CO1.1: Infant and child mortality

Definitions and methodology

This indicator presents information on infant mortality through three main measures:

i. The *infant mortality rate*, defined as the number of deaths of children aged less than one in a given year per 1000 live births.
ii. The *neonatal mortality rate*, defined as the number of deaths of children aged less than 28 days in a given year per 1000 live births.
iii. The *post-neonatal mortality rate*, defined as the number of deaths of children aged between 28 days and one year in a given year per 1000 live births.

The infant mortality rate is equivalent to the sum of the neonatal and post-neonatal mortality rates. Data come either from OECD Health Statistics or from the UN Inter-agency Group for Child Mortality Estimation.

Information on child mortality is presented through one measure:

i. The *child mortality rate* (sometimes also called the under-five mortality rate), defined as the probability of a child born in a specific year dying before reaching the age of five when subject to current age-specific mortality rates. This probability is expressed as a rate per 1000 live births. Data for all countries come from the UN Inter-agency Group for Child Mortality Estimation.

Lastly, in addition to the data on infant and child mortality, this indicator also provides supplementary information on the prevalence of breastfeeding in Box CO1.1.A. The prevalence of breastfeeding is measured through one main measure:

i. The *proportion of children who were* '*ever breastfed*', where 'ever breastfed' means infants who have been put to the breast, even if only once. These data generally come from national health surveys.

Key findings

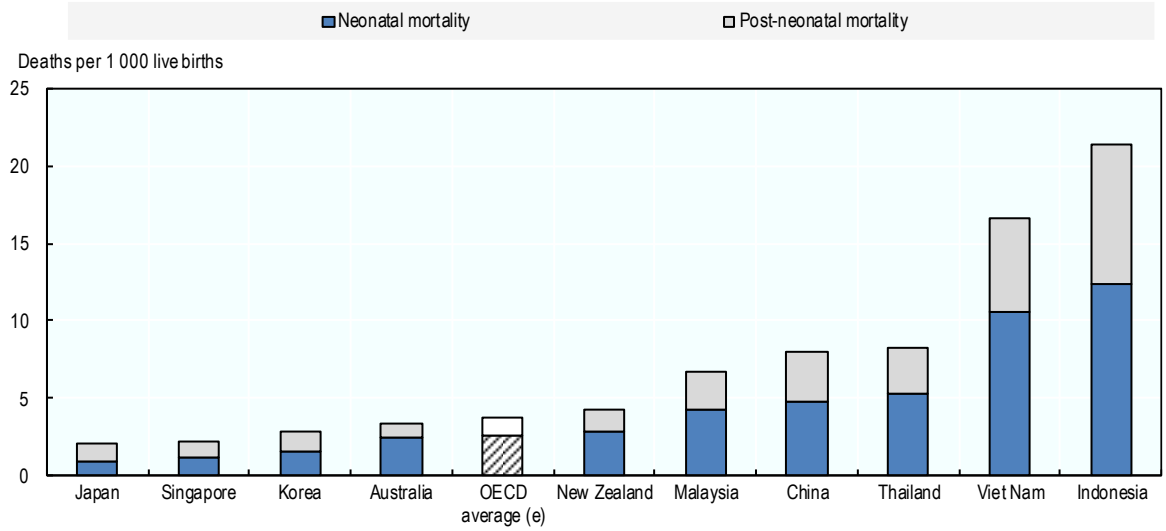
Infant mortality rates are generally low across the covered Asia/Pacific countries, though there is some variation from country to country (Chart CO1.1.A). In most of the covered Asia/Pacific countries infant mortality rates stand at 8 deaths per 1000 live births or less, with the lowest rates, at only just over 2 deaths per 1000 live births, in Japan and Singapore. The highest infant mortality rates, at above 15 deaths per 1000 live births, are in Viet Nam (16.7 deaths per 1000 live births) and Indonesia (21.4 deaths per 1000 live births).

In most of the covered Asia/Pacific countries, somewhere around one-half to two-thirds of deaths that occur during the first year of life are neonatal deaths, that is, deaths that occur with the first 28 days after birth (Chart CO1.1.A). The share of neonatal deaths among all infant deaths is highest in Australia, where roughly 73% of infant deaths are neonatal deaths, and is lowest in Japan, where about 45% of infant deaths are neonatal deaths.

Other relevant indicators: SF2.1 Fertility rates; CO1.2 Life expectancy at birth; CO1.3 Low birth weight; CO1.4 Vaccination rates;

Family Database in the Asia-Pacific Region,
http://www.oecdkorea.org/user/nd84097.do?View&boardNo=00002627
OECD and OECD KOREA Policy Centre

Chart CO1.1.A. **Infant mortality[a], neonatal mortality[b], and post-neonatal infant mortality[c] rates, 2017 or latest available[d]**
Deaths per 1000 live births



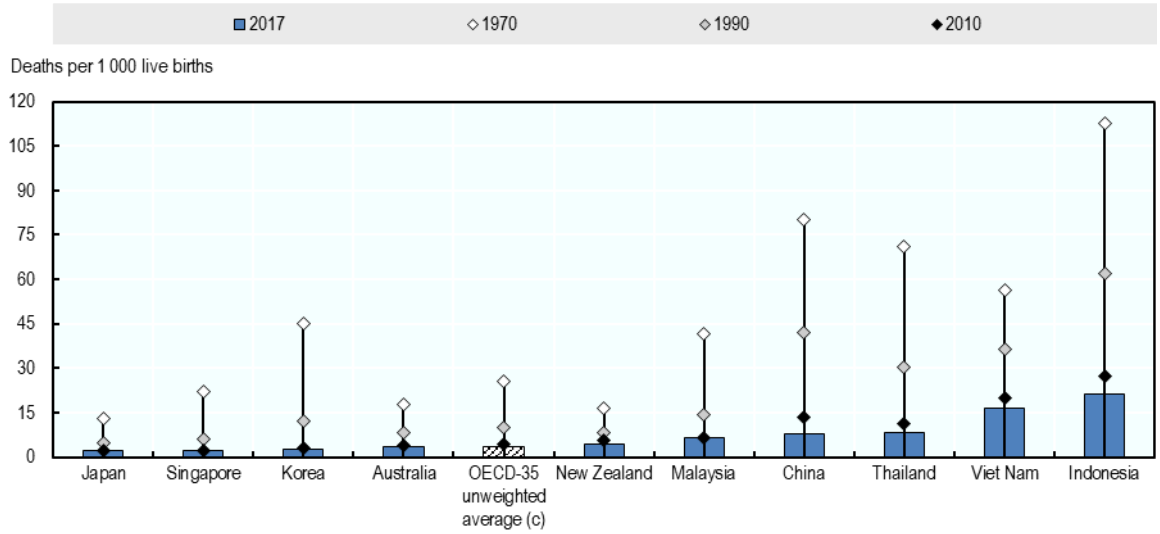
a) Deaths of children aged less than one year per 1000 live births
b) Deaths of children aged less than 28 days old per 1000 live births
c) Deaths of children aged between 28 days and one year of age per 1000 live births
d) Data for New Zealand refer to 2015, and for Japan to 2016.
e) The OECD average refers to the unweighted average across OECD member countries with available and comparable data. See OECD Family Database Indicator CO1.1 (http://www.oecd.org/els/family/database.htm) for more detail.

Sources: Australia, China, Korea, Indonesia, Japan and New Zealand: OECD Health Statistics; OECD average: OECD Family Database Indicator CO1.1; Malaysia, Singapore, Thailand and Viet Nam: UN Inter-agency Group for Child Mortality Estimation.

All covered Asia/Pacific countries have made progress in reducing infant mortality over recent decades (Chart CO1.1.B). In absolute terms, China, Indonesia and Thailand have made the greatest progress: in China and Thailand, current infant mortality rates are at least 60-deaths-per-1000-live-births lower than they were in 1970; in Indonesia, they are over 90-deaths-per-1000-live-births lower than in 1970. However, many of the other remaining covered Asia/Pacific countries have also seen large declines, too. Infant mortality rates have fallen by at least two-thirds since 1970 in all of the covered countries, with the current rates in both Korea and Singapore less than one-tenth of what they were in 1970.

Child mortality rates are usually a little higher than infant mortality rates (Chart CO1.1.C). Among the covered Asia/Pacific countries, the highest child mortality rates are in Viet Nam (21 deaths per 1000 live births) and Indonesia (25 deaths per 1000 live births), and the lowest in Japan and Singapore (under 3 deaths per 1000 live births). Just as for infant mortality, child mortality rates have fallen sharply in recent decades. The largest declines can again be found in China, Indonesia and Thailand (decreases of 102-, 95- and 89-deaths-per-1000-live-births since 1970, respectively), but in all the covered Asia/Pacific countries child mortality rates have fallen by at least three-quarters since 1970.

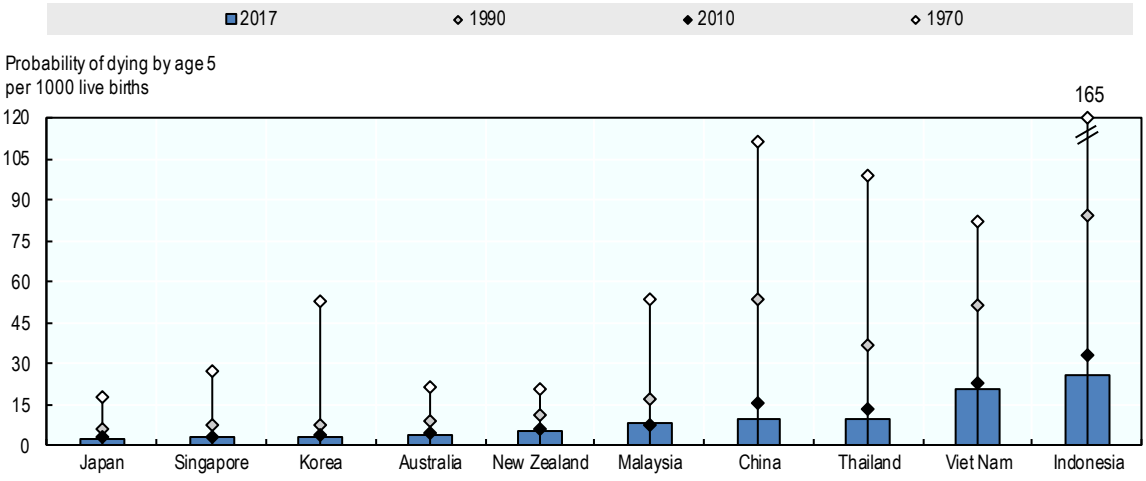
Chart CO1.1.B. **Trends in infant mortality rates, 1970, 1990[a], 2010 and 2017[b]**
Deaths per 1000 live births



a) Data for Korea refer to 1989.
b) Data for New Zealand refer to 2015, and for Japan to 2016.
b) The OECD-35 average refers to the unweighted average across the 35 OECD member countries with available and comparable data. See OECD Family Database Indicator CO1.1 (http://www.oecd.org/els/family/database.htm) for more detail.

Sources: Australia, China, Indonesia, Korea, Japan and New Zealand: OECD Health Statistics; OECD average: OECD Family Database Indicator CO1.1; Malaysia, Singapore, Thailand and Viet Nam: UN Inter-agency Group for Child Mortality Estimation

Chart CO1.1.C. **Child mortality rates, 1970, 1990, 2010 and 2017**
Probability of dying by age 5 per 1000 live births



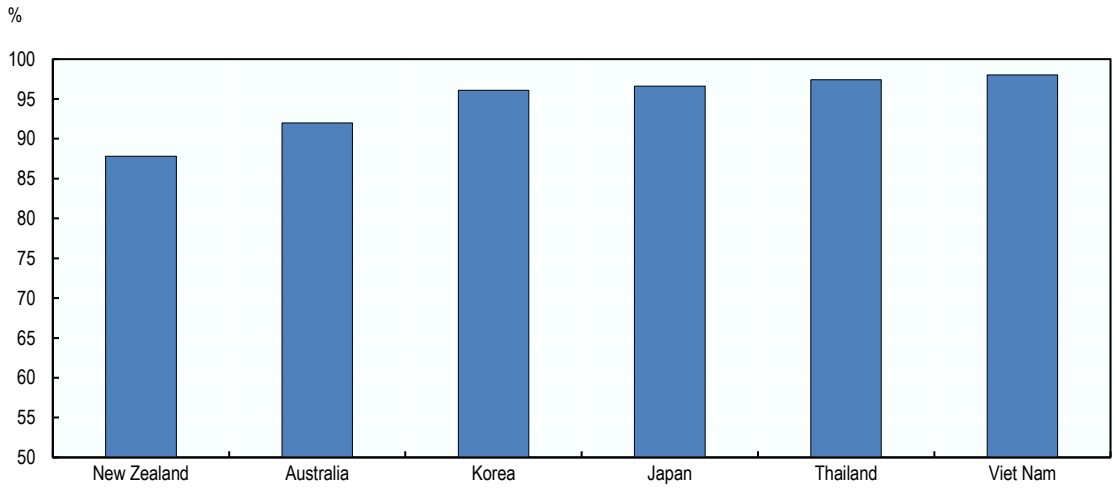
Sources: All countries: UN Inter-agency Group for Child Mortality Estimation

Box CO1.1.A: Breastfeeding rates

Breastfeeding provides both children and mothers with a number of benefits. Breastfeeding delivers infants with the nutrients needed for healthy development; it protects them from common childhood illnesses such as respiratory, gastrointestinal, and ear infections (Kramer et al., 2001; Baker and Milligan, 2007); and it may also help boost their physical and cognitive development (Caspi et al, 2007; Kramer, et al, 2008). Breastfeeding also benefits mothers by reducing the risks of breast and ovarian cancer, weight gain and diabetes (Stuebe, 2009).

Where available, data suggests that breastfeeding rates are usually fairly high in Asia/Pacific countries, though there is some cross-national variation (Box Chart CO1.5.A). Among covered Asia/Pacific countries with available data, the share of children that were 'ever breastfed' exceeds 90% in all countries other than New Zealand (87.8%), with rates highest at greater than 96% in all of Japan, Korea, Thailand and Viet Nam.

Box Chart CO1.5.A**: Proportion of children who were "ever breastfed", latest available year**
Proportion of children who were "ever breastfed"



Data for New Zealand refer to 2005, for Australia to 2006, for Japan to 2007, for Viet Nam to 2014, for Korea to 2015, and for Thailand to 2015-16.

Sources: Australia: Growing up in Australia, Waves 1 and 2; Korea: Statistics Korea; Japan: Nutrition Survey on Infants 2005 (Ministry on Health, Labour and Welfare); Thailand: The Multiple Indicator Cluster Survey (MICS), 2015-16; New Zealand: New Zealand Health Survey; Viet Nam: The Multiple Indicator Cluster Survey (MICS), 2014

UNICEF (2017) *The State of the World's Children 2017* provides data based on an alternative measure : "exclusive breastfeeding rates" (i.e. no other food or drink, not even water, other than breast milk (including milk expressed or from a wet nurse) for the first six months of life, with the exception of oral rehydration salts, drops and syrups (vitamins, minerals and medicines). In four countries where data are available, exclusive breastfeeding rates are lower than the World Health Assembly target of at least 50% by 2025: 41% in Indonesia (2012), 24% in Viet Nam (2013-14), 23% in Thailand (2014-15) and 19% in China (2013) (OECD Health at a Glance Asia/Pacific 2018).

Comparability and data issues

Data on infant and child mortality come either from OECD Health Statistics, who gather data from national statistical offices, or from the UN Inter-agency Group for Child Mortality Estimation, a collaboration between UNICEF, the United Nations Population Division (UNPD), the World Health Organization (WHO), and the World Bank. Original data sources differ across countries. Figures for some countries (e.g. Australia, Japan, New Zealand and Singapore) are based on records from vital registration systems – the preferred source, since they are based on actual records of events as they occur and they cover entire populations. Figures for other countries (e.g. China, Korea, Thailand and Viet Nam) are based on data from censuses or surveys, or from a mixture of data from vital registration systems and censuses or surveys. Data coming from censuses or surveys may be less reliable that those from vital registration systems (e.g. due to the under-reporting of child deaths). See here for more detail on the methods of data collection used by OECD Health Statistics, and here for more detail on the methodology employed by the UN Inter-agency Group for Child Mortality Estimation.

Sources and further reading: Kramer, M.S. and PROBIT Study Group (Promotion of Breastfeeding Intervention Trial) (2001), "Promotion of Breastfeeding Intervention Trial (PROBIT): A Randomized Trial in the Republic of Belarus", *JAMA*, Vol. 285, No. 4, pp. 413-420; Baker, M. and K.S. Milligan (2007), "Maternal employment, breastfeeding, and health: Evidence from maternity leave mandates", *NBER Working Papers* 13188, National Bureau of Economic Research, Inc ; Caspi, A., B. Williams and T. Moffit. (2007) "Moderation of breastfeeding effects on the IQ by genetic variation in fatty acid metabolism", *PNAS,* Vol. 104, No. 47, pp. 18860-18865; Kramer and PROBIT study group (2008), "Breastfeeding and Child Cognitive Development: New Evidence From a Large Randomized Trial", *Arch Gen Psychiatry*, Vol. 65, No. 5, pp. 578-584; Stuebe, A. (2009), "The risks of not breastfeeding for mothers and infants", *Rev Obstet Gynecol*, Vol. 2, No. 4, pp. 222-231; OECD Health Statistics, http://www.oecd.org/els/health-systems/health-data.htm; World Health Organization (2017), *Global Health Observatory (GHO): Child Health*, http://www.who.int/gho/child_health/en/; UN Inter-agency Group for Child Mortality Estimation, http://www.childmortality.org/; OECD/WHO (2018), *Health at a Glance: Asia/Pacific 2018*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance_ap-2016-en