



TONGA

Data brief 2: Inequalities in fertility and mortality

THE KILIKILI TEFUA PROJECT:

Utilising birth and death data to identify gendered registration and health outcomes in Tonga



BACKGROUND

The Government of the Kingdom of Tonga is committed to ensuring that no one is left behind; however, anecdotal evidence suggests certain inequalities persist between girls and boys, and women and men. In response, between October 2024 and September 2025, the Ministry of Health, Ministry of Justice, and Tonga Statistics Department applied a gendered analysis of birth and death data to:

- highlight any inequalities in the civil registration status and health outcomes between girls and boys, and women and men,
- investigate the potential underlying causes behind these inequalities to judge if they were instances of inequity (inequalities that are unfair), and
- provide recommendations on changes to processes and policies to strengthen the collection, analysis and dissemination of data for gendered analyses.

KEY FINDINGS: FERTILITY

Almost 100% of mothers give birth in a health facility

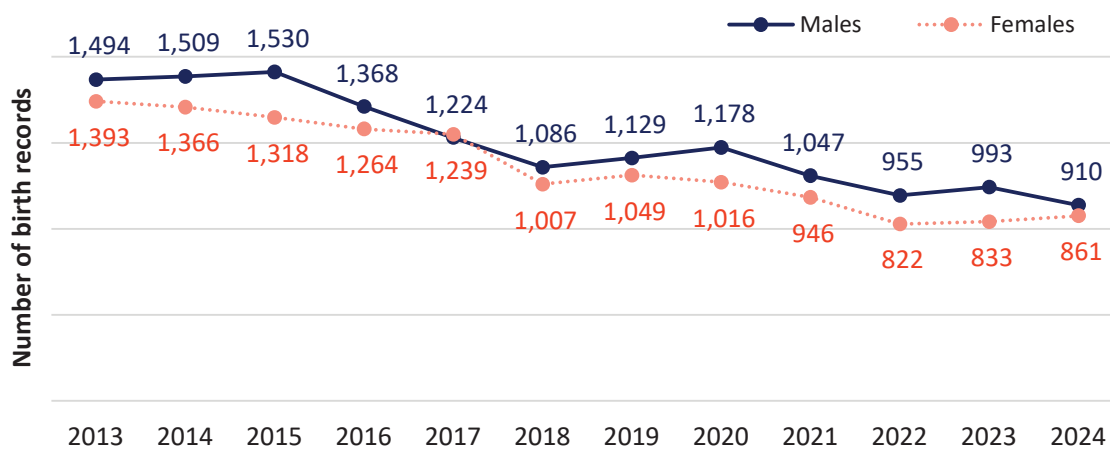
Tonga has achieved almost universal coverage of hospital-based deliveries, at over 99% in Tongatapu, Vava'u, and Ha'apai, and almost 98% in 'Eua.

Understanding the characteristics of births that occur in the community or at home (such as age of the mother, place of usual residence, etc.) will be an important first step in developing any targeted interventions to ensure all mothers have access to appropriate maternity services.

Fewer babies are being born each year

Over 27,500 live births were recorded or registered during the 12-year period analysed (2013–2024). The highest number of births took place in 2013, and the lowest in 2024. This highlights an apparent decrease of 39% over the period. Along with an actual decrease in the number of births, the apparent decrease may be due to late registration and/or data availability constraints.

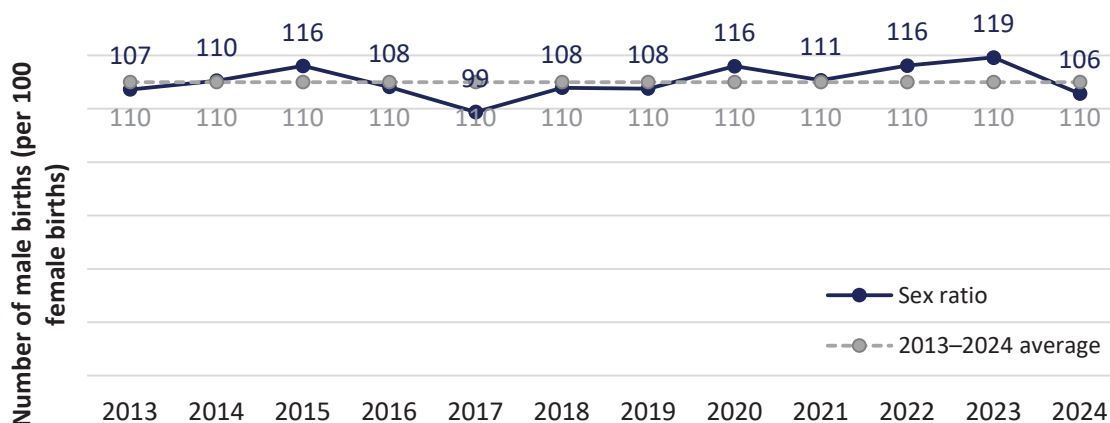
Figure 1. Number of live births by sex of newborn, 2013–2024, Tonga



More boys are born each year than girls

The sex ratio at birth is the number of male babies born for every female baby born, usually expressed per 100 live births. Based on the 12-years of available data, the average sex ratio at birth for Tonga was 110. This means that, on average, 110 male babies are born for every 100 females.

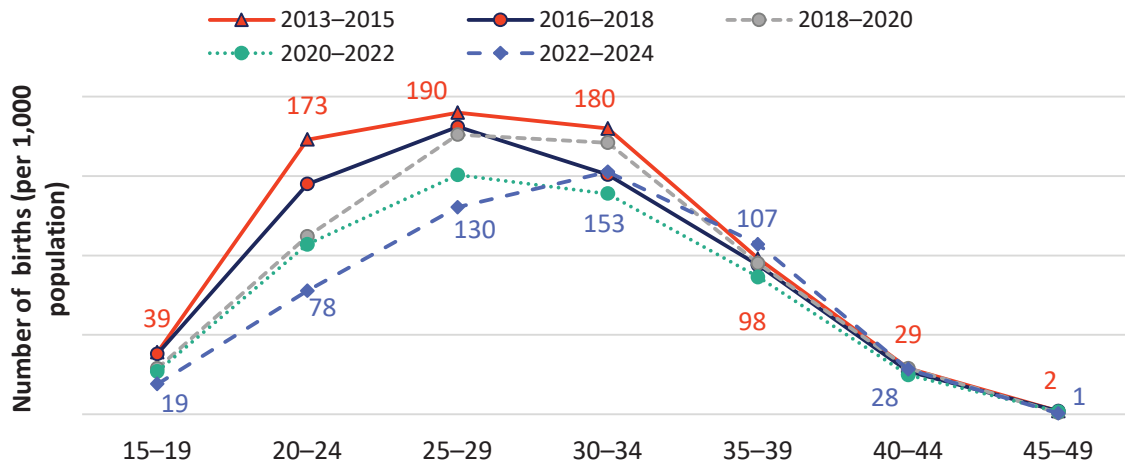
Figure 2. Sex ratio at birth, 2013–2024, Tonga



Mothers are giving birth at older ages

Along with a substantial overall decline in fertility, women in Tonga appear to be giving birth at older ages. Fertility rates among women aged 25–29 years decreased from 190 to 130 babies per 1000 women (in that age group) during the period, while in 2022–2024, “peak” fertility had shifted from women aged 25–29 years, to women aged 30–34 years. While birth data from 2023 and 2024 are likely incomplete, this shift in fertility (towards older mothers) is apparent from as early as 2016.

Figure 3. Age-specific fertility rate (ASFR), 2013–2024, Tonga



KEY FINDINGS: MORTALITY

More male deaths are recorded each year than female deaths

Over 8700 deaths were recorded or registered during the 12-year period analysed. While year-on-year fluctuations are apparent in the data, the overall trend is one of a decrease, from approximately 740 deaths in 2013, to 659 deaths in 2024. Along with an actual decrease in the number of deaths, the apparent decrease over time may be due to late registration and/or data availability constraints.

Of all recorded or registered deaths, approximately 56% of the decedents were male, and this ranged from a peak of 60% in 2017, to a low of 53% in 2024.

Figure 4. Number of death records by sex of decedent, 2013–2024, Tonga

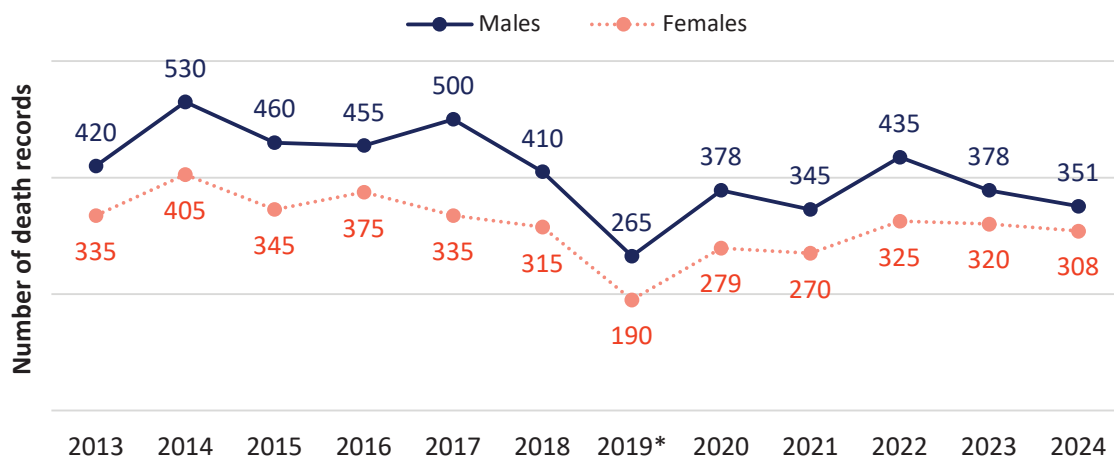


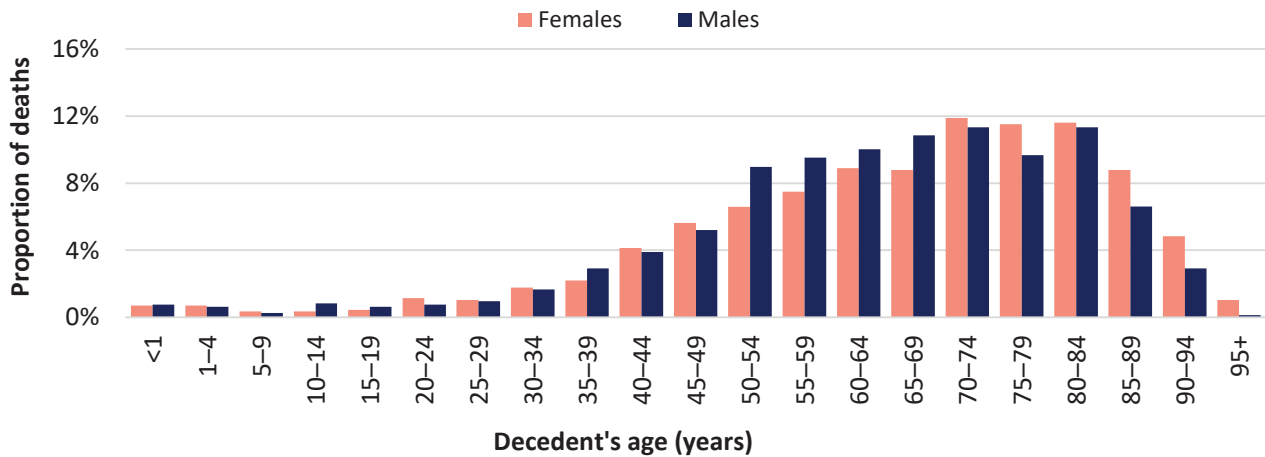
Figure notes: Data from 2013–2019 were approximated from graphs, as no raw data was available on the number of deaths by sex. As stated in the 2018–2020 Vital Statistics Report, data from 2019 are missing deaths that occurred between September and December of the year, and as such, are under-counts.

Men are dying at younger ages than women

The age and sex distribution of deaths varies considerably depending on the size of the population currently alive at each age group, and the overall level of mortality in a country, which determines the risk of dying at each age.

Adolescent males (aged 10–19 years) account for a slightly higher proportion of deaths than females of the same age, and this is generally linked with increased risk-taking among males in this age group. Between the ages of 50–69 years, a higher proportion of men die than women of the same age, reflecting their higher age-specific mortality rates and shorter life expectancy.

Figure 5. Age-sex distribution of deaths, 2020–2024, Tonga

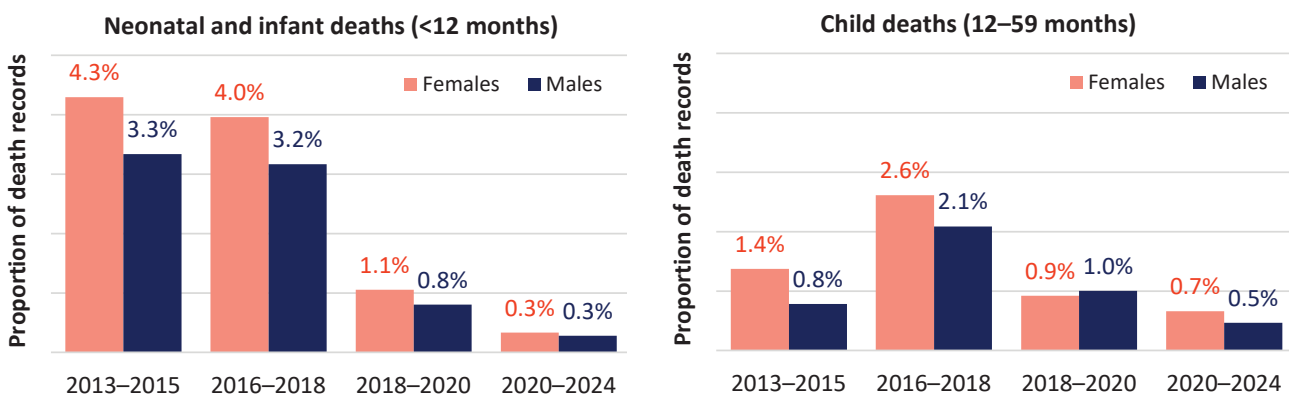


However, child mortality among girls appears higher than among boys

Of interest is the higher proportion of neonatal and infant deaths among females over the past 12 years, which is not expected given Tonga's high sex ratio at birth. Deaths among children (aged 12–59 months), while contributing a lower proportion of overall deaths when compared with neonatal and infant deaths, also indicate a slightly higher number of female deaths being recorded or registered.

Given the small sample size of this current analysis, this trend should be investigated retrospectively (using previous years' data) and regularly monitored moving forward.

Figure 6. Age-sex distribution of child (<5 years) deaths by sex, 2013–2024, Tonga

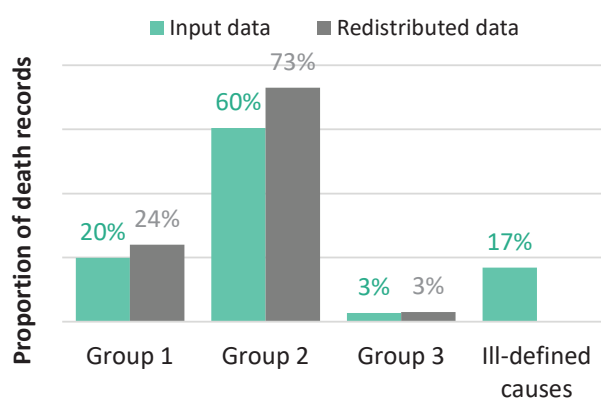


KEY FINDINGS: CAUSE OF DEATH

As many as 73% of deaths may be due to NCDs

Based on the input data, approximately 20% of recorded deaths during 2020–2024 were due to infectious diseases (Group 1), 60% due to noncommunicable diseases (NCDs, Group 2), and 3% external causes (Group 3), with the remaining 17% assigned an ill-defined cause. Using the redistribution algorithm in ANACoD,¹ which removes ill-defined causes and redistributes them to their “most likely” cause group, the actual proportion of deaths due to NCDs in Tonga may be as high as 73%.

Figure 7. Proportion of deaths by broad cause of death group, before and after redistribution, 2020–2024, Tonga



Ischemic heart disease is the leading cause of death for females and males

Of the 2,384 death records analysed during 2020–2024, 30% of deaths were due to diseases of the circulatory system, followed by certain infectious and parasitic diseases (14%), and deaths due to symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (13%).

Based on redistributed data, the most probable leading causes of death for females are ischemic heart disease, stroke, and breast cancer. For males, the most probable leading causes of death are ischemic heart disease, stroke, and lung cancer.

¹ *Analysing Mortality and Causes of Death (ANACoD3), Version 3.0.* World Health Organization. Available at: <https://www.who.int/standards/classifications/classification-of-diseases/services/analysing-mortality-levels-and-causes-of-death>.



However, males are more likely to die from injuries than females

Accident- and injury-related deaths are more common among younger adults, however the relative share of these deaths is larger for males than for females.

Table 1. Top 10 causes of death, before and after redistribution of ill-defined causes, 2020–2024, Tonga

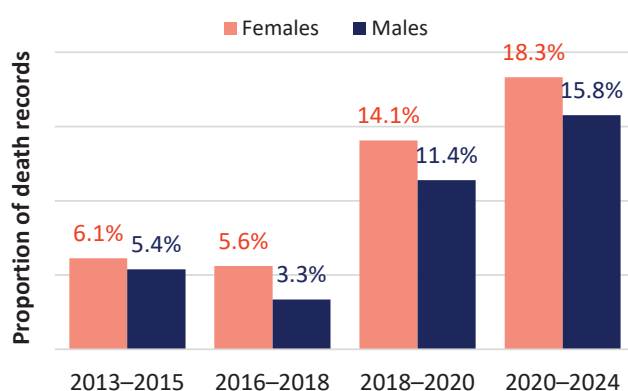
Females		Males	
Cause of death	Proportion of deaths (%)	Cause of death	Proportion of deaths (%)
Ischemic heart disease	15.8	Ischemic heart disease	25.2
Stroke	8.9	Stroke	9.4
Breast cancer	4.8	Tracheal, bronchus and lung cancer	3.5
Sepsis, unspecified organism	4.6	Chronic obstructive pulmonary disease	3.5
Chronic kidney disease	2.4	Cirrhosis and other chronic liver diseases	2.3
Diabetes mellitus	2.4	Chronic kidney disease	2.2
Cirrhosis and other chronic liver diseases	2.2	Diabetes mellitus	2.1
Cervical cancer	2.0	Prostate cancer	2.0
Tracheal, bronchus and lung cancer	1.8	Stomach cancer	1.3
Uterine cancer	1.6	Colon and rectum cancer	1.1
Total (top 10 causes)	46.5	Total (top 10 causes)	52.6
All other causes	53.5	All other causes	47.4

Overall, more females are assigned an ill-defined cause of death than males

Overall, out of the approximate 7400 deaths with cause of death data recorded between 2013–2024, over 760 records had an ill-defined cause of death (10%). The proportion of death records with an ill-defined cause appears to have increased in Tonga since 2013, from 6–18% for females, and 5–16% for males.

Of interest is the higher proportion of female deaths with an ill-defined cause – a consistent feature over the 12 years of data analysed.

Figure 8. Proportion of death records with an ill-defined cause of death by sex, 2013–2024, Tonga

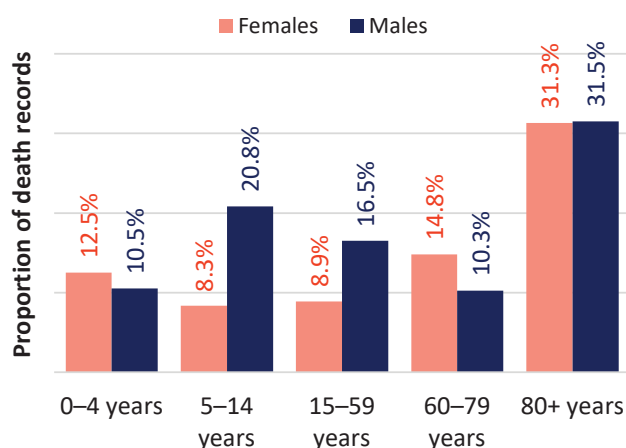


However, deaths among adolescent boys and adult males are more likely to be assigned an ill-defined cause than females of the same age

While female deaths appear more likely to be assigned an ill-defined cause of death than male deaths overall; deaths among adolescent boys (5–14 years) and adult males (15–59 years) appear more likely to have an ill-defined cause of death than females of the same age group. The reasons behind this should be further investigated, with targeted interventions developed as needed.

Given the small sample size of this current analysis, this trend should be investigated retrospectively (using previous years' data) and regularly monitored moving forward.

Figure 9. Proportion of ill-defined causes of death by age group and sex, 2020–2024, Tonga



Ill-defined causes are reducing the quality of mortality data

ANACONDA² groups ill-defined causes according to their potential impact for guiding or misguiding public policy to prevent premature deaths. In this classification, four levels are defined, depending on how serious their impact is for misinforming public policy.

Overall, 68% of ill-defined causes of death were classified as having a “serious” impact on describing the current cause structure of mortality patterns in the population, distorting potential policy decisions. Specific examples of these causes include “sepsis”, “cardiac arrest”, and “senility” – all of which provide no actionable information on the underlying cause of death.

Table 2. Number and proportion of ill-defined causes of death by severity, 2020–2024, Tonga

Severity – policy impact	Relative share of total ill-defined causes (%)
Very high – serious impact	68.4
High – substantial impact	12.2
Medium – important impact	6.4
Low – limited impact	13.0
TOTAL	100.0

RECOMMENDED DATA ACTION POINTS

- The apparent decrease in the number of births and deaths over the past 12 years should be further investigated to see if this is a “true” trend, or if this reflects under reporting by the Ministry of Health and/or under-registration by the Ministry of Justice, or a combination of both.
- As a large proportion of birth records from 2023 and 2024 from the Ministry of Justice are missing data on the age of the mother, further reconciliation with data from the Ministry of Health should be carried out to improve the statistical completeness of the records before further analyses are conducted.
- To improve registration completeness of child deaths, the Ministry of Health may wish to consider ways of automatically notifying the Ministry of Justice when a child death occurs (if not already in place).

² Analysis of Causes of National Deaths for Action (ANACONDA). The University of Melbourne.

- Deaths among males aged 5–14 years and 15–59 years appear to be more likely to have an ill-defined cause of death than females of the same age. Given the small sample size of this current analysis, this trend should be investigated retrospectively (using previous years' data) and regularly monitored moving forward.
- Routine data quality audits on medical certification practices should be implemented, if not already in place.
- Additional capacity building and resourcing for physicians on the medical certification of cause of death is recommended.

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