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for every child

An Uneven Chance of Survival

Risk factors associated with under-five and neonatal mortality

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Will I survive to age 5?

A child born today faces remarkably better chances of survival than one born at the beginning of this century. According to the latest estimates on child mortality, the global under-five mortality rate declined by more than half between 2000 and 2024.[1] The risk of dying during the critical first 28 days of life decreased by 43 per cent, while older children under age 5 – those aged 1–59 months – are 57 per cent less likely to die before reaching age 5 than they were in 2000.

Yet progress has not reached every child. In 2024, 4.9 million children died before reaching their fifth birthday, including 2.3 million newborns. These tragedies are increasingly concentrated among the world's most vulnerable children. Children in the poorest and least developed countries, as well as those living in fragile- and conflict-affected settings, shoulder a disproportionate share of this burden. Unequal chances of survival not only persist across countries, but are also evident within countries themselves.[2]

Due primarily to causes including premature birth, complications around the time of birth and common childhood illnesses (e.g., pneumonia, diarrhoea, malaria), many newborn and under-five deaths are preventable. But further reducing mortality rates – particularly in high-burden settings – requires looking beyond cause of death alone. Policies and programmes must also

address the underlying conditions that shape a child's chance of survival and reach the most vulnerable children.

Child mortality is deeply influenced by broader social and economic conditions – often through intermediary factors such as maternal health[3] – and by inequalities in access to services, such as health care and education.[4] With this in mind, pinpointing some of the background factors that determine children's outcomes in the first five years of life is critical in order to identify which children are at greatest risk and to direct resources, investments and interventions where they can have the greatest impact.

This report identifies seven measurable determinants that mediate child mortality rates. They can be grouped into two broad categories: **socio-economic factors** (**household wealth**, **maternal education** and **urban/rural residence**) and **maternal fertility-related conditions** (**maternal age**, **birth interval**, **birth order** and **birth size**), which are closely interlinked.





What are my chances of making it to my 5th birthday if...

... I live in one of the world's **poorest households**?

... My **mother never went to school or only attended primary school**?

... I live in a **rural** area?

... My mother is an **adolescent or older than 40**?

... I'm **born within two years** of a sibling?

... I'm the **fourth-born or later child** in my family?

... I'm **a small newborn**?



Child mortality targets, equity and data disaggregation

The SDGs aim to end preventable deaths of newborns and children younger than age 5 by 2030.

All countries should aim to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-five mortality to at least as low as 25 deaths per 1,000 live births (SDG 3.2).

To address inequity and ensure no child is left behind, the SDGs call for data to be disaggregated by many of the risk factors identified in this report.[7]

Primarily based on household survey data[5] produced by low- and middle-income countries – settings that accounted for over 9 in 10 (95 per cent) under-five deaths in 2024 – this analysis shows that these factors and conditions can increase a child's risk of dying before age 5 by many degrees. Findings for certain determinants for a select group of high-income countries further demonstrate that children face unjust outcomes across economic settings. Focus boxes on ethnicity, stillbirth and subnational trends highlight the significance of these topics when it comes to understanding equity and under-five mortality rates.

Though the risk factors in this analysis have different levels of data availability (see 'Annex: Data availability', p. 72),[6] when viewed together, they create a more nuanced understanding of the circumstances that are likely to shape survival to age 5. By zooming out beyond country level and looking at aggregates, the identified disparities in under-five, neonatal and 1–59-months mortality provide policy- and decision makers with critical guidance on identifying which children are being left behind and some of the reasons why. This report's findings underscore the need to analyse child health and survival through an equity lens, yielding evidence which can then be used to inform the design, implementation and financing of policies and programmes that ensure the most marginalized and vulnerable children in society are reached.

The Sustainable Development Goals (SDGs) emphasize the need to address disparities within countries, regardless of a country's wealth. An approach centred on equity is vital to reaching the SDG targets for neonatal and under-five mortality and achieving an end to preventable child deaths. In order to realize the important vision of the 2030 Agenda and ensure every child's right to survive to age 5 is upheld, inequities between different groups of children must be recognized, prioritized and rectified for every child in every community.

A fair chance in life: Equity vs. equality



Equity is achieved when every child has a fair chance in life and can reach their full potential for well-being. It accounts for the fact that different children have different sets of needs based on their backgrounds, individual circumstances and a range of socio-economic factors. Equity is a pillar of sustainable development.



Equality refers to circumstances where every child is treated in the same way and supported by the same resources and opportunities.



7 risk factors at a glance

AS **wealth** decreases...

mother's education level drops...

and in **rural** settings...

WHEN mothers are **younger than 20 or older than 40**...

a baby is **born within two years** of a sibling...

a child is the **fourth-born or later child**...

a baby is a **small newborn**...

newborns and children under 5 are less likely to survive.

Children have no control over their family's income, where they live, their mother's level of education or her age, the age of their siblings, their birth order or their size at birth. But their chances of survival are profoundly affected by these conditions.

By identifying and measuring the impact of these factors and taking action accordingly, the world can take important strides towards ensuring every child has a fair chance in life.

Socio-economic factors

1. WEALTH

Children born into the poorest households
face disproportionate risks of dying during the first five years compared to those from the richest households.



MORTALITY RATES ARE (ON AVERAGE)		
2.0x as high	1.3x as high	3.0x as high
among children who are		
under age 5	neonates	aged 1 to 59 months

IN 1 IN 4 COUNTRIES STUDIED: children from the poorest households **are at least 2x more likely to die before age 5 than children from the richest households.**

2. EDUCATION

Children of mothers with no or only primary education
face greater threats to their survival than those of mothers who attended secondary school or higher.



MORTALITY RATES ARE (ON AVERAGE)		
1.9x as high	**1.6x** as high	**2.3x** as high
among children who are		
under age 5	neonates	aged 1 to 59 months

IN 1 IN 11 COUNTRIES STUDIED:

children born to mothers with no or only primary education
are at least 2x more likely to die before age 5
than children whose mothers attended secondary school or higher.

3. RESIDENCE

Children born in rural areas
are more likely to die before turning 5 than those in urban areas.



MORTALITY RATES ARE (ON AVERAGE)		
1.6x as high	**1.4x** as high	**1.9x** as high
among children who are		
under age 5	neonates	aged 1 to 59 months

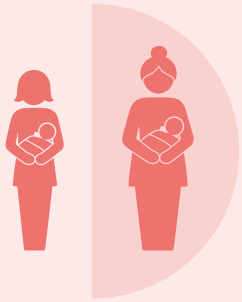
IN 1 IN 3 COUNTRIES STUDIED:

children living in rural areas
are at least 1.5x more likely to die before age 5
than children living in urban areas.

Maternal fertility-related conditions

4. MOTHER'S AGE

Children born to the world's youngest mothers and oldest mothers face a higher likelihood of death before age 5.



MORTALITY RATES ARE (ON AVERAGE)		
1.3x as high (mothers younger than 20)	**1.3x as high** (mothers younger than 20)	**1.3x as high** (mothers younger than 20)
1.4x as high (mothers older than 40)	**1.5x as high** (mothers older than 40)	**1.4x as high** (mothers older than 40)
among children who are		
under age 5	neonates	aged 1 to 59 months

IN 5 IN 6 COUNTRIES STUDIED: children born to mothers younger than 20 or older than 40 **face a higher risk of dying before age 5** than children born to mothers aged 20–29 years.

5. BIRTH INTERVAL

Children born within shorter intervals
are more likely to die before age 5 than those born at longer intervals.



MORTALITY RATES ARE (ON AVERAGE)

under age 5	neonates	aged 1 to 59 months
2.1x as high	2.3x as high	2.1x as high

when the birth interval is two years or less compared to a birth interval of three years

among children who are

IN 1 IN 2 COUNTRIES STUDIED: birth spacing of less than 2 years **more than doubles the risk of dying before age 5.**

6. BIRTH ORDER

Children of higher birth orders – those born after the third-born child
– are more likely to die before age 5 than those born second or third.



MORTALITY RATES ARE (ON AVERAGE)

under age 5	neonates	aged 1 to 59 months
1.7x as high	1.6x as high	1.7x as high

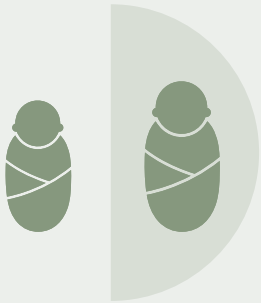
among fourth-born or later births compared to second or third births

among children who are

IN 1 IN 6 COUNTRIES STUDIED: children born as a fourth or subsequent birth face **at least 2x the risk of dying before age 5** compared to second or third births.

7. BIRTH SIZE

Small or very small babies
are more likely to die before age 5 than average or large babies.



NEONATAL MORTALITY RATES ARE (ON AVERAGE)

1.9x

as high among small or very small babies compared to average or large babies

IN 3 IN 5 COUNTRIES STUDIED:

small or very small babies face
at least 2x the risk of dying during the first month of life
compared to average or large babies.



Findings and analysis: Why do some children face a higher risk of dying before age 5?

Socio-economic factors

This section examines three socio-economic factors – household wealth, mother's education level and place of residence (rural versus urban environments) – and their association with survival to age 5. While numerous factors contribute to child mortality outcomes, these dimensions are readily available in household survey data and significantly shape under-five mortality rates.

The findings in this section provide critical evidence to help guide, design and implement solutions that can reduce systemic inequalities within countries and help ensure equal chances for every child during the first five years of life.





Wealth: What if I live in a poor household?



Wealth can shape many aspects critical to child survival, such as parents' ability to afford health care, nutritious food and safer environments for children.

The impact of wealth-related deprivations becomes more visible as children age, with higher mortality rates among the poorest older cohort of children (1–59 months) than among the poorest newborns.

This analysis considers wealth as a measure of household wealth (as opposed to measures of absolute poverty). Populations of children are grouped into five quintiles – poorest to richest – defined by country-specific ranges. The latest United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) numbers are used to project under-five mortality rates by wealth quintile to 2030.

The availability of trend estimates by wealth quintile also allowed for a deeper analysis of the relationship between household wealth and under-five mortality rates – reaffirming the need for better data across the dimensions highlighted in this report to inform proactive equitable and effective action for children.

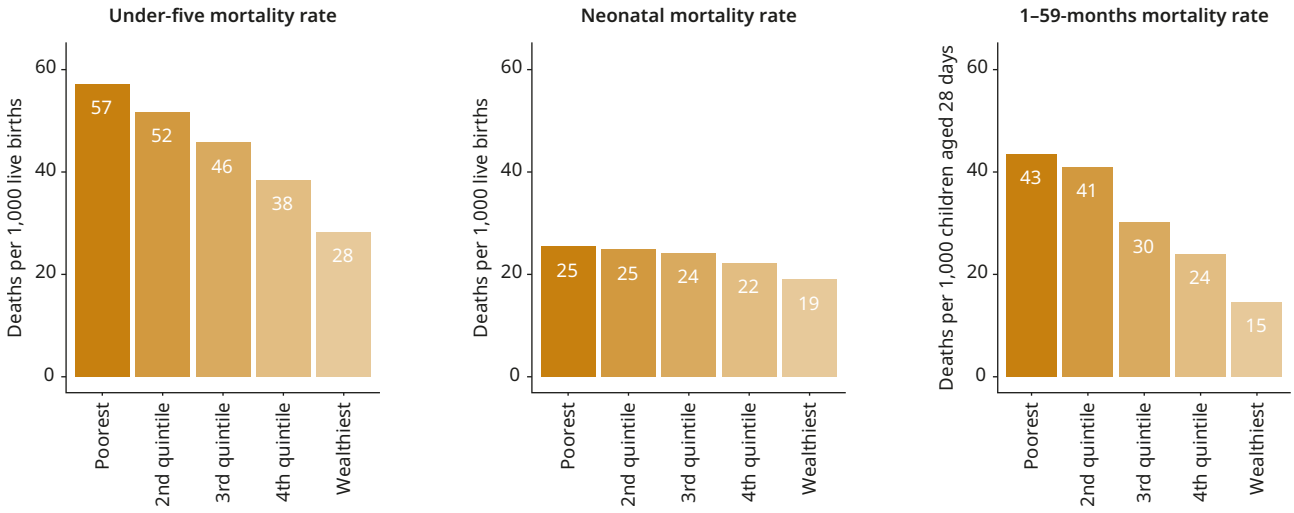
KEY FACT

Almost 900 million children in developing countries live in multidimensional poverty, without even a minimum level of access to education, health services, housing, nutrition, sanitation or safe drinking water.[8]



Children from the poorest households are, on average, nearly twice as likely to die before reaching age 5 than those from the wealthiest households

Figure 1. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by household wealth (2024)



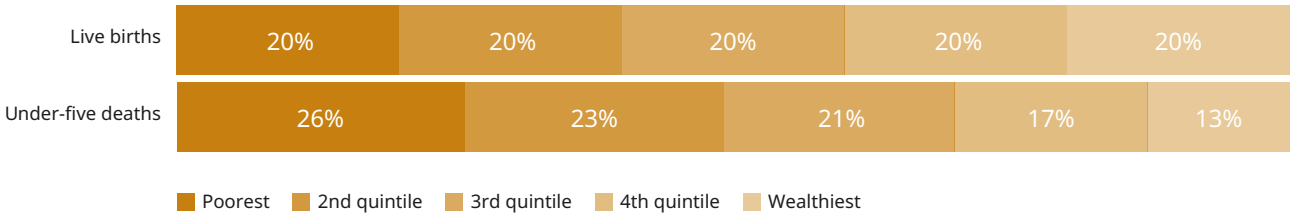
Note: Under-five mortality rates are not strictly comparable with the neonatal and 1–59-months mortality rates in this analysis since different methods were applied to calculate them. The under-five mortality rate by wealth quintile was modelled by UN IGME for 106 low- and middle-income countries using survey data as input, while neonatal and 1–59-months mortality rates are based on analysis of DHS, MICS and other nationally representative sources for 68 low- and middle-income countries.

The risk of dying before age 5 for children growing up in the poorest households is on average 2.0 times that of children from the richest households. In 2024, the average estimated under-five mortality rate was 57 deaths per 1,000 live births in the poorest quintile, compared to 28 deaths per 1,000 live births in the wealthiest quintile, with an absolute difference of 29 deaths per 1,000 live births (*see Figure 1*).

The neonatal mortality rate in the poorest households was only slightly higher than in the wealthiest households, with an average ratio of 1.3 and an absolute difference of only 6 deaths per 1,000 live births. Among the older under-five age group, differences by wealth quintile become more pronounced: the 1–59-months mortality rate for children in the poorest households was on average 3.0 times that of children living in the wealthiest households, with an absolute difference of 29 deaths per 1,000 children aged 28 days.

The poorest children in low- and middle-income countries bear a disproportionate burden of under-five deaths

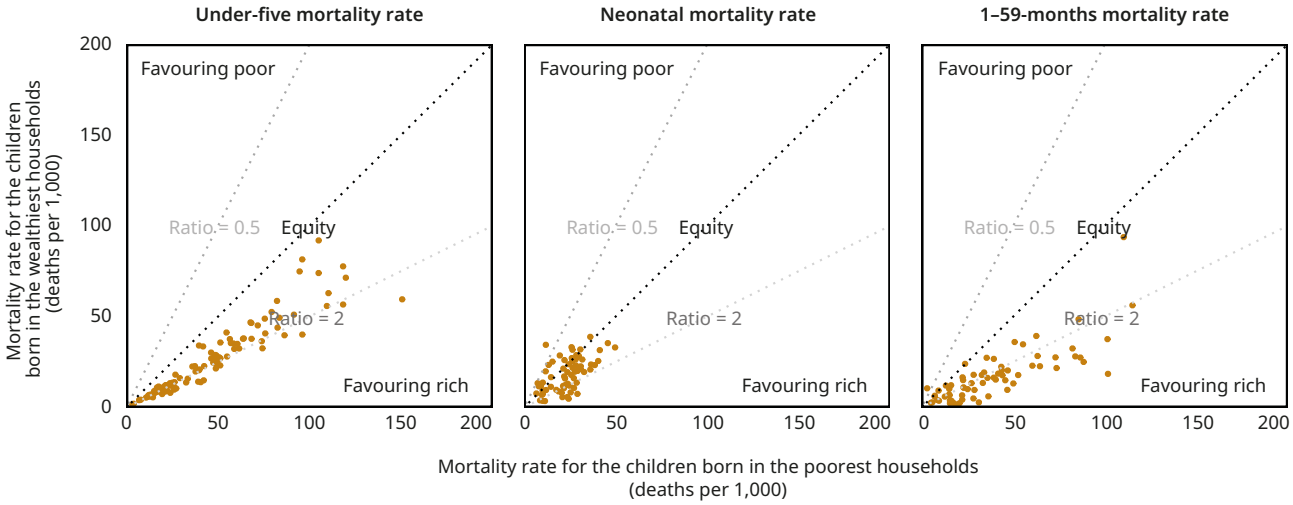
Figure 2. Percentage of live births and under-five deaths, by household wealth (2024)



Children in the poorest wealth quintile account for a larger proportion of under-five deaths compared to their share of live births. Although births are equally distributed by quintile in our analysis (*see Figure 2*), deaths are not: Nearly half of all under-five deaths (49 per cent) occurred among children born into the two poorest groups, compared to 30 per cent in the two wealthiest groups.

Disparity ratios and wealth: How pronounced are inequities between different groups of children within countries?

Figure 3. Under-five mortality rates, neonatal mortality rates and 1–59-months mortality rates in the poorest and wealthiest households in selected countries



While the comparative risk of dying before age 5 in the poorest and wealthiest households varies by country, under-five mortality is consistently associated with household wealth in all countries analysed (*see <childmortality.org> for country charts and data*). In every country, child mortality was highest among the poorest quintile and lowest among the wealthiest quintile.

In 2024, the under-five mortality rate disparity ratio between children in the poorest households and children in the wealthiest households across countries ranged from 1.1 to 3.0, with a median ratio of 1.9 across countries.

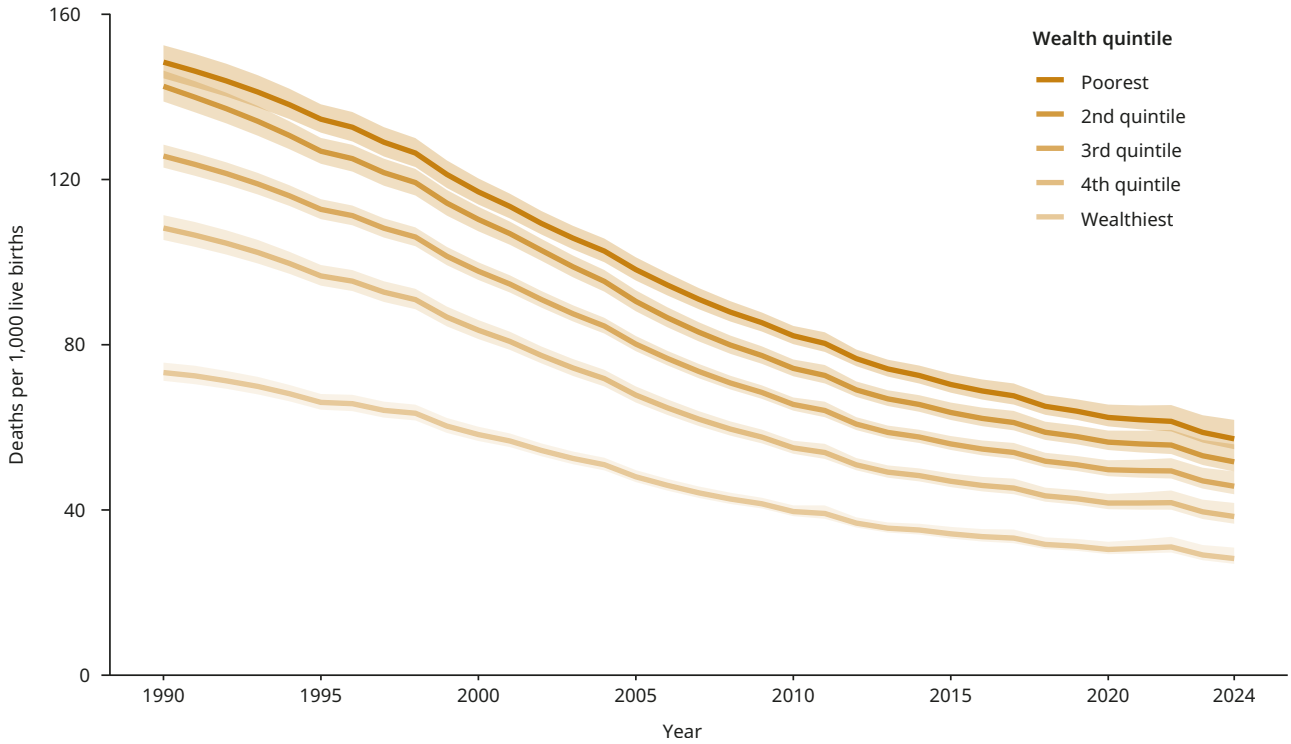
In three quarters of countries (78), children born in the poorest households were 1.1 to 2.0 times more likely to die before age 5 than children born in the wealthiest ones (*see Figure 3*). In one quarter of countries (28), the ratio was higher than 2. In absolute terms, the difference between the poorest and richest households was more than 19 deaths per 1,000 live births in 46 per cent of the countries (49), ranging overall from the smallest difference of 2 deaths per 1,000 live births to the largest difference of 91 deaths per 1,000 live births.

For the neonatal mortality rate, half of the countries (34) had a disparity ratio of less than 1.4 between babies born to the poorest households and those born to the richest households.

The ratios increased among the older under-five age group, with the 1–59-months mortality rate disparity ratio between the poorest and wealthiest households exceeding 2.3 in half of the countries (34).

For decades, children from the poorest families have faced a higher risk of dying than their wealthier peers

Figure 4. Under-five mortality rates by household wealth (1990–2024)



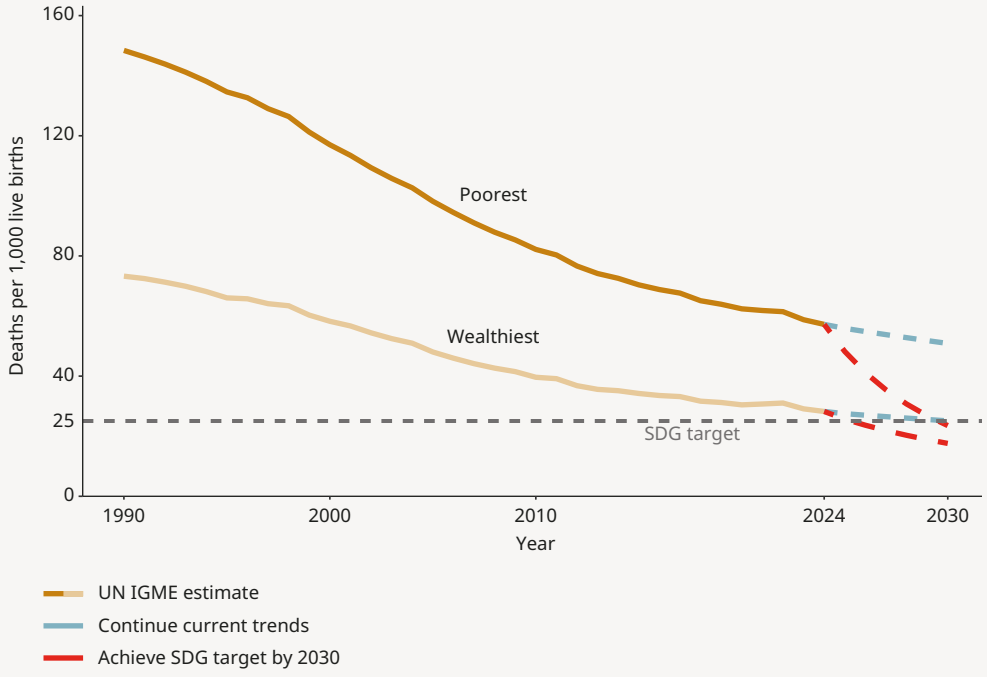
In 2024, of the 4.7 million under-five deaths that took place in the 106 low- and middle-income countries analysed, two times as many children (1.2 million) died in the poorest quintile compared to the wealthiest quintile (596,000). This trend holds across time: From 1990 to 2024, among the 265 million under-five deaths that occurred in the same low- and middle-income countries, an estimated 67 million of these children were born in the poorest quintile compared to 33 million from the wealthiest quintile.

Since 1990, the under-five mortality rate has declined by more than 60 per cent across all quintiles (*see Figure 4*). As a result, the absolute difference between the poorest and wealthiest quintiles was reduced from 75 deaths per 1,000 live births to 29 deaths per 1,000 live births. The ratio of the mortality rates in the poorest and wealthiest quintiles remained more or less the same – around 2 from 1990 to 2024.

Under-five mortality, wealth and the SDGs

If the SDG targets were achieved by 2030 across all wealth quintiles, 8.2 million lives could be saved

Figure 5. Estimated and projected under-five mortality rates in the poorest and the wealthiest quintiles, by different scenarios (1990–2030)



Note: The 'achieve SDG target by 2030' scenarios are applied at the country level. Countries that have already met the SDG target continue their current downward trends, resulting in an aggregate rate below 25 deaths per 1,000 live births.

From 1990 to 2024, the gap in mortality rates between the poorest and wealthiest populations saw a notable decline in absolute terms. If this trajectory continues, the difference is expected to further reduce to 26 deaths per 1,000 live births by 2030, with an under-five mortality rate of 51 deaths per 1,000 live births in the poorest households and 25 deaths per 1,000 live births in the richest households (*see Figure 5*). While absolute differences are expected to decline, relative differences are projected to remain: By 2030, children born into the poorest quintile will continue to face a risk of dying before age 5 twice that of children in the wealthiest quintile.

Achieving the SDG under-five mortality target on time across wealth quintile groups in the 106 countries analysed would save the lives of 8.2 million children from now until 2030; almost 56 per cent of these children would come from the two poorest quintiles, with a third (2.4 million) in the poorest quintile alone. By 2024, 34 per cent (36) of the poorest quintiles in the countries analysed had already met the SDG target, compared to 56 per cent (59) of the wealthiest quintiles.

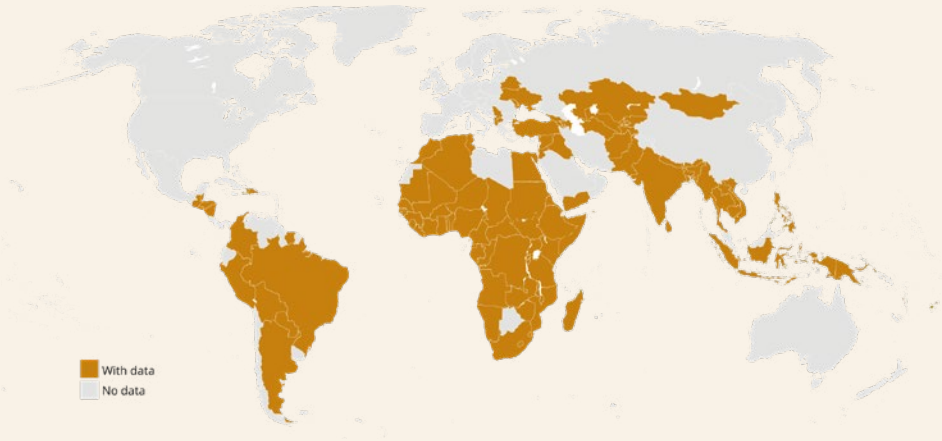
Comparing progress in reducing under-five mortality rates at the national level to progress by wealth quintile, 57 countries among the 106 countries are off track at the national level to reach the under-five mortality target, while 62 are off track in the poorest quintile, 58 in the second-poorest quintile, 57 in the middle quintile, 50 in the second-wealthiest quintile and 38 in the wealthiest quintile.

To achieve the SDG target on time, the wealthiest quintile needs to triple its current annual rate of reduction, the second- and third-wealthiest quintiles need to more than triple their current rates of reduction, and the fourth-wealthiest and poorest groups need to more than quadruple their current rates of reduction. These findings show that current progress in many countries is insufficient even among the wealthiest households, highlighting the need for accelerated progress across all quintiles.

If the SDG target for under-five mortality was achieved for the children born in the poorest and richest quintiles in each country, the gap between their under-five mortality rates at aggregated level would narrow to just 5.9 deaths per 1,000 live births by 2030 – a far more equitable outcome for children. This captures the immense value of looking at vulnerable subgroups when examining progress towards SDG targets, whether by socio-economic group, subnational level or otherwise.

BEHIND THE DATA: MEASURING CHILD MORTALITY AND HOUSEHOLD WEALTH

Map 1. Countries with available survey data for household wealth analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of under-five mortality by household wealth is based on estimates and projections generated by UN IGME for 106 low- and middle-income countries, where 96 per cent (4.7 million) of global under-five deaths and 80 per cent (105 million) of live births took place in 2024.

UN IGME estimates are unavailable by the under-five subgroups (neonates, 1–59-month-olds). For the analysis of the neonatal mortality rate by wealth quintile, 68 countries with survey data were analysed, which accounted for 73 per cent (1.7 million) of global neonatal deaths. For the analysis of the 1–59-months mortality rate, 68 countries with survey data were analysed, which accounted for 81 per cent (2.1 million) of global deaths among this age group.

For further details, please see the Annex.

Why is data availability important?

Data and statistical systems play a critical role in identifying the groups of children experiencing the highest rates of mortality. Well-functioning and high-quality data collection mechanisms enable countries and organizations to track and monitor the well-being of children, understand where inequities persist and channel resources to reach those children left behind.

Survey data in low- and middle-income countries provide vital insights into these disparities. These data are often not timely, however, but refer to the 5- or 10-year period before the survey. For under-five mortality estimation by wealth in this report, for instance, the average for most recent data point from surveys was 9.2 years old (from target year 2024) across the 106 countries. For neonatal and 1–59-months mortality estimation, the average for most recent data point was 7.5 years old across the 68 countries.

These data gaps must be addressed in order to identify where and which children face unequal chances of survival.



Education: What if my mother never went to school or only attended primary school?



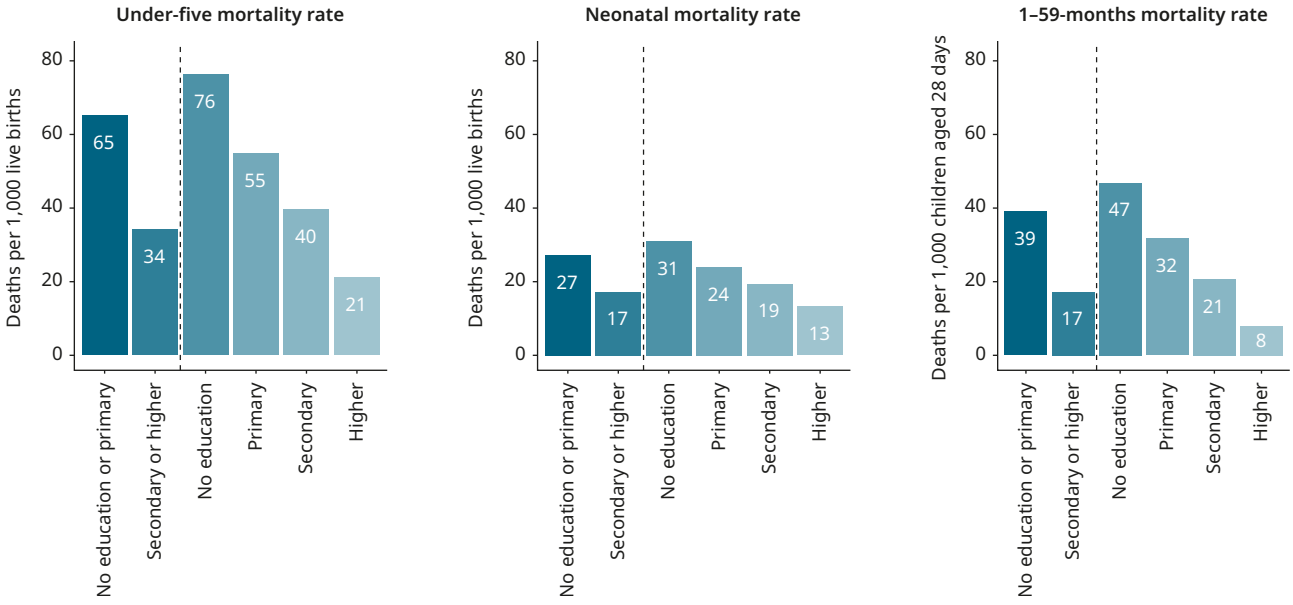
Upholding the right of girls to go to school carries broad ripple effects in society. Research demonstrates that when girls are educated, poverty rates decline, maternal health improves, violence decreases and children's chances of survival increase. Maternal levels of education have been consistently linked to child mortality rates.[9, 10]

KEY FACT

Around the world, 122.3 million girls are out of school – 34.8 million girls of primary school age and 87.5 million girls of secondary school age. Girls in countries affected by conflict are more than twice as likely to be out of school than those living in non-affected countries.[11]

The less education a mother has, the more likely she is to endure the loss of a child

Figure 6. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by mother's education (2024)



Note: Two standard groupings for mother's education were used in all countries: 1) two categories: no education or primary, and secondary or higher, or 2) four categories: no education, primary, secondary, and higher. The dotted line separates the two standard groupings. The under-five, neonatal and 1–59-months mortality rates by mother's education for the first grouping (two categories) are derived from UNICEF analysis based on DHS, MICS and other nationally representative sources for 66 countries; 55 of these also had data for the second grouping (four categories).

Children born to mothers with no education or only primary education are more likely to die before they turn 5 years old than those born to a mother with secondary or higher education. These risks become more pronounced as children age: Among mothers with the lowest levels of education, mortality rates are higher among children aged 1–59 months than among newborns. The opposite

is true, however, among children born to mothers with higher levels of education, whose chances of survival improve as they age.

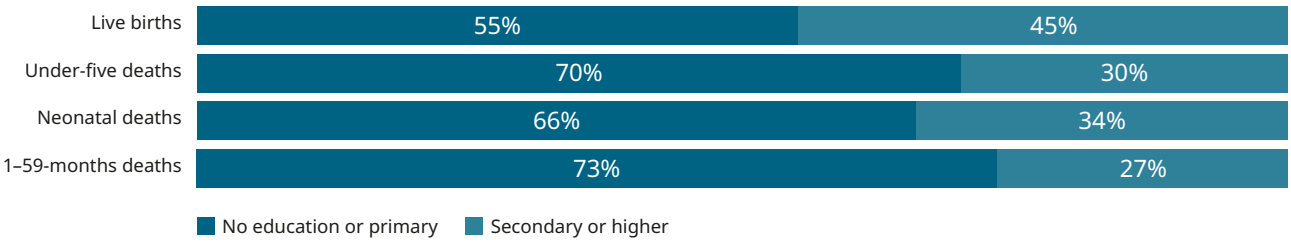
For the 66 countries analysed, the under-five mortality rate was 65 deaths per 1,000 live births for children of mothers with no or primary education, and 34 deaths per 1,000 live births for children of mothers with secondary or higher education (*see Figure 6*). The risk of dying for children born to mothers in the combined two lowest education levels was on average 1.9 times that of those born to mothers in the two combined highest education levels, with an absolute difference of 31 deaths per 1,000 live births.

The neonatal mortality rate for children whose mothers had no or only primary education was on average 1.6 times that of those with mothers who attended secondary or higher education, with an absolute difference of 10 deaths per 1,000 live births. Older children face even higher risks: The 1–59-months mortality rate for children of mothers with no or primary education was on average 2.3 times that of children born to mothers with secondary or higher education, with an absolute difference of 22 deaths per 1,000 children aged 28 days.

More detailed information from a subset of countries shows that mortality rates gradually decline as levels of maternal education increase. In this subset of data, under-five mortality rates in 2024 were 76 deaths per 1,000 live births for the group with no maternal education, and 55, 40 and 21 deaths per 1,000 live births for children of mothers with primary, secondary and higher education, respectively.

The burden of under-five deaths is unequally carried by mothers with little to no education

Figure 7. Percentage of live births, under-five deaths, neonatal deaths and 1–59-months deaths, by mother's education (2024)



Mothers with the least education shoulder a disproportionate share of under-five deaths, with lower levels of maternal education (no education/primary) associated with a higher percentage of under-five, neonatal and 1–59-months deaths compared to the share of live births. Although 55 per cent of live births occur in this group, children born to mothers with the least education

accounted for 70 per cent of all under-five deaths in 2024. Children born to mothers with secondary or higher education, however, accounted for 45 per cent of live births in 2024, compared to just 30 per cent of under-five deaths (*see Figure 7*).

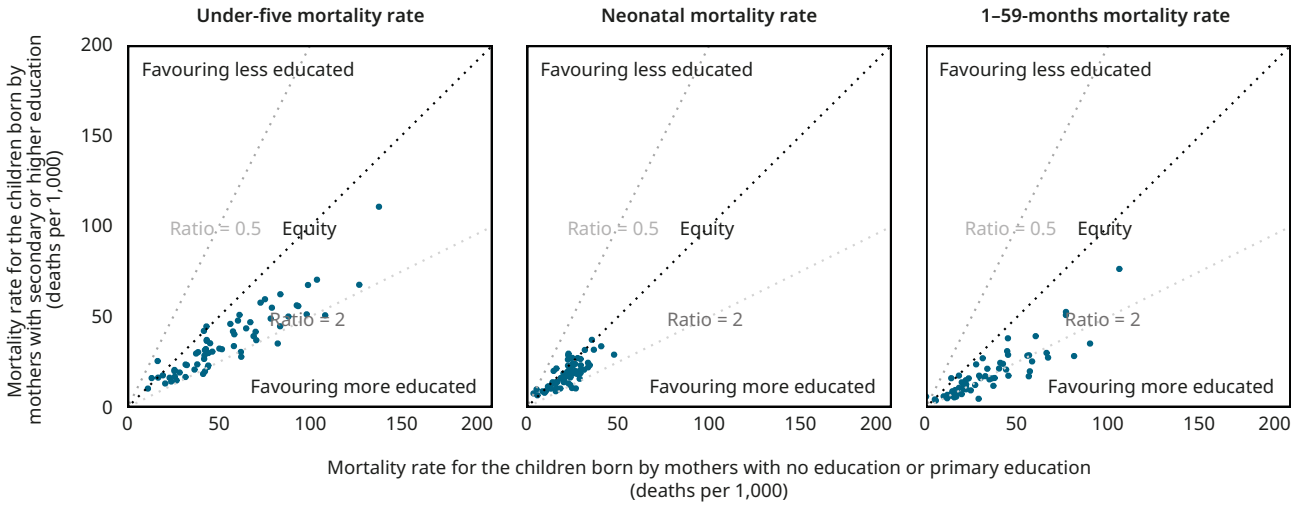
Children of mothers with lower education continue to be disadvantaged

Under-five mortality rates declined across all education levels and both age groups (neonates, 1–59-month-olds) in the aggregate for 47 countries with trend data since 2000. While the absolute difference in the under-five mortality rate between children of mothers with no or primary education and those with secondary or higher education dropped by 58 per cent, the decline in disparity ratio was smaller – from around 2.2 in 2000 to 1.8 in 2024.

Reaching the under-five mortality SDG targets for all children regardless of their mother's level of education will require concentrated efforts among the groups that are off track to meet the target – that is, mothers with no, primary or secondary education. In the two lowest levels of education, the current annual rate of reduction would need to accelerate by a factor of six in under-five mortality and by more than eight times for neonatal mortality to meet the SDG targets by 2030.

Disparity ratios and mother's education: How pronounced are inequities between different groups of children within countries?

Figure 8. Under-five mortality rates, neonatal mortality rates and 1–59-months mortality rates by mother's education in selected countries



Within countries, the under-five mortality disparity ratio by mother's level of education increases as children age, with greater disparities observed among older children under age 5 than newborns. Lower maternal educational attainment is generally associated with higher mortality risks, but variation exists across countries (*see <https://childmortality.org> for country charts and data*).

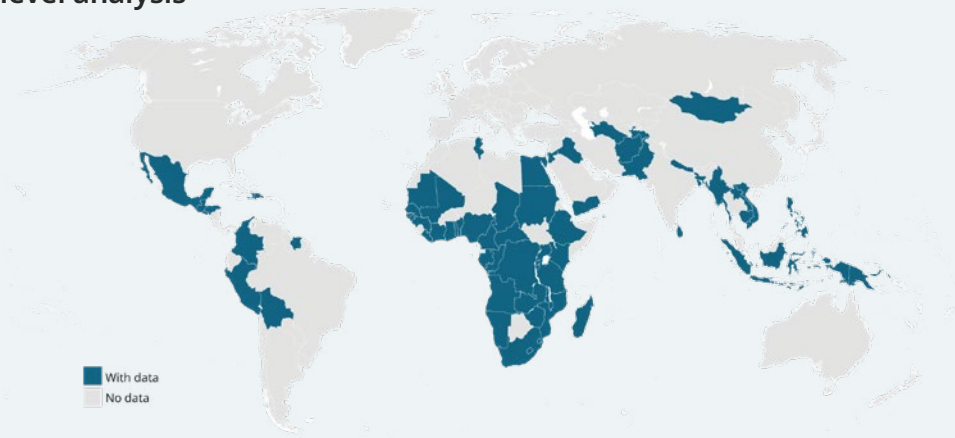
Among the countries analysed, the under-five mortality disparity ratio in 2024 of children born to mothers with no or primary education compared to those born to mothers with secondary or higher education ranged from 0.6 to 2.3. Nearly half of the countries showed a ratio greater than 1.5.

The neonatal mortality disparity ratio for children of mothers with no or primary education and those of mothers with secondary or higher education ranged from 0.5 to 2.6. The ratio was above 1.2 for nearly half of countries analysed.

When it comes to older children, the range ticked even higher: The 1–59-months mortality disparity ratio for children born to mothers with no or primary education and those born to mothers with secondary or higher education ranged from 0.9 to 6.1. The median ratio was 1.9.

BEHIND THE DATA: MEASURING CHILD MORTALITY AND MOTHER'S EDUCATION

Map 2. Countries with available survey or sample vital registration data for mother's education level analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of mortality by mother's education is based on data from 66 low- and middle-income countries, where 75 per cent (3.6 million) of the world's under-five deaths, 71 per cent (1.6 million) of neonatal deaths, 78 per cent (2.0 million) of deaths among children aged 1–59 months and 54 per cent (71 million) of live births took place in 2024. The trend analysis was based on data for 47 countries with three or more data points.

For mother's education groupings, the highest level of education attended – not necessarily completed – was used. Two standard groupings for mother's education were used in all countries: 1) one grouping of two categories (no or primary education, and secondary or higher education) for 66 countries; and 2) a second grouping of four categories (no, primary, secondary, or higher education) for a subset of 55 countries. If there were insufficient data to calculate mortality rates by mother's education in the 5-year period before the survey, a 10-year period was used. If the data were still insufficient, they were regrouped into two broader groups: no education or primary, and secondary or higher education. In cases where this reclassification was not feasible, survey data from that country were excluded. Survey data with national education categories were reclassified to match the standard categories, if possible.



Residence: What if my home is in a rural area?



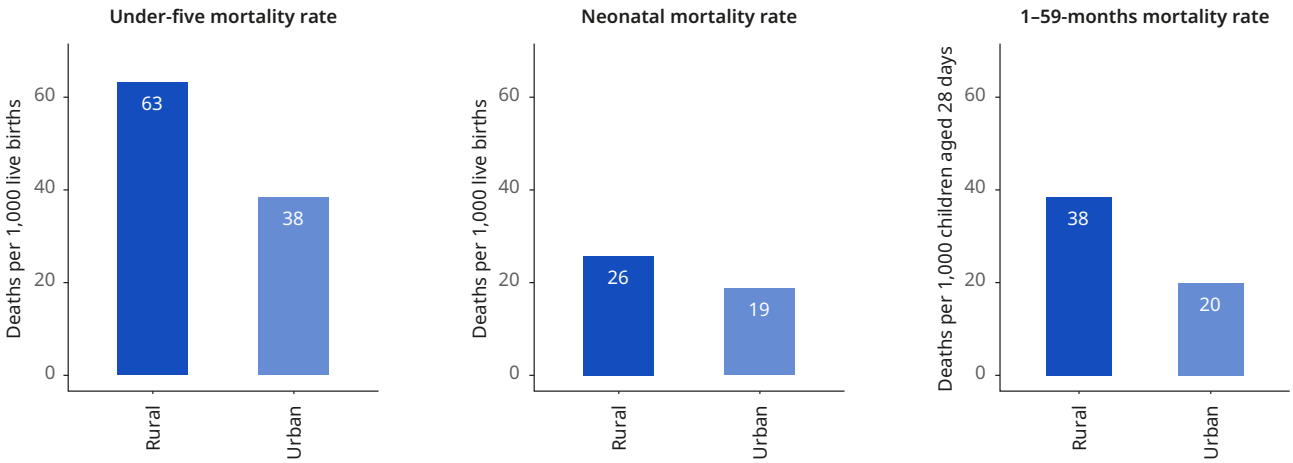
Due to factors like poor access to and coverage of health care, limited basic sanitation and lower education levels, children in rural areas have long faced higher risks of mortality than their urban counterparts. While an increasing number of children are growing up in urban slums, under-five mortality rates remain, on average, higher in rural than in urban areas.

KEY FACT

The world has become increasingly urban; more people live in cities today than in towns or rural areas.[12]

A child growing up in a rural setting is far less likely to see their fifth birthday than a child in an urban one

Figure 9. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by residence (2024)



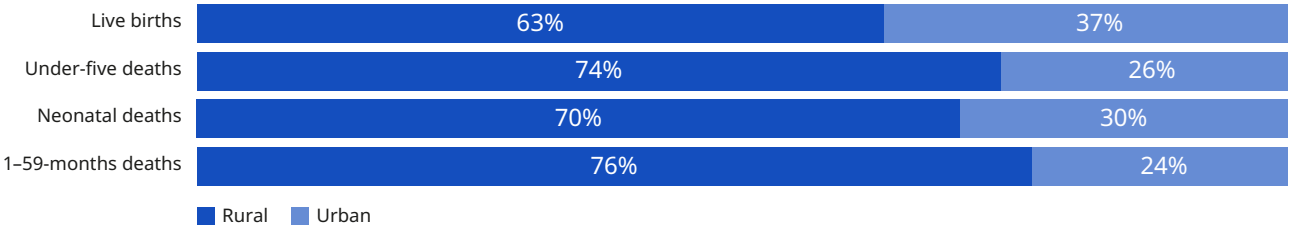
Note: The under-five, neonatal and 1–59-months mortality rates by residence are derived from UNICEF analysis based on DHS, MICS and other nationally representative sources for 67 countries.

Children born in rural settings die more often than those born in urban environments: In 2024, the under-five mortality rate in rural areas was 63 deaths per 1,000 live births versus 38 deaths per 1,000 live births in urban areas (*see Figure 9*). The likelihood that a child will die before age 5 in a rural area was on average 1.6 times greater than that of a child growing up in an urban area, with an absolute difference of 25 deaths per 1,000 live births. This gap in survival is wider among children aged 1–59 months than it is during the first 28 days of life.

Newborns living in rural environments faced a risk of dying an average of 1.4 times that of those living in urban settings, with an absolute difference of 7 deaths per 1,000 live births. Meanwhile, the 1–59-months mortality rate for children in rural areas was on average 1.9 times as high as that of children in urban areas, with an absolute difference of 19 deaths per 1,000 children aged 28 days.

Rural settings experience a disproportionate number of under-five deaths

Figure 10. Percentage of live births, under-five deaths, neonatal deaths and 1–59-months deaths, by residence (2024)



Children in rural areas account for an unequal share of under-five deaths: While 63 per cent of live births in 2024 occurred in rural areas, these regions accounted for 74 per cent of under-five deaths (*see Figure 10*). Meanwhile, 70 per cent of neonatal deaths were in rural areas and an even higher proportion – 76 per cent – of deaths among 1–59-month-olds took place in these settings.

Children in rural areas are still being left behind

Since 2000, under-five mortality rates in rural and urban areas have declined by a similar percentage based on 52 countries with trend data. The absolute difference in under-five mortality rates declined by almost half between children in rural and urban areas, while the relative disadvantage in rural areas remained at similar levels between 2000 and 2024, with children living in rural areas facing a risk of dying in the first five years of life 1.6 times that of children living in urban areas.

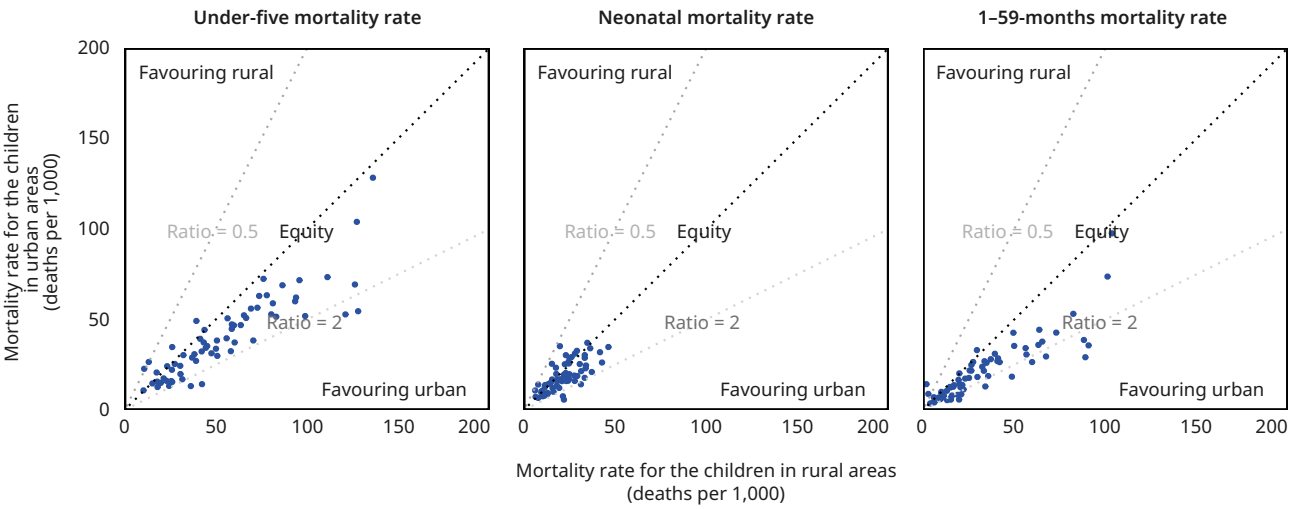
Achieving the under-five mortality SDG target will require a focus on rural areas: On average, the current annual rate of reduction in rural areas needs to more than quintuple to meet the target by 2030, compared to the 2.8-times increase needed in urban areas. Interventions targeting children aged 1–59 months are crucial given the larger rural/urban disparities that exist in this age group.

Disparity ratios and residence: How pronounced are inequities between different groups of children within countries?

In most countries, children in rural areas are disadvantaged compared to children in urban areas (*see Figure 11*). The under-five mortality rate disparity ratio of rural to urban areas ranged from 0.5 to 3.0, with a range of 1.2 to 1.5 in half of the countries.

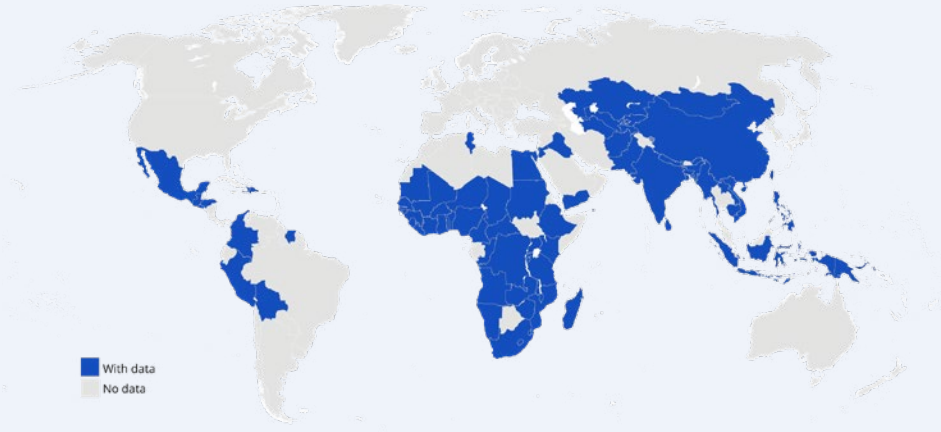
The neonatal mortality rate disparity ratio of rural to urban environments ranged from 0.6 to 3.9. The middle half of countries fell between 0.9 and 1.4. The 1–59-months mortality rate disparity ratio of rural to urban areas ranged from 0.1 to 3.5, a considerably wider range than that of neonates. The median ratio was also higher in this age group, at 1.4 across countries.

Figure 11. Under-five mortality rates, neonatal mortality rates and 1–59-months mortality rates in urban and rural areas in selected countries



BEHIND THE DATA: MEASURING CHILD MORTALITY AND RESIDENCE

Map 3. Countries with available survey or sample vital registration data for residence analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of aggregate mortality by residence is based on data from 67 countries, accounting for 75 per cent (3.6 million) of global under-five deaths, 70 per cent (1.6 million) of neonatal deaths, 79 per cent (2.1 million) of deaths among children aged 1–59 months and 52 per cent (69 million) of live births in 2024. Eight countries – including the two most populous, China and India, along with Bangladesh, Burkina Faso, the Comoros, Kazakhstan, Liberia and Viet Nam – were not included in the aggregates, since the distribution of births by residence was not available from their sample vital registration or survey data. China and India both show lower mortality among children in urban areas (an under-five mortality rate disparity ratio of 1.8 and 1.7, respectively). When including these eight countries in the country-level analysis, the data account for 93 per cent (4.5 million) of global under-five deaths, 93 per cent (2.1 million) of neonatal deaths, 93 per cent (2.4 million) of deaths among children aged 1–59 months and 81 per cent (107 million) of live births in 2024. The trend analysis was based on data for 52 countries with three or more data points.

Definitions of 'rural' and 'urban' are country-specific and reflect those used at the time of the survey. Significant differences exist as to the size of an area defined as 'urban', ranging from a population threshold of 200 (in Denmark and Sweden) to 30,000 (Mali) or 50,000 (Japan). Most countries used a threshold of between 2,000 and 5,000.[13]

As cities grow, what are the implications for under-five mortality among the urban poor?

Based on current trends, by 2050, approximately 68 per cent of the global population, or 6.7 billion people, will live in cities.[14] Though data regularly show that urban children have access to better essential services – e.g., health care, education, and water and sanitation – than their rural peers, this advantage often disappears for the poorest urban children. Using a household wealth lens to examine under-five mortality rates among urban children, a study shows that in some countries, the most disadvantaged urban children are more likely to die before turning 5 than those in rural areas.[15]

Data and evidence from sub-Saharan Africa, where rapid urbanization is taking place, provide important insights as to how urbanization, household wealth and access to health care might converge to shape the chances of survival to age 5. As sub-Saharan Africa's capital cities expand, health care coverage – particularly in slums – has not kept pace, and is in some cases progressing more slowly than in rural areas.[16] This has led to concerning outcomes in child mortality in some countries, where children in the poorest urban quintile are at least twice as likely to die before their fifth birthday as their richest urban peers.[17]

These trends illustrate the importance of examining what happens when particular factors that shape under-five mortality intersect – in this case, examining household wealth in tandem with residence in order to determine which children face the greatest risks of death before age 5.



CRITICAL FOCUS

Ethnicity and under-five mortality

Though the SDGs call for disaggregation of social indicators by ethnic group, the evidence base currently lacks robust, systematic, multi-country analyses of ethnic inequalities in child health and survival. But to realize the vision of the 2030 Agenda for Sustainable Development and end preventable child deaths, it is vital that these analyses are regularly conducted and that action is taken accordingly.[18]

Around the world and across economic settings, ethnicity is influencing whether or not a child survives to age 5.[19] Ethnicity has been tied to lower rates of immunization among different groups of children, disproportionate rates of preventable childhood diseases and unequal access to essential services like health care, education, and water, sanitation and hygiene – all of which can affect survival to age 5.[20]

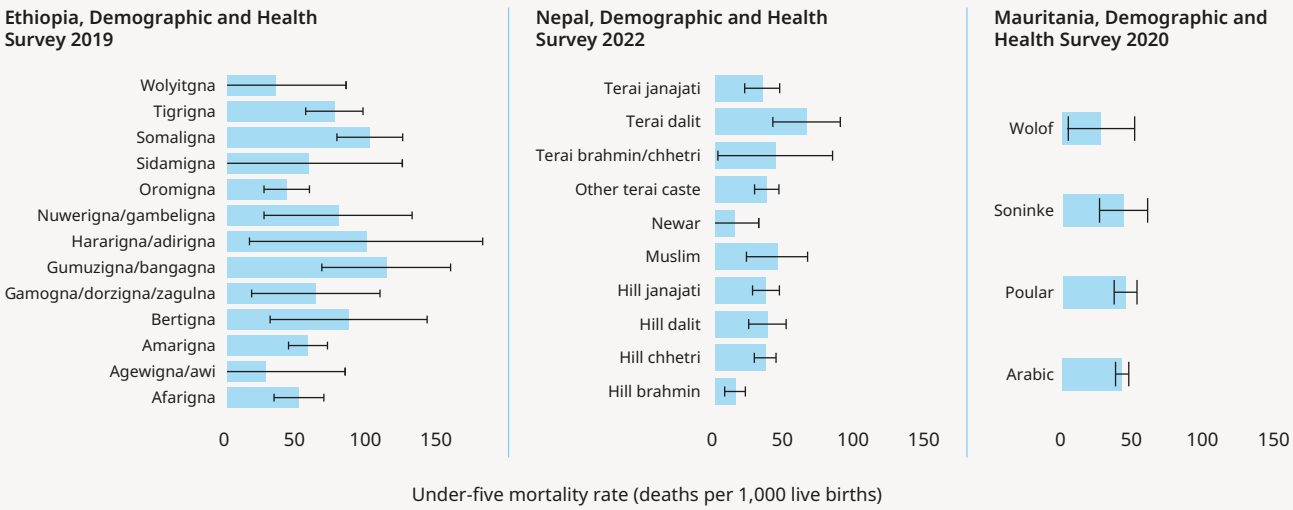
In some countries, members of particular ethnic minority groups are disadvantaged;[21, 22, 23] in others, children from the ethnic majority experience an imbalance in child mortality outcomes.[24, 25] Ethnicity can also mediate under-five mortality rates in wealthier countries. Due to large uncertainty in the data driven by small case numbers, however, these differences are often not statistically significant.

This box examines under-five mortality rates by ethnic group in three low- and lower-middle-income countries (Ethiopia, Nepal and Mauritania) and two upper-middle- and high-income countries (Australia and Brazil). The findings illustrate the need for country-specific analyses of ethnicity across country income groups in order to ensure equal chances of survival for every child.



Disadvantages in child mortality by ethnic group may be pronounced

Figure 12. Under-five mortality rates by ethnic group in selected low- and lower-middle-income countries

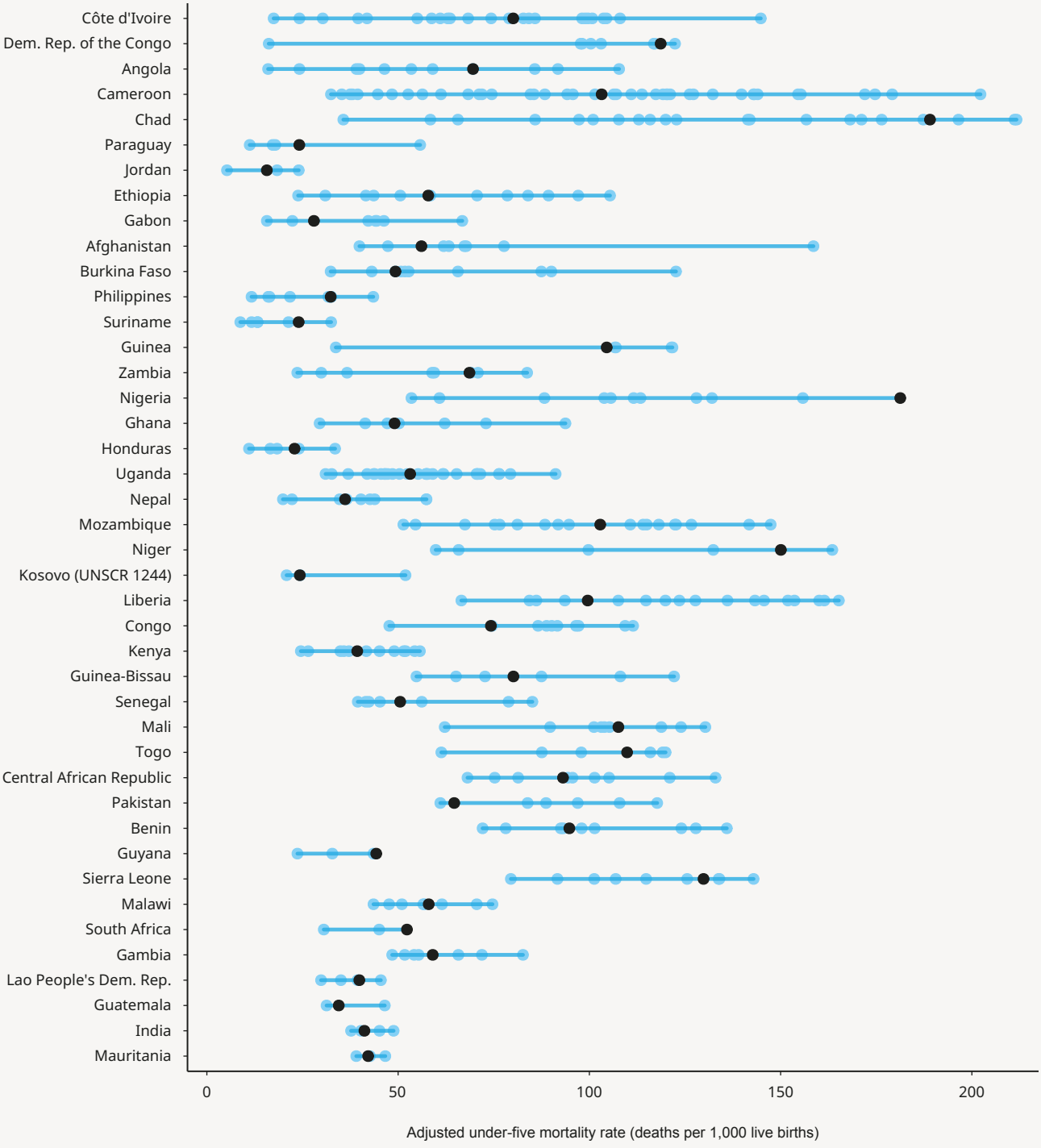


Note: The under-five mortality rate by ethnicity is derived from UNICEF analysis based on DHS, MICS and other nationally representative sources for 42 countries. Here we display 3 selected countries. The black line represents the standard error.

One of the smaller disparities by ethnic group in the dataset was in Mauritania, where the disparity ratio is 1.2 between the Soninke group (under-five mortality rate: 46.7 deaths per 1,000 live births) and the Wolof group (under-five mortality rate: 39.1 deaths per 1,000 live births), and the Theil index (see 'Annex: Measures used in this analysis', p. 68) was 4.5. In contrast, one of the larger disparities in under-five mortality rates by ethnicity across the analysed countries was observed in Ethiopia. The highest under-five mortality rate was recorded among the Gumuzigna/bangagna ethnic group, with 105 deaths per 1,000 live births, while the lowest was among the Agewigna/awi group, at 24 deaths per 1,000 live births – a disparity ratio of 4.4.

After controlling for wealth, mother's education and residence, ethnic variability persisted in this analysis for all except nine countries. In these countries, gaps in mortality between ethnic groups were substantially reduced after adjustment, indicating that ethnic disparities in mortality were partially related to wealth, mother's education and residence.

Figure 13. Under-five mortality rate by ethnicity in low- and middle-income countries



Note: UNICEF analysis based on DHS and MICS for 42 countries. The surveys are ranked in descending order based on the ratio of the highest under-five mortality rate to the lowest under-five mortality rate among different ethnic groups within each survey. The black dots are the reference ethnicity group which have the largest number of live births in a certain country. Guyana was classified as high-income country by the World Bank Group in 2023.

Ethnicity and under-five mortality rates in wealthier countries

Zooming in on several examples among upper-middle- and high-income countries with vital registration data by ethnicity showed diversity varying from two groups (Indigenous and non-Indigenous) in Australia to five groups in Brazil. The under-five mortality rate disparity ratio between ethnic groups ranged from 2.1 in Australia to 7.0 in Brazil (*see Figure 14*).

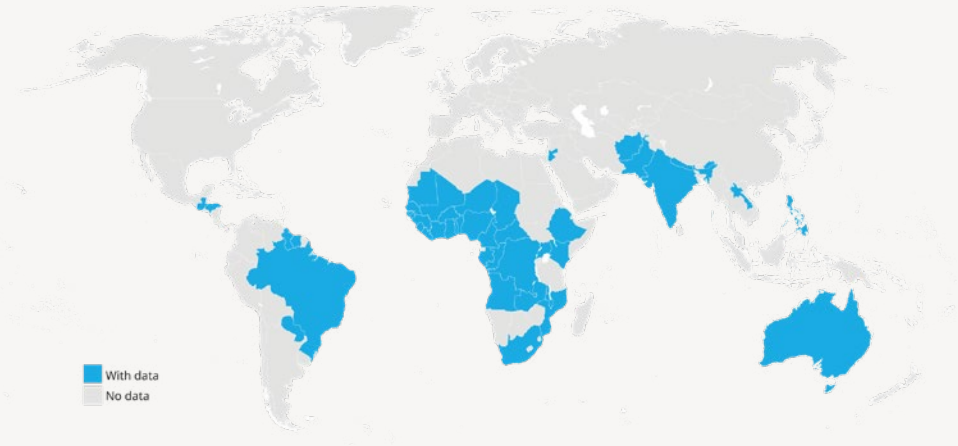
The likelihood of death in the first five years of life ranges widely by ethnic group in upper-middle- and high-income countries

Figure 14. Under-five mortality rates by ethnicity in selected upper-middle- and high-income countries



BEHIND THE DATA: ESTIMATING CHILD MORTALITY AND ETHNICITY

Map 4. Countries with available survey or sample vital registration data for ethnicity analysis



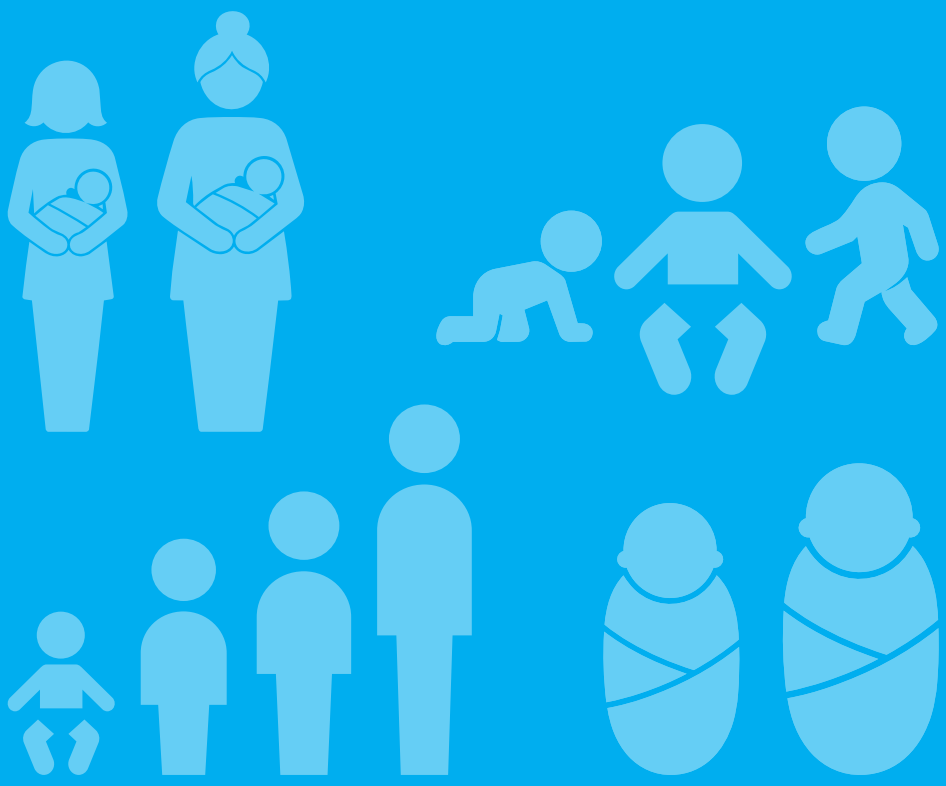
Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

Under-five mortality rates by ethnic group were analysed for 42 low- and middle-income countries, building on previous UNICEF analysis.[26] Approximately 75 per cent (3.6 million) of global under-five deaths and 53 per cent (69.5 million) of live births in 2024 occurred in these countries. Ethnic diversity varied from 3 groups (Guatemala and South Africa) to 43 groups (Cameroon) in the dataset. The definition of 'ethnicity' in this analysis was broad. It included self-reported ethnic affiliation, language, skin colour (South Africa), and caste or tribal group (India). All mortality rates refer to the 10-year period leading up to the year the survey was taken; ethnic groups with less than 200 weighted cases in the survey were excluded. Mortality estimates from survey data by ethnic group are in many cases less precise, with a coefficient of variation above 15 per cent, rendering comparison between ethnic groups less accurate.

Maternal fertility-related conditions

This section examines four maternal fertility-related conditions – mother's age, birth interval, birth order and birth size – that are tied to higher risks of under-five mortality. While these factors are discussed individually, it is important to note that three of them – mother's age, birth interval and birth order – are often interrelated.[27] For further discussion of these links, see p. 53.

The patterns described in this section reiterate the need for every mother-to-be to know the risks and benefits associated with pregnancy during different times in her life and receive the care she needs accordingly.





Mother's age: What if my mother is an adolescent or older than 40?



The age at which pregnancy occurs carries critical implications for under-five mortality, with children born to the youngest and oldest mothers facing a higher likelihood of death before age 5.[28, 29, 30, 31] Among adolescent mothers, these risks can be seen from the neonatal period until age 5, and also manifest in the incidence of stillbirths (see p. 55).

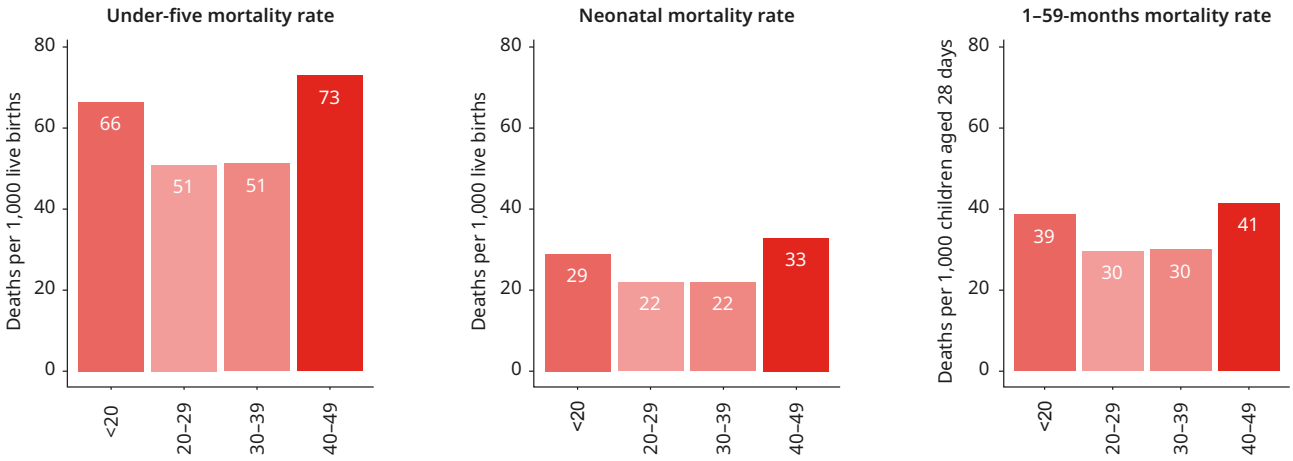
The effect of maternal age on child survival highlights important issues regarding health-seeking behaviour – particularly among adolescents – and the need to provide access to sexual and reproductive health education. It also reiterates the need to ensure that girls go to school and are protected from child marriage, both of which can be tied to pregnancy during adolescence.

KEY FACT

Approximately 12 million babies were born to mothers between the ages of 15 and 19 in 2024,[32] about half of them in sub-Saharan Africa. While the global adolescent birth rate has dropped by nearly half since 1994 – declining from 73 to 38 births per 1,000 girls and young women aged 15–19 years – in sub-Saharan Africa, it remains above 90 births per 1,000 girls and young women aged 15–19 years.[33]

Children born to the youngest and oldest mothers face the highest risk of dying before age 5

Figure 15. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by mother's age (2024)



Note: The under-five, neonatal and 1–59-months mortality rates by mother's age are derived from UNICEF analysis based on DHS, MICS and other nationally representative sources for 64 countries.

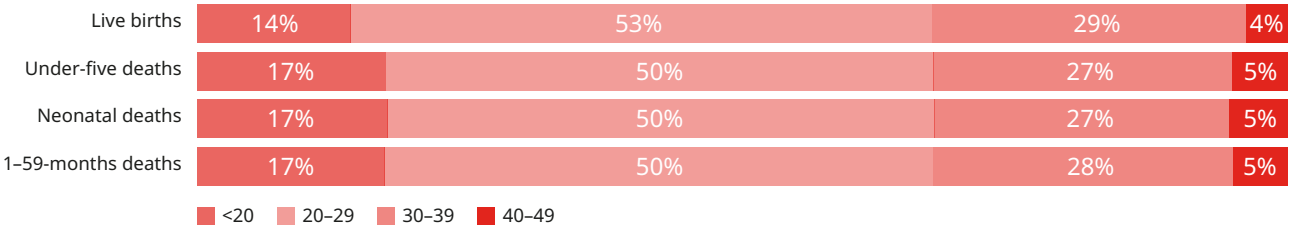
Children born to adolescent mothers and to women older than 40 face higher mortality rates throughout the first five years of life (*see Figure 15*). Though the risks are highest among children born to the oldest mothers, these deaths constitute only around 5 per cent of under-five deaths, compared to the much higher proportion (approximately 17 per cent) of deaths among children born to adolescent mothers (*see Figure 16*).

The under-five mortality rate for children of adolescent mothers was on average 1.3 times as high as that of children born to mothers aged 20–29 years, with an absolute difference of 16 deaths per 1,000 live births. Meanwhile, for children born to mothers aged 40–49 years, the risk of dying before age 5 was 1.4 times that of children born to mothers aged 20–29 years, with an absolute difference of 22 deaths per 1,000 live births.

These trends remain more or less the same across the first five years of life, with little variation between newborns and children aged 1–59 months.

Adolescent mothers shoulder the greatest relative burden of under-five deaths

Figure 16. Percentage of live births, under-five deaths, neonatal deaths and 1–59-months deaths, by mother's age (2024)



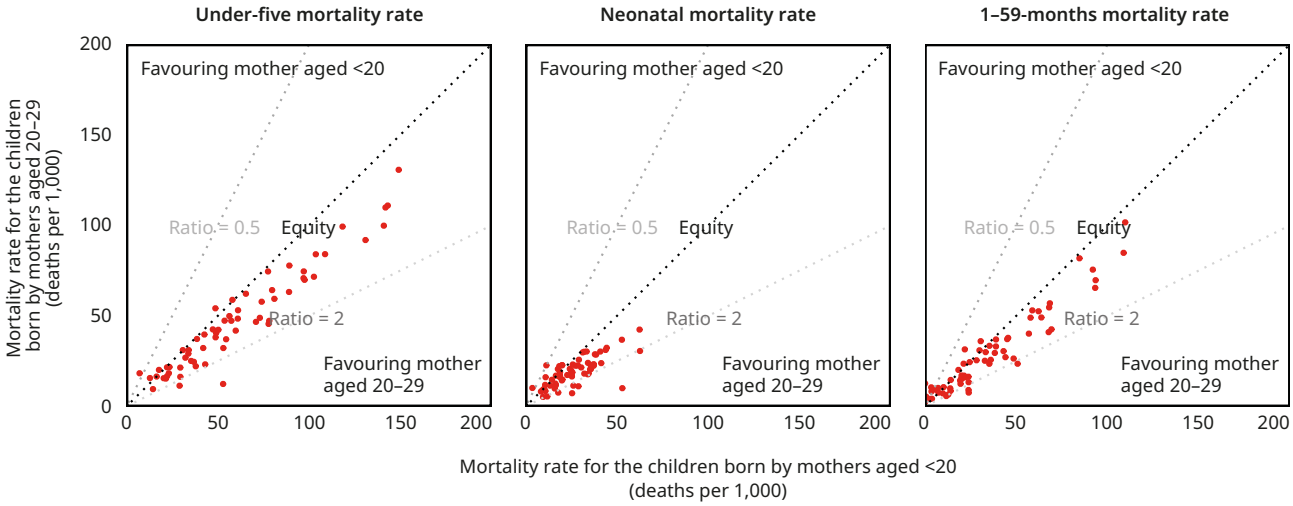
Children born to adolescent mothers account for a slightly higher percentage of under-five and neonatal deaths than their share of live births. While 14 per cent of live births took place among mothers younger than 20 years old, 17 per cent of all under-five deaths and 17 per cent of neonatal deaths occurred in this group. Only 4 per cent of live births occurred among women above age 40, and their share of under-five deaths was around 5 per cent. More than half (53 per cent) of children were born to mothers aged 20–29 years, with that age group experiencing roughly half of all under-five deaths.

Mother's age remains an important factor

Under-five mortality rates by mother's age have declined for all age groups since 2000 in 46 countries with trend data. With similar rates of progress for the different maternal age categories, the absolute gap narrowed while relative disparities remained at similar levels. The risk of children born to adolescent mothers compared to children born to mothers aged 20–29 years has remained steady at 1.3.

Disparity ratios and mother's age: How pronounced are inequities between different groups of children within countries?

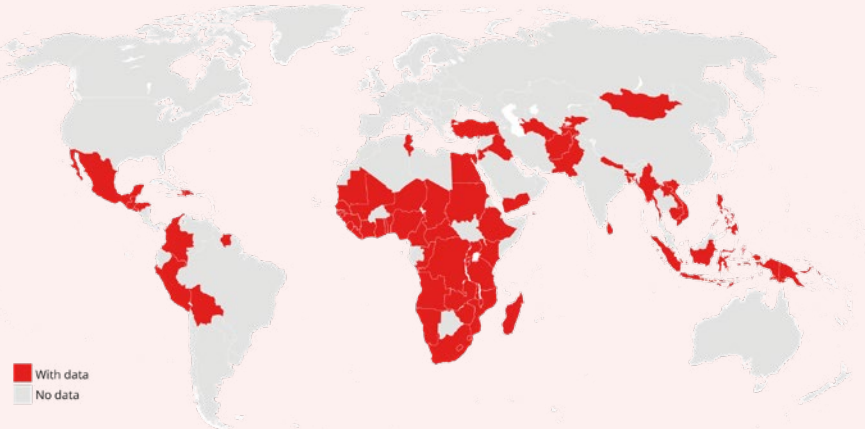
Figure 17. Under-five mortality rates, neonatal mortality rates and 1–59-months mortality rates for adolescent mothers and mothers in their twenties in selected countries



Most countries studied showed an elevated mortality risk for children under age 5 among the youngest and oldest mothers, with a few exceptions. The under-five mortality rate disparity ratio between children born to adolescent mothers and those of mothers aged 20–29 years ranged from 0.4 to 4.3. The median ratio was 1.3 across countries, with one quarter of countries analysed having values between 1.3 and 1.5. For neonates and children aged 1–59 months, the ratio followed similar patterns.

BEHIND THE DATA: MEASURING CHILD MORTALITY AND MOTHER'S AGE

Map 5. Countries with available survey or sample vital registration data for mother's age analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of mortality by mother's age is based on data from 64 low- and middle-income countries, which accounted for 76 per cent (3.7 million) of global under-five deaths, 72 per cent (1.6 million) of neonatal deaths, 80 per cent (2.1 million) of deaths among children aged 1–59 months and 53 per cent (70 million) of live births in 2024. Several countries were excluded primarily due to the small number of births that occurred among older women. Maternal age at birth was used in the five-year period preceding the survey. The trend analysis was based on data for 46 countries with three or more data points.



Birth interval: What if I’m born within two years of a sibling?



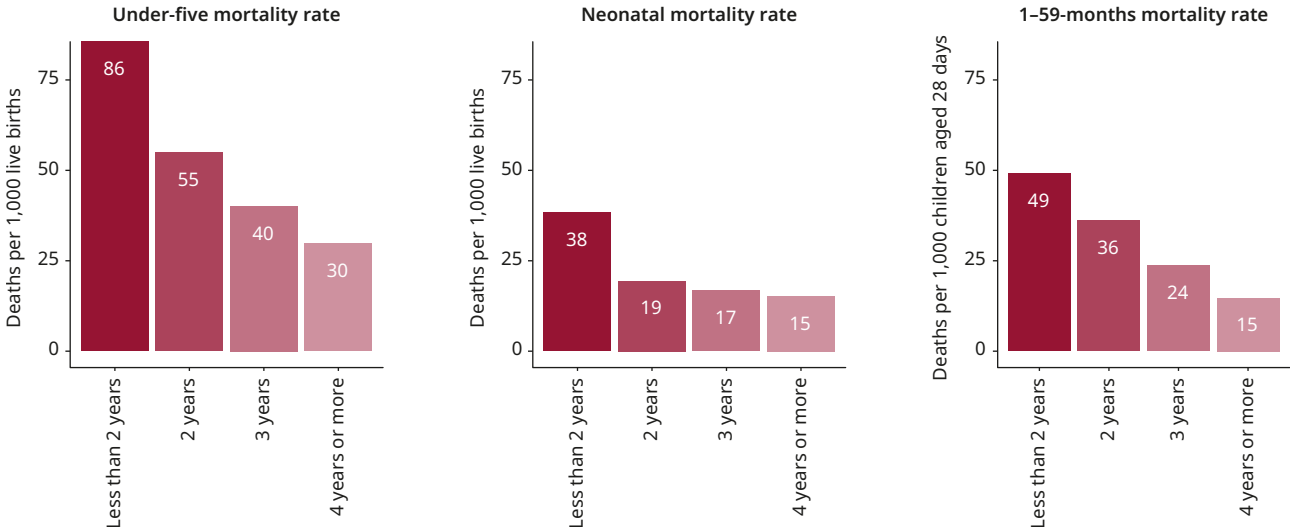
As birth intervals shorten (i.e., as the period of time since the previous birth decreases), the odds that a child will die before turning 5 increase. The link between birth interval and child mortality reiterates the need for widespread access to family planning services and education that ensure mothers understand optimal birth spacing for their own and their children's survival – particularly among groups of women likely to have a higher number of births.[34, 35, 36, 37, 38] This connection can be largely attributed to differences in the background characteristics of mothers with high fertility versus low fertility.[39]

KEY FACT

In sub-Saharan Africa, nearly one in two births occur at short birth intervals (i.e., less than two years apart).[40]

Longer intervals between births increase the odds of survival to age 5

Figure 18. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by birth interval (2024)



Note: The under-five, neonatal and 1–59-months mortality rates by birth interval are derived from UNICEF analysis based on DHS, MICS and other nationally representative sources for 69 countries.

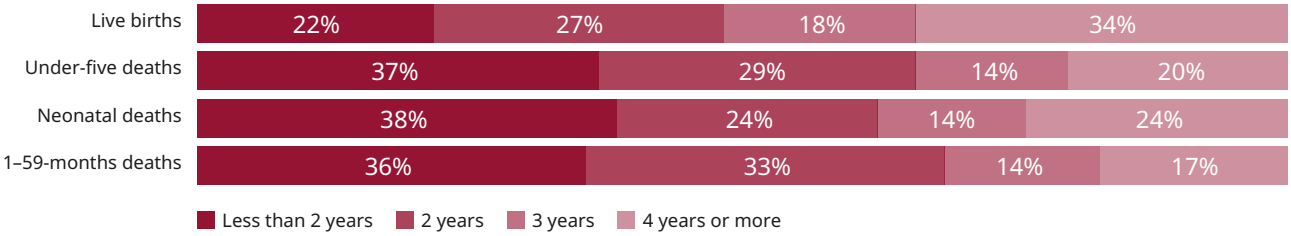
The under-five mortality rate for children born within two years of a sibling was on average 2.1 times that of children born with a birth interval of three years, with an absolute difference of 45 deaths per 1,000 live births (*see Figure 18*). The odds of survival improve as birth intervals lengthen, most notably when births are spaced at three-year intervals: The under-five mortality rate drops from 86 deaths per 1,000 live births for birth intervals of less than two years to 55 deaths per 1,000 live births for birth intervals of two years, to 40 deaths per 1,000 live births

for three-year intervals and further declines to 30 deaths per 1,000 live births for intervals of four years or more. These findings underscore the World Health Organization recommendations to wait a minimum of 24 months following a live birth to attempt the next pregnancy.[41]

Among both neonates and 1–59-month-olds, children born within two years of a sibling face the highest mortality risks. Short birth intervals are a particularly substantial risk factor in the first month of life: The neonatal mortality rate for children with a birth interval of less than two years was on average 2.3 times that of those with a birth interval of three years, with an absolute difference of 22 deaths per 1,000 live births. The 1–59-months mortality rate for children with a birth interval of less than two years was on average 2.1 times that of children with a birth interval of three years, with an absolute difference of 25 deaths per 1,000 children aged 28 days.

Mothers who give birth to children within two-year intervals experience an unequal share of under-five deaths

Figure 19. Percentage of live births, under-five deaths, neonatal deaths and 1–59-months deaths by birth interval (2024)



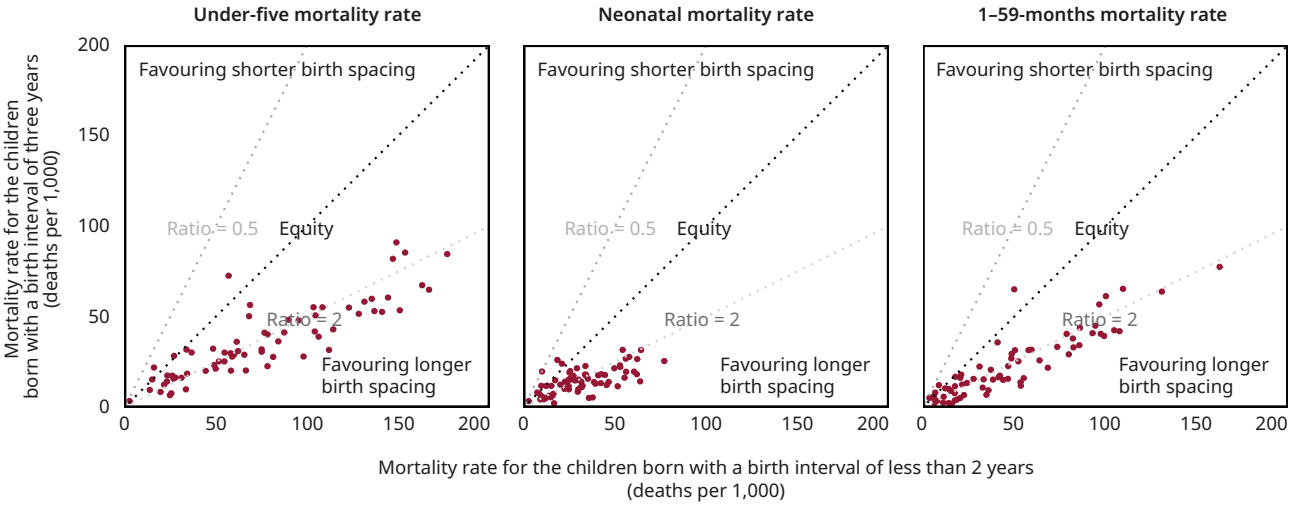
More than two thirds of the burden of under-five deaths is carried by women who give birth either within or at the two-year mark of a prior birth. The greatest relative burden is seen in the shortest birth interval (under two years): 37 per cent of all under-five deaths, 38 per cent of neonatal deaths and 36 per cent of deaths among children aged 1–59 months occurred in this category, compared to 22 per cent of live births (*see Figure 19*).

Short birth intervals continue to be a risk factor

Since 2000, the mortality risk for children with birth intervals of less than two years has continued to be more than twice that of children spaced three years or more apart. The disparity ratio increased from 1.9 to 2.3 based on aggregate trend data for 50 countries, although the absolute differences between birth intervals declined. Overall trends, however, indicate that more women are spacing births at greater intervals while having less children.

Disparity ratios and birth interval: How pronounced are inequities between different groups of children within countries?

Figure 20. Under-five mortality rates, neonatal mortality rates and 1–59-months mortality rates of children born within short and long birth intervals in selected countries



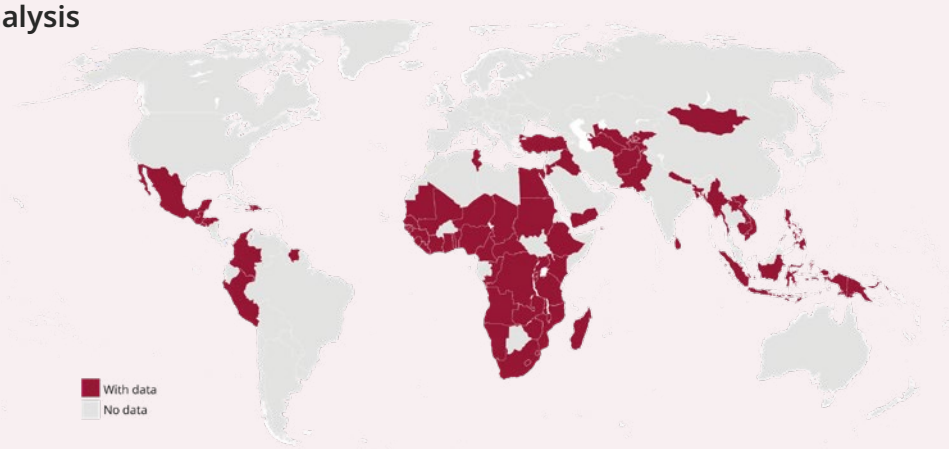
The under-five mortality rate disparity ratio between children born within two years of a sibling and those born three years apart ranged from 0.7 to 3.8. Half the countries analysed showed a ratio above 2.1.

Looking at the neonatal mortality rate disparity ratio between children with a birth interval of less than two years and those born at a three-year interval, the ratio ranged from 0.5 to 7.9. The median neonatal mortality rate disparity ratio was 2.2 across 69 countries.

Among children aged 1–59 months with a birth interval of less than two years compared to those born three years apart, disparity ratios ranged from 0.7 to 8.7. The median 1–59-months ratio was 2.1 across 69 countries. Outlying ratios below 1.5 or above 4 occurred in 21 countries and were more concentrated among countries with lower mortality levels.

BEHIND THE DATA: MEASURING CHILD MORTALITY AND BIRTH INTERVAL

Map 6. Countries with available survey or sample vital registration data for birth interval analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of mortality by birth interval is based on data from 69 low- and middle-income countries, which accounted for 78 per cent (3.8 million) of global under-five deaths, 74 per cent (1.7 million) of neonatal deaths, 82 per cent (2.1 million) of deaths among children aged 1–59 months and 57 per cent (75 million) of live births in 2024.

'Birth interval' is defined as the difference, in years, between a child's date of birth and that of their last-born sibling; it is not the time between the preceding birth and conception.



CRITICAL FOCUS

What role does a child's sex play in shaping under-five mortality rates?

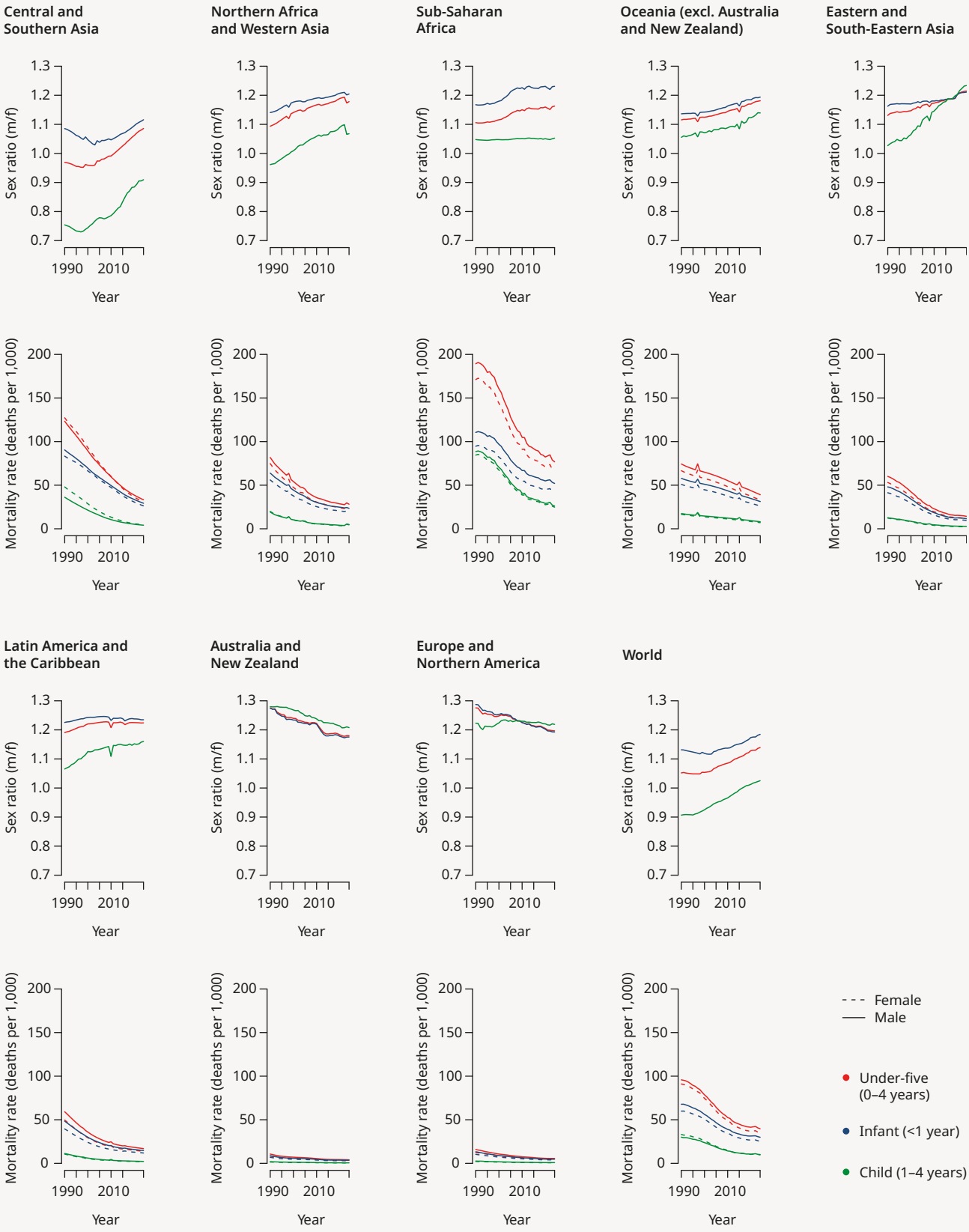
Sex differences in mortality are an important area of research when examining equity in health outcomes. Due to biological factors, under-five mortality rates among males are expected to be higher, on average, than among females. For instance, the estimated global under-five mortality rate for girls in 2024 was 35 deaths per 1,000 live births, while the rate for boys was 40 deaths per 1,000 live births (*see Figure 21*).[42] In some countries, however, mortality rates for girls are significantly higher than what would be expected based on global patterns of sex ratios (i.e., male/female mortality, where any value above 1 indicates boys face higher risks of death than girls and values below 1 indicate girls face the greater risk).[43] Notably, the number of countries showing higher-than-expected mortality for girls has fallen from 26 to 9 since 1990, with the remaining countries primarily located in Central and Southern Asia.

The Central and Southern Asia region has some of the world's lowest sex ratios for under-five mortality, infant mortality (children aged <1 year) and child mortality (children aged 1–4 years). Across these three indicators, a sex ratio below 1 – indicating higher female mortality – was observed in only one indicator from 2000 to 2024: Central and Southern Asia's child mortality rate. No estimates were available for neonates.

Globally and across most regions, however, sex ratios tend to increase as mortality decreases (*see Figure 21*). Sex ratios are higher among infants than among children aged 1–4 years, suggesting infant boys are more likely to die than infant girls, whereas girls face greater relative risks between the ages of 1 and 4. In the regions of Australia and New Zealand and Europe and Northern America, however – where mortality levels are relatively low – sex ratios have decreased over the last two decades and male mortality risks among the 1–4-years age group are greater than among male infants.

What is driving these divergent outcomes by country and region? They may be tied to sex-dependent allocation in certain environments when it comes to resources like nutrition and access to health care, both of which are critical to fighting infectious diseases associated with death among children aged 1–4 years. Examining the age-specific causes of death and any sex differentials in resource allocation that may drive sex differences in mortality is thus an important component to reducing preventable mortality overall.

Figure 21. Sex ratios and under-five, infant and child mortality rates, by sex and region (1990–2024)



Note: Analysis based on UN IGME sex-specific U5MR, IMR and CMR estimates for 200 countries, 2025. The sex ratios and mortality rates are presented without uncertainty in this figure for simplicity; however, the model produces uncertainty bounds around sex-specific estimates, which sometimes overlap to indicate no statistically significant difference between rates.



Birth order: What if I'm the fourth-born or later child in my family?



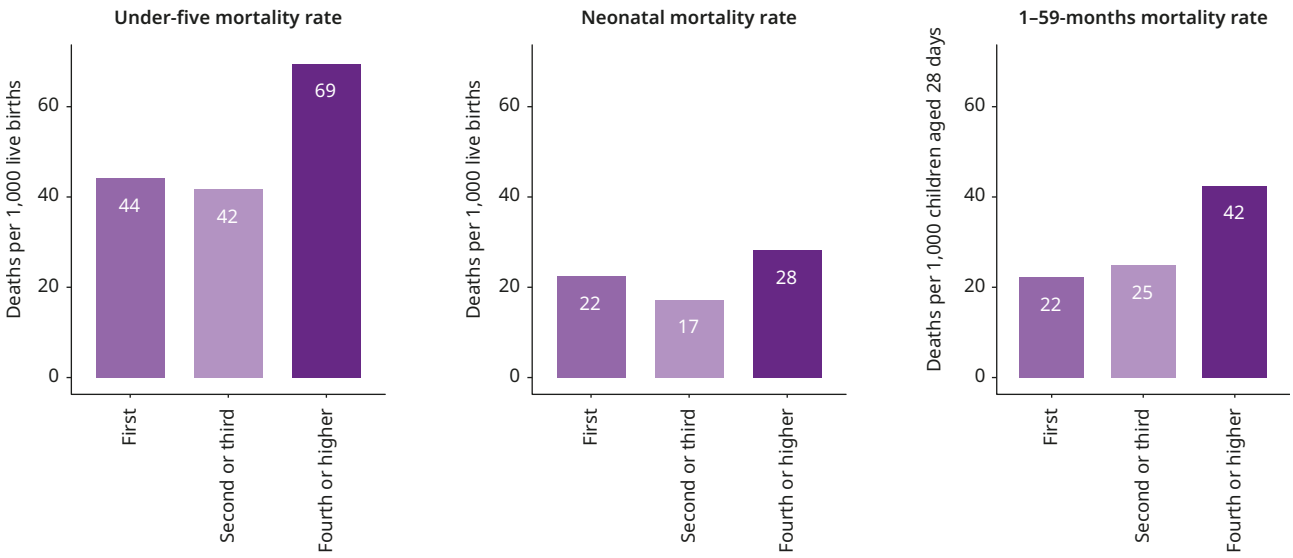
Whether a child celebrates their fifth birthday or not can depend on their birth order and whether they are firstborn or joining many siblings. Child mortality is significantly associated with birth order – with fourth- or later-born children facing the highest risks.[44, 45]

KEY FACT

While the global fertility rate has declined by about half since 1950 – reaching 2.2 children per woman in 2024 – fertility rates continue to be much higher in sub-Saharan Africa, at about 4.3 children per woman.[46]

Fourth- or later-born children are the most likely to die in the first five years of life

Figure 22. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by birth order (2024)

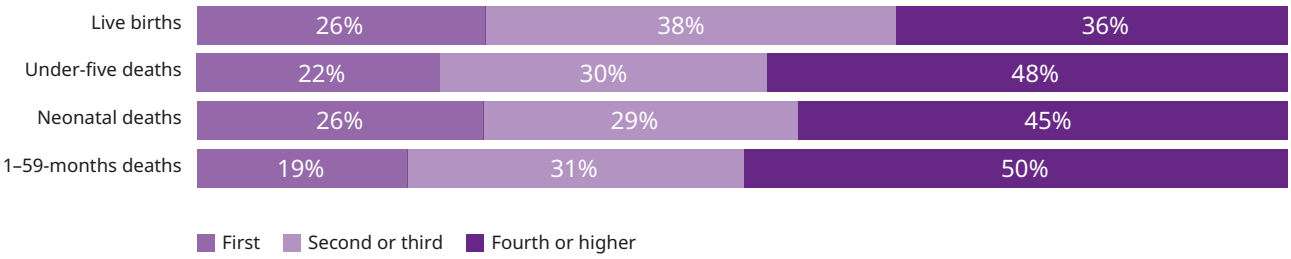


Note: The under-five, neonatal and 1–59-months mortality rates by birth order are derived from UNICEF analysis based on DHS, MICS and other nationally representative sources for 69 countries.

If a child is the fourth or greater addition to a family, they face an under-five mortality risk that is 1.7 times that of a child born second or third, with an absolute difference of 28 deaths per 1,000 live births. Firstborn children have a slightly higher neonatal mortality risk than second- or third-born children (*see Figure 22*). In the first month of life, the risk of dying for fourth- or higher-born children is 1.6 times as high as the risk faced by second- or third-born children, with an absolute difference of 11 deaths per 1,000 live births. As they mature to age 5, these chances of survival do not improve: The 1–59-months mortality rate for children joining three or more siblings in a family was on average 1.7 times that of the second- or third-born children, with an absolute difference of 18 deaths per 1,000 children aged 28 days.

Children who are born fourth or later bear an unequal burden of death before age 5

Figure 23. Percentage of live births, under-five deaths, neonatal deaths and 1–59-months old deaths, by birth order (2024)



Children of higher birth order account for a higher share of under-five, neonatal and 1–59-months deaths than their share of live births (*see Figure 23*). While 36 per cent of live births were of children born fourth or later, this group accounted for 48 per cent of all under-five deaths. This percentage increases with age: 45 per cent of neonatal deaths took place among children born fourth or later, compared to 50 per cent of deaths among children aged 1–59 months.

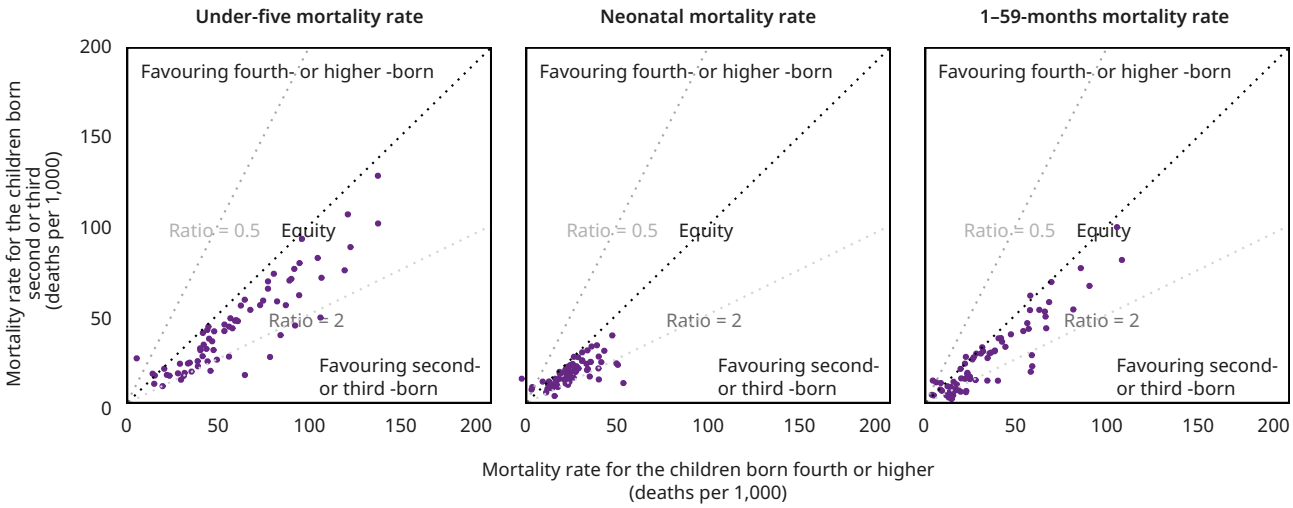
High birth order remains a risk factor

Under-five mortality rates have declined for all children regardless of their birth order since 2000, based on 50 countries with trend data. While absolute differences declined, relative differences increased slightly over time: fourth- or higher-born children are now over 1.7 times less likely than second- or third-born children to reach their fifth birthday, compared to 1.5 in 2000.



Disparity ratios and birth order: How pronounced are inequities between different groups of children within countries?

Figure 24. Under-five mortality rates, neonatal mortality rates and 1–59-months mortality rates of second- and third-born and fourth- or higher-born children in selected countries

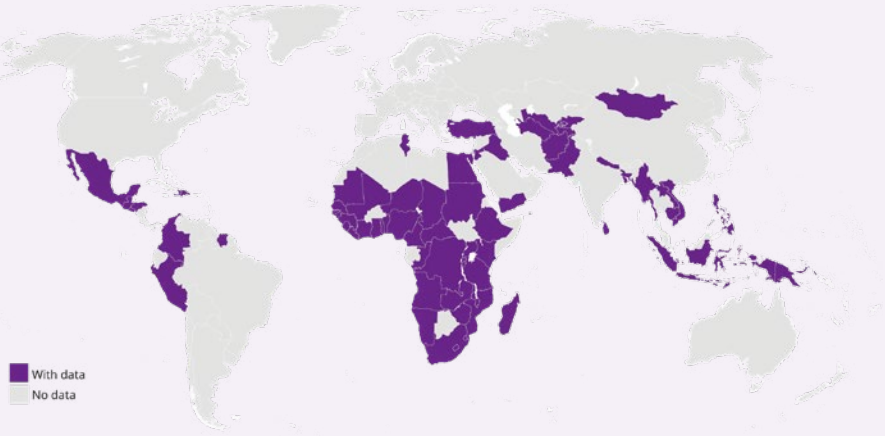


Across the countries studied, mortality risks for fourth- or higher-order births compared to second- or third-order births differed markedly during the first five years of life (*see Figure 24*), whereas mortality risks for first births compared to second or third births did not differ significantly. An elevated risk of dying before age 5 for fourth- or higher-born children compared to second- or third-born children was found in almost all countries. The under-five mortality rate disparity ratio between the fourth or higher birth and the second or third birth ranged from 0.2 to 4.1, with half of the countries having values of 1.3 or higher. Similar patterns by birth order can be observed in neonatal mortality rates and 1–59-months mortality rates.



BEHIND THE DATA: MEASURING CHILD MORTALITY AND BIRTH ORDER

Map 7. Countries with available survey or sample vital registration data for birth order analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of mortality by birth order is based on data from 69 low- and middle-income countries, which accounted for 77 per cent (3.7 million) of global under-five deaths, 73 per cent (1.6 million) of neonatal deaths, 81 per cent (2.1 million) of deaths among children aged 1–59 months and 56 per cent (73 million) of live births in 2024.

Birth order was grouped into first birth, second and third birth, and fourth and higher birth for each recorded birth. These groupings are child-specific and not simply based on the number of times the mother has given birth to a child (parity) at the time of the interview.

CRITICAL FOCUS

Interacting maternal fertility-related conditions

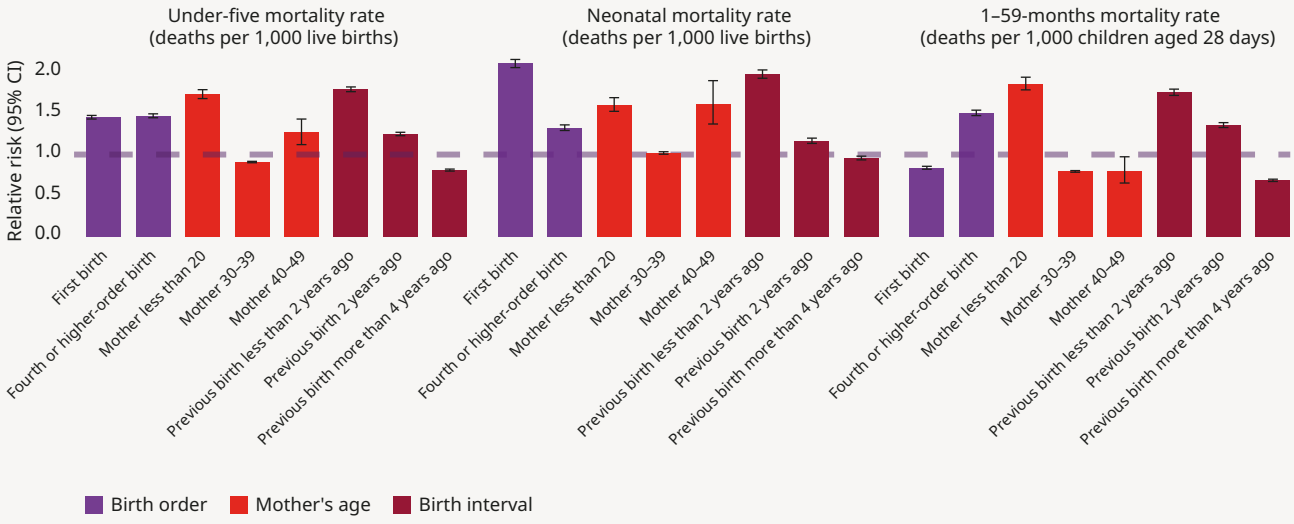
This analysis captures the inherent risks and benefits associated with pregnancy during different times in a woman's life and the need to inform women accordingly. Many of the conditions described in this report are intertwined: Birth spacing, maternal age at birth and birth order are closely related and have joint impact on child mortality.[47] Mortality risks due to short birth intervals may be determined by maternal age, age at pregnancy, number of children, socio-economic status and/or death of a previous child.[48] Mortality risks associated with firstborn children may also be a factor of maternal age. The risks associated with high birth order and advanced maternal age could relate to maternal nutritional depletion, less care-seeking with multiple children, infection transmission from siblings, and the division of resources between siblings.

The association between maternal fertility-related conditions and child mortality outcomes was analysed in order to provide insight into how these factors interact, using data from the latest 150 Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS), which covered 8.2 million births. The analysis found that facing a double fertility risk – such as a birth interval of less than two years and being born fourth or higher – increases the likelihood of a child dying before age 5 by over 20 per cent compared to children born at longer intervals and lower-

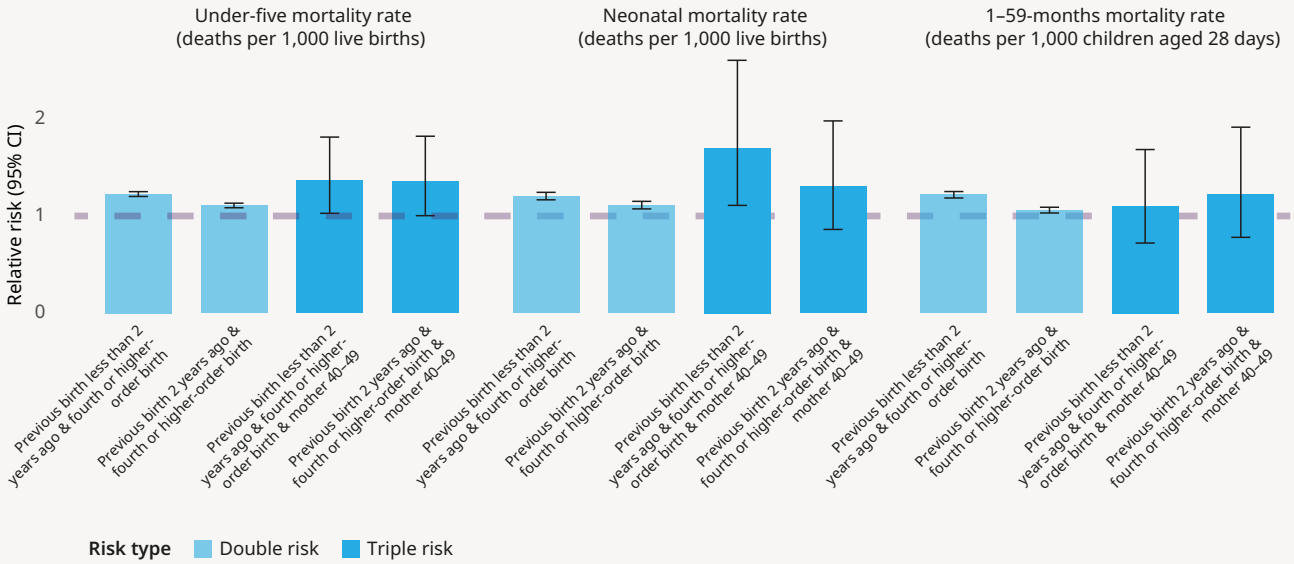
order births. Children born with two or three fertility-related risk factors have a higher mortality risk compared to children with one risk factor or no risk factor. For children with two risk factors, the largest risks are observed for short birth spacing and the youngest and oldest mothers. For children born to the oldest mothers, with a high birth order and at short birth intervals, the risk of dying before age 5 is relatively higher compared to children with one single risk or no risks (*see Figure 25*).

Figure 25. Under-five mortality, neonatal mortality and 1–59-months mortality risks by maternal fertility-related conditions

a) Relative risk by maternal fertility-related conditions



b) Relative risk by combined maternal fertility-related conditions



Note: UNICEF analysis based on dataset from 150 surveys, including a combined total of 8.2 million births. The reference categories for the single risk factors are: 1) Birth order: Second and third births; 2) Mother's age: 20–29 years; and 3) Birth interval: Previous birth three years ago. For double and triple risk factors, the reference category combines the reference categories of the single risk factors. For example, the reference category for previous birth less than two years and fourth or higher-order birth is the combination of previous birth three years ago and second or third birth. The relative risk of each double risk factor is compared to the reference category's mortality risk.

CRITICAL FOCUS

Stillbirth and inequities

The stillbirth rate is an important indicator of the quality of care received during pregnancy and childbirth. According to the latest available estimates on late gestation stillbirths (i.e., stillbirths that occur during the third trimester of pregnancy), an estimated 1.9 million babies were stillborn in 2023 – the equivalent of one stillbirth every 17 seconds.[49] And between 2000 and 2023, approximately 59 million babies were stillborn. These sobering figures exclude stillbirths at earlier gestational stages and are likely underestimates, as many countries do not systematically record or report these deaths and stillbirths are largely missing from worldwide data tracking systems.

The burden of stillbirths is unjustly carried by pregnant women in two regions – sub-Saharan Africa and Southern Asia – where 8 in 10 (79 per cent) of these deaths took place in 2023.

Like under-five deaths, most stillbirths are preventable, as the key causes of stillbirth – maternal infections, non-communicable diseases, nutrition and lifestyle factors – are largely treatable. Many of the risk factors linked to higher rates of under-five mortality in this report – like household wealth, maternal level of education and place of residence – have also been associated with a higher risk of stillbirth (*see Figure 26*). Evidence suggests that these disparities are part of a broader pattern of structural inequality in stillbirth risk observed across health systems and regions, regardless of income level.[50, 51]

- In low- and middle-income countries, mothers who experienced a stillbirth were more likely to be from the **poorest households**, **have low levels of education** and **live in rural areas**.[52, 53, 54] Similar outcomes have also been observed in high-income settings – including contexts where universal health coverage is available.[55]
- Adolescent mothers and those **older than 35** experience higher rates of stillbirth.[56, 57]
- Higher stillbirth rates have been recorded among different **ethnic groups** in high-income countries, pointing to social and structural determinants of risk that intersect and extend beyond income.[58]
- **Birth interval**, **birth order** and **birth size** have also been associated with a heightened risk of stillbirth.

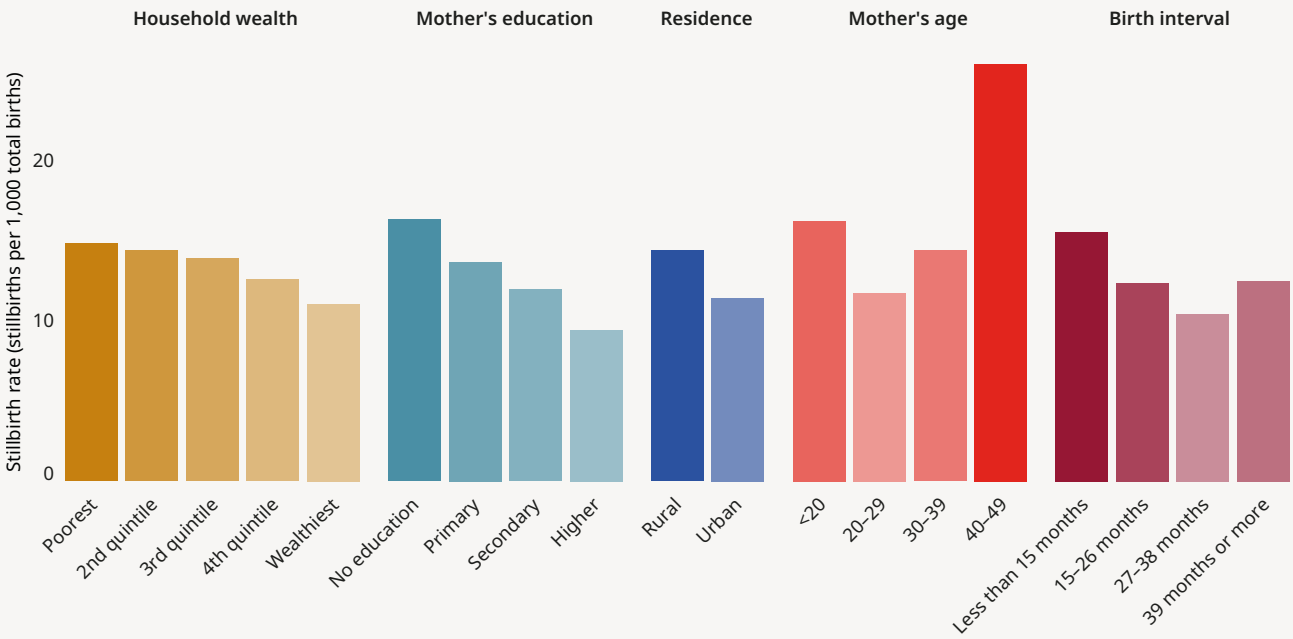
Among the 200 countries for which the UN IGME stillbirth estimates are generated, 20 countries have no stillbirth data, and an additional 30 countries lack quality stillbirth data. Many of the countries with the greatest data gaps are also those bearing the largest burden of stillbirths. The inequities in child mortality rates described in this report illustrate the need to improve the data on stillbirths, particularly in low- and middle-income countries, so that efforts to prevent stillbirths are

not only equitably distributed among all women, but also so that those facing the highest risks are identified and reached.

Surveys that include full pregnancy histories (as opposed to full birth histories) offer great potential to close many of these data gaps, as they count and capture every birth – whether a live birth or stillbirth.[59, 60] They would also allow for more nuanced assessment of disparities in stillbirths related to the socio-economic factors and maternal fertility-related conditions described in this report.

Stillbirths must be included in burden assessments and relevant indicators, and efforts designed to address inequities in under-five mortality must also institute measures that prevent stillbirths.

Figure 26. Stillbirth rates by household wealth, mother's education, residence, mother's age and birth interval (2023)



Note: The analysis is based on 54 DHS surveys conducted between 2011 and 2024 in 54 low- and middle-income countries that accounted for 77 per cent (1.5 million) of global stillbirths in 2023. Rates were computed by aggregating stillbirths and births across surveys. After calculating the number of stillbirths and total births in each equity group, the distribution of births by equity group in the surveys was applied to the live birth figures from World Population Prospects 2024 and UN IGME stillbirth figures for 2023 to calculate the aggregated stillbirth rate in each group.



Birth size: What if I’m a small newborn?



Smaller birth size is strongly linked to a higher risk of neonatal mortality, and most deaths during the first 28 days of life are attributable to being born preterm, small for gestational age or with low birthweight. When they do survive to age 5, small and vulnerable newborns are also at risk of facing long-term health issues as they mature.[61, 62] Mothers of small and vulnerable newborns may suffer from undernutrition, infections and environmental exposure.[63] These conditions are also linked to stillbirths, 1.9 million of which occur annually (see p. 55).

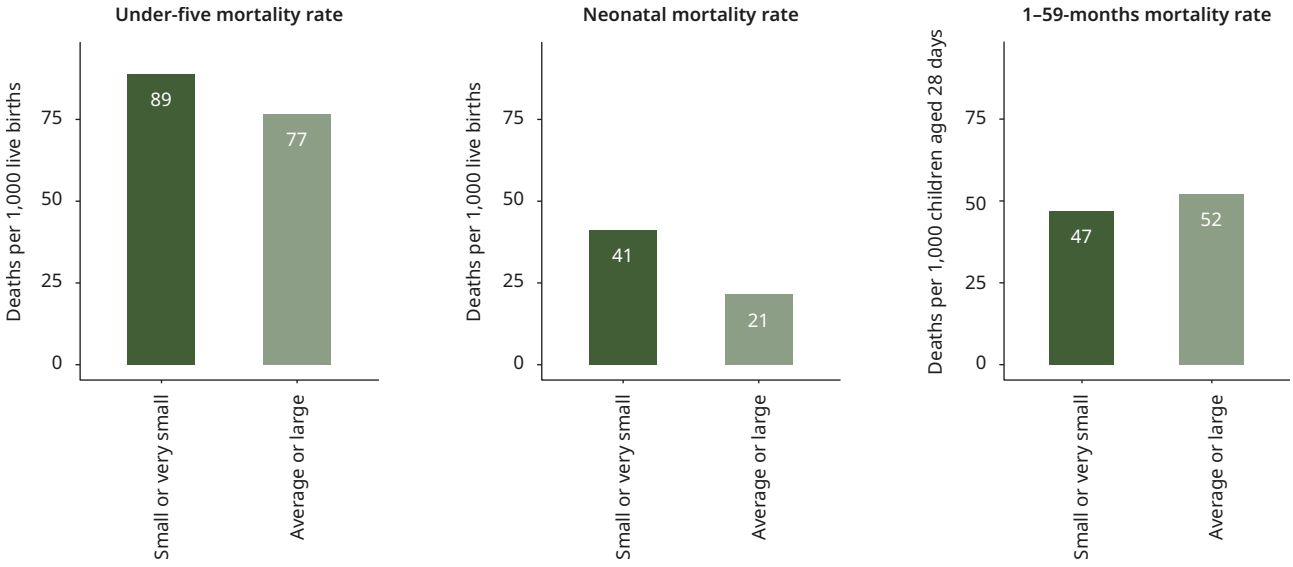
This risk factor underscores the importance of targeting interventions to improve fetal growth and address the determinants of low birthweight, such as maternal health and nutrition.

KEY FACT

In 2020, 35.3 million newborns were considered to be small and vulnerable – or one in four babies worldwide.[64]

Babies who are small or very small are more likely to die during the first month of life than larger babies

Figure 27. Under-five mortality rate, neonatal mortality rate and 1–59-months mortality rate, by birth size (2024)



Note: The under-five, neonatal and 1–59-months mortality rates by birth size are derived from UNICEF analysis based on DHS, MICS and other nationally representative sources. The analysis is not comparable across age groups: The under-five mortality rate aggregate is based on 7 countries, neonatal mortality rate on 40 countries, and 1–59-months mortality rate on 7 countries.

Birth size is an important factor for newborn survival. The neonatal mortality rate for very small or small newborns is almost twice that of newborns with average or large size, with an absolute difference of 20 deaths per 1,000 live births.

The burden of neonatal mortality is heavier among mothers to small or very small babies

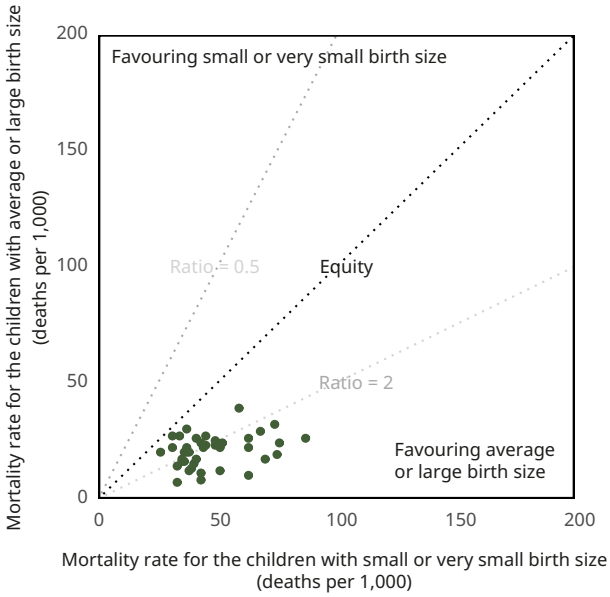
Figure 28. Percentage of live births and neonatal deaths, by birth size (2024)



Children of small or very small size account for a higher percentage of neonatal deaths compared to their share of live births. While 18 per cent of live births were children of small or very small size, almost a third (29 per cent) of neonatal deaths occurred in this size group.

Disparity ratios and birth size: How pronounced are inequities between different groups of children within countries?

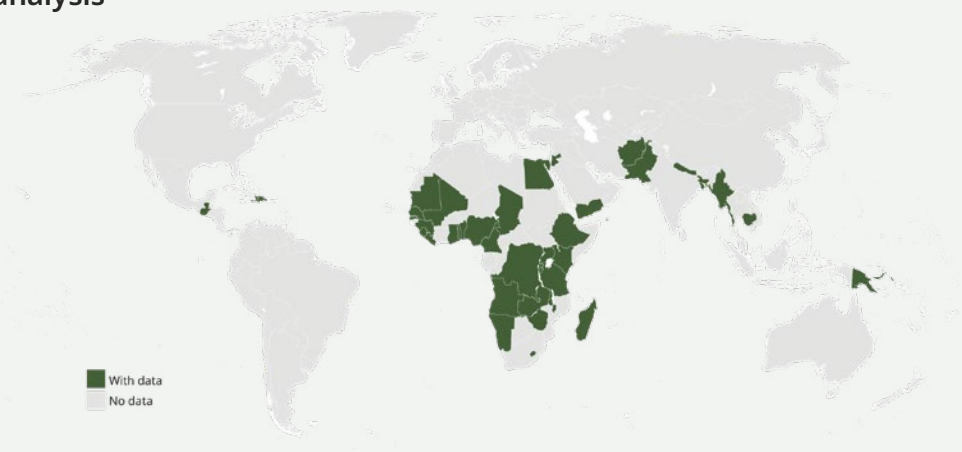
Figure 29. Neonatal mortality rates by small and average birth size in selected countries



Across the 40 countries studied, the neonatal mortality rate disparity ratio between very small or small newborns and average or large newborns ranged from 1.1 in Ethiopia to 6.3 in Cambodia (*see Figure 29*). In half of the countries, the risk of dying before turning 1 month for very small or small newborns was 2.2 times higher than it was among average or large newborns. For older children under 5 years of age, the disparity ratio ranged from 1.0 to 1.9 among the very few countries with data.

BEHIND THE DATA: ESTIMATING CHILD MORTALITY AND BIRTH SIZE

Map 8. Countries with available survey or sample vital registration data for newborn birth size analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of mortality by birth size is based on data for neonates from 40 countries, which accounted for 60 per cent (1.4 million) of global neonatal deaths and 39 per cent (52 million) of live births in 2024. Reliable data with sufficient cases were more often available for neonates than for older children under age 5. If the denominator was too small for the calculation of the mortality rate, the estimate was not published.

Given the small number of surveys and cases, estimates of mortality by birth size used published values with 10-year reference intervals and did not recalculate them using the shorter reference period of 5 years that was used for the other indicators.

The mother's estimate of the baby's size at birth was used, with categories of very small, smaller than average, and average or larger.



CRITICAL FOCUS

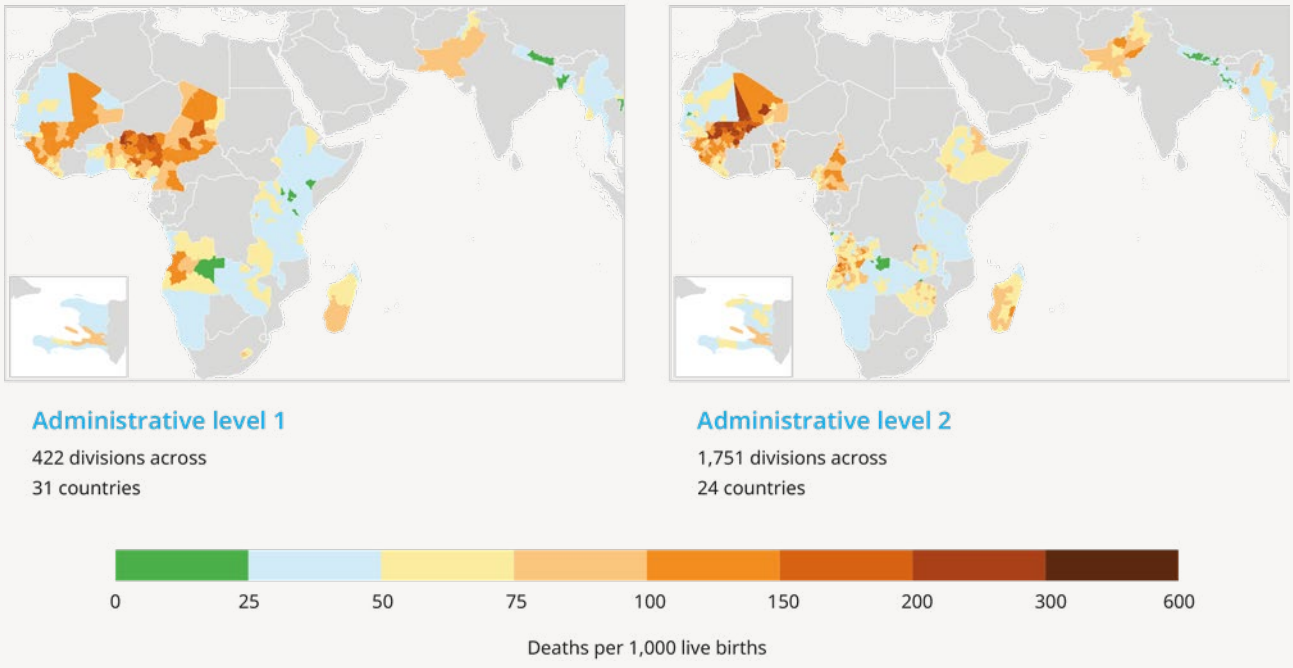
Subnational trends in under-five mortality

The SDG agenda commits to leaving no one behind. As this publication highlights, realizing that goal in child mortality demands a focus on those children who continue to face disproportionately greater threats to their survival.

While national-level estimates are critical to tracking progress towards achieving the SDG targets on under-five mortality, they can also obscure uneven subnational trends within countries – which, if left unaddressed, threaten to leave the children facing the greatest mortality risks behind.[65] When national-level estimates are broken down by administrative level – e.g., municipalities, districts, provinces, states – inequities between different groups of children emerge, even in countries where under-five mortality rates are relatively low and/or SDG targets have already been met.

Applying a local-level lens to country estimates reveals vastly different chances of survival for children in low- and lower-middle-income countries

Map 9. Under-five mortality rate at administrative levels 1 and 2 (2021)



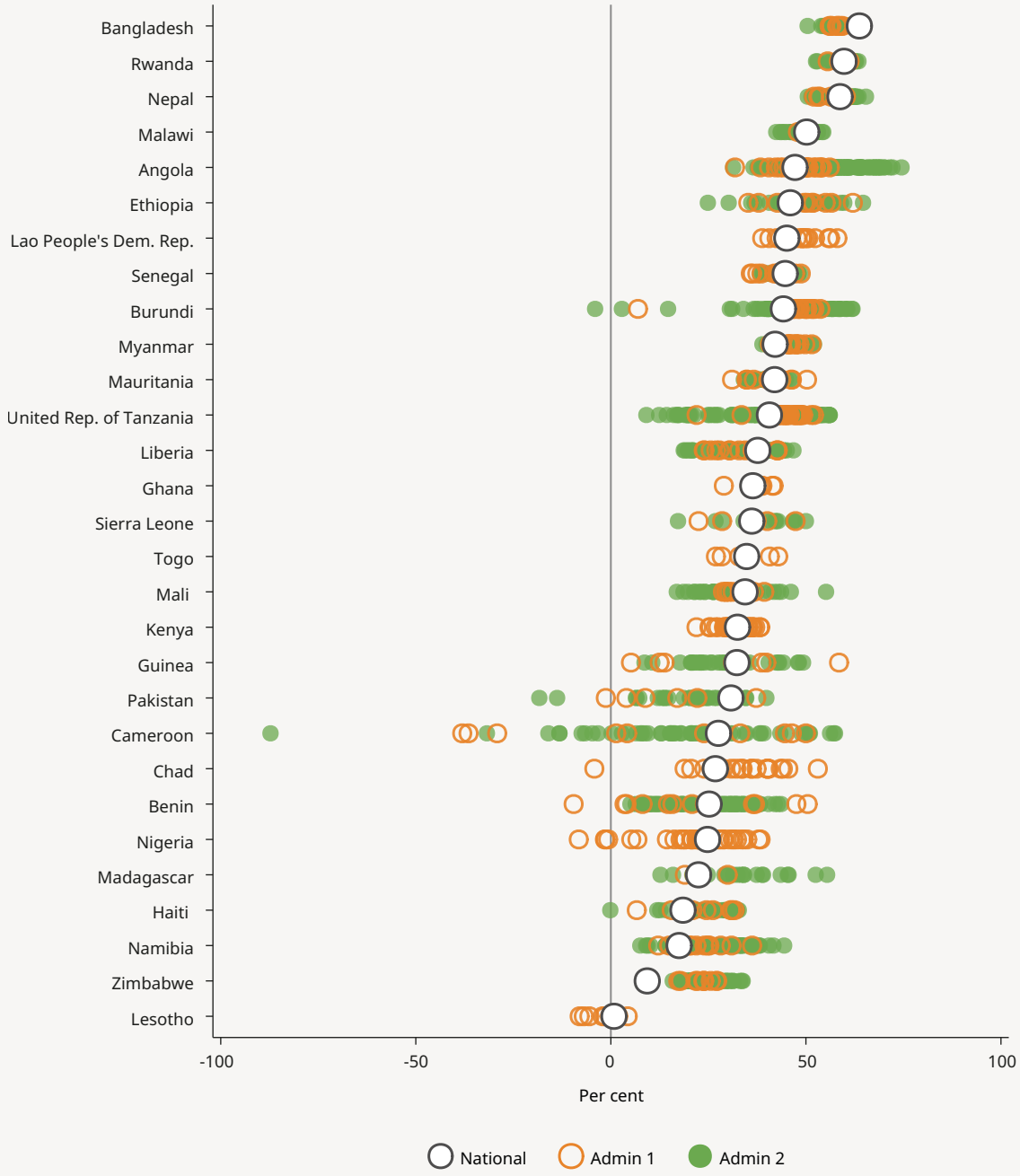
Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

Current mortality levels, progress in reducing under-five mortality and distance to SDG mortality targets are highly varied when examined at subnational level. In Nigeria, for instance, where the national under-five mortality rate for 2021 was 111 deaths per 1,000 live births, rates at administrative level 1 ranged from a low of 52 deaths per 1,000 live births to a high of 253 deaths per 1,000 live births – a fivefold difference (*see Map 9*). In Angola, the national neonatal mortality rate was 27 deaths per 1,000 live births in 2021, while subnational rates at administrative level 2 ranged from a low of 6 deaths per 1,000 live births to a high of 70 deaths per 1,000 live births.

Looking at reductions in mortality rates, progress by locality has also been uneven, as seen in Haiti: Its national neonatal mortality rate has declined by 18 per cent since 2000, but the percentage decline within administrative level 1 divisions ranged from a high of 32 per cent (almost twice the national average) to a low of just 7 per cent (a mere third of national progress) (*see Figure 30*). In Chad, the national under-five mortality rate has declined by 42 per cent since 2000, while the percentage decline within administrative level 1 ranged from a low of -34 per cent (i.e., an increase) to a high of 75 per cent.



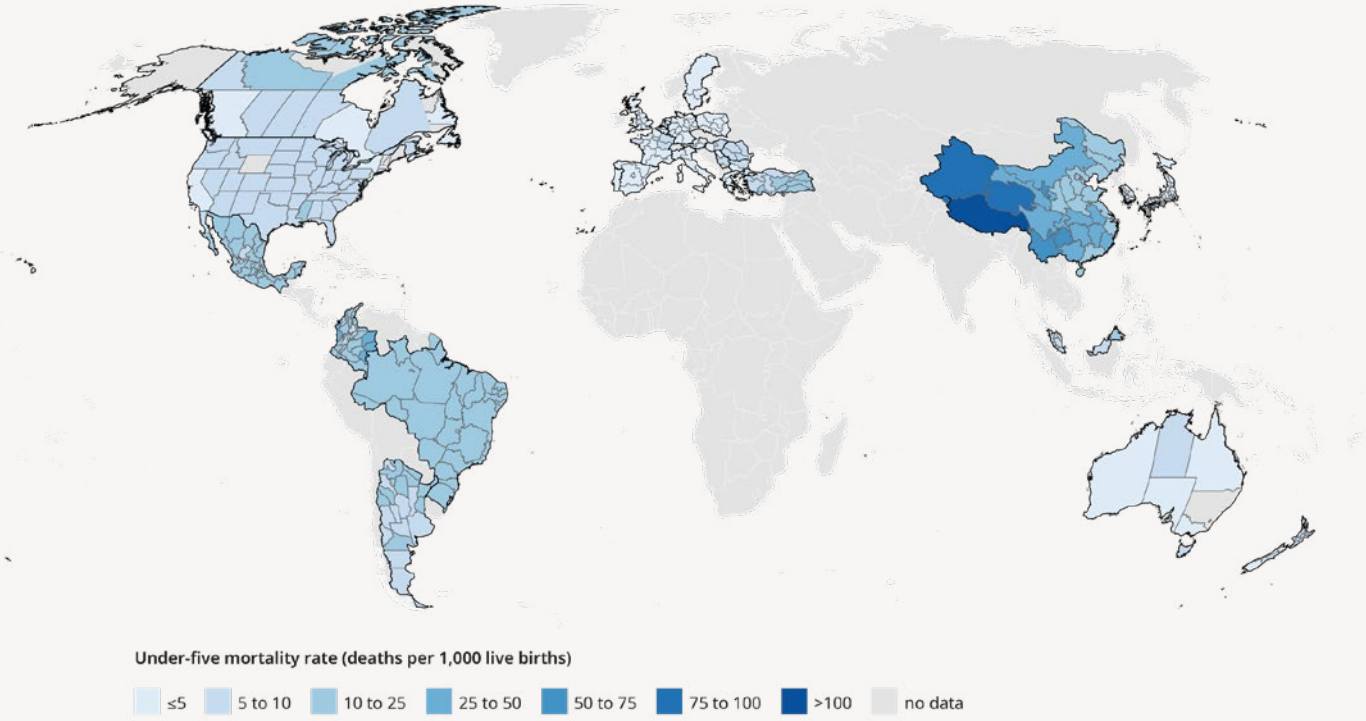
Figure 30. Percentage decline in the neonatal mortality rate at administrative level 1 and administrative level 2, by country (2000–2021)



Substantial variation by administrative level also exists in SDG progress status (i.e., achieved, on track, in need of acceleration) relative to national status. In Angola, Bangladesh and Nepal – none of which have achieved the SDG targets on under-five mortality or neonatal mortality – some subnational areas have already reached the targets. In Nepal, where the under-five mortality rate was 27 deaths per 1,000 live births in 2021, three of the country's seven administrative level 1 areas are already below the target of 25 deaths per 1,000 live births. And in Angola, which had a neonatal mortality rate of 27 deaths per 1,000 live births in 2021, 9 of its 163 administrative level 2 areas had achieved neonatal mortality rates below the SDG target of 12 deaths per 1,000 live births.

Subnational disparities in under-five mortality exist in wealthier countries

Map 10. Subnational under-five mortality rates at administrative level 1 for selected upper-middle- and high-income countries (2017-2024)



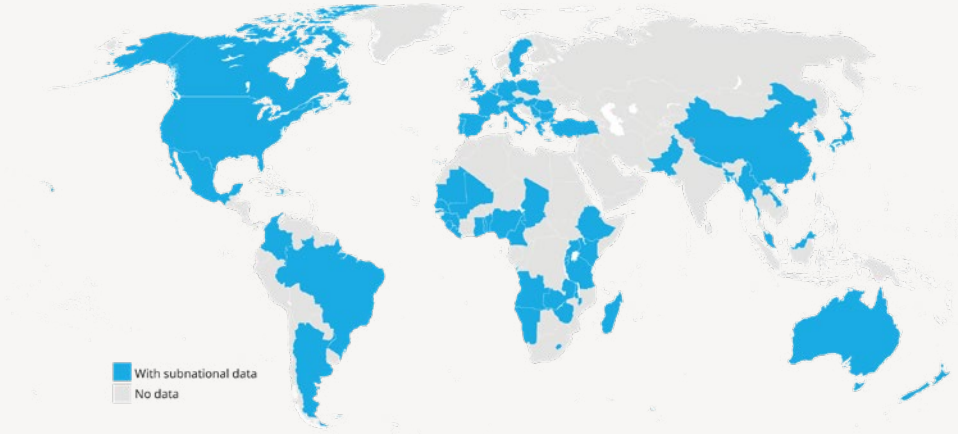
Note: Rates are based on unrounded numbers; value ranges are greater than the lower bound number and less than or equal to the upper bound number. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

Among 8 upper-middle-income countries studied, all have met the SDG target for under-five mortality, but the burden of under-five mortality is unevenly distributed at regional level. As of 2020, 16 out of 31 subnational regions in China had not met the target. These disparities seem to shrink as a country's income increases; examining data from 21 high-income countries shows that the SDG target on under-five mortality has been met at national and subnational levels.

Even in scenarios where SDG targets have been met, not all children face the same chances of survival: Subnational disparities in under-five mortality rates are more pronounced in the United States of America, Canada and New Zealand than in European countries, Japan and the Republic of Korea (*see Map 10*). European countries also demonstrate subnational variations in under-five mortality, with France showing the highest discrepancy at administrative level 1.

BEHIND THE DATA: MEASURING CHILD MORTALITY AND SUBNATIONAL TRENDS

Map 11. Countries with available subnational survey or vital registration data for subnational analysis



Note: This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

The analysis of mortality rates by subnational level is based on UN IGME estimates derived from 2000–2021 household data (including DHS and MICS) from 31 low- and middle-income countries, primarily in sub-Saharan Africa and Southern Asia, at administrative levels 1 and 2. These countries accounted for 51 per cent (2.5 million) of global under-five deaths, 50 per cent (1.1 million) of neonatal deaths and 31 per cent (41 million) of live births in 2024.

Subnational data were available from vital registration systems for 29 upper-middle- and high-income countries, which accounted for 4 per cent (190 thousand) of global under-five deaths, 4 per cent (98 thousand) of neonatal deaths and 19 per cent (26 million) of live births in 2024.





Evidence for every child

The interventions to reduce under-five mortality are well established. When women and children have access to quality care before and during pregnancy and childbirth – including sexual and reproductive health services, care for small and sick newborns, routine immunization and adequate nutrition – more children will survive and thrive.

Yet this report highlights a persistent reality: These preventative measures remain unevenly accessible based on the conditions into which a child is born, leaving families around the world to continue to unnecessarily experience the loss of children. While the data explored in this analysis offer important insights into these patterns of inequity, they do not capture the full picture. Better data and evidence are also needed to understand how additional dimensions – such as ethnicity, disability status, migration status and exposure to conflict – influence child survival.

In this way, an equity-driven approach to data collection, analysis and use plays an instrumental role in helping countries focus attention and resources where they are most likely to have the greatest impact on child mortality. Viewing under-five mortality rates through an equity lens enables countries to look beyond national averages to identify the children most at risk of dying before age 5 and the barriers that place them at risk.

An **equity-focused analysis** can answer critical questions such as:

- **Which children are being left behind?**
  Which groups of children are most likely to die before age 5 when mortality is viewed through the lens of wealth, maternal education, place of residence and birth characteristics? Which age groups – newborns? children aged 1–59 months? – are most vulnerable?
- **Where would targeted investments most substantially improve child survival?**
  Which geographic areas – rural communities? specific regions or districts? fragile and conflict-affected settings? – are home to the children facing the greatest risk of dying before age 5?
- **Which barriers are shaping chances of survival?**
  What do patterns in under-five mortality tell us about underlying barriers such as financial constraints, limited access to maternal and newborn care, gaps in adolescent health services, or insufficient birth spacing and family planning support?
- **Who is being missed – even when national targets are met?**
  In countries that have achieved SDG targets for child mortality, which population groups continue to experience elevated risks that are masked by national averages?

Together, these questions provide a road map for action – showing **who** is being left behind, **where** the greatest mortality burdens persist and **how** resources can be targeted most effectively.

Reducing under-five mortality requires more than sustaining progress at the national level. It requires the deliberate and strategic use of evidence to guide action equitably – ensuring that resources and services are directed towards the populations facing the greatest barriers to survival. This includes:

- Strengthening access to maternal, newborn and childcare where mortality remains highest, alongside reproductive health services and education
- Implementing interventions that focus on underserved populations, paying close attention to geographic inequities in rural areas and/or at subnational level
- Addressing the social and economic barriers linked to greater mortality risks (e.g., poverty, education)
- Investing in data systems so that they can capture inequities, track progress among vulnerable groups and hold governments accountable

Every child, regardless of where they are born, their socio-economic status, gender, ethnicity or circumstance, deserves an equal opportunity to survive and reach their full potential. Urgent, evidence-based action and targeted investments are needed to address the root causes of disadvantage and ensure that those furthest behind are reached first. By prioritizing equity today, countries can accelerate progress towards the SDGs and take one step closer to a world in which every child has a fair chance to survive and thrive.

Annex

Measures used in this analysis

This publication presents relative disparity ratios to compare gaps in mortality rates between two distinct groups and absolute differences to measure how wide those gaps are. Both measures are useful for understanding inequality as they offer different insights – for instance, relative disparity ratios can remain the same over time while absolute gaps can decline or increase.

Other statistical measures to assess inequality across groups – such as the slope index, between-group variance, concentration index and Theil index – can also be used. The Theil index was used in this analysis to examine ethnic groups in order to provide a relative measure of inequality across more than two groups and take group size into account. Absolute inequalities can also be measured with the slope index and between-group variance, while also taking group size into account; they were not, however, used in the findings presented here.

These summary indices often complement each other and offer a more complete picture of inequalities, thus helping us understand vulnerabilities. For instance, a disparity ratio might be relatively small between two groups (indicating little inequality), but once population weight is accounted for in calculating the Theil index, a higher degree of inequity may be discovered. While the other measures described above can enhance statistical analysis, they can also make interpretation more complex. Given the correlation of different relative and absolute measures, the findings in this analysis use interpretable disparity ratios and absolute differences as much as possible.

The correlation and country ranking across measures is high within absolute and relative measures of under-five mortality rates by wealth quintiles and other equity dimensions when group sizes are similar. For instance, the correlation between the concentration index and the disparity ratio by wealth quintile for under-five mortality rates is -0.97 (*see Figure 31*). The correlation and country ranking across absolute and relative measures of under-five mortality rate by wealth quintile is weak since relative inequalities can be very different from absolute inequalities.

What do disparity ratios tell us about child mortality and inequities?

The **disparity ratio** is derived by dividing the highest numerical value by the lowest numerical value – in this case using mortality rates associated with the lowest or highest levels of mother's education or wealth, for instance. The greater the resulting ratio's numerical value, the greater the inequalities between groups are. A disparity ratio of 1 indicates that the risk of dying by age 5 is the same between groups measured. Increasing disparity ratios over time indicate widening disparities between under-five mortality rates, while declining disparity ratios demonstrate the relative risks are leveling out.

A lower ratio does not indicate absolute levels themselves are higher or lower. For instance, the disparity ratio in child mortality by wealth quintile in South Sudan is low, at 1.1, but this is because the country's child mortality rates – which are among the world's highest – are roughly the same across wealth quintiles.

How can disparity ratios be used to inform programming?

Zooming in on Southern Asia as an example – where neonatal mortality rates remain stubbornly high – disparities in mortality rates by mother's education level in Nepal are notable, at 3.0, comparing children born by mothers without education to children born by mothers with secondary education or higher. This indicates the importance of prioritizing girls' education and targeting interventions among mothers with the lowest levels of education in order to successfully and meaningfully reduce the country's overall neonatal mortality rate.

Index	Type of measurement	Short description of calculation
Absolute difference	Absolute	Difference between two groups (e.g., lowest and highest, poorest and wealthiest, no education and secondary or higher level of education)
Slope index	Absolute	Slope of regression of group-specific mortality rate on its cumulative proportion of live births up to the midpoint of each group[66, 67]
Between-group variance	Absolute	Population-weighted squared differences between group estimates and the national mean
Disparity ratio	Relative	Ratio between mortality rates of two groups (e.g., lowest and highest, poorest and wealthiest, no education and secondary or higher level of education)
Concentration index	Relative	Twice the area between the mortality concentration curve (the cumulative proportion of deaths against the cumulative proportion of live births, beginning with one group (e.g., poorest quintile)) and the diagonal
Theil index	Relative	Takes into account the proportion of the population in each group and the mortality ratios in each group relative to the national mean value Captures a group's population share, the ratio of the group's mortality rate to the population average, and its logarithmic term[68]

Figure 31. Correlation of inequality measure of under-five mortality rates by socio-economic status

	Wealth	Education (2 groups)	Education (4 groups)	Residence	
Absolute difference – Slope index	-1.00	-1.00	-0.61	-1.00	Absolute vs Absolute
Absolute difference – Between-group variance	0.89	0.92	0.70	0.88	
Slope index – Between-group variance	-0.91	-0.92	-0.79	-0.88	
Disparity ratio – Concentration index	-0.97	-0.95	-0.49	-0.84	Relative vs Relative
Disparity ratio – Theil index	0.99	0.22	0.40	0.62	
Concentration index – Theil index	-0.97	-0.20	-0.71	-0.48	
Absolute difference – Disparity ratio	0.15	0.82	0.38	0.74	Absolute vs Relative
Absolute difference – Concentration index	-0.09	-0.80	-0.45	-0.64	
Absolute difference – Theil index	0.15	-0.25	0.24	0.34	
Slope index – Disparity ratio	-0.12	-0.82	-0.24	-0.74	
Slope index – Concentration index	0.06	0.80	0.66	0.64	
Slope index – Theil index	-0.12	0.25	-0.22	-0.34	
Between-group variance – Disparity ratio	0.14	0.68	0.13	0.53	
Between-group variance – Concentration index	-0.09	-0.64	-0.40	-0.40	
Between-group variance – Theil index	0.16	-0.25	0.18	0.38	

Figure 32. Correlation of the country rank of inequality measure of under-five mortality rates by socio-economic status

	Wealth	Education (2 groups)	Education (4 groups)	Residence	
Absolute difference – Slope index	-0.99	-1.00	-0.64	-1.00	Absolute vs Absolute
Absolute difference – Between-group variance	0.99	0.95	0.76	0.90	
Slope index – Between-group variance	-0.99	-0.95	-0.85	-0.90	
Disparity ratio – Concentration index	-0.99	-0.91	-0.67	-0.94	Relative vs Relative
Disparity ratio – Theil index	0.99	0.33	0.65	0.77	
Concentration index – Theil index	-0.99	-0.36	-0.70	-0.78	
Absolute difference – Disparity ratio	0.05	0.80	0.80	0.82	Absolute vs Relative
Absolute difference – Concentration index	0.03	-0.84	-0.53	-0.74	
Absolute difference – Theil index	0.01	-0.02	0.48	0.51	
Slope index – Disparity ratio	0.00	-0.80	-0.50	-0.82	
Slope index – Concentration index	-0.08	0.84	0.70	0.74	
Slope index – Theil index	0.03	0.02	-0.41	-0.51	
Between-group variance – Disparity ratio	-0.03	0.78	0.50	0.72	
Between-group variance – Concentration index	0.11	-0.85	-0.51	-0.68	
Between-group variance – Theil index	-0.06	0.03	0.43	0.68	

Data availability

This analysis focuses on low- and middle-income countries (LMICs) with estimates or household survey data that collect information on equity, as well as selected analysis on equity in upper-middle- and high-income countries with vital registration data.

Most of the data used in this analysis are from nationally representative household surveys. For under-five mortality rates by wealth quintile and under-five and neonatal mortality rates by subnational area, UN IGME[69, 70] produces annual trend estimates that are used. The estimates are informed by household survey data, and a statistical model is fitted to the data to generate trend estimates and averages over the results from household surveys. All other disaggregated mortality estimates – for all dimensions analyzed – are based on nationally representative household survey data or sample vital registration data. In addition, we compiled subnational mortality data from vital registration systems in upper-middle- and high-income countries – mainly in Europe, Northern America, Australia and New Zealand – as well as mortality data by ethnicity in Australia and Brazil.

Data were not available for all countries. Wealth quintile under-five estimates were available for 106 countries from empirical survey or sample vital registration data, while 70 countries (or less) were included in the analysis of wealth quintile neonatal mortality, education, residence, mother's age, birth interval, birth order and birth size (*see Table 1*). For different disaggregations, the number of countries vary a bit because not every category in the equity dimension had sufficient cases for comparison across categories.

Mortality rates for the different disaggregations were mostly calculated from microdata (77 surveys for 72 countries); or, in the absence of microdata, obtained from reports or websites (46 surveys or sample vital registration systems for 46 countries). In total, almost 8,000 data points from empirical data sources were included in this analysis. Among household survey and sample vital registration data, we selected the most recent quality data point by disaggregation.

Table 1 below provides an overview of the selection criteria applied to country data by equity dimension, ranging from socio-economic factors to demographic variables. We selected the most recent source since 2013 in a country, excluding data sources with low quality and estimates for small countries with less than 10,000 live births in 2024. For countries with more than one quality survey since 2013, we selected the most recent. While all the UN IGME estimates are available up to the year 2024, survey estimates refer to a 5-year or 10-year period before the survey. If possible, the 5-year period was used but in some cases 10-year intervals were used. For the few cases of sample vital registration (Bangladesh, China and India) the most recent available annual data were used.

Table 1. Number of countries with data, by selection criteria and equity dimension

Analysis steps	Wealth quintile U5MR	Wealth quintile NMR	Mother's education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational
UN IGME estimates or empirical data	106	103	U5MR: 120 NMR: 110	U5MR: 123 NMR: 112	106	106	106	87	42 (survey data) and 2 (vital registration data)	31 (UN IGME estimate) and 47 (vital registration data)
Select most recent survey year since 2013	/	91	U5MR: 97 NMR: 94	U5MR: 98 NMR: 95	94	95	94	46	/	/
Exclude surveys with low quality in national data	/	77	U5MR: 82 NMR: 80	U5MR: 85 NMR: 81	79	79	80	43	/	/
Enough cases in each category to allow comparison	/	77	U5MR: 76 NMR: 76	U5MR: 84 NMR: 81	76	U5MR: 78 NMR: 77	U5MR: 79 NMR: 78	U5MR: 8 NMR: 40	/	/
Exclude small countries with less than 10,000 live births and high-income countries where applicable	/	68	U5MR: 67 NMR: 67	U5MR: 75 NMR: 72	70	70	70	U5MR: 8 NMR: 40	/	/
Number of countries – country-level	106	68	U5MR: 67 NMR: 66	U5MR: 75 NMR: 70	70	70	70	U5MR: 7 NMR: 40	42 (survey data) and 2 (vital registration data)	31 (UN IGME estimate) and 29 (vital registration data)
Number of countries – aggregate	106	68	U5MR: 66 NMR: 66	67	64	69	69	U5MR: 7 NMR: 40	Not applicable	Not applicable

Note: The numbers for 1–59-months mortality rate are the same as for NMR.

Table 2. Characteristics of equity dimensions in the analysis (2013–2024)

Equity group	Categories	Data sources	Definition	Range reference years	Average reference year	Number of data points	Number of countries
Wealth quintile U5MR	poorest, 2nd quintile, 3rd quintile, 4th quintile, wealthiest	UN IGME	Indicator of the economic status of households	2024.5	2024.5	530	106
Wealth quintile NMR and 1–59-months mortality rate	poorest, 2nd quintile, 3rd quintile, 4th quintile, wealthiest	DHS, MICS, other national household surveys	Indicator of the economic status of households	2010.5–2021.5	2016.5	408	68
Education	Group 1: no education/primary, secondary/higher Group 2: no education, primary, secondary, higher	DHS, MICS, other national household surveys	Highest level of schooling attended or completed	2010.5–2021.5	2016.7	423	67
Residence	rural, urban	DHS, MICS, other national household surveys and sample vital registration	Country-specific delimitations at the time of the survey	2010.5–2023.5	2016.9	225	75
Mother's age	<20, 20–29, 30–39, 40–49	DHS, MICS, other national household surveys	Mother's age at birth, difference between the birthdate of the child and birthdate of the mother	2005.5–2021.5	2016.3	350	70
Birth interval	<2 years, 2 years, 3 years, 4+ years	DHS, MICS, other national household surveys	Difference in years between birthdate of child and birthdate of preceding child	2010.5–2021.5	2016.5	350	70
Birth order	1, 2–3, 4+	DHS, MICS, other national household surveys	Birth order	2010.5–2021.5	2016.5	280	70
Birth size	small or very small, average or large	DHS, MICS, other national household surveys	Mother's estimate of baby's size at birth	U5MR: 2011.3–2015.4 NMR: 2008.1–2015.4	U5MR: 2012.6 NMR: 2012.1	U5MR: 21 NMR: 120	U5MR:7 NMR:40
Ethnicity for low- and middle-income countries	self-reported ethnicity or proxy variables such as language	DHS and MICS	Self-reported ethnic affiliation, language, skin colour, and caste or tribal group	2011.5–2022.5	2017.6	440	42
Subnational (1) for low- and lower-middle-income countries	Admin level 1 and admin level 2	DHS, MICS, other national household surveys	Subnational	2000.0–2020.1	2007.0	46660	31
Subnational (2) for upper-middle- and high-income countries	Admin level 1 and admin level 2	Vital registration	Subnational	2017.5-2024.5	2023.0	700	29

Calculation of aggregates and adjustments

Aggregated mortality rates were calculated to summarize the disparities across the equity dimensions for the selected countries in this analysis. For comparability, the rates from empirical data were adjusted to the UN IGME national estimates for the year 2024. As a next step the number of deaths in each equity group were calculated using the respective number of births with the distribution of births by equity group in the surveys applied to the live births from World Population Prospects 2024 Revision[71] for the year 2024. After the deaths and births in each group were summed up, the aggregated mortality rate was calculated for each group.

For the neonatal mortality rate (NMR) by wealth quintile in the country analysis and for the aggregates, the rates were adjusted to the UN IGME estimate of under-five mortality rate (U5MR) by wealth quintile using the following steps: First, the ratio of NMR to U5MR was calculated from the most recent survey data in each wealth quintile in a country. Second, this ratio was multiplied by the UN IGME U5MR estimates by wealth quintile in the country in the year 2024 to obtain the adjusted NMR for each quintile in the country. The adjusted NMR was used as input for the calculation of the aggregate for countries with available quality data. For Kosovo*, no UN IGME estimates by wealth quintile were available to adjust to. The same approach was used for the 1–59-months mortality rate.

Trend analysis

To analyse time trends by equity, the most recent data point from each available survey was selected with at least three data points over time to enable trend estimation. This meant about 70–80 per cent of the countries per equity dimension were kept in the analysis, ranging from 46 countries (for mother's age) to 52 countries (for residence). In the next step, linear models were fit separately for each country and each equity dimension using the log-transformed mortality estimates, and these models were used to extrapolate values from 2000 to 2024. For comparability, the rates were adjusted from empirical data to the UN IGME national estimates for the years 2000 and 2024, and the aggregates were calculated as above.

* All references to Kosovo in this report should be understood to be in the context of United Nations Security Council resolution 1244 (1999).

Representativeness of analysis

Table 3 shows the representativeness of this analysis in terms of under-five and neonatal mortality burden and live births for each equity dimension.

For instance, for the analysis of the under-five mortality rate by wealth quintile, the countries with estimates accounted for 96 per cent of the global under-five deaths and 80 per cent of live births in 2024, with approximately 4.7 million under-five deaths occurring in these countries. For analysis of the neonatal mortality rate by wealth quintile, the countries with survey data accounted for 73 per cent of the neonatal deaths and 54 per cent of the live births. For the rural versus urban country-level analysis, the countries accounted for 93 per cent of the global under-five deaths, 93 per cent of neonatal deaths and 81 per cent of live births in 2024, translating into 4.5 million under-five deaths. For the rural/urban aggregates, the countries accounted for 75 per cent of the global under-five deaths, 70 per cent of neonatal deaths and 52 per cent of live births in 2024, with about 3.6 million under-five deaths. China and India could not be included in the aggregates since the distribution of births by residency was not available from the sample vital registration data. The subnational estimates by UN IGME ('Subnational 1') refer to LMICs with survey data.[72] The countries with estimates accounted for 51 per cent of global under-five deaths (around 2.5 million under-five deaths in total), 50 per cent of neonatal deaths and 31 per cent of live births in 2024. 'Subnational 2' – which includes 29 upper-middle- and high-income countries – accounted for only 4 per cent of global under-five deaths, 4 per cent of neonatal deaths and 19 per cent of live births in 2024, with a total of 190,469 under-five deaths in these countries.

Database and code availability

The analytical code and documentation used to produce this report are available at github.com/unicef-drp/under-five-mortality-risk-factors. The repository includes:

- Code for:
  - selection criteria and harmonization with the original database available at childmortality.org;
  - calculation of the aggregates presented in the report;
  - additional analyses (e.g., inequality measures); and
  - generation of the report's figures and tables.
- Quarto/Markdown source files used to generate the full report.

For details on the report's analysis of ethnicity or subnational estimates, please contact the authors.

Table 3. Number of UN IGME under-five and neonatal deaths and WPP live births in countries included in the regional aggregates by equity dimension (2024)

Equity dimension	Number of countries with survey data	Number of under-five deaths	Number of neonatal deaths	Number of live births	Share of global under-five deaths in 2024	Share of global neonatal deaths in 2024	Share of global live births in 2024
Wealth quintile	U5MR: 106 NMR: 68	4,667,526	1,656,382	U5MR: 105,488,138 NMR: 71,742,222	96%	73%	U5MR: 80% NMR: 54%
Education	66	3,622,718	1,617,716	71,464,581	75%	71%	54%
Residence	67	3,647,584	1,595,179	69,030,535	75%	70%	52%
Mother's age	64	3,686,999	1,624,772	69,638,863	76%	72%	53%
Birth interval	69	3,796,896	1,677,526	74,727,592	78%	74%	57%
Birth order	69	3,745,416	1,648,839	73,432,053	77%	73%	56%
Birth size	U5MR: 7 NMR: 40	1,175,267	1,367,657	U5MR: 14,901,587 NMR: 52,144,334	24%	60%	U5MR:11% NMR: 39%

Table 4: Number of UN IGME under-five and neonatal deaths and WPP live births in countries included in the analysis by additional equity dimension (2024)

Equity	Number of countries with survey data	Number of under-five deaths	Number of neonatal deaths	Number of live births	Share of global under-five deaths in 2024	Share of global neonatal deaths in 2024	Share of global live births in 2024
Ethnicity	42	3,643,664	1,659,119	69,486,669	75%	73%	53%
Subnational (1)	31	2,485,077	1,131,988	40,999,793	51%	50%	31%
Subnational (2)	29	190,469	97,998	25,551,759	4%	4%	19%

Note: Subnational (1) refers to the UN IGME estimates and subnational (2) to the 29 upper-middle- and high-income countries.

Data sources

Table 5: Data sources by country for selected equity dimensions

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Afghanistan	AFG	UN IGME 2025	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Demographic and Health Survey 2015	Demographic and Health Survey 2015	
Albania	ALB	UN IGME 2025									
Algeria	DZA	UN IGME 2025									
Angola	AGO	UN IGME 2025	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015	Demographic and Health Survey 2015–2016
Argentina	ARG	UN IGME 2025									
Armenia	ARM	UN IGME 2025									
Azerbaijan	AZE	UN IGME 2025									
Bangladesh	BGD	UN IGME 2025	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Report on Sample Vital Registration System 2023	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2014		Multiple Indicator Cluster Survey 2019
Belarus	BLR	UN IGME 2025									
Belize	BLZ	UN IGME 2025									
Benin	BEN	UN IGME 2025	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017	Demographic and Health Survey 2017–2018
Bhutan	BTN	UN IGME 2025									
Bolivia (Plurinational State of)	BOL	UN IGME 2025		Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016					
Brazil	BRA	UN IGME 2025									
Burkina Faso	BFA	UN IGME 2025			Malaria Indicator Survey 2017–2018					Demographic and Health Survey 2021	

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Burundi	BDI	UN IGME 2025	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017		Demographic and Health Survey 2016–2017
Cambodia	KHM	UN IGME 2025	Demographic and Health Survey 2014	Demographic and Health Survey 2014	Demographic and Health Survey 2014	Demographic and Health Survey 2014	Demographic and Health Survey 2014	Demographic and Health Survey 2014	Demographic and Health Survey 2014		
Cameroon	CMR	UN IGME 2025	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018
Central African Republic	CAF	UN IGME 2025	Multiple Indicator Cluster Survey 2018–2019	Multiple Indicator Cluster Survey 2018–2019	Multiple Indicator Cluster Survey 2018–2019	Multiple Indicator Cluster Survey 2018–2019	Multiple Indicator Cluster Survey 2018–2019	Multiple Indicator Cluster Survey 2018–2019		Multiple Indicator Cluster Survey 2018	
Chad	TCD	UN IGME 2025	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014	Demographic and Health Survey 2014–2015
China	CHN				NHFPC, Death Registration Data 2023						
Colombia	COL	UN IGME 2025	Demographic and Health Survey 2015	Demographic and Health Survey 2015	Demographic and Health Survey 2015	Demographic and Health Survey 2015	Demographic and Health Survey 2015	Demographic and Health Survey 2015			
Comoros	COM	UN IGME 2025			Census 2017						
Congo	COG	UN IGME 2025	Multiple Indicator Cluster Survey 2014–2015	Multiple Indicator Cluster Survey 2014–2015	Multiple Indicator Cluster Survey 2014–2015	Multiple Indicator Cluster Survey 2014–2015	Multiple Indicator Cluster Survey 2014–2015	Multiple Indicator Cluster Survey 2014–2015		Demographic and Health Survey 2011	
Côte d'Ivoire	CIV	UN IGME 2025	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021		Enquête Démographique et de Santé 2021	
Democratic Republic of the Congo	COD	UN IGME 2025	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2013–2014	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2013–2014	Demographic and Health Survey 2013	

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Dominican Republic	DOM	UN IGME 2025	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Demographic and Health Survey 2013		
Egypt	EGY	UN IGME 2025	Family Health Survey 2021	Family Health Survey 2021	Family Health Survey 2021	Family Health Survey 2021	Family Health Survey 2021	Family Health Survey 2021	Demographic and Health Survey 2014		
El Salvador	SLV	UN IGME 2025	Multiple Indicator Cluster Survey 2014	Encuesta Nacional de Salud 2021	Encuesta Nacional de Salud 2021	Encuesta Nacional de Salud 2021	Encuesta Nacional de Salud 2021	Encuesta Nacional de Salud 2021			
Equatorial Guinea	GNQ	UN IGME 2025									
Eritrea	ERI	UN IGME 2025									
Eswatini	SWZ	UN IGME 2025	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022			
Ethiopia	ETH	UN IGME 2025	Mini Demographic and Health Survey 2019	Mini Demographic and Health Survey 2019	Mini Demographic and Health Survey 2019	Mini Demographic and Health Survey 2019	Mini Demographic and Health Survey 2019	Mini Demographic and Health Survey 2019	Demographic and Health Survey 2016	Mini Demographic and Health Survey 2019	Mini Demographic and Health Survey 2019
Fiji	FJI	UN IGME 2025									
Gabon	GAB	UN IGME 2025		Demographic and Health Survey 2019–2021						Demographic and Health Survey 2019	
Gambia	GMB	UN IGME 2025	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019	
Georgia	GEO	UN IGME 2025									
Ghana	GHA	UN IGME 2025	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2014	Multiple Indicator Cluster Survey 2017-2018	Multiple Indicator Cluster Survey 2017–2018
Guatemala	GTM	UN IGME 2025	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014–2015	Demographic and Health Survey 2014-2015	

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Guinea	GIN	UN IGME 2025	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018
Guinea-Bissau	GNB	UN IGME 2025	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014		Multiple Indicator Cluster Survey 2014	
Guyana	GUY									Multiple Indicator Cluster Survey 2014	
Haiti	HTI	UN IGME 2025	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017	Demographic and Health Survey 2016–2017		Demographic and Health Survey 2016–2017
Honduras	HND	UN IGME 2025	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019		Multiple Indicator Cluster Survey 2019	
India	IND	UN IGME 2025			Sample Registration System 2023					Demographic and Health Survey 2020	
Indonesia	IDN	UN IGME 2025	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017			
Iraq	IRQ	UN IGME 2025	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018			
Jordan	JOR	UN IGME 2025	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	Demographic and Health Survey 2017	
Kazakhstan	KAZ	UN IGME 2025			Multiple Indicator Cluster Survey 2015						
Kenya	KEN	UN IGME 2025	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2014	Demographic and Health Survey 2022	Demographic and Health Survey 2014
Kiribati	KIR	UN IGME 2025									
Kosovo*	RKS		Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020		Multiple Indicator Cluster Survey 2019-2020	

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Kyrgyzstan	KGZ	UN IGME 2025	Multiple Indicator Cluster Survey 2023		Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023			
Lao People's Democratic Republic	LAO	UN IGME 2025	Lao Social Indicator Survey III 2023	Lao Social Indicator Survey III 2023	Lao Social Indicator Survey III 2023	Lao Social Indicator Survey III 2023	Lao Social Indicator Survey III 2023	Lao Social Indicator Survey III 2023		Multiple Indicator Cluster Survey 2017	Multiple Indicator Cluster Survey 2017
Lesotho	LSO	UN IGME 2025	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2014		Multiple Indicator Cluster Survey 2018
Liberia	LBR	UN IGME 2025	Demographic and Health Survey 2019–2020	Malaria Indicator Survey 2022	Malaria Indicator Survey 2022	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2013	Demographic and Health Survey 2019–2020
Madagascar	MDG	UN IGME 2025	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Multiple Indicator Cluster Survey 2018	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021	Enquête Démographique et de Santé 2021		Demographic and Health Survey 2021
Malawi	MWI	UN IGME 2025	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Demographic and Health Survey 2015–2016	Multiple Indicator Cluster Survey 2019-2020	Multiple Indicator Cluster Survey 2019–2020
Maldives	MDV	UN IGME 2025									
Mali	MLI	UN IGME 2025	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2023–2024	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018
Mauritania	MRT	UN IGME 2025	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2019–2021	Demographic and Health Survey 2020	Demographic and Health Survey 2019–2021
Mexico	MEX			Encuesta Nacional de la Dinámica Demográfica 2023	Encuesta Nacional de la Dinámica Demográfica 2023	Encuesta Nacional de la Dinámica Demográfica 2023	Encuesta Nacional de la Dinámica Demográfica 2023	Encuesta Nacional de la Dinámica Demográfica 2023			
Mongolia	MNG	UN IGME 2025	Social Indicator Sample Survey 2013–2014	Social Indicator Sample Survey 2013–2014	Social Indicator Sample Survey 2013–2014	Social Indicator Sample Survey 2013–2014	Social Indicator Sample Survey 2013–2014	Social Indicator Sample Survey 2013–2014			
Morocco	MAR	UN IGME 2025									

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Mozambique	MOZ	UN IGME 2025	Demographic and Health Survey 2022–2023	Demographic and Health Survey 2022–2023	Demographic and Health Survey 2022–2023	Demographic and Health Survey 2022–2023	Demographic and Health Survey 2022–2023	Demographic and Health Survey 2022–2023		Demographic and Health Survey 2011	
Myanmar	MMR	UN IGME 2025	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015–2016	Demographic and Health Survey 2015–2016		Demographic and Health Survey 2015–2016
Namibia	NAM	UN IGME 2025	Demographic and Health Survey 2013	Demographic and Health Survey 2013	Demographic and Health Survey 2013	Demographic and Health Survey 2013	Demographic and Health Survey 2013	Demographic and Health Survey 2013	Demographic and Health Survey 2013		Demographic and Health Survey 2013
Nepal	NPL	UN IGME 2025	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2016	Demographic and Health Survey 2022	Demographic and Health Survey 2016
Nicaragua	NIC	UN IGME 2025									
Niger	NER	UN IGME 2025	Enquête Nationale sur la Fécondité et la Mortalité des Enfants de moins de 5 ans 2021		Enquête Nationale sur la Fécondité et la Mortalité des Enfants de moins de 5 ans 2021	Enquête Nationale sur la Fécondité et la Mortalité des Enfants de moins de 5 ans 2021	Enquête Nationale sur la Fécondité et la Mortalité des Enfants de moins de 5 ans 2021	Enquête Nationale sur la Fécondité et la Mortalité des Enfants de moins de 5 ans 2021		Demographic and Health Survey 2012	
Nigeria	NGA	UN IGME 2025	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Multiple Indicator Cluster Survey 2021	Multiple Indicator Cluster Survey 2021	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018
North Macedonia	MKD	UN IGME 2025									
Pakistan	PAK	UN IGME 2025	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017–2018	Demographic and Health Survey 2017	Demographic and Health Survey 2017–2018
Papua New Guinea	PNG	UN IGME 2025	Demographic and Health Survey 2016–2018	Demographic and Health Survey 2016–2018	Demographic and Health Survey 2016–2018	Demographic and Health Survey 2016–2018	Demographic and Health Survey 2016–2018	Demographic and Health Survey 2016–2018	Demographic and Health Survey 2016–2018		
Paraguay	PRY	UN IGME 2025								Multiple Indicator Cluster Survey 2016	

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Peru	PER	UN IGME 2025	Encuesta Demográfica y de Salud Familiar 2023	Encuesta Demográfica y de Salud Familiar 2023	Encuesta Demográfica y de Salud Familiar 2023	Encuesta Demográfica y de Salud Familiar 2023	Encuesta Demográfica y de Salud Familiar 2022	Encuesta Demográfica y de Salud Familiar 2023			
Philippines	PHL	UN IGME 2025	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022		Demographic and Health Survey 2022	
Republic of Moldova	MDA	UN IGME 2025									
Rwanda	RWA	UN IGME 2025	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020	Demographic and Health Survey 2019–2020		Demographic and Health Survey 2019–2020
Samoa	WSM	UN IGME 2025									
Sao Tome & Principe	STP	UN IGME 2025									
Senegal	SEN	UN IGME 2025	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2018	Demographic and Health Survey 2019	Demographic and Health Survey 2019
Serbia	SRB	UN IGME 2025									
Sierra Leone	SLE	UN IGME 2025	Demographic and Health Survey 2019		Demographic and Health Survey 2019	Demographic and Health Survey 2019	Demographic and Health Survey 2019	Demographic and Health Survey 2019	Demographic and Health Survey 2019	Demographic and Health Survey 2019	Demographic and Health Survey 2019
Somalia	SOM	UN IGME 2025									
South Africa	ZAF	UN IGME 2025	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016		Demographic and Health Survey 2016	
South Sudan	SSD	UN IGME 2025									
Sri Lanka	LKA	UN IGME 2025	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016			
State of Palestine	PSE	UN IGME 2025	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020	Multiple Indicator Cluster Survey 2019–2020			
Sudan	SDN	UN IGME 2025	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014	Multiple Indicator Cluster Survey 2014			

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Suriname	SUR	UN IGME 2025	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018	Multiple Indicator Cluster Survey 2018		Multiple Indicator Cluster Survey 2018	
Syrian Arab Republic	SYR	UN IGME 2025									
Tajikistan	TJK	UN IGME 2025	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023	Demographic and Health Survey 2023			
Thailand	THA	UN IGME 2025									
Timor-Leste	TLS	UN IGME 2025									
Togo	TGO	UN IGME 2025	Multiple Indicator Cluster Survey 2017	Multiple Indicator Cluster Survey 2017	Multiple Indicator Cluster Survey 2017	Multiple Indicator Cluster Survey 2017	Multiple Indicator Cluster Survey 2017	Multiple Indicator Cluster Survey 2017	Demographic and Health Survey 2013–2014	Demographic and Health Survey 2013	Multiple Indicator Cluster Survey 2017
Tonga	TON	UN IGME 2025									
Tunisia	TUN	UN IGME 2025	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023	Multiple Indicator Cluster Survey 2023			
Türkiye	TUR	UN IGME 2025				Demographic and Health Survey 2013	Demographic and Health Survey 2013	Demographic and Health Survey 2013			
Turkmenistan	TKM	UN IGME 2025	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019			
Tuvalu	TUV	UN IGME 2025									
Uganda	UGA	UN IGME 2025	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016	Demographic and Health Survey 2016
Ukraine	UKR	UN IGME 2025									
United Republic of Tanzania	TZA	UN IGME 2025	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2022	Demographic and Health Survey 2015–2016		Demographic and Health Survey 2015–2016
Uzbekistan	UZB	UN IGME 2025	Multiple Indicator Cluster Survey 2021–2022		Multiple Indicator Cluster Survey 2021–2022		Multiple Indicator Cluster Survey 2021–2022	Multiple Indicator Cluster Survey 2021–2022			

Country	ISO country code	Wealth quintile U5MR	Wealth quintile NMR	Education	Residence	Mother's age	Birth interval	Birth order	Birth size	Ethnicity	Subnational (LMICs)
Vanuatu	VUT	UN IGME 2025									
Viet Nam	VNM	UN IGME 2025	Multiple Indicator Cluster Survey 2013–2014	Multiple Indicator Cluster Survey 2013–2014	Population Change and Family Planning Survey 2021	Multiple Indicator Cluster Survey 2013–2014	Multiple Indicator Cluster Survey 2013–2014	Multiple Indicator Cluster Survey 2013–2014			
Yemen	YEM	UN IGME 2025	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Multiple Indicator Cluster Survey 2022–2023	Demographic and Health Survey 2013		
Zambia	ZMB	UN IGME 2025	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2024	Demographic and Health Survey 2018	Demographic and Health Survey 2018	Demographic and Health Survey 2018
Zimbabwe	ZWE	UN IGME 2025	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Multiple Indicator Cluster Survey 2019	Demographic and Health Survey 2015		Demographic and Health Survey 2015

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