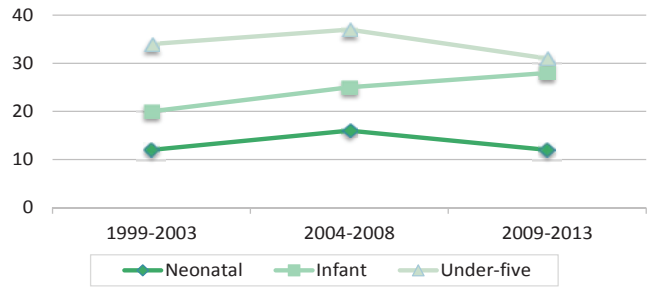
Infant and child mortality

Infant and child mortality data are important not only for demographic assessment but also for design and evaluation of health programmes and policies. Primary and preventive health services target improving the quality of life for Ni-Vanuatu people; this includes the reduction of infant and childhood mortality and the incidence of high-risk pregnancies.

Neonatal mortality	The probability of dying within the first month of life (12/1000)
Post-neonatal mortality	The probability of dying between 2–12 months (16/1000)
Infant mortality	The probability of dying before the first birthday (28/1000)
Child morality	The probability of dying between age 1 and before the fifth birthday (3/1000)
Under-five mortality	The probability of dying before the fifth birthday (31/1000)

For the five years preceding the 2013 Vanuatu DHS, the estimated infant mortality rate was 28 deaths per 1000 live births (Fig. 1). This means, about three of every 100 children born in Vanuatu died prior to their first birthday. Of those who survived until their first birthday during this period, three of 100 died before reaching their fifth birthday. This results in an estimated under-five mortality rate of 31 deaths per 1000 live births.

Figure 1: Childhood mortality trends

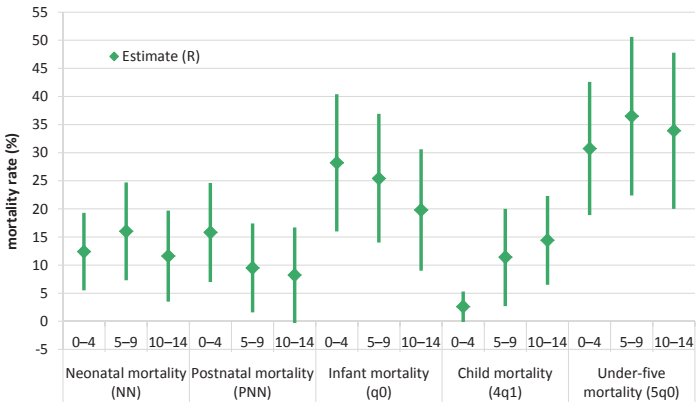


While under-five mortality has remained quite stable over the past fifteen years (34/1000 → 31/1000), this 'stability' is the result of two opposing developments: an increase in infant mortality (20/1000 → 28/1000), and a marked decrease (14/1000 → 3/1000) in child mortality.

Notwithstanding these trends, these various mortality indicators need to be interpreted in connection with their standard errors, to ascertain the probability of these trends reflecting a true development. Figure 2 shows that, apart from improved child mortality, all other values lie in overlapping confidence intervals. This means that the true mortality value of each period could be located anywhere in the confidence interval and, as such, the true trend could theoretically be the opposite of what the mortality indicators suggest.

Comparing 2013 DHSestimates with similar statistics derived from the 2009 census shows identical values in child mortality (3/1000), but a higher infant mortality rate (IMR) (28/1000) compared with the corresponding figure from the census (21/1000). This translates into a slightly higher under-five mortality (31/1000) compared to the 2009 census based estimate of 24/1000.

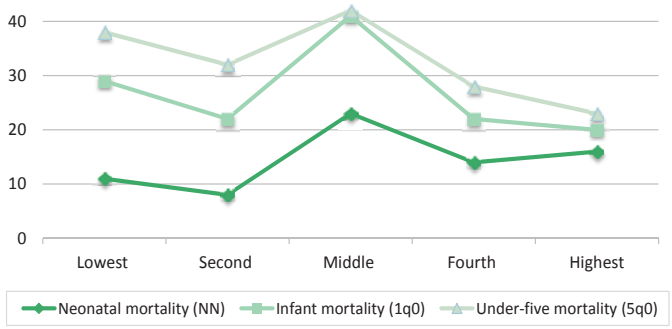
Figure 2: Childhood mortality rates and 95% confidence intervals



Infant and child mortality by socio-economic characteristics

Better health outcomes of children, including child survival, are associated with higher education outcomes of their mothers and their overall socio-economic status. Survey data could not show conclusive evidence of such a relationship regarding the education of mothers in Vanuatu, whereas the household economic status seemed to have more of an impact. Children growing up in households in the highest wealth quintile have lower post neonatal, infant, child and under-five mortality rates than those in the lowest wealth quintiles, with neonatal deaths showing no conclusive evidence for such a pattern (Fig. 3).

Figure 3: Infant and child mortality by wealth quintile



Lower urban than rural post-neonatal, infant, child and under-five mortality rates, with neonatal mortality the only exception to this pattern, reflect the positive impact easier access to better health facilities and services may have on child survival; the same can be said regarding marked differences in socio-economic conditions between urban and rural Vanuatu, as illustrated in the relative distributions of populations across wealth quintiles, illustrating a distinct socio-economic rural-urban divide in Vanuatu. These patterns become even more pronounced when combining the data from

peri-urban villages (Rural 1) and the corresponding urban estimates, particularly in the case of much better post-neonatal and child mortality outcomes in the combined urban areas, relative to rural Vanuatu.

Table1: Urban-rural variations in infant and child mortality (2003–2012)

Residence Characteristics (Location)	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
RESIDENCE					
Urban	16	9	25	3	28
Rural	13	14	28	8	35
... Rural 1	12	8	20	2	22
... Rural 2	13	15	29	9	37

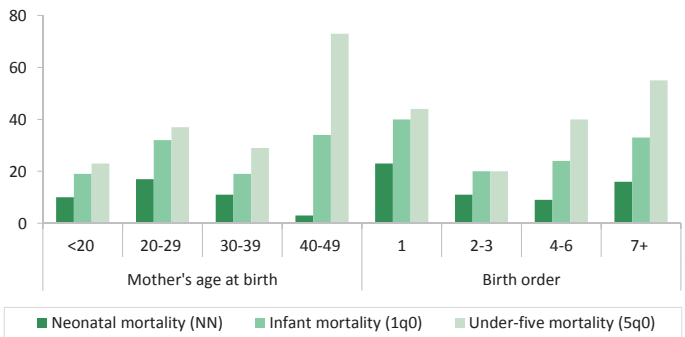
Infant and child mortality by demographic characteristics

Vanuatu 2013 DHS results point to a higher female than male neonatal, infant and under-five mortality. This contrasts with the higher male than female post-neonatal deaths, with no gender differences reported for child mortality (1–4 years old).

An old saying that 'too early and too late increases child mortality' applies only in the case of older mothers; while showing the smallest incidence of neonatal mortality, women in their forties are more than twice as likely to lose a child between 28 days and the child's fifth birthday than women in any other age-group (Fig. 4).

Similarly, short birth intervals (< 2 years) generally have a negative impact on a child's chances of survival. This holds true for Vanuatu, particularly with respect to neonatal, infant and under-five mortality rates. The child mortality rate is highest among children born after a short birth interval (< 24 months after a previous birth).

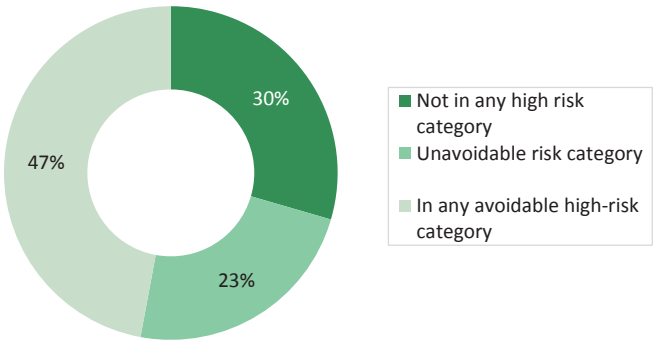
Figure 4: Early childhood mortality rates by demographic characteristics



High-risk fertility behaviour

Generally, infants and children have a greater probability of dying if they are born to mothers who are over 34 years old or under 18 years old, born after a short birth interval (< 24 months after a previous birth) or of high birth order (i.e. the mother has previously given birth to three or more children). Vanuatu 2013 DHS data show that about 30% of births were not in any high-risk category; an additional 23% of births were first-order births to mothers aged 18–34, which is considered an unavoidable risk category, whereas 47% are in at least one of the specified avoidable high-risk categories.

Figure 5: High-risk births



Policy note

With overall under-five mortality having remained relatively stable over the past ten years (modest change from 34/1000 → 31/1000), the only truly significant change occurred in child mortality, improving from 14 deaths per 1000 live births to just three since the period 1999–2003. This positive development is counter-balanced by an increase in infant mortality (20/1000 → 28/1000) during the same period. Although not statistically significant, any reversal in past achievement in child survival should alert Vanuatu health authorities, as this increase in IMR is largely the result of post-neonatal mortality doubling (8/1000 → 16/1000), whereas neonatal mortality remained constant over this period.

The results also indicate that high levels of infant and under-five mortality are more common among children with mother's having low levels of education and living in the lowest wealth households. Furthermore, about half of all births are associated with at least one avoidable high-risk category. Specific health policy and associated public awareness and prevention programmes targeting specific population groups might be considered in stepped up Maternal and Child Health (MCH) activities and the overall health development plan.

**For more detailed information on infant and child mortality, see chapter 8 in the 2013 Vanuatu DHS report.*