have high levels of under-5 mortality in 2030.

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Introduction

During the past few decades, substantial political, donor, and country focus has been placed on the reduction of child mortality. The Millennium Development Goal 4 (MDG 4) target of reduction of child mortality by two thirds from 1990 to 2015 has captured the attention of high-level leaders.[1–5] The UN Commission for Accountability for Women's and Children's Health is a further reminder of intensified interest, along with numerous initiatives from donor organisations.[4,6,7] Global interest in child mortality reduction is not new; the child survival revolution,[8] Jim Grant's pioneering work at UNICEF on child interventions,[9] and the Health for All by the Year 2000 campaign[10] are examples of the worldwide focus on improvement of child survival that began more than three decades ago. Key actors such as the governments of the USA, Ethiopia, and India, together with UNICEF, are arguing for a continued post-2015 focus on further reductions in child mortality to eliminate all child deaths from preventable causes by 2035.[1] This global goal is mainly motivated, not only by the huge disparities between and within nations in child mortality, but also by compelling evidence that child mortality can be reduced even in low-resource settings.[11,12]

Child mortality worldwide is decreasing and has been in many countries for many decades.[1,13–20] The decreases achieved in high-income, middle-income, and low-income countries surely count among the more important achievements for humanity in the past 60 years.[21–27] Four types of interconnected explanations have been suggested for the sustained but heterogeneous decrease in child mortality. Demographers and other social scientists have identified long-term associations between child mortality and maternal education, income per person, and technology change.[28–32] Health-system researchers have explained why some health systems are able to achieve faster rates of decrease or lower levels of child mortality at similar amounts of income and health expenditure than are others.[33] More recently, detailed analyses by the Countdown to 2015 and other groups have sought to explain levels and trends in child mortality through the coverage of a short list of proven technologies.[5,34] Political scientists have called attention to the potential role of

global collective action, such as the Millennium Declaration itself, as a key contributor to social phenomenon and health development.[35,36] All of these explanations have merit; understanding the balance and interconnection between them might provide important insights for future global and national action to accelerate decreases in child mortality.

Timely, local, and valid assessments of trends in child mortality along with the associated drivers of these trends can provide an important input to national, regional, and global debates on next steps. Although the long-term trend in child mortality has been downward, important heterogeneity exists across countries and age groups. Understanding this heterogeneity can help to catalyse and optimise a process of shared learning from success stories and to identify crucial areas that need more attention.

Here, we aimed to use data from the Global Burden of Diseases, Injuries, and Risk Factors Study 2013 (GBD 2013) to assess levels and trends of child mortality, and to explore key factors associated with progress. We aimed to use the GBD 2013 data to report three interrelated themes: estimate the levels and trends in early neonatal (age 0–6 days), late neonatal (7–28 days), postneonatal (29–364 days), childhood (1–4 years), and under-5 (0–4 years) mortality from 1990 to 2013, for 188 countries (with one additional country comparing to GBD 2010[37] because we included Sudan and South Sudan in this analysis) with the most up-to-date data and methods; explore the contribution of broad drivers of child mortality during the past few decades and whether accelerated reductions have been beyond what might have been expected after 2000; and forecast child mortality to 2030 to identify populations that are likely to be the main challenges to further global progress with child survival strategies in the mid-term.

Methods
Estimation of child, infant, and neonatal mortality by country during 1990–2013

We used the broad data analysis strategy from the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010) to measure national trends in child mortality.
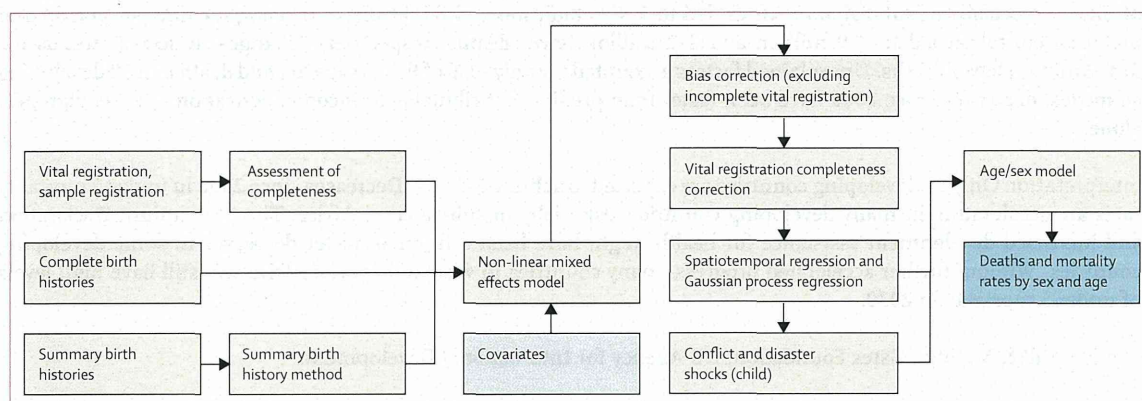
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Figure 1: Child mortality estimation process for the Global Burden of Diseases, Injuries, and Risk Factors Study 2013

The appendix summarises the methods we used,[13,14,18] including further refinements on the basis of feedback for GBD 2010. Figure 1 shows the analytical steps we used to estimate under-5 mortality. This process had three components. First, we used improved formal demographic methods to analyse empirical data for child deaths reported from censuses, vital registration systems, sample registration systems, disease surveillance systems, and various surveys with different birth history modules. Demographic techniques applied to major sources of data collectively generated more than 29000 child mortality point estimates for countries in various years given that there might be multiple mortality estimates from different sources for a specific country in a given year. Next, we synthesised child mortality data for each country following a three-step process. First, we applied a non-linear mixed effects model to examine the relationship between child mortality, lagged distributed income per person, maternal education, and the crude death rate from HIV/AIDS in the under-5 age group. In the second stage, we applied spatiotemporal regression to the residuals from the first stage regression in which we effectively borrowed strength over time and across countries within the same GBD region. Results from the second step were then used as priors in the third stage in which we applied a Gaussian process regression to generate best estimates of child mortality with 95% uncertainty intervals. In the final component, we applied an age and sex model to estimate age-specific and sex-specific mortality for early neonatal, late neonatal, postneonatal, and childhood age groups. The age and sex model improves upon the GBD 2010[18] by applying a mixed effects model that accounts for the differential effect of the HIV/AIDS epidemic on age-specific mortality among the neonatal age groups and postneonatal deaths under age 5. The appendix provides details of each component, data, estimates for under-5 mortality, and visualisation of model fits.

Factors associated with child mortality trends

We explored the correlates of child mortality to establish the contribution of different factors to recent changes in under-5 mortality rates. We estimated the following equation with mixed effects linear regression

$$\ln(_5q_0) = \beta_0 + \beta_1 \times \ln(LDI_{cy}) + \beta_2 \times maternal\ education_{cy}$$
$$+ \beta_3 \times HIV_{cy} + \sum_{s=1}^{308} \alpha_s \times year\_GBD\ super\ region_s + \gamma_c + \varepsilon_{cy}$$

where c is country, y is year, γ_c is a random effect on country, LDI_{cy} is lagged distributed income per person[38] for country c in year y, $maternal\ education_{cy}$ is the average years of education earned by women in the age group 15 to 49, HIV_{cy} is HIV-related child crude death rate[39,40] as estimated with the improved EPP-Spectrum for GBD 2013,[40–42] and $_5q_0$ is the probability of death before the age of 5 estimated from this study. We also added combined year and GBD super-region fixed effects, $year\_GBD\ super\ region$, to capture the differential secular trends of child mortality by geographic units. Following Preston,[32] we used time (year) as a proxy for changes in availability and use of technologies designed to improve child health that are correlated with time. We used the term "secular trend" to more broadly encompass the availability of specific child health technologies and changes in our understanding of how to more effectively deliver health interventions, and the interaction of health programmes with other technological change such as the expansion of roads or other related infrastructure.

We tested alternative model specifications including within and between estimators with different auto-regressive terms,[43] country fixed effects, and mixed effects models; the general magnitude of the effects for income, education, and time were robust to specification. We used this specification because it is the simplest to explain, and we recorded no qualitative difference in our results across model specifications. We applied Shapley decomposition[44,45] to quantify the contribution of changes in income per person, maternal education, HIV, secular trend, births, and a collective of "other" factors to the change in under-5 mortality from 1990 to 2013. Shapley

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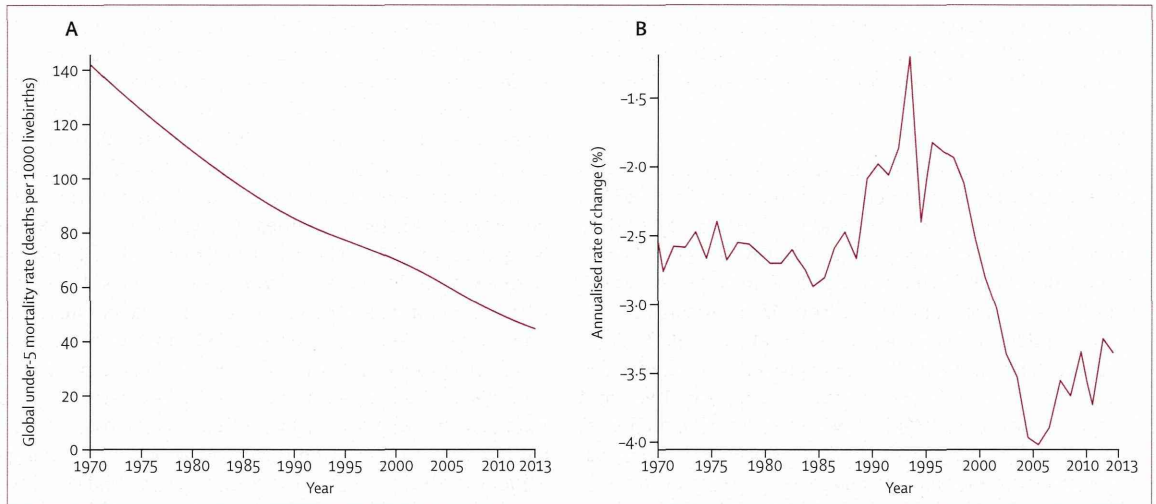

Figure 2: Global under-5 mortality rate and rate of change, 1970–2013
(A) Global under-5 mortality, 1970–2013. (B) Annualised rate of change in global child mortality, 1970–2013.

decomposition is a method with a game theory foundation that allows for decomposition of changes in a variable because of different contributory factors. Specifically, to assess the effect of these six factors on changes in under-5 deaths from 1990 to 2013, we constructed 64 scenarios in which all six factors took on values from either 1990 or 2013 in each specific scenario.

To compute the effect of any one factor, we assessed 32 pairs of scenarios in which all five remaining factors had the same values. For each pair, we then calculated the change in under-5 deaths, for which only the factor of interest changed value, and used this as a measure of the contribution of this specific factor to the change in under-5 deaths. The average of the changes in all 32 pairs of scenarios was the contribution of one factor. We repeated the same process for all six factors.

We used the above equation to predict annualised rates of change for each country from 2000 to 2013 with recorded changes in income per person and maternal education and counterfactual levels of HIV in the absence of intervention. We generated counterfactual

HIV death rates with the improved EPP-Spectrum models for GBD 2013[39,40] by setting prevention of mother-to-child transmission, co-trimoxazole prophylaxis, and antiretroviral therapy (ART) to zero for all years. These predicted rates provided an estimate of the effect of changes in income per person, education, and the long-term secular trend by GBD super-region on the basis of a comparison with observed rates of change.

Scenarios for under-5 mortality in 2030

We developed four scenarios to predict the under-5 mortality rate in 2030 on the basis of the distribution of observed annualised rates of change from 2000 to 2013. Scenario one used the observed rate of change from 2000 to 2013 for each country to project to 2030. We assumed child mortality rates in any country with an increase in mortality in this time stayed at a constant level during the projection period. In scenario two, we applied the best 75th percentile rate of change in all countries from 2000 to 2013. In scenario three, all countries had a rate of change corresponding to the best 90th percentile, and in scenario four, to the best 95th percentile rate of change. We used observed rates of change for all-cause mortality by detailed age groups (early neonatal, late neonatal, postneonatal, and childhood deaths at age 1–4 years) to generate scenarios for the age composition of under-5 deaths. Our predictions of the number of deaths were based on these predicted rates and UN Population Division fertility forecasts.[46] We then rescaled predicted age-specific and sex-specific mortality to match the predicted all-cause under-5 mortality rate in 2030. For analyses, we used Stata (version 13.1), R (versions 2.15.2, 3.0.1, and 3.0.2), and Python (version 2.7.3).

Role of the funding source

The funders of the study had no role in study design, data collection, data analysis, data interpretation, or

	1970	1980	1990	2000	2013
Early neonatal (0–6 days)	31·4 (30·0–32·8)	26·7 (25·7–27·7)	22·6 (21·8–23·3)	19·8 (19·2–20·4)	14·0 (13·5–14·6)
Late neonatal (7–28 days)	16·8 (16·3–17·4)	12·8 (12·6–13·1)	9·3 (9·1–9·5)	7·2 (7·1–7·4)	4·4 (4·1–4·6)
Postneonatal (29–364 days)	48·1 (45·1–51·4)	36·5 (34·9–38·2)	27·6 (26·4–28·8)	22·2 (21·3–23·0)	13·2 (12·4–14·1)
Child (1–4 years)	54·1 (49·8–58·7)	38·7 (36·2–41·3)	27·9 (26·1–29·6)	22·1 (20·9–23·3)	13·1 (12·0–14·3)
Under 5 (0–4 years)	142·6 (138·5–146·9)	110·0 (108·1–111·7)	84·6 (83·3–85·9)	69·4 (68·5–70·4)	44·0 (41·9–46·3)

Table 1: Global mortality rate (deaths per 1000 livebirths) for early neonatal, late neonatal, postneonatal, child, and under-5 age groups for 1970, 1980, 1990, 2000, and 2013

writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

Figure 2 shows the trend in global under-5 mortality rates and the annualised rate of change in the years from 1970 to 2013. Worldwide, under-5 mortality decreased by slightly more than two-thirds from 143 per 1000 livebirths in 1970, to 85 per 1000 in 1990, and to 44 per 1000 in 2013. The global number of under-5 deaths fell from 17·6 million in 1970, to 12·2 million in 1990, and to 6·3 million in 2013. Child mortality fell at an annual rate of between 2·5% and 3·0% from 1970 until 1985, but slowed beginning in 1985, and was at its lowest (–1·2%) in 1994. Progress in reduction of child mortality accelerated after 1997. Since 2003, the global child mortality rate has decreased at a faster rate than in the 1970s and 1980s. Tables 1 and 2 show early neonatal, late neonatal, postneonatal, childhood, and under-5 mortality rates and number of deaths for 1970, 1980, 1990, 2000, and 2013. In 2013, 31·9% of under-5 deaths worldwide happened in the early neonatal period, 9·7% in the late neonatal period, 29·4% in the postneonatal period, and 28·9% between the ages of 1–4 years. The age composition of global child deaths has progressively changed during the past 43 years; the proportion of child deaths in the neonatal (early and late) period increased from 33·4% in 1970, to 37·4% 1990, and to 41·6% in 2013. Annual rates of change between 1970 and 2013 have been very similar (close to –3%) for late neonatal, postneonatal, and ages 1–4 years, but slower (–1·9%) for the early neonatal period (data not shown). Between 2000 and 2013, the annualised rate of change for the early neonatal period was 1·2 to 1·4 percentage points slower than for other under-5 age-groups, albeit faster than the early neonatal rate of decline in previous decades. We used the following equation to calculate rate of change

$$\ln(R_t/R_0)/t$$

where R_t is the rate in time t and R_0 is the rate in time 0, or the baseline. The appendix shows trends and annualised rates of change for super-regions.

Table 3 provides estimates and uncertainty intervals for early neonatal, late neonatal, postneonatal, childhood, and under-5 mortality rates by country, and under-5 deaths for 2013, and the annualised rates of change in under-5 mortality rate from 1990 to 2000, 2000 to 2013, and 1990 to 2013 for 188 countries and 21 GBD regions. Under-5 mortality rates ranged by 66·3 times, from 152·5 per 1000 livebirths in Guinea-Bissau to 2·3 per 1000 in Singapore in 2013. The ten countries with the highest under-5 mortality rate in 2013 were all in sub-Saharan Africa. 55 countries achieved under-5 mortality rates lower than 10 per 1000 livebirths in 2013; nine of them were developing countries. In 2013, 26 countries accounted for 80% of child deaths worldwide (Afghanistan, Angola, Bangladesh, Brazil, Burkina Faso, Cameroon, Chad, China, Cote d'Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, India, Indonesia, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Pakistan, Philippines, Somalia, Sudan, Tanzania, and Uganda; table 3). Neonatal mortality rates ranged from 42·6 per 1000 in Mali to 1·2 per 1000 in Singapore in 2013 (data not shown). On the basis of rates of change from 1990 to 2013, 27 of 138 developing countries are likely to achieve the MDG 4 target of a two-thirds reduction in child mortality from 1990 levels by 2015 (Armenia, Bahrain, Bangladesh, Benin, Bhutan, Brazil, Burma, China, Egypt, El Salvador, Federated States of Micronesia, Iran, Lebanon, Liberia, Libya, Maldives, Nepal, Nicaragua, Oman, Peru, Saudi Arabia, Sri Lanka, Thailand, Timor-Leste, Tunisia, Turkey, and United Arab Emirates).

Figure 3 compares annualised rates of change from 2000 to 2013, with 1990 to 2000. 99 of 188 countries had faster rates of decline between 2000 and 2013 than between 1990 and 2000. Of note, 90% (43 of 48) of countries in sub-Saharan Africa had a faster rate of decline. 20 of 29 countries in central Europe, eastern Europe, and central Asia have also had accelerated decreases. Conversely, 23 of 29 countries in Latin America and the Caribbean had slower rates of decline after 2000 than before. Additionally, we recorded slower rates of change in ten regions. Large differences in the rate of change of child mortality were apparent in several small island nations, most likely due to large random fluctuations over time.

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	1970	1980	1990	2000	2013
Early neonatal (0–6 days)	3886·0 (3707·1–4062·4)	3420·8 (3289·8–3553·1)	3256·8 (3148·0–3363·1)	2638·9 (2561·5–2716·4)	2001·4 (1918·4–2084·3)
Late neonatal (7–28 days)	1999·8 (1944·5–2068·3)	1587·4 (1558·6–1616·9)	1307·9 (1283·2–1333·3)	937·0 (918·8–955·4)	610·7 (578·6–646·1)
Postneonatal (29–364 days)	5636·5 (5294·9–6004·9)	4459·7 (4269·7–4655·4)	3853·7 (3695·1–4015·1)	2874·9 (2768·3–2980·8)	1847·8 (1731·1–1969·8)
Childhood (1–4 years)	6088·4 (5598·6–6604·3)	4554·9 (4254·0–4871·4)	3826·8 (3594·8–4066·9)	2876·8 (2721·4–3040·9)	1816·0 (1654·1–1985·1)
Under 5 (0–4 years)	17597·8 (17119·3–18099·4)	14012·4 (13782·5–14227·7)	12206·3 (12026·1–12384·0)	9327·6 (9206·8–9455·7)	6274·8 (5976·8–6593·4)

Table 2: Global number of deaths (thousands) for early neonatal, late neonatal, postneonatal, child, and under-5 age groups for 1970, 1980, 1990, 2000, and 2013

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	Deaths per 1000 livebirths					Number of under to 5 deaths (thousands)	Annualised rate of change		
	Early neonatal (0–6 days)	Late neonatal (7–28 days)	Post to neonatal (29–364 days)	Childhood (1–4 years)	Under 5 (0–4 years)		1990–2000	2000–13	1990–13
Global	14·0 (13·5 to 14·6)	4·4 (4·1 to 4·6)	13·2 (12·4 to 14·1)	13·1 (12·0 to 14·3)	44·0 (41·9 to 46·3)	6274·8 (5976·8 to 6593·4)	–2·0 (–1·8 to –2·1)	–3·5 (–3·1 to –3·9)	–2·8 (–2·6 to –3·1)
High–income Asia Pacific	1·0 (0·8 to 1·2)	0·4 (0·4 to 0·5)	0·9 (0·8 to 1·1)	0·8 (0·7 to 1·1)	3·2 (2·7 to 3·8)	5·1 (4·4 to 6·1)	–3·0 (–2·0 to –4·2)	–4·0 (–2·7 to –5·2)	–3·6 (–2·6 to –4·4)
Brunei	2·7 (2·1 to 3·4)	0·9 (0·8 to 1·0)	2·2 (1·6 to 2·8)	2·5 (1·8 to 3·2)	8·2 (6·8 to 10·0)	0·1 (0·0 to 0·1)	–1·2 (0·0 to –2·2)	–0·8 (1·1 to –2·4)	–1·0 (0·0 to –1·8)
Japan	0·9 (0·7 to 1·2)	0·4 (0·3 to 0·5)	0·9 (0·7 to 1·2)	0·8 (0·6 to 1·1)	3·0 (2·3 to 3·8)	3·2 (2·5 to 4·0)	–2·9 (–2·6 to –3·3)	–3·3 (–1·4 to –5·1)	–3·2 (–2·1 to –4·2)
Singapore	0·8 (0·6 to 1·1)	0·4 (0·3 to 0·4)	0·6 (0·4 to 0·7)	0·5 (0·4 to 0·7)	2·3 (1·8 to 2·9)	0·1 (0·1 to 0·1)	–7·5 (–6·4 to –8·7)	–3·6 (–1·5 to –5·5)	–5·3 (–4·2 to –6·4)
South Korea	1·3 (1·1 to 1·5)	0·5 (0·5 to 0·6)	1·0 (0·9 to 1·2)	0·9 (0·6 to 1·2)	3·7 (3·4 to 4·1)	1·8 (1·6 to 1·9)	–2·9 (–0·5 to –5·5)	–4·9 (–4·2 to –5·6)	–4·1 (–2·9 to –5·3)
Central Asia	13·3 (12·5 to 14·1)	3·0 (2·8 to 3·3)	11·1 (10·0 to 12·3)	7·0 (6·1 to 8·1)	34·0 (31·6 to 36·5)	61·9 (57·7 to 66·5)	–1·6 (–1·1 to –2·0)	–3·5 (–2·9 to –4·1)	–2·7 (–2·3 to –3·0)
Armenia	7·3 (6·2 to 8·4)	1·8 (1·6 to 2·0)	4·6 (3·7 to 5·4)	3·2 (2·3 to 4·4)	16·8 (15·2 to 18·7)	0·7 (0·6 to 0·8)	–4·2 (–3·2 to –5·1)	–4·9 (–4·0 to –5·9)	–4·6 (–4·0 to –5·1)
Azerbaijan	14·5 (13·4 to 15·8)	3·4 (3·0 to 3·8)	12·5 (10·5 to 14·9)	5·1 (3·7 to 6·9)	35·1 (31·8 to 39·0)	5·9 (5·3 to 6·5)	–2·0 (–1·1 to –3·1)	–4·6 (–3·6 to –5·4)	–3·5 (–2·9 to –4·0)
Georgia	9·4 (8·3 to 10·6)	2·0 (1·9 to 2·2)	5·8 (4·8 to 6·9)	4·0 (2·7 to 5·6)	21·1 (19·0 to 23·4)	1·2 (1·1 to 1·4)	–1·3 (0·0 to –2·4)	–4·0 (–2·9 to –5·2)	–2·8 (–2·2 to –3·4)
Kazakhstan	9·8 (8·6 to 11·0)	2·0 (1·9 to 2·2)	6·1 (5·1 to 7·3)	5·1 (3·9 to 6·6)	22·8 (20·6 to 25·3)	7·7 (7·0 to 8·6)	–1·1 (0·0 to –2·3)	–3·5 (–2·4 to –4·5)	–2·4 (–1·9 to –3·0)
Kyrgyzstan	14·5 (13·3 to 15·6)	2·2 (2·0 to 2·4)	9·1 (7·8 to 10·5)	4·1 (3·1 to 5·4)	29·6 (27·0 to 32·2)	4·4 (4·0 to 4·8)	–3·8 (–2·7 to –4·7)	–3·9 (–3·0 to –4·9)	–3·9 (–3·4 to –4·3)
Mongolia	15·1 (13·8 to 16·3)	3·7 (3·3 to 4·1)	14·7 (12·3 to 17·4)	10·0 (7·4 to 13·3)	42·9 (38·8 to 47·5)	2·7 (2·5 to 3·0)	–4·0 (–3·0 to –4·9)	–3·2 (–2·1 to –4·1)	–3·5 (–3·0 to –4·0)
Tajikistan	14·4 (13·0 to 15·5)	3·3 (2·9 to 3·6)	16·1 (13·7 to 18·4)	8·6 (6·3 to 11·6)	41·7 (37·9 to 45·2)	11·1 (10·1 to 12·1)	–2·5 (–1·6 to –3·3)	–4·4 (–3·6 to –5·3)	–3·6 (–3·1 to –4·0)
Turkmenistan	17·5 (16·0 to 19·0)	4·7 (4·1 to 5·4)	19·6 (15·9 to 23·3)	11·5 (8·2 to 15·9)	52·3 (46·7 to 58·9)	5·8 (5·2 to 6·6)	–2·1 (–0·8 to –3·4)	–3·3 (–2·1 to –4·3)	–2·8 (–2·2 to –3·4)
Uzbekistan	14·0 (12·5 to 15·5)	3·4 (3·0 to 3·8)	10·9 (9·0 to 13·1)	8·1 (6·2 to 10·3)	35·9 (32·5 to 39·9)	22·3 (20·2 to 24·8)	–0·9 (0·0 to –1·8)	–2·6 (–1·7 to –3·7)	–1·9 (–1·4 to –2·4)
East Asia	4·9 (4·3 to 5·5)	1·4 (1·3 to 1·6)	3·5 (2·9 to 4·1)	3·3 (2·4 to 4·2)	13·0 (12·1 to 13·8)	247·4 (229·7 to 265·2)	–4·7 (–3·9 to –5·5)	–7·9 (–7·3 to –8·6)	–6·5 (–6·1 to –6·9)
China	4·9 (4·3 to 5·5)	1·4 (1·3 to 1·6)	3·5 (2·9 to 4·1)	3·2 (2·3 to 4·2)	13·0 (12·0 to 13·8)	238·8 (220·9 to 256·0)	–4·7 (–3·9 to –5·5)	–8·1 (–7·4 to –8·7)	–6·6 (–6·2 to –7·0)
North Korea	8·8 (6·8 to 10·9)	2·0 (1·7 to 2·3)	5·5 (3·9 to 7·5)	5·1 (3·5 to 7·2)	21·2 (17·2 to 26·3)	7·6 (6·1 to 9·4)	–2·1 (–0·1 to –4·0)	–5·7 (–3·9 to –7·5)	–4·1 (–2·9 to –5·4)
Taiwan (Province of China)	2·1 (1·8 to 2·3)	0·8 (0·7 to 0·8)	1·7 (1·4 to 2·0)	2·2 (1·7 to 2·8)	6·7 (6·1 to 7·3)	1·0 (0·9 to 1·1)	–0·2 (0·2 to –0·6)	–1·8 (–1·1 to –2·5)	–1·1 (–0·7 to –1·5)
South Asia	22·5 (21·0 to 24·1)	6·4 (5·7 to 7·2)	14·2 (12·7 to 16·2)	10·5 (8·7 to 12·9)	52·6 (48·3 to 50·0)	1844·0 (1694·2 to 2031·5)	–2·9 (–2·7 to –3·2)	–3·9 (–3·2 to –4·6)	–3·5 (–3·1 to –3·9)
Afghanistan	20·9 (18·7 to 23·1)	10·7 (9·5 to 12·1)	34·9 (28·0 to 41·9)	26·7 (19·3 to 35·2)	90·2 (81·6 to 100·0)	94·7 (85·6 to 105·2)	–1·7 (–0·9 to –2·5)	–3·6 (–2·6 to –4·4)	–2·7 (–2·2 to –3·3)
Bangladesh	19·3 (17·6 to 21·1)	5·4 (4·8 to 6·2)	9·0 (7·5 to 10·8)	7·6 (5·8 to 9·8)	40·8 (36·9 to 45·4)	128·2 (116·0 to 142·7)	–4·7 (–4·3 to –5·1)	–5·6 (–4·7 to –6·4)	–5·2 (–4·7 to –5·6)
Bhutan	18·9 (16·8 to 21·3)	5·7 (4·6 to 7·0)	14·4 (10·7 to 18·7)	9·3 (6·3 to 14·3)	47·5 (39·9 to 57·0)	0·7 (0·6 to 0·8)	–4·1 (–3·2 to –5·0)	–4·9 (–3·6 to –6·1)	–4·5 (–3·7 to –5·3)
India	22·4 (20·4 to 24·5)	5·7 (4·9 to 6·8)	12·0 (10·0 to 14·6)	9·6 (7·1 to 12·9)	48·8 (43·1 to 56·4)	1249·7 (1103·8 to 1443·7)	–3·0 (–2·7 to –3·4)	–4·3 (–3·2 to –5·1)	–3·7 (–3·1 to –4·3)
Nepal	17·7 (16·1 to 19·4)	4·3 (3·8 to 5·0)	9·2 (7·6 to 11·2)	7·0 (5·2 to 9·1)	37·7 (33·9 to 42·1)	22·2 (20·0 to 24·9)	–5·4 (–5·0 to –5·9)	–6·1 (–5·2 to –6·9)	–5·8 (–5·3 to –6·3)
Pakistan	26·3 (24·2 to 28·6)	10·2 (9·3 to 11·3)	26·5 (22·8 to 30·7)	14·9 (11·1 to 19·4)	75·8 (70·1 to 82·5)	348·5 (321·9 to 379·2)	–1·4 (–1·1 to –1·9)	–1·8 (–1·1 to –2·5)	–1·7 (–1·3 to –2·1)
Southeast Asia	9·8 (8·9 to 10·6)	3·2 (2·9 to 3·5)	7·9 (6·8 to 9·2)	6·6 (5·5 to 7·9)	27·2 (24·5 to 30·4)	320·9 (289·3 to 358·5)	–4·1 (–3·7 to –4·6)	–4·0 (–3·1 to –4·8)	–4·0 (–3·5 to –4·5)

(Table 3 continues on next page)

	Deaths per 1000 livebirths					Number of under to 5 deaths (thousands)	Annualised rate of change		
	Early neonatal (0–6 days)	Late neonatal (7–28 days)	Post to neonatal (29–364 days)	Childhood (1–4 years)	Under 5 (0–4 years)		1990–2000	2000–13	1990–13
(Table continued from previous page)									
Burma	14·3 (12·7 to 16·1)	3·9 (3·2 to 4·7)	11·1 (8·4 to 14·6)	8·3 (5·6 to 11·8)	37·1 (31·6 to 43·7)	34·1 (29·0 to 40·2)	–3·5 (–1·6 to –5·6)	–5·5 (–3·7 to –7·1)	–4·6 (–3·7 to –5·5)
Cambodia	15·5 (14·0 to 17·1)	4·8 (4·1 to 5·6)	15·6 (12·4 to 19·0)	7·9 (5·6 to 10·5)	43·2 (37·4 to 49·5)	16·7 (14·4 to 19·2)	–1·4 (–0·6 to –2·1)	–6·6 (–5·3 to –7·7)	–4·3 (–3·6 to –5·0)
Indonesia	11·1 (9·9 to 12·3)	3·8 (3·4 to 4·3)	10·0 (8·2 to 12·3)	7·0 (5·2 to 9·0)	31·5 (28·1 to 35·6)	148·8 (132·2 to 168·2)	–4·7 (–4·1 to –5·3)	–4·1 (–3·1 to –5·1)	–4·4 (–3·8 to –4·9)
Laos	18·6 (16·6 to 20·7)	6·7 (5·6 to 7·8)	20·6 (16·2 to 25·5)	16·7 (11·8 to 23·8)	61·3 (52·8 to 69·4)	11·1 (9·5 to 12·6)	–2·6 (–1·5 to –3·8)	–5·3 (–4·1 to –6·6)	–4·1 (–3·5 to –4·9)
Malaysia	2·3 (1·9 to 2·7)	1·0 (0·9 to 1·1)	1·6 (1·3 to 2·1)	1·6 (1·2 to 2·1)	6·5 (5·5 to 7·6)	3·3 (2·9 to 4·0)	–6·1 (–5·8 to –6·4)	–2·7 (–1·3 to –3·8)	–4·2 (–3·4 to –4·8)
Maldives	8·0 (6·4 to 10·1)	1·9 (1·7 to 2·1)	2·9 (2·4 to 3·5)	3·6 (2·7 to 4·7)	16·3 (13·5 to 19·7)	0·1 (0·1 to 0·1)	–6·1 (–4·8 to –7·3)	–6·7 (–5·1 to –8·2)	–6·5 (–5·6 to –7·2)
Philippines	9·9 (8·4 to 11·3)	2·6 (2·3 to 3·0)	6·9 (5·4 to 8·9)	8·2 (6·2 to 10·7)	27·3 (23·2 to 32·2)	65·1 (55·4 to 76·9)	–3·3 (–2·3 to –4·3)	–2·7 (–1·3 to –4·2)	–3·0 (–2·2 to –3·7)
Sri Lanka	3·2 (2·6 to 3·8)	1·3 (1·2 to 1·5)	1·9 (1·5 to 2·3)	2·5 (1·8 to 3·2)	8·8 (7·5 to 10·5)	3·4 (2·8 to 4·0)	–8·0 (–7·7 to –8·3)	–4·8 (–3·5 to –6·1)	–6·2 (–5·4 to –6·9)
Thailand	4·6 (3·7 to 5·8)	2·1 (1·8 to 2·4)	2·3 (1·9 to 2·6)	2·1 (1·6 to 2·9)	11·0 (9·3 to 13·2)	7·7 (6·5 to 9·2)	–5·0 (–3·1 to –6·9)	–4·2 (–2·5 to –5·8)	–4·5 (–3·5 to –5·4)
Timor–Leste	13·7 (12·3 to 15·1)	2·4 (2·0 to 2·8)	15·3 (12·2 to 19·1)	7·9 (5·7 to 10·7)	38·8 (33·3 to 45·3)	1·6 (1·3 to 1·8)	–3·4 (–2·6 to –4·1)	–7·9 (–6·6 to –9·2)	–5·9 (–5·2 to –6·7)
Vietnam	6·9 (5·4 to 8·5)	2·6 (2·4 to 2·9)	3·7 (3·0 to 4·6)	5·4 (4·1 to 7·1)	18·6 (15·8 to 21·9)	26·6 (22·6 to 31·5)	–5·0 (–3·7 to –6·2)	–3·4 (–1·9 to –5·1)	–4·1 (–3·3 to –4·8)
Australasia	1·8 (1·5 to 2·2)	0·5 (0·4 to 0·6)	1·4 (1·1 to 1·6)	0·9 (0·7 to 1·1)	4·6 (3·9 to 5·4)	1·8 (1·5 to 2·1)	–4·1 (–3·7 to –4·5)	–2·8 (–1·4 to –4·1)	–3·4 (–2·6 to –4·1)
Australia	1·8 (1·5 to 2·2)	0·5 (0·4 to 0·6)	1·2 (1·0 to 1·4)	0·8 (0·6 to 1·1)	4·4 (3·7 to 5·1)	1·3 (1·1 to 1·6)	–4·2 (–3·6 to –4·7)	–2·9 (–1·5 to –4·1)	–3·4 (–2·7 to –4·1)
New Zealand	1·8 (1·5 to 2·2)	0·5 (0·5 to 0·6)	2·1 (1·7 to 2·6)	1·1 (0·8 to 1·5)	5·6 (4·7 to 6·7)	0·3 (0·3 to 0·4)	–4·0 (–3·1 to –4·8)	–2·4 (–0·9 to –3·8)	–3·1 (–2·3 to –3·8)
Caribbean	11·6 (10·1 to 13·6)	4·5 (4·0 to 5·2)	12·0 (10·1 to 14·4)	7·8 (6·0 to 9·9)	35·5 (30·9 to 41·2)	29·8 (26·1 to 34·4)	–3·5 (–3·0 to –4·1)	–2·2 (–1·1 to –3·3)	–2·8 (–2·1 to –3·4)
Antigua and Barbuda	7·0 (2·8 to 14·4)	2·0 (1·1 to 3·3)	3·8 (1·8 to 8·1)	2·6 (1·1 to 5·7)	15·3 (6·9 to 30·9)	0·0 (0·0 to 0·0)	–0·7 (6·1 to –7·7)	–1·6 (4·9 to –8·4)	–1·2 (2·8 to –5·2)
Barbados	8·1 (3·1 to 16·3)	2·2 (1·3 to 3·9)	4·4 (2·1 to 10·1)	1·8 (0·8 to 3·9)	16·5 (7·3 to 33·5)	0·1 (0·0 to 0·1)	–3·1 (4·4 to –10·2)	–1·7 (5·5 to –8·8)	–2·3 (1·3 to –6·0)
Belize	8·7 (3·7 to 15·6)	2·3 (1·3 to 3·9)	4·6 (2·4 to 10·3)	3·1 (1·4 to 6·3)	18·6 (9·0 to 35·5)	0·1 (0·1 to 0·3)	–3·8 (–1·1 to –6·6)	–3·6 (1·8 to –9·1)	–3·7 (–0·5 to –6·7)
Cuba	2·0 (1·6 to 2·4)	0·9 (0·8 to 1·1)	1·7 (1·3 to 2·0)	1·1 (0·8 to 1·4)	5·7 (4·9 to 6·6)	0·6 (0·5 to 0·7)	–4·9 (–4·4 to –5·3)	–3·1 (–1·9 to –4·3)	–3·9 (–3·2 to –4·5)
Dominica	10·2 (4·3 to 17·5)	2·6 (1·5 to 4·8)	5·6 (2·6 to 13·8)	3·6 (1·7 to 7·9)	21·8 (10·2 to 42·8)	0·0 (0·0 to 0·0)	–2·1 (5·1 to –9·1)	–1·3 (5·4 to –7·7)	–1·6 (2·7 to –5·6)
Dominican Republic	13·6 (11·7 to 15·6)	3·1 (2·6 to 3·8)	7·6 (5·5 to 10·1)	4·6 (3·1 to 6·6)	28·8 (24·1 to 34·5)	6·2 (5·2 to 7·5)	–4·7 (–3·8 to –5·6)	–1·9 (–0·3 to –3·4)	–3·1 (–2·3 to –3·9)
Grenada	5·9 (2·5 to 12·6)	1·8 (1·0 to 2·9)	3·3 (1·5 to 6·7)	2·2 (1·0 to 4·2)	13·2 (6·1 to 25·9)	0·0 (0·0 to 0·1)	–3·2 (3·4 to –10·1)	–3·6 (2·5 to –9·8)	–3·4 (0·5 to –7·2)
Guyana	11·8 (6·8 to 16·8)	3·6 (2·1 to 7·0)	14·0 (5·4 to 29·3)	7·2 (2·8 to 17·3)	36·2 (17·2 to 69·5)	0·6 (0·3 to 1·1)	–4·1 (–2·0 to –6·1)	0·1 (5·7 to –5·4)	–1·7 (1·5 to –4·7)
Haiti	16·7 (14·7 to 18·8)	8·8 (7·6 to 10·4)	25·4 (20·6 to 31·4)	16·9 (11·7 to 22·9)	66·1 (56·8 to 77·6)	17·4 (14·9 to 20·5)	–4·0 (–3·3 to –4·8)	–3·0 (–1·8 to –4·2)	–3·5 (–2·8 to –4·2)
Jamaica	7·6 (2·7 to 14·5)	2·0 (1·1 to 3·7)	4·1 (1·9 to 9·9)	4·6 (1·9 to 10·3)	18·3 (8·0 to 37·6)	0·9 (0·4 to 1·9)	–2·8 (1·1 to –7·0)	–2·2 (4·0 to –8·5)	–2·5 (1·2 to –6·2)
Saint Lucia	8·4 (3·3 to 16·2)	2·3 (1·2 to 4·1)	4·6 (2·2 to 10·8)	3·1 (1·3 to 6·6)	18·2 (8·1 to 37·1)	0·1 (0·0 to 0·1)	–5·0 (1·6 to –11·4)	–0·8 (5·9 to –7·3)	–2·6 (1·6 to –6·4)
Saint Vincent and the Grenadines	10·9 (4·7 to 18·2)	2·7 (1·6 to 5·1)	6·2 (2·9 to 15·1)	3·9 (1·7 to 8·6)	23·6 (11·0 to 46·0)	0·0 (0·0 to 0·1)	–2·8 (4·2 to –10·0)	–2·1 (4·2 to –7·8)	–2·4 (1·4 to –6·0)

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	Deaths per 1000 livebirths					Number of under to 5 deaths (thousands)	Annualised rate of change		
	Early neonatal (0–6 days)	Late neonatal (7–28 days)	Post to neonatal (29–364 days)	Childhood (1–4 years)	Under 5 (0–4 years)		1990–2000	2000–13	1990–13
(Table continued from previous page)									
Suriname	16·5 (14·4 to 18·6)	4·2 (3·4 to 5·1)	11·4 (8·4 to 15·3)	6·6 (4·3 to 9·4)	38·1 (31·8 to 45·7)	0·4 (0·3 to 0·4)	−1·5 (0·3 to −3·3)	−1·1 (0·7 to −2·8)	−1·3 (−0·4 to −2·2)
The Bahamas	11·3 (4·9 to 22·4)	1·0 (0·6 to 1·7)	2·1 (1·1 to 4·7)	2·1 (0·9 to 4·5)	16·5 (7·5 to 32·6)	0·1 (0·0 to 0·2)	−6·8 (0·2 to −13·0)	−0·6 (5·8 to −7·4)	−3·3 (0·9 to −7·2)
Trinidad and Tobago	11·2 (4·4 to 20·4)	4·0 (2·2 to 7·6)	4·0 (1·9 to 10·8)	3·3 (1·5 to 6·7)	22·3 (9·9 to 45·0)	0·4 (0·2 to 0·9)	0·7 (5·0 to −3·7)	−2·7 (3·5 to −9·2)	−1·2 (2·3 to −4·7)
Central Europe	2·4 (1·7 to 3·5)	1·0 (0·8 to 1·4)	2·2 (1·6 to 3·1)	1·1 (0·8 to 1·5)	6·7 (4·9 to 9·4)	8·4 (6·1 to 11·8)	−4·9 (−4·5 to −5·4)	−5·1 (−2·4 to −7·5)	−5·1 (−3·5 to −6·3)
Albania	2·7 (1·0 to 4·8)	1·8 (0·9 to 2·8)	8·3 (4·0 to 18·4)	5·2 (2·6 to 10·4)	17·9 (8·6 to 35·1)	0·7 (0·3 to 1·4)	−4·1 (−2·0 to −6·2)	−3·5 (2·3 to −8·6)	−3·8 (−0·6 to −6·7)
Bosnia and Herzegovina	3·1 (2·0 to 4·5)	0·6 (0·5 to 0·8)	1·0 (0·7 to 1·6)	0·7 (0·4 to 1·1)	5·4 (3·6 to 7·9)	0·2 (0·1 to 0·3)	−5·4 (−4·5 to −6·2)	−5·2 (−2·2 to −8·3)	−5·3 (−3·6 to −6·9)
Bulgaria	2·9 (2·0 to 4·5)	1·5 (1·1 to 2·1)	3·6 (2·4 to 4·8)	1·7 (1·1 to 2·6)	9·7 (6·8 to 13·8)	0·7 (0·5 to 1·0)	−0·3 (0·4 to −0·9)	−4·6 (−1·8 to −7·2)	−2·7 (−1·1 to −4·2)
Croatia	2·2 (1·4 to 3·3)	0·7 (0·5 to 0·9)	1·0 (0·7 to 1·5)	0·7 (0·4 to 1·0)	4·6 (3·1 to 6·6)	0·2 (0·1 to 0·3)	−3·3 (−2·1 to −4·4)	−4·9 (−1·8 to −7·8)	−4·2 (−2·5 to −5·8)
Czech Republic	1·0 (0·6 to 1·5)	0·6 (0·4 to 0·8)	0·9 (0·7 to 1·3)	0·5 (0·3 to 0·7)	3·0 (2·1 to 4·3)	0·4 (0·2 to 0·5)	−8·6 (−7·7 to −9·6)	−4·5 (−1·5 to −7·1)	−6·3 (−4·6 to −7·8)
Hungary	2·3 (1·8 to 2·9)	0·9 (0·8 to 1·1)	1·3 (1·0 to 1·6)	0·6 (0·4 to 0·9)	5·1 (4·1 to 6·4)	0·5 (0·4 to 0·6)	−4·8 (−4·1 to −5·4)	−5·5 (−3·8 to −7·3)	−5·2 (−4·1 to −6·1)
Macedonia	3·3 (2·2 to 5·3)	1·4 (1·0 to 1·9)	2·3 (1·5 to 3·4)	0·9 (0·6 to 1·5)	8·0 (5·3 to 11·9)	0·2 (0·1 to 0·3)	−8·1 (−7·2 to −8·9)	−5·2 (−1·9 to −8·2)	−6·4 (−4·7 to −8·2)
Montenegro	2·4 (1·3 to 4·0)	1·0 (0·6 to 1·5)	1·9 (1·1 to 3·2)	1·0 (0·5 to 1·8)	6·3 (3·6 to 10·5)	0·0 (0·0 to 0·1)	−0·1 (6·4 to −6·3)	−9·1 (−5·0 to −13·0)	−5·2 (−1·7 to −8·5)
Poland	2·2 (1·5 to 3·2)	0·9 (0·7 to 1·2)	1·3 (0·9 to 1·9)	0·6 (0·4 to 1·0)	5·0 (3·5 to 7·2)	2·1 (1·4 to 3·0)	−6·4 (−6·1 to −6·8)	−4·9 (−2·0 to −7·5)	−5·5 (−3·9 to −7·0)
Romania	3·2 (1·8 to 6·0)	1·5 (1·0 to 2·2)	4·5 (2·6 to 6·8)	1·9 (1·1 to 3·0)	11·0 (6·6 to 17·7)	2·5 (1·5 to 4·0)	−3·5 (−3·3 to −3·9)	−6·0 (−2·2 to −9·5)	−4·9 (−2·7 to −7·0)
Serbia	2·4 (1·8 to 3·0)	0·7 (0·6 to 0·8)	1·2 (0·9 to 1·5)	0·7 (0·5 to 0·9)	4·9 (3·9 to 6·0)	0·5 (0·4 to 0·6)	−8·9 (−3·2 to −13·9)	−3·3 (−1·7 to −5·1)	−5·7 (−3·0 to −8·2)
Slovakia	2·3 (1·3 to 3·8)	1·1 (0·8 to 1·7)	2·2 (1·2 to 3·6)	1·0 (0·6 to 1·8)	6·7 (4·0 to 10·8)	0·4 (0·2 to 0·6)	−3·2 (−2·3 to −4·1)	−3·4 (0·6 to −7·0)	−3·3 (−1·0 to −5·3)
Slovenia	1·5 (0·8 to 2·6)	0·5 (0·3 to 0·8)	1·0 (0·6 to 1·6)	0·6 (0·3 to 1·1)	3·6 (2·1 to 6·0)	0·1 (0·0 to 0·1)	−5·8 (−3·9 to −7·8)	−3·5 (0·6 to −7·2)	−4·5 (−2·0 to −6·7)
Eastern Europe	3·5 (2·6 to 4·7)	1·3 (1·1 to 1·6)	3·0 (2·3 to 3·6)	2·0 (1·5 to 2·6)	9·7 (7·7 to 12·2)	23·6 (18·5 to 29·4)	−1·3 (0·1 to −2·7)	−5·5 (−3·7 to −7·4)	−3·7 (−2·5 to −4·9)
Belarus	2·7 (2·0 to 3·9)	1·1 (0·9 to 1·5)	2·4 (1·6 to 3·4)	1·4 (0·9 to 2·0)	7·6 (5·5 to 10·4)	0·8 (0·6 to 1·1)	−2·3 (1·3 to −5·9)	−5·8 (−2·8 to −9·0)	−4·3 (−2·4 to −6·0)
Estonia	1·4 (1·0 to 1·8)	0·8 (0·6 to 1·0)	1·1 (0·8 to 1·5)	0·9 (0·6 to 1·2)	4·2 (3·4 to 5·2)	0·1 (0·0 to 0·1)	−4·5 (−3·5 to −5·7)	−7·7 (−5·8 to −9·4)	−6·3 (−5·3 to −7·3)
Latvia	2·1 (1·7 to 2·5)	1·1 (1·0 to 1·3)	1·8 (1·4 to 2·3)	1·4 (1·0 to 1·8)	6·4 (5·3 to 7·6)	0·1 (0·1 to 0·2)	−2·8 (−1·9 to −3·7)	−5·8 (−4·3 to −7·4)	−4·5 (−3·7 to −5·3)
Lithuania	1·4 (1·1 to 1·8)	0·7 (0·6 to 0·8)	1·5 (1·1 to 1·8)	1·0 (0·7 to 1·3)	4·6 (3·6 to 5·6)	0·2 (0·1 to 0·2)	−2·6 (−1·6 to −3·6)	−6·8 (−5·2 to −8·7)	−5·0 (−4·0 to −6·0)
Moldova	5·3 (3·5 to 7·3)	1·5 (1·1 to 1·9)	3·8 (2·9 to 4·7)	2·2 (1·4 to 3·3)	12·6 (9·2 to 16·4)	0·5 (0·4 to 0·7)	−1·4 (0·7 to −3·5)	−5·8 (−3·3 to −8·4)	−3·9 (−2·4 to −5·3)
Russia	3·4 (2·6 to 4·6)	1·3 (1·1 to 1·6)	2·9 (2·2 to 3·7)	2·0 (1·4 to 2·8)	9·6 (7·5 to 12·1)	16·3 (12·6 to 20·7)	−1·6 (0·7 to −4·1)	−5·5 (−3·7 to −7·4)	−3·8 (−2·3 to −5·2)
Ukraine	4·1 (2·9 to 5·7)	1·5 (1·2 to 1·9)	3·3 (2·5 to 4·2)	2·0 (1·4 to 2·8)	10·9 (8·3 to 13·9)	5·4 (4·1 to 6·9)	0·2 (2·3 to −1·9)	−5·4 (−3·1 to −7·9)	−3·0 (−1·7 to −4·3)
Western Europe	1·6 (1·3 to 2·0)	0·6 (0·5 to 0·7)	1·1 (0·9 to 1·3)	0·7 (0·6 to 0·8)	3·9 (3·3 to 4·7)	18·2 (15·2 to 21·9)	−5·0 (−4·8 to −5·2)	−2·9 (−1·4 to −4·3)	−3·8 (−3·0 to −4·6)
Andorra	1·0 (0·6 to 1·8)	0·4 (0·2 to 0·7)	0·7 (0·4 to 1·2)	0·4 (0·2 to 0·8)	2·6 (1·5 to 4·4)	0·0 (0·0 to 0·0)	−6·4 (−0·6 to −11·4)	−2·9 (1·8 to −7·3)	−4·5 (−1·4 to −7·3)

(Table 3 continues on next page)

	Deaths per 1000 livebirths					Number of under to 5 deaths (thousands)	Annualised rate of change		
	Early neonatal (0–6 days)	Late neonatal (7–28 days)	Post to neonatal (29–364 days)	Childhood (1–4 years)	Under 5 (0–4 years)		1990–2000	2000–13	1990–13
(Table continued from previous page)									
Austria	1·7 (1·3 to 2·1)	0·6 (0·5 to 0·7)	1·2 (0·9 to 1·5)	0·7 (0·5 to 0·9)	4·1 (3·2 to 5·2)	0·3 (0·3 to 0·4)	−5·6 (−4·8 to −6·6)	−2·3 (−0·4 to −4·1)	−3·8 (−2·7 to −4·8)
Belgium	1·8 (1·5 to 2·1)	0·6 (0·5 to 0·7)	1·2 (1·0 to 1·4)	0·7 (0·5 to 0·9)	4·2 (3·6 to 5·0)	0·5 (0·5 to 0·6)	−5·7 (−5·3 to −6·2)	−2·4 (−1·2 to −3·7)	−3·9 (−3·1 to −4·5)
Cyprus	1·9 (1·4 to 2·4)	0·7 (0·6 to 0·8)	1·2 (1·0 to 1·6)	0·3 (0·2 to 0·4)	4·1 (3·3 to 5·1)	0·0 (0·0 to 0·0)	−6·3 (−5·2 to −7·4)	−2·9 (−0·9 to −4·7)	−4·4 (−3·3 to −5·4)
Denmark	1·7 (1·3 to 2·1)	0·5 (0·4 to 0·6)	1·0 (0·8 to 1·2)	0·7 (0·5 to 0·9)	3·8 (3·0 to 4·8)	0·2 (0·2 to 0·3)	−5·1 (−4·1 to −5·9)	−3·0 (−0·9 to −4·8)	−3·9 (−2·8 to −5·0)
Finland	1·3 (1·0 to 1·8)	0·4 (0·3 to 0·5)	0·7 (0·5 to 0·9)	0·6 (0·4 to 0·8)	3·0 (2·3 to 3·8)	0·2 (0·1 to 0·2)	−5·1 (−4·1 to −6·2)	−2·7 (−0·7 to −4·4)	−3·7 (−2·6 to −4·7)
France	1·3 (1·0 to 1·6)	0·5 (0·5 to 0·7)	1·2 (1·0 to 1·5)	0·7 (0·5 to 0·9)	3·7 (3·1 to 4·6)	3·0 (2·4 to 3·7)	−4·8 (−4·5 to −5·2)	−2·9 (−1·3 to −4·5)	−3·8 (−2·9 to −4·6)
Germany	1·6 (1·3 to 1·8)	0·5 (0·4 to 0·5)	1·0 (0·8 to 1·1)	0·6 (0·5 to 0·8)	3·6 (3·2 to 4·1)	2·5 (2·2 to 2·9)	−5·5 (−5·2 to −5·9)	−3·0 (−1·9 to −3·9)	−4·1 (−3·5 to −4·6)
Greece	1·6 (1·4 to 1·9)	0·9 (0·8 to 1·0)	1·0 (0·9 to 1·2)	0·6 (0·4 to 0·7)	4·0 (3·6 to 4·6)	0·4 (0·4 to 0·5)	−4·9 (−4·5 to −5·4)	−3·5 (−2·5 to −4·5)	−4·1 (−3·5 to −4·7)
Iceland	0·9 (0·6 to 1·4)	0·4 (0·3 to 0·5)	0·7 (0·5 to 1·0)	0·4 (0·2 to 0·6)	2·4 (1·7 to 3·5)	0·0 (0·0 to 0·0)	−5·7 (−3·0 to −8·3)	−3·8 (−0·8 to −6·6)	−4·6 (−2·8 to −6·3)
Ireland	2·0 (1·4 to 2·7)	0·5 (0·4 to 0·7)	1·3 (1·0 to 1·8)	0·8 (0·5 to 1·1)	4·6 (3·4 to 6·1)	0·3 (0·2 to 0·4)	−3·4 (−2·2 to −4·3)	−3·3 (−1·0 to −5·5)	−3·3 (−2·0 to −4·5)
Israel	1·6 (1·3 to 2·0)	0·6 (0·6 to 0·7)	1·3 (1·0 to 1·5)	0·8 (0·6 to 1·0)	4·3 (3·7 to 5·0)	0·7 (0·6 to 0·8)	−5·1 (−4·4 to −5·8)	−4·1 (−2·8 to −5·2)	−4·5 (−3·8 to −5·1)
Italy	1·7 (1·3 to 2·3)	0·7 (0·5 to 0·8)	0·8 (0·6 to 1·0)	0·5 (0·4 to 0·7)	3·7 (2·8 to 4·8)	2·1 (1·6 to 2·7)	−5·6 (−5·1 to −5·9)	−3·1 (−1·0 to −5·2)	−4·2 (−3·0 to −5·3)
Luxembourg	1·1 (0·8 to 1·6)	0·4 (0·3 to 0·6)	0·8 (0·6 to 1·1)	0·4 (0·3 to 0·7)	2·8 (2·0 to 3·9)	0·0 (0·0 to 0·0)	−6·2 (−3·9 to −8·4)	−4·6 (−1·9 to −7·2)	−5·3 (−3·7 to −6·8)
Malta	3·2 (2·3 to 4·3)	1·0 (0·8 to 1·2)	2·1 (1·5 to 3·0)	0·7 (0·5 to 1·0)	7·0 (5·1 to 9·5)	0·0 (0·0 to 0·0)	−3·4 (−1·4 to −5·4)	0·0 (2·5 to −2·5)	−1·5 (0·0 to −2·9)
Netherlands	1·8 (1·4 to 2·3)	0·5 (0·4 to 0·6)	0·9 (0·7 to 1·2)	0·8 (0·6 to 1·1)	4·1 (3·3 to 5·1)	0·7 (0·6 to 0·9)	−3·2 (−2·5 to −3·8)	−3·6 (−1·9 to −5·3)	−3·4 (−2·4 to −4·3)
Norway	1·2 (0·9 to 1·4)	0·4 (0·3 to 0·4)	0·8 (0·7 to 1·0)	0·6 (0·5 to 0·8)	3·0 (2·5 to 3·6)	0·2 (0·2 to 0·2)	−5·9 (−4·9 to −6·9)	−4·0 (−2·6 to −5·4)	−4·8 (−4·0 to −5·6)
Portugal	1·2 (1·1 to 1·4)	0·5 (0·5 to 0·6)	1·0 (0·9 to 1·2)	0·7 (0·5 to 0·9)	3·5 (3·0 to 4·0)	0·3 (0·3 to 0·4)	−7·1 (−6·7 to −7·5)	−5·6 (−4·6 to −6·6)	−6·2 (−5·6 to −6·8)
Spain	1·3 (1·0 to 1·7)	0·7 (0·6 to 0·8)	1·0 (0·8 to 1·2)	0·6 (0·5 to 0·8)	3·6 (2·9 to 4·4)	1·8 (1·4 to 2·2)	−5·5 (−5·0 to −6·0)	−3·2 (−1·6 to −4·7)	−4·2 (−3·3 to −5·1)
Sweden	1·2 (0·9 to 1·5)	0·3 (0·3 to 0·4)	0·7 (0·6 to 0·9)	0·5 (0·4 to 0·7)	2·7 (2·1 to 3·4)	0·3 (0·2 to 0·4)	−6·2 (−5·3 to −7·1)	−3·0 (−1·1 to −4·8)	−4·4 (−3·3 to −5·4)
Switzerland	2·0 (1·7 to 2·3)	0·5 (0·4 to 0·5)	1·1 (0·9 to 1·3)	0·8 (0·6 to 1·1)	4·3 (3·8 to 5·0)	0·4 (0·3 to 0·4)	−4·0 (−3·5 to −4·5)	−2·1 (−1·0 to −3·1)	−2·9 (−2·3 to −3·5)
UK	2·1 (1·7 to 2·7)	0·7 (0·6 to 0·8)	1·4 (1·1 to 1·7)	0·8 (0·6 to 1·0)	4·9 (4·0 to 6·0)	3·8 (3·1 to 4·7)	−4·1 (−3·8 to −4·5)	−2·0 (−0·4 to −3·5)	−2·9 (−2·0 to −3·8)
Andean Latin America	8·5 (7·9 to 9·0)	3·2 (3·1 to 3·4)	10·0 (9·1 to 10·9)	6·8 (5·8 to 7·9)	28·2 (26·9 to 29·6)	34·0 (32·4 to 35·7)	−5·0 (−4·7 to −5·4)	−3·8 (−3·3 to −4·2)	−4·3 (−4·1 to −4·6)
Bolivia	13·1 (12·0 to 14·2)	4·1 (3·8 to 4·4)	15·5 (13·3 to 17·8)	9·9 (7·5 to 12·9)	41·9 (39·0 to 45·2)	11·4 (10·7 to 12·3)	−4·5 (−4·0 to −5·1)	−3·9 (−3·2 to −4·5)	−4·2 (−3·8 to −4·5)
Ecuador	5·6 (5·0 to 6·2)	3·5 (3·3 to 3·7)	11·9 (10·1 to 13·8)	7·8 (6·0 to 9·9)	28·6 (26·6 to 30·9)	9·4 (8·7 to 10·1)	−3·1 (−2·3 to −3·9)	−2·7 (−1·9 to −3·3)	−2·8 (−2·4 to −3·2)
Peru	8·0 (7·1 to 8·9)	2·7 (2·6 to 2·8)	6·6 (5·7 to 7·6)	4·9 (3·7 to 6·3)	22·0 (20·5 to 23·8)	13·2 (12·3 to 14·3)	−6·4 (−5·7 to −6·9)	−4·5 (−3·8 to −5·1)	−5·3 (−4·9 to −5·7)
Central Latin America	5·8 (5·2 to 6·4)	2·3 (2·2 to 2·4)	6·0 (5·4 to 6·7)	4·0 (3·5 to 4·5)	18·0 (16·5 to 19·7)	87·7 (80·4 to 96·1)	−4·0 (−3·5 to −4·5)	−3·6 (−2·8 to −4·4)	−3·8 (−3·3 to −4·2)
Colombia	5·2 (4·5 to 6·0)	2·2 (2·1 to 2·3)	5·9 (5·1 to 6·8)	4·8 (3·8 to 6·0)	17·9 (16·3 to 19·8)	16·3 (14·9 to 18·0)	−2·3 (−1·5 to −3·2)	−3·1 (−2·3 to −4·0)	−2·8 (−2·3 to −3·2)

(Table 3 continues on next page)