REPUBLIC OF FIJI

Vital Statistics Report 2016–2021

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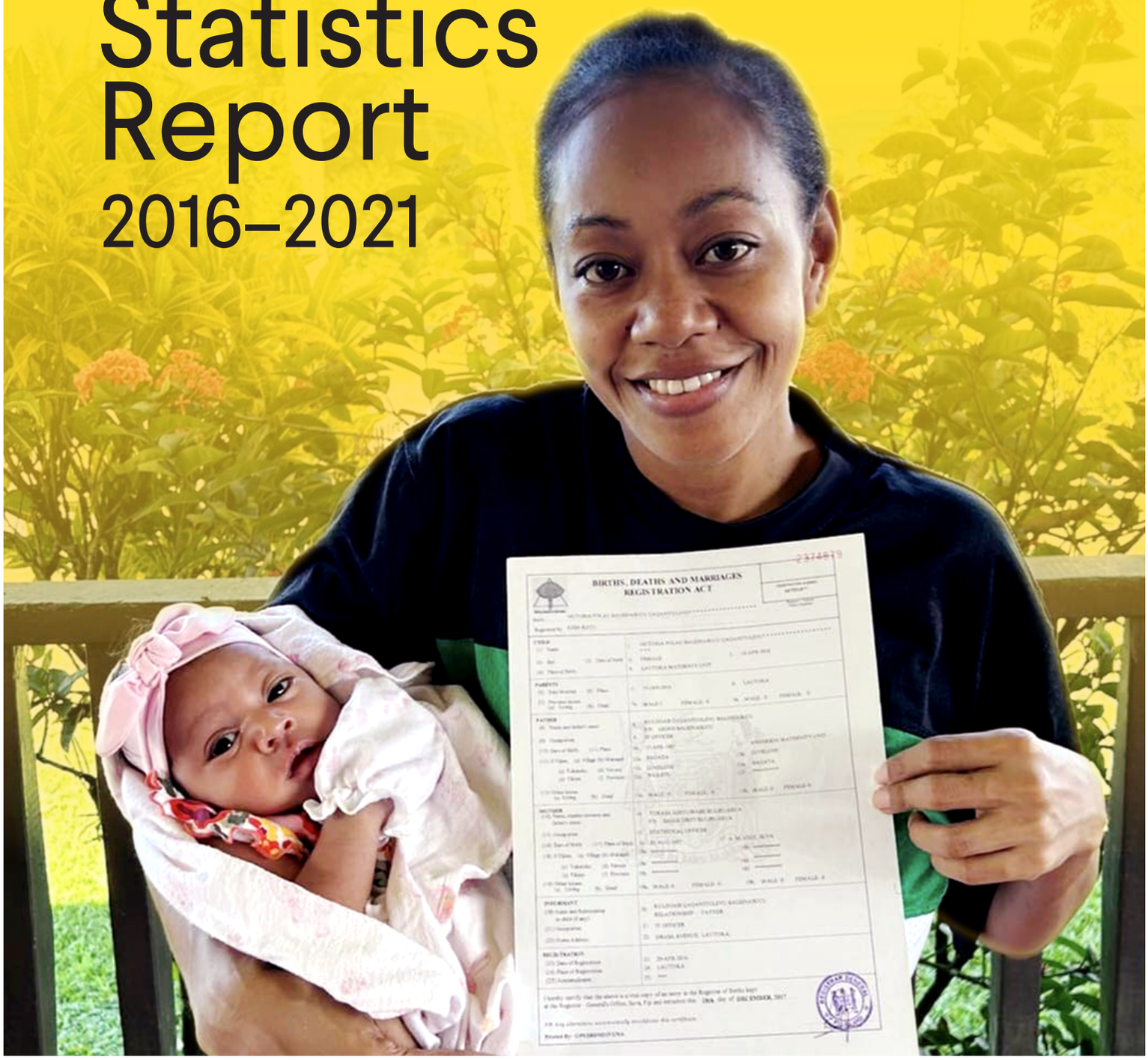
Fiji Bureau of Statistics (FBoS)

Registrar General's Office (Ministry of Justice, CRO)

Ministry of Health & Medical Services (MHMS)



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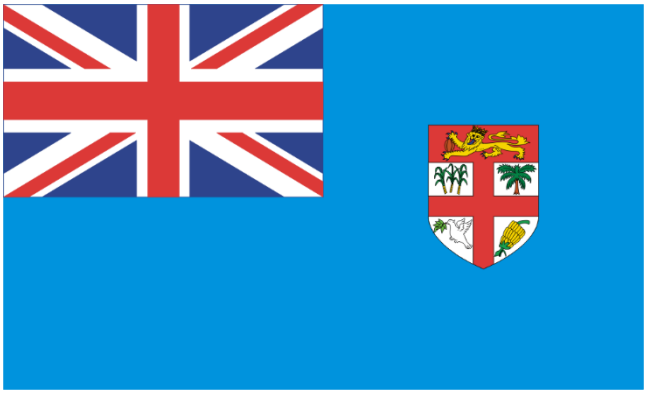

REPUBLIC OF FIJI

VITAL STATISTICS REPORT

2016-2021

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Published by: Fiji Bureau of Statistics (FBoS)

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Foreword

It is with great honour and privilege that I introduce the Fiji Vital Statistics Report 2016-2021, which was produced through the collaborative effort between the Fiji Bureau of Statistics, Fiji Ministry of Health & Medical Services, Ministry of Justice - Registrar General Office, University of New South Wales, Vital Strategies, and the Brisbane Accord Group. The collaboration between government agencies, academic institutions, and international organizations as such, exemplifies the spirit of partnership that is essential to address complex societal challenges.

This report represents the culmination of five years of meticulous data collection, analysis, and collaboration, capturing the vital events that have shaped Fiji's society during this critical period. The information presented within these pages offers a comprehensive and in-depth understanding of the demographic dynamics, health trends, and social indicators that have played a significant role in our national development.

At the heart of this report lies the dedication and hard work of statisticians, researchers, public health experts, and data specialists who worked tirelessly to ensure the accuracy and reliability of the data. Their unwavering commitment to data integrity has produced a report that stands as a beacon of evidence-based decision-making for policymakers, researchers, and stakeholders alike.

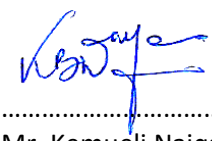
The value of this report extends far beyond its statistical insights. It serves as a powerful tool to inform evidence-based policies, strengthen health systems, and promote social equality. As we navigate the complexities of an ever-changing world, this report will undoubtedly guide us in designing targeted interventions and programs that address the needs of our diverse communities.

Findings in this Fiji Vital Statistics Report 2016 – 2021 are critical in assisting informed decision-making by all key stakeholders as well as development partners. The information collated will inform policies aimed at the social inclusion of the most vulnerable population, helps identifies inequalities and allow for international comparability.

On behalf of all the collaborating institutions, I extend my heartfelt appreciation to everyone who contributed to the creation of this report. Your dedication and hard work have brought this vision to life, and your commitment to data-driven decision-making will undoubtedly drive positive change in Fiji and beyond.

With great optimism and a sense of purpose, I invite you to delve into the rich insights offered by the Fiji Vital Statistics Report 2016-2021, as we collectively strive towards building a brighter sustainable future for all Fijians.

Vinaka vakalevu,



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Mr. Kemueli Naiqama
Chief Executive - Fiji Bureau of Statistics

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LIST OF ACRONYMS

CMRIS	Consolidated Monthly Reporting Information System
CWM	Colonial War Memorial
DAMU	Data Analysis Management Unit
ICD	International Classification of Diseases
IMR	Infant mortality rate
MCCD	Medical certificate of cause of death
MHMS	Ministry of Health and Medical Services
NCD	Non-communicable disease
NMR	Neonatal mortality rate
NoB	Notification of birth
U5MR	Under-five mortality rate

ACKNOWLEDGEMENTS

We are grateful to the Vital Strategies and the Bloomberg Philanthropies Data for Health Initiative for their financial and technical support, particularly Carlie Congdon from Vital Strategies who helped us manage the project from start to finish. We thank Dr Christine Linhart and Dr Stephen Morrell from the University of New South Wales (UNSW Sydney) for their technical assistance and expertise, for providing us with a platform where we were able to gain a lot of knowledge leading to the writing of this report. We are also highly indebted to the Fiji Civil Registration and Vital Statistics Committee and the FBoS management for their support guiding us all during the data analysis and report writing activities, and for their constructive criticism given in the right spirit. Also, we would like to thank UN ESCAP, the Pacific Community (SPC) and Pacific CRVS for their ongoing support to strengthen CRVS systems in Fiji.

We would not have been able to complete this project and publish this report without the great assistance from the Ministry of Health and Medical Services health workers (DAMU Team, COVID19 Response Team, nurses, midwives, doctors) who greatly assisted the FBoS team during the fieldwork activities in health facilities around the country.

Success in such projects cannot be achieved single handedly. The team's effort sails the ship to the coast. Therefore, we also like to express our sincere thanks to our respective government Ministries/Departments for giving us this opportunity to be able to collaborate and implement the project activities accordingly in a timely manner and provided insight and expertise that greatly assisted the development of this report.

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EXECUTIVE SUMMARY

This report provides statistics pertaining to births recorded by the Fiji Ministry of Health and Medical Services (MHMS) and registered by the Civil Registration Office (CRO) for babies born during 2016-21; and deaths recorded by the MHMS for deaths that occurred during 2016-21. The population denominators applied for estimation of different indicators are derived from the Fiji Population and Housing Census for 2017, and for 2016 and 2018-21 from population projections produced by the Fiji Bureau of Statistics.

Pacific Island countries have frequently undertaken aggregate period analyses of fertility and mortality data (e.g., 2-5 years grouped together) to minimise stochastic and other variation which often occurs when annual estimates are generated for small populations. Due to the sharp increase in mortality in 2021 during the COVID-19 pandemic (829 recorded COVID-19 deaths) it was determined that presentation of annual mortality estimates would be more appropriate for this vital statistics report so as to not dilute or mask the effect of the pandemic on mortality estimates for 2021. Conversely, such aggregation would inflate the mortality estimates for other years included in the period. For consistency, fertility estimates are also presented annually in this vital statistics report. Moreover, the birth and death datasets were assessed to be of sufficient size to generate accurate annual fertility and mortality estimates. Aspects of the analyses that may be particularly prone to stochastic or other variation have been highlighted.

Throughout 2016-21 the Consolidated Monthly Reporting Information System (CMRIS) aggregate birth database maintained by the MHMS had the highest number of birth records annually and has been used in this vital statistics report to calculate the total number of births each year, crude birth rates, and the number of births by health facility. Because the CMRIS does not record sex of the baby or age of the mother, sex ratios at birth, age-specific fertility rates and the total fertility rate were calculated using the Civil Registry birth dataset for years where the estimated completeness exceeded 90% (2016-19). The MHMS death dataset for 2016-21 is used for all-cause and cause-specific mortality analyses in this vital statistics report, as it contains information on causes of death and is the most complete mortality database.

Births

The number of aggregate births reported through the CMRIS remained consistent at around 19,000-20,000 per year between 2016-19, then increased to just above 21,000 in 2020, with 20,217 births reported in 2021. Using this data, the calculated annual crude birth rates during 2016-19 remained relatively stable between 21.8-22.2 births per 1,000 population, before increasing sharply to 23.4 in 2020, and declining to 22.4 per 1,000 in 2021. The overall fertility pattern across 2016-21 indicated a gradual increase in the crude birth rate. Data from the Civil Registry birth registration dataset showed that during 2016-19 the sex ratio at birth varied between 1.08-1.09, which means for every 100 female births there were 108-109 male births. Age-specific fertility rates calculated from the same data source show the majority of births during 2016-19 were to women aged 20-29 years, with around 29% of births in women aged 20-24 years and 30% in women aged 25-29 years. During 2016-19 the total fertility rate fluctuated between 2.6-2.8, which means that on average a woman would be expected to give birth to between 2.6 to 2.8 babies during her lifetime.

Deaths

The MHMS death database showed that during 2016-20 the number of deaths each year fluctuated somewhat, but the overall mortality pattern was a plateau in the number of deaths in both sexes with an average 7,480 deaths per year. In 2021 during the peak of the COVID-19 pandemic in Fiji, the

number of deaths sharply increased to 8,815, and increase of 1,031 deaths over 2020. More male than female deaths were recorded across all years, with deaths comprising 54% males and 46% females for 2016-21. Age-specific mortality rates in each age group fluctuated in males and females over time. Excluding 2021, these fluctuations were generally small, and the overall mortality pattern demonstrated a plateau across most age-groups. In 2021 during the peak of theCOVID-19 pandemic, the plateau among children and young and middle-aged adults generally continued in both sexes. In contrast, among older adults aged 60+ years most mortality rates increased markedly, particularly in men aged 75+ years, and women aged 65-74 and 85+ years.

Neonatal mortality rates (NMR), infant mortality rates (IMR) and under-five mortality rates (U5MR) all showed fluctuations during 2016-21, but the overall mortality pattern was plateaux. During 2016-21, the NMR varied between 6.7-11.0 deaths per 1,000 live births, the IMR varied between 12.8-18.2 deaths per 1,000 live births, and the U5MR varied between 16.2-22.5 deaths per 1,000 live births. Child mortality was not greatly affected by the peak of the COVID-19 pandemic in Fiji in 2021, with five COVID-19 deaths recorded in children under-five years of age. Estimates for maternal mortality were unable to be calculated due to significant under-enumeration of maternal deaths. The crude death rate fluctuated between 7.8-8.7 deaths per 1,000 population during 2016-20, before a sharp increase to 9.8 in 2021. Similarly, the age-standardised mortality rate (using the 2017 Census as the standard) fluctuated between 7.8-8.7 deaths per 1,000 population during 2016-20, before a sharp increase to 9.4 in 2021. In females, life expectancy at birth plateaued at 69-70 years during 2016-20, and then declined by more than one year from 69.5 in 2020 to 68.2 years in 2021 during the peak of the COVID-19 pandemic in Fiji. In males, life expectancy at birth fluctuated during 2016-20 but the overall pattern was a plateau at around 65-66 years, followed by a decline of more than one year, from 66.0 in 2020 to 64.9 in 2021.

Causes of Death

Circulatory diseases, diabetes and cancers were the leading causes of death in Fiji during 2016-21 for both males and females (all ages combined). Children aged 0-4 years mainly died of conditions originating in the perinatal period, primarily respiratory and cardiovascular disorders. Among children aged 5-14 years, external causes of mortality were the leading cause of death, primarily accidental drowning and submersion, and motor vehicle accidents. Among young adults aged 15-34 years, external causes of mortality were again the leading cause of death in males and females. Among men this was primarily accidental suffocation, hanging and strangulation followed by motor vehicle accidents; and in women it was primarily accidental suffocation, hanging and strangulation, followed by exposure to smoke, fire and flames.

In adults aged 35-59 years, the leading causes of death in men and women were non-communicable diseases (NCDs). In both sexes diseases of the circulatory system, primarily ischaemic heart diseases and cerebrovascular diseases, were the leading cause of death. In men diabetes mellitus was the second leading cause of death, followed by cancers (primarily liver and lung cancer). Among women, cancers were the second leading cause of death (primarily breast and cervical cancer), followed by diabetes mellitus as the third leading cause of death. In men and women aged 60+years, the leading causes of death remained the same in men, diabetes mellitus increased to become the second leading cause of death (similar to men) and cancers the third leading cause of death.

Fiji did not record its first case of community transmission of COVID-19 until April 2021. There were no COVID-19 deaths recorded in 2019, two recorded in 2020, and 829 recorded in 2021. Of the 831 recorded COVID-19 deaths during 2020-21, 1% were children aged less than 15 years, 3% young adults aged 15-34 years, 29% adults aged 35-59 years, and 68% were aged 60+ years.

SUMMARY OF FIGURES AND INDICATORS

Indicator	2016	2017	2018	2019	2020	2021
Number of births	19,180	19,646	19,690	19,825	21,040	20,217
Sex ratio (M/F)	1.09	1.08	1.08	1.08	^	^
Crude birth rate	21.8	22.2	22.2	22.2	23.4	22.4
Total fertility rate	2.8	2.7	2.6	2.8	^	^
Total number of deaths	7,588	6,925	7,510	7,591	7,784	8,815
Total number of deaths (M)	4,190	3,728	4,100	4,058	4,163	4,714
Total number of deaths (F)	3,398	3,197	3,410	3,533	3,621	4,101
Distribution (%) M/F deaths	55.2/44.8	53.8/46.2	54.6/45.4	53.5/46.5	53.5/46.5	53.5/46.5
Neonatal mortality rate	6.7	11.0	9.6	8.5	6.8	11.0
Infant mortality rate	14.1	18.2	15.4	14.7	12.8	16.3
Under-five mortality rate	18.6	22.5	18.8	18.7	16.2	19.6
Crude death rate	8.6	7.8	8.4	8.5	8.7	9.8
Crude death rate (M)	9.4	8.3	9.1	9.0	9.1	10.3
Crude death rate (F)	7.8	7.3	7.8	8.0	8.2	9.2
Age-standardised mortality rate	8.7	7.8	8.4	8.3	8.4	9.4
Age-standardised mortality rate (M)	9.5	8.3	9.0	8.8	8.9	10.0
Age-standardised mortality rate (F)	7.9	7.3	7.7	7.8	7.9	8.8
Life expectancy at birth	67.3	68.3	67.8	67.9	67.7	66.5
Life expectancy at birth (M)	65.2	66.7	65.8	66.2	66.0	64.9
Life expectancy at birth (F)	69.6	70.0	69.9	69.7	69.5	68.2
Life expectancy at age 40	30.7	32.1	31.1	31.3	31.1	30.0
Life expectancy at age 40 (M)	29.0	30.6	29.4	29.7	29.7	28.6
Life expectancy at age 40 (F)	32.5	33.6	32.8	32.9	32.5	31.5
COVID-19 deaths	0	0	0	0	2	829
COVID-19 deaths (M)	0	0	0	0	1	460
COVID-19 deaths (F)	0	0	0	0	1	369

M = male; F = female; ^ estimates of the sex ratio at birth and total fertility rates have not been calculated due to completeness of less than 90% in the civil registry birth database for 2020-21; estimates of maternal mortality were unable to be calculated, see Chapter Two (Introduction and Methods) pg.11

CHAPTER ONE: INTRODUCTION AND METHODOLOGY

Introduction

Vital statistics constitute the collection of statistics on vital events in a lifetime of a person, as well as the relevant characteristics (of the events themselves and of the person(s) concerned. This vital statistics report presents statistics pertaining to two vital events, live births and deaths. The report also provides statistics on causes of death. Vital Statistics on births and deaths can be derived from periodic sources such as censuses and population surveys, as well as from administrative sources, primarily health information and civil registration systems. Administrative sources hold a critical advantage over periodic collections by providing data on a continuous basis.

Timely and complete vital statistics from administrative data sources provide a continuous picture of fertility and mortality (cause-specific) trends in a country, which are fundamental for national planning across multiple sectors. Health planners and policy makers require them to track and monitor progress against health indicators, including evaluating the impact of interventions targeted at improving the health and wellbeing of the population. For example, statistics on deaths and causes of death can help identify the extent and distribution of major diseases in the country, and support government measures to develop and target appropriate public health interventions effectively.

Vital statistics on births can also assist the education sector to estimate the facilities that may be required in schools, and to monitor school enrolment and school completion. Government Ministries responsible for infrastructure, including transport, housing, water and land resources, depend on accurate population data to plan for current and future populations. Non-government organisations and businesses also use vital statistics in their planning processes. Xx

vital statistics enable Fiji to monitor and report on progress against many of the goals set out by the *Healthy Islands* development framework[1] and the sustainable development agenda.[2]

This is the second national vital statistics report for Fiji based on data from administrative records, published by Fiji Bureau of Statistics, in collaboration with the MHMS and the Civil Registry. This report presents key demographic measures of fertility and mortality (including causes of death) for the period 2016-21, based on data collected by the MHMS and the Civil Registry.

About Fiji Islands

Fiji is an archipelago nation of more than 330 islands, of which about 110 are permanently inhabited. At the most recent Fiji population and housing census in 2017 the population was estimated to be 884,887. Almost three-quarters of the population live on the island of Viti Levu, which is also where the country's capital Suva is located. The main spoken languages are English, iTaukei (Fijian) and Fiji Hindi. Fiji is classified by the World Bank as an upper middle-income country.[3]

Improvements have been made in the general health status of the Fiji population in recent decades, however, the increasing disease burden from non-communicable diseases (NCDs) is having a substantial effect on health outcomes across the population. After remaining relatively free of COVID-19 during the initial waves of the global pandemic, Fiji experienced a surge in cases from April 2021, resulting in substantial health, social and economic consequences for the country. Since the beginning of the pandemic, Fiji has recorded around 69,000 confirmed cases and 883 deaths, with over 1.5 million vaccine doses administered.[4]

[1] Monitoring progress towards the vision of Healthy Islands in the Pacific: second progress report 2019. Manila, Philippines. World Health Organization Regional Office for the Western Pacific; 2020. Licence: CC BY-NC-SA 3.0 IGO

[2] https://sdgs.un.org/goals

[3] https://data.worldbank.org/country/FJ

[4] https://covid19.who.int/region/wpro/country/fj

Sources of Birth Data in Fiji

Information on births in Fiji comes from four data sources: (1) Hard copy birth ledger books; (2) electronic and paper notifications of birth entered into the Patient Information System (PATISPlus); and (3) the CMRIS, are all maintained by the MHMS (Figure 1.1). (4) The birth registration database is maintained by the Civil Registry within the Ministry of Justice (Figure 1.2).

1. Hard copy birth ledger book

Every birth event occurring in a health facility (miscarriage, stillbirth, live birth) is entered into a hard copy birth ledger book located in the birthing unit of all health facilities. The ledger book contains birth information and details of the child, mother and father (Figure 1.1).

2. Notification of Birth (NoB)

A NoB form is issued for live births and contains the birth information and details of the child, mother and father. At eight Divisional and Sub-Divisional hospitals (where ≥90% of births occur) all birth information should be entered electronically and an A4 printed NoB form generated; whilst at the remaining hospitals, health centres and nursing stations, handwritten carbon copy A5 NoB forms are used. These forms have four copies: the penned white copy is given to the parent(s); a pink copy is sent to the Civil Registration Office in Suva; a yellow copy is sent to Fiji Bureau of Statistics in Suva; and the blue copy remains at the health facility. In practice however, handwritten A5 NoB forms are sometimes used at the eight hospitals where NoB data should be entered electronically. Reasons stated for the continued use of the handwritten NoB's include issues around access to functioning computers and printers, lack of paper and ink for printers, and electricity (Figure 1.1).

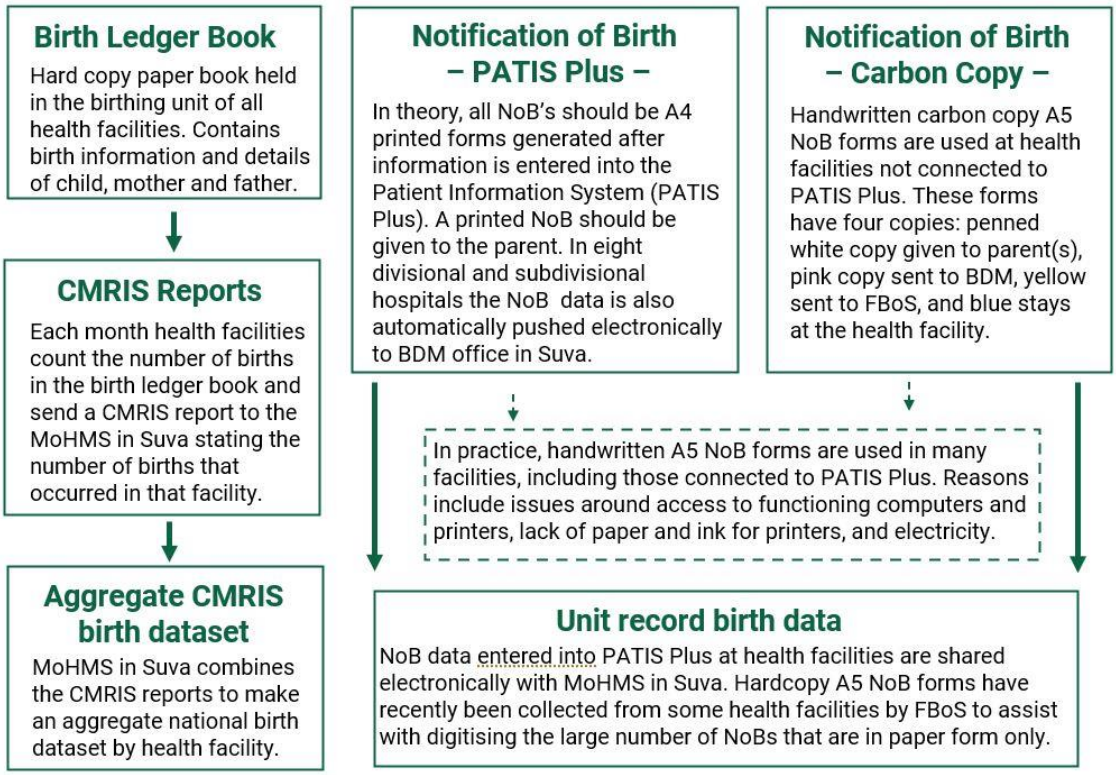
3. Consolidated monthly reporting information system (CMRIS)

Health facilities in Fiji send monthly CMRIS reports stating the aggregate number of births that have occurred in that facility, as per the hard copy birth ledger book, to the Data Analysis Management Unit (DAMU) of the MHMS in Suva. Health facilities should enter the number of births by sex into the CMRIS report, however, this often does not occur and only the total number of births (both sexes combined) is entered into the CMRIS. Therefore, CMRIS birth data disaggregated by sex is not possible. The purpose of reporting births through the CMRIS is to provide the ability to reconcile the aggregate birth figures from the CMRIS with the number of individual birth unit records reported to the DAMU through the PATISPlus system. The DAMU conducts quarterly visits to undertake quality checks on data reported through CMRIS, including reconciling the number of births recorded in the CMRIS database against the hard copy birth ledger books. Zone nurses also report any community births in their monthly reports, but this is a rare event (Figure 1.1).

4. Birth Registration database

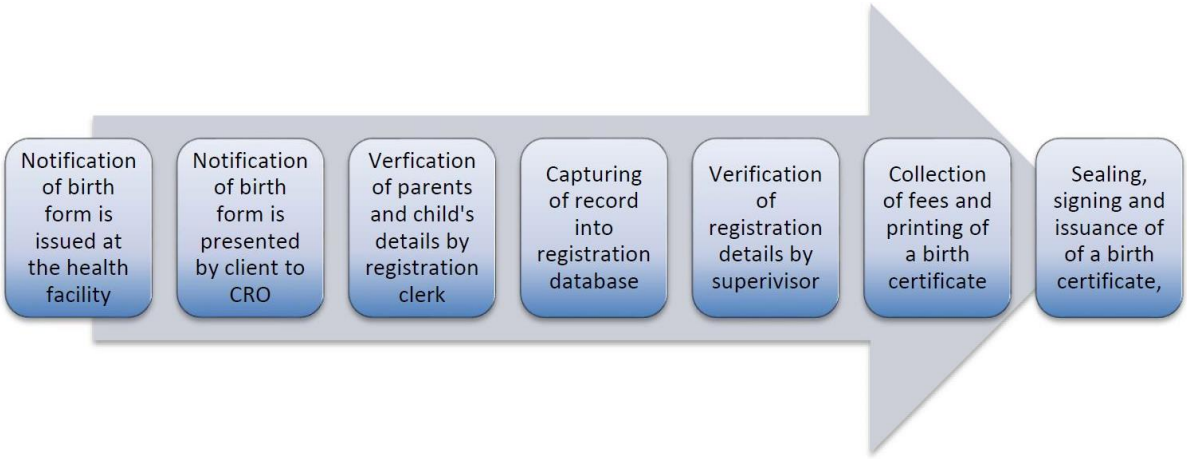
The Civil Registry, under the Ministry of Justice, is responsible for birth registration. The Colonial War Memorial (CWM) Divisional Hospital in Suva was the pilot site for electronic sharing of NoB data between the MHMS and the Civil Registry in 1996. NoB information for CWM hospital is manually extracted from the PATISPlus system and entered into the Civil Registry database on a periodic basis. The system for the remaining seven hospitals where NoB data is entered electronically is different, whereby NoB information is automatically transferred to the Civil Registry when it is entered in PATISPlus. For births occurring in the eight hospitals that share information electronically with the Civil Registry, the informant registers the birth by presenting to a Civil Registry Office with their A4 printout of the NoB. The customer service officer can retrieve the electronic record and needs to complete only a small number of fields. For births that occur in areas not electronically connected to the Civil Registry, the informant presents with the A5 paper NoB form, and this is used to register the birth. In April 2019, the government launched a birth registration mobile application called e-Services, under the "digitalFIJI" application, which enables the public to register births online. This process involves downloading the birth registration application, following instructions on the screen, and submission of the registration electronically. Parents or informants still need to present themselves physically to a Civil Registry Office to collect the birth certificate (Figure 1.2).

Figure 1.1. Process of recording birth data in the Fiji Ministry of Health and Medical Services



CMRIS = consolidated monthly reporting information system; MoHMS = Ministry of Health and Medical Services; NoB = notification of birth; FBoS = Fiji Bureau of Statistics; BDM = Births, Deaths and Marriages Office.

Figure 1.2. Process of birth registration in the Civil Registry



Estimating the Completeness of Unit Record Birth Data in Fiji

The number of aggregate births reported through the CMRIS system remained consistent at around 19,000-20,000 per year between 2016-19, then increased to just above 21,000 in 2020, with 20,217 births reported in 2021 (Table 1.1). The number of births each year in the individual health facilities reporting through the CMRIS showed small fluctuations during 2016-21, but the figures remained fairly consistent in each facility and indicate that the CMRIS is a well-functioning system for capturing the aggregate number of births by facility across Fiji during 2016-21 (Appendix 1). In addition,

according to the Fiji 2021 Multiple Indicator Cluster Survey, 99.7 percent of women who gave birth in the last two years did so at a health facility.[5] For these reasons, the CMRIS is used in this vital statistics report to assess the completeness of unit record birth data from the MHMS and the Civil Registry.

Ministry of Health and Medical Services – Notifications of Birth

The estimated national completeness of the MHMS NoB birth dataset fluctuated from 36-48% in 2016-17, before increasing to 80% in 2018, then declining to 75% in 2019, 41% in 2020, and 28% in 2021 (Table 1.1). During 2016-20 the MHMS captured an estimated ≥90% of the births occurring in Lautoka Hospital, the second largest health facility in Fiji with just over 20% of the country's births. However, the completeness in the remaining health facilities varied greatly. For CWM Divisional Hospital, the largest health facility in Fiji with more than 40% of the country's births, completeness varied from 23% in 2016-17, 98% in 2018, 68% in 2019 and 0% in 2020-21 (Appendix 2). The reason for the low levels of completeness of MHMS birth data compared to the CMRIS, and the large fluctuations in NoB completeness over time and by health facility, require further investigation.

Civil Registry – Birth Registrations

The estimated national completeness of the Civil Registry birth registrations dataset fluctuated between 91-98% in 2016-19, 80% in 2020, and 59% in 2021 (Table 1.1). The lower levels of completeness in recent years are most likely the result of delayed birth registration, with levels of completeness expected to steadily rise for 2020-21 over the coming years. During 2016-19 the Civil Registry captured an estimated ≥90% of the births that occurred in the three largest health facilities in Fiji (CWM Divisional Hospital, Lautoka Hospital, Nadi Hospital). In general, the Civil Registry maintained registration completeness exceeding 90% during 2016-19 in health facilities that recorded 100+ births per year in the CMRIS. There was greater fluctuation in completeness in the smaller health facilities, particularly those where the CMRIS reported less than 20 births per year (e.g., Lakeba Hospital, Lomaloma Hospital). In 2020 and 2021 the lower levels of estimated national completeness of the Civil Registry birth database occurred across all major health facilities (Appendix 2).

Table 1.1. Number of births and estimated completeness by source of data, 2016-21

Year	CMRIS	MHMS		Civil Registry	
	n	n	%	n	%
2016	19,180	6,883	35.9%	18,844	98.2%
2017	19,646	9,377	47.7%	18,470	94.0%
2018	19,690	15,780	80.1%	17,938	91.1%
2019	19,825	14,913	75.2%	18,942	95.5%
2020	21,040	8,698	41.3%	16,724	79.5%
2021	20,217	5,608	27.7%	11,990	59.3%

CMRIS = Consolidated monthly reporting information system; MHMS = Ministry of Health and Medical Services

Birth Data Used for Analyses in this Vital Statistics Report

Throughout 2016-21 the CMRIS aggregate birth database maintained by the MHMS had the highest number of birth records annually and has been used in this vital statistics report to calculate the total number of births each year, crude birth rates, and the number of births by health facility. Because the CMRIS data could not be disaggregated by sex of the baby, and age of the mother is not recorded, sex

[5] Fiji Bureau of Statistics. 2022. Fiji Multiple Indicator Cluster Survey 2021, Survey Findings Report. Suva, Fiji: Fiji Bureau of Statistics. See indicator TM.8 p.13.

ratios at birth, age-specific fertility rates and the total fertility rate could not be calculated from the CMRIS dataset.

Individual unit record birth datasets are maintained by the MHMS (NoB's) and the Civil Registry (birth registrations). Because the Civil Registry dataset had a higher level of completeness during 2016-21 compared with the MHMS NoB dataset, it has been used in this vital statistics report for fertility analyses where the sex of the baby and age of mother are required. For those years where the completeness of the Civil Registry birth dataset exceeded 90% (2016-19), fertility analysis results are presented without correction for under-enumeration. For 2020-21, estimates of the sex ratio at birth, age-specific fertility rates and total fertility rates have not been calculated. The Civil Registry plans to include 2020-21 in future vital statistics reports following continued efforts to increase birth registrations to 100%.

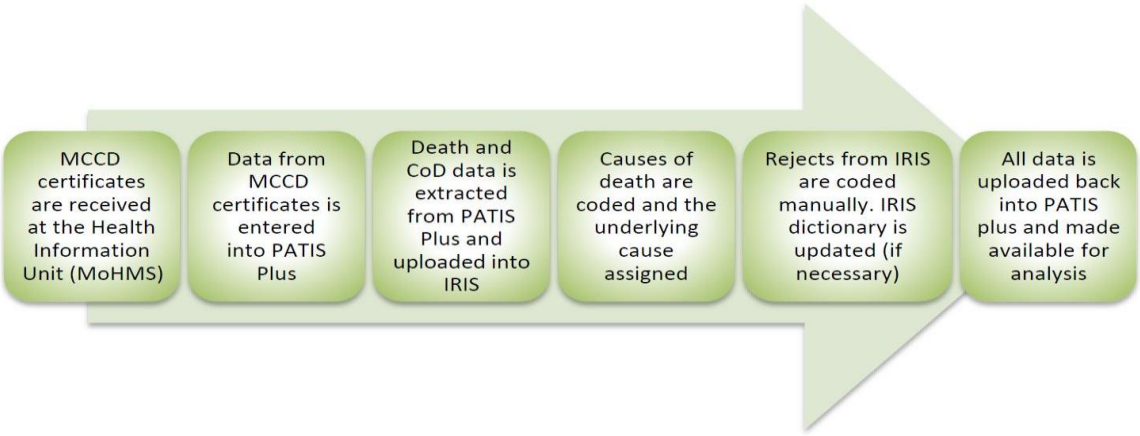
Source of Death Data in Fiji

Unlike birth data, health facilities do not maintain a hard copy death ledger book, and the CMRIS does not collect or report aggregate numbers of deaths per health facility. The single source of data for fact and details of deaths, including cause(s) of death, is the Medical Certificate of Cause of Death (MCCD) mortality database maintained by the MHMS. The Civil Registry within the Ministry of Justice maintains the death registration database, which originates from MCCDs.

1. Medical certificates of cause of Death (MCCD)

When a death occurs at a health facility, a MCCD is issued by a registered medical practitioner. For deaths that occur in the community, the law requires the death be reported to the nearest health facility, where a MCCD is completed. The MCCD form has five copies: the penned white copy is sent to the Civil Registration Office in Suva; the green copy is given to relatives of the deceased; the blue copy is sent to the Fiji Police Force; the pink copy is sent to the DAMU within the MHMS; and the yellow copy remains at the health facility. The DAMU enters all details on the MCCD, including cause(s) of death, into the PATISPlus system. Death data extracted from PATISPlus is uploaded into IRIS, an automated coding software program, where all causes of death are coded according to the International Classification of Diseases (ICD) 10th edition, and an underlying cause of death is assigned. Rejects from IRIS are coded manually. All causes of death, including underlying causes, are uploaded back into PATISPlus and are made available for data analysis (Figure 1.3).

Figure 1.3. Process of coding causes of death in the Fiji Ministry of Health and Medical Services



2. Death Registration database

The Civil Registry, under the Ministry of Justice, is responsible for death registration. When a death occurs, the MHMS issues a MCCD. A copy is provided to the family of the deceased, and the health

facility sends another copy to the Civil Registry Office in Suva. There is currently no electronic system that automatically shares death records with the Civil Registry (as there is for births). To register a death, an informant must present at a Civil Registry Office with the MCCD and provide information on the place of burial/cremation and other burial details. The customer service officer manually enters information from the MCCD, along with additional information provided by the informant (with supporting documents), into the death registration system. A death certificate is issued once all of the details have been entered and verified.

Death Data Used for Analyses in this Vital Statistics Report

The MHMS mortality dataset for 2016-21 is used for all-cause and cause-specific mortality analyses in this vital statistics report, as it contains information on causes of death and is the most complete mortality database.

Within the MHMS mortality database there are separate variables for stillbirths and maternal deaths, which should be selected at data entry for either of these events. In the mortality dataset the stillbirth variable contains the word 'stillbirth' or is left blank. The maternal death variable contains the word 'Direct', 'Indirect', Coincidental' or is left blank. Stillbirth records were identified in the 2016-21 dataset by the underlying cause of death being recorded as ICD-10 code P95 (stillbirth) and/or the separate stillbirth variable being selected. There were 965 stillbirth records identified in the 2016-21 dataset which were excluded from all mortality analyses, with the number each year fluctuating between 117 in 2017 to 219 in 2020 (Appendix 3).

Maternal deaths were identified in the 2016-21 dataset by the underlying cause of death being recorded as ICD-10 codes O00-O99 and/or the separate maternal death variable being selected. Appendix 4 outlines the number of maternal deaths each year during 2016-21 and shows that the system used during that period likely under-enumerated maternal deaths, particularly during the earlier period 2016-18. Using both the ICD-10 codes and the maternal death variable, 45 maternal deaths were identified during 2016-21: 7 deaths a year in 2016-17, 2 in 2018, 13 in 2019, 10 in 2020 and 6 in 2021. Subsequently, estimates of maternal mortality were not calculated for this vital statistics report. The MHMS has recently introduced a new system for identifying and reviewing maternal deaths, including obstetric committee review of mortality records and greater alignment with WHO maternal mortality coding guidelines for ICD-10[6]. MHMS plans to publish estimates of maternal mortality in the future.

Fertility and Mortality Analysis

Birth and death records were extracted from the MHMS and the Civil Registry databases into Microsoft Excel spreadsheets prior to analysis. These spreadsheets were then imported into the statistical program SAS (version 9.4) which was used for all analyses in this vital statistics report. Fiji Bureau of Statistics has held a SAS licence for several years and remains a component of the core funding budget each year. Therefore, the SAS code produced for this report can be used as a sustainable approach to automate aspects of future fertility and mortality analyses, thereby greatly reducing the human resource requirements previously needed when all analyses were undertaken using Microsoft Excel.

Population denominators used in the calculation of fertility and mortality rates were derived from the 2017 Fiji Population and Housing Census for 2017, and for 2016 and 2018-21 from population projections produced by Fiji Bureau of Statistics. To calculate population projections Fiji Bureau of

[6] World Health Organisation. The WHO application of ICD-10 to deaths during pregnancy, childbirth, and the puerperium: ICD-MM. Geneva; WHO: 2012.

Statistics uses Mortpak software and inputs the growth rate from the two census years as well as the population by sex by 5-year age group of the most recent census (in this case the 2017 Census). In addition to Census data, recent fertility and mortality rates (where available) and migration numbers by sex and age group are also inputted into Mortpack.

Annual crude fertility rates are estimated as the number of births per 1,000 population, using CMRIS total births as the numerator and estimated annual populations as denominators, the latter provided by Fiji Bureau of Statistics. Annual age-specific and total fertility rates for 2016-19, were calculated in 5-year age groups of the mother (15-19 to 45-49 years) and expressed as per 1,000 population. Annual total fertility rates are calculated as the cumulated age-specific rates (15-49 years) multiplied by 5.

For mortality, annual neonatal (<1 month), infant (0-1 year) and child (0-4 years) mortality was estimated with numerators of deaths in each of these age categories and the denominator of total births for the given year, expressed as deaths per 1,000 live births. For all other mortality rates and measures (e.g., survival), age-specific population estimates were used (in 5-year age groups 0-4 to 85+ years). All-cause mortality was expressed as per 1,000 population and cause-specific mortality expressed as per 100,000 population. Age-specific mortality is presented in broad age categories (0-14, 15-39, 40-59 and 60+years), and all-age mortality directly age-standardised to the 2017 Fiji census population.

Confidence intervals for rate estimates are presented where appropriate to highlight the uncertainty in the data. For rates, these were based on variance and standard errors assuming a binomial distribution and using a z-score of 1.96 for 95% confidence interval (the normal approximation to the binomial). Confidence intervals for life expectancy, derived from the variance of the probability of surviving, were calculated using the Chiang Method (Chiang, 1967)[7] with an adjustment for variance in the terminal age group, as outlined by Lo et al. (2016)[8]. The variance for the total fertility rate was estimated by summing the variances of the individual age-specific fertility rates (and multiplying by 5). As the age-specific fertility rates were annual, it was assumed there was negligible correlation between different age-specific rates in a single year and therefore covariance would contribute little to this variance estimate of the total fertility rate.

[7] Chiang, C. L. Variance and covariance of life table functions estimated from a sample of deaths. In Vital Health and Statistics. 1967; 2(20):1-8.

[8] Lo E, Vatnik D, Benedetti A, Bourbeau R. Variance models of the last age interval and their impact on life expectancy at subnational scales. Demographic Research. 2016; 35(15): 399-454.

CHAPTER TWO: BIRTHS AND FERTILITY

Chapter Two presents estimates of the number of births, and fertility indicators by age group and sex where possible, in Fiji during 2016-21. Birth data used for analyses in this chapter have been derived from two sources: (1) the CMRIS database, maintained by the MHMS; and (2) the Civil Registry birth registration database. An explanation of the databases and rationale for their selection and use in analyses in this vital statistics report is provided in Chapter One (*Introduction and Methodology*). Throughout this chapter, in the text and below each table and figure, the source from which the data has been derived is specified.

Number of Births Annually

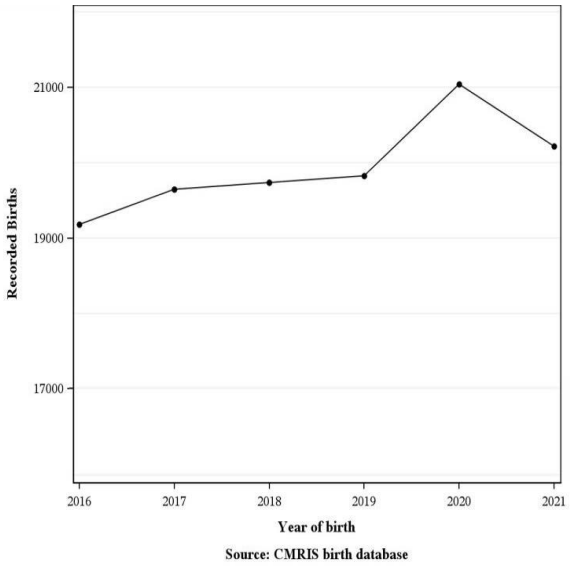
The CMRIS birth database maintained by the MHMS recorded 119,598 births in Fiji during 2016-21. The average number of births each year during this period was 19,933. Between 2016 and 2019, the number of births gradually increased from 19,180 births in 2016 to 19,825 births in 2019. In 2020 births increased sharply by more than 1,000, to 21,040 births, before declining to 20,217 in 2021. There are currently no explanations for the sharp increase in the number of births in 2020, and more investigations are being undertaken by the MHMS to identify possible reasons. Because the CMRIS database cannot be disaggregated by the sex of the baby, Table 2.1 and Figure 2.1 show the annual number of births during 2016-21 for both sexes combined.

Table 2.1. Number of births (both sexes combined), 2016-21

Total number of births	2016	2017	2018	2019	2020	2021	TOTAL
	19,180	19,646	19,690	19,825	21,040	20,217	**119,598**

Source: CMRIS birth database

Figure 2.1. Number of births by year (both sexes combined), 2016-21



Sex Ratio at Birth

The sex ratio at birth is the number of live male births for every 100 live female births. Because the CMRIS database cannot be disaggregated by the sex of the baby, the Civil Registry birth registration database has been used to calculate the sex ratio at birth for 2016-19 where the estimated completeness of the Civil Registry exceeded ≥90%. During 2016-19 the sex ratio at birth varied between 1.08-1.09, which means for every 100 female births there were 108-109 male births (Table

2.2). Count data of the number of births by sex have not been shown in Table 2.2 to minimise potential misinterpretation of under-enumerated counts (i.e., the Civil Registry did not capture 100% of births during 2016-19).

Table 2.2. Sex ratio at birth, 2016-19

	2016	2017	2018	2019
Sex ratio (male/female)	1.09	1.08	1.08	1.08

Source: Civil Registry birth registration database

Crude Birth Rate

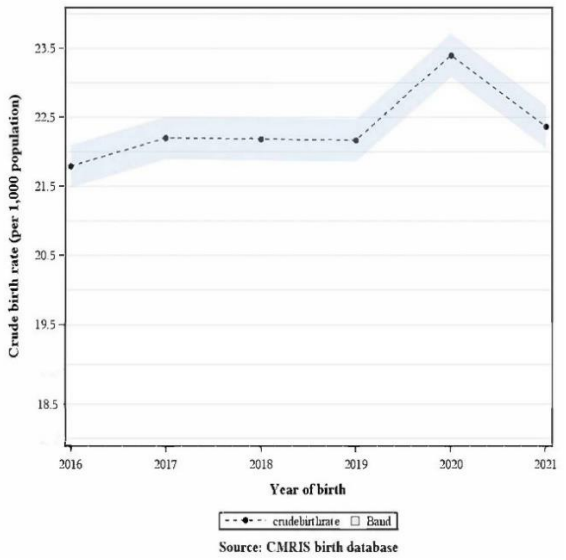
The crude birth rate is the number of births per 1,000 population over a given time period. The crude birth rates in Table 2.3 and Figure 2.2 have been calculated by dividing the number of births recorded in the CMRIS database each year during 2016-21 by the estimated annual population for the same time period. The population for 2017 was derived from the 2017 Fiji census, and for 2016 and 2018-21 from population projections produced by the Fiji Bureau of Statistics (Appendix 5). During 2016-19 the crude birth rate remained relatively stable between 21.8-22.2 births per 1,000 population. In 2020 it increased sharply to 23.4 per 1,000, before declining to 22.4 per 1,000 in 2021. The overall fertility pattern across 2016-21 indicated a gradual increase in the crude birth rate.

Table 2.3. Crude birth rate, 2016-21

Year	Crude Birth Rate	
	Rate	95%CI
2016	21.8	21.5-22.1
2017	22.2	21.9-22.5
2018	22.2	21.9-22.5
2019	22.2	21.9-22.5
2020	23.4	23.1-23.7
2021	22.4	22.1-22.7

95%CI = 95% statistical confidence interval; Source: CMRIS birth database

Figure 2.2. Crude birth rate, 2016-21



Births by Age of Mother and Age-Specific Fertility Rates

Childbearing age is generally considered to be from 15 to 49 years of age, with babies born to mothers outside this age range less common. Because the CMRIS birth database does not collect information on the age of the mother, the Civil Registry birth registration database has been used to analyse the percentage distribution of births by age of mother, and calculate age-specific fertility rates, for 2016-19 where the estimated completeness of the Civil Registry exceeded ≥90%. Count data of the number of births by mothers age group have not been shown in Table 2.4 to minimise potential misinterpretation of under-enumerated counts.

The distribution of births by mother's age group shows the majority of births during 2016-19 were to women aged 20-29 years, with around 29% of births in women aged 20-24 years and 30% in women aged 25-29 years (Table 2.4). From 30+ years fertility slowly declined, with around 20-21% of births to mothers aged 30-34 years, and 11% to mothers aged 35-39 years. The percentage distribution remained below 3% in women aged 40-44 years, and below 1% in women aged 45+ years. Teenage pregnancy in mothers aged 15-19 years comprised 5-6% of the percentage distribution of births in each year during 2016-19. In the <15 and 50+ year age groups there were births recorded in all years during 2016-19, however the numbers remain low and comprised 0.0% of all births.

Table 2.4. Percentage distribution of births by mothers age group, 2016-19

Age Group	2016 %	2017 %	2018 %	2019 %
<15	0.0	0.0	0.0	0.0
15-19	5.0	5.3	5.8	6.3
20-24	29.4	29.0	29.9	29.4
25-29	29.4	30.2	29.5	30.3
30-34	21.8	21.2	21.0	20.4
35-39	11.2	11.1	10.7	10.7
40-44	2.9	3.0	2.8	2.8
45-49	0.2	0.2	0.1	0.1
50+	0.0	0.1	0.0	0.0
Unknown	0.0	0.0	0.0	0.0
Total	**100%**	**100%**	**100%**	**100%**

Source: Civil Registry birth registration database

Age-specific fertility rates are the number of births occurring to mothers of a certain age group per 1,000 women in that age group in the same time period. The age-specific fertility rates for 2016-19 shown in Table 2.5 and Figure 2.3 have been calculated using the Civil Registry birth registration database and populations obtained from the Fiji Bureau of Statistics. Populations for 2017 were derived from the 2017 Fiji census, and for 2016 and 2018-21 from population projections (Appendix 5). It is important to note that the numerators used in the calculation of age-specific fertility rates for 2016-19 (births from the Civil Registry) are estimated to be between 91% (2018) and 98% (2016) complete, and therefore the rates would be slightly higher if all births had been captured and analysed in this vital statistics report.

Age-specific fertility rates for 2016-19 show that fertility was highest among women aged 25-29 years, with the fertility rate fluctuating between 157-171 births per 1,000 women. Women aged 20-24 years had the next highest fertility levels, with the rate fluctuating between 148-156 births per 1,000. From 30+ years of age the fertility rate slowly declined, from around 113-123 births per 1,000 women aged 30-34 years, and 60-67 births per 1,000 women aged 35-39 years. From 40+ years of age fertility declined sharply, from around 20 births per 1,000 women aged 40-44 years, to less than 2 births per

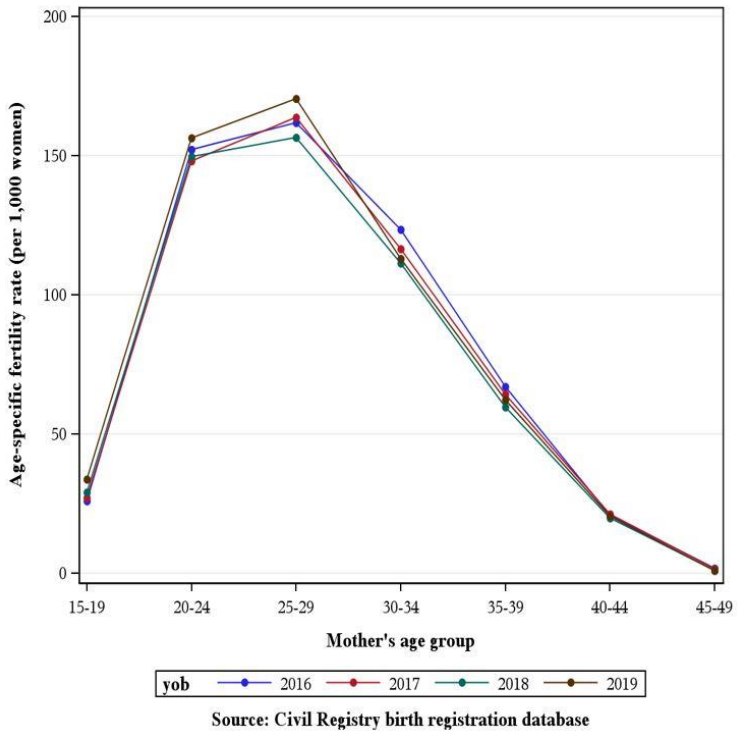
1,000 women aged 45-49 years. The teenage fertility rate among young women aged 15-19 years showed a consistent gradual increase during 2016-19, from 26 births per 1,000 in 2016 to 34 births per 1,000 in 2019 (Table 2.5).

Table 2.5. Age-specific fertility rates, 2016-19

Age Group	2016		2017		2018		2019	
	Rate	95%CI	Rate	95%CI	Rate	95%CI	Rate	95%CI
15-19	26.0	24.4-27.6	27.2	25.5-28.8	29.1	27.4-30.9	33.8	31.9-35.7
20-24	152.2	148.5-155.9	148.1	144.4-151.7	149.6	145.9-153.3	156.3	152.6-160.1
25-29	161.8	157.9-165.7	163.7	159.8-167.7	156.5	152.6-160.4	170.5	166.4-174.5
30-34	123.4	119.9-127.0	116.5	113.1-119.9	111.4	108.0-114.7	113.0	109.6-116.3
35-39	67.0	64.3-69.8	64.3	61.6-67.0	59.7	57.1-62.3	62.3	59.7-64.9
40-44	20.8	19.0-22.5	21.3	19.5-23.0	19.9	18.2-21.6	20.5	18.8-22.3
45-49	1.8	1.3-2.4	1.7	1.1-2.2	1.1	0.7-1.5	1.0	0.6-1.3

Rate = age-specific fertility rate per 1,000 women; 95%CI = 95% statistical confidence interval; Source: Civil Registry birth registration database

Figure 2.3. Age-specific fertility rates, 2016-19



Total Fertility Rate

The total fertility rate is the average number of children a woman would give birth to during her lifetime if she were to pass through her childbearing years experiencing the present-day age-specific fertility rates. The total fertility rates in Table 2.6 and Figure 2.4 have been calculated from the age-specific fertility rates shown in Table 2.5, which are derived from the Civil Registry birth registration database. Again, it is important to note that the numerators used in the calculation of these total fertility rates are estimated to be between 91-98% complete, and therefore the rates would be somewhat higher if all births had been captured and analysed in this vital statistics report.

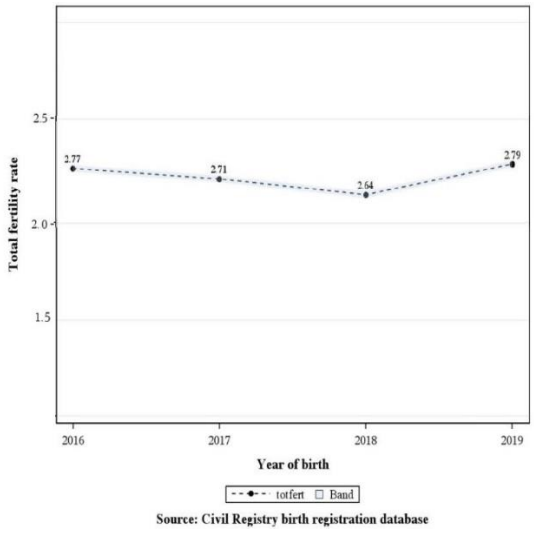
During 2016-19 the total fertility rate fluctuated between 2.6-2.8, which means that on average a woman would be expected to give birth to between 2.6 to 2.8 babies during her lifetime.

Table 2.6. Total fertility rate, 2016-19

Year	Rate	
	Rate	95%CI
2016	2.8	2.7-2.9
2017	2.7	2.6-2.8
2018	2.6	2.5-2.7
2019	2.8	2.7-2.9

Source: Civil Registry birth registration database

Figure 2.4. Total fertility rate, 2016-19



Source: Civil Registry birth registration database

Place of Birth

Table 2.7 shows the number of annual births reported by each health facility through the CMRIS during 2016-21. Figures 2.5-2.8 show the location of each health facility that reports through the CMRIS, by Administrative Division. CWM Divisional Hospital in the Central Division had the highest number of births each year, fluctuating between 7,938-8,820. Lautoka Divisional Hospital in the Western Division had the second highest number of births, fluctuating between 4,097-4,492 during 2016-20 before declining to 3,767 in 2021. Labasa Divisional Hospital in the Northern Division had the third highest number of births, fluctuating between 1,858-2,348.[9] Of the 119,598 births that were recorded in the CMRIS database during 2016-21, 94% were from the ten health facilities where the highest number of births occurred.

Makoi Birthing Unit in the Central Division opened in late 2018, and Navosa Hospital in the Western Division opened in early 2021. No births were recorded in the CMRIS from the 'Other Mamanuca Islands' or the 'Yasawa Islands' in the Western Division. It is understood that pregnant women from these island groups most frequently travel to Lautoka or Nadi several weeks before they are due to give birth and reside with relatives or family friends until they deliver their baby in Lautoka or Nadi hospital (Figure 2.6). Similarly, no births were recorded from the 'Other Lau Islands' or the 'Other Lomaiviti Islands' in the Eastern Division, and it is understood that pregnant women from those island

[9] The Eastern Division does not have a Divisional Hospital.

groups most frequently travel to Suva and reside with relatives or family friends until their baby is born in a health facility in Suva. A small number of pregnant women from the outer islands of the Eastern Division may travel by boat to one of the sub-divisional hospitals to deliver their baby (e.g., Lakeba or Lomaloma Hospital) if they are on a nearby island. However, the ferry routes can be inconsistent between these smaller islands, and it is reported that most women make the decision to travel to Suva (Figure 2.8).

Table 2.7. Number of births by health facility recorded through the CMRIS, 2016-21

Code	Facility Name	2016	2017	2018	2019	2020	2021	TOTAL
2	**CWM Divisional Hospital**	7,939	8,502	8,596	8,194	8,820	8,715	50,766
7	**Lautoka Divisional Hospital**	4,097	4,352	4,315	4,492	4,321	3,767	25,344
4	**Labasa Divisional Hospital**	2,115	1,858	2,104	2,124	2,348	2,088	12,637
11	**Nadi Hospital**	1,087	918	1,041	944	1,115	1,030	6,135
13	**Nausori Hospital**	890	891	791	664	757	744	4,737
19	**Sigatoka Hospital**	623	629	572	603	738	705	3,870
1	**Ba Hospital**	425	502	392	406	415	469	2,609
18	**Savusavu Hospital**	379	403	384	397	440	536	2,539
20	**Waiyevo Hospital^**	255	282	299	272	275	289	1,672
14	**Navua Hospital**	321	257	260	246	134	322	1,540
21	**Tavua Hospital**	256	238	206	239	275	276	1,490
16	**Rakiraki Hospital**	169	152	197	159	257	331	1,265
3	**Korovou Hospital**	179	208	182	225	206	234	1,234
30	**Makoi Birthing Unit**	*	*	0	466	442	235	1,143
10	**Nabouwalu Hospital**	133	157	104	137	148	116	795
22	**Vunidawa Hospital**	88	81	68	78	106	197	618
15	**Ra Hospital**	72	92	98	91	98	55	506
8	**Levuka Hospital**	68	68	39	41	72	48	336
23	**Vunisea Hospital**	56	38	29	36	53	41	253
5	**Lakeba Hospital**	18	12	6	4	3	4	47
6	**Lomaloma Hospital**	9	6	6	5	8	10	44
24	**Wainibokasi Hospital**	1	0	1	2	7	1	12
17	**Rotuma Hospital**	0	0	0	0	2	1	3
31	**Navosa Hospital**	*	*	*	*	*	3	3
25	**Other Lau Islands**							0
26	**Other Lomaiviti Islands**							0
27	**Other Mamanuca Islands**							0
28	**Yasawa Islands**							0
29	**All Others**							0
	TOTAL	**19,180**	**19,646**	**19,690**	**19,825**	**21,040**	**20,217**	**119,598**

*Code = health facility code outlined in the Fiji Bureau of Statistics Standard Operating Procedure of birth data entry; CWM Hospital = Colonial War Memorial Hospital; ^ previously named Taveuni Hospital; facility code 9 and 12 no longer in use; * facility not yet open.*

Figure 2.5. Central Division health facilities

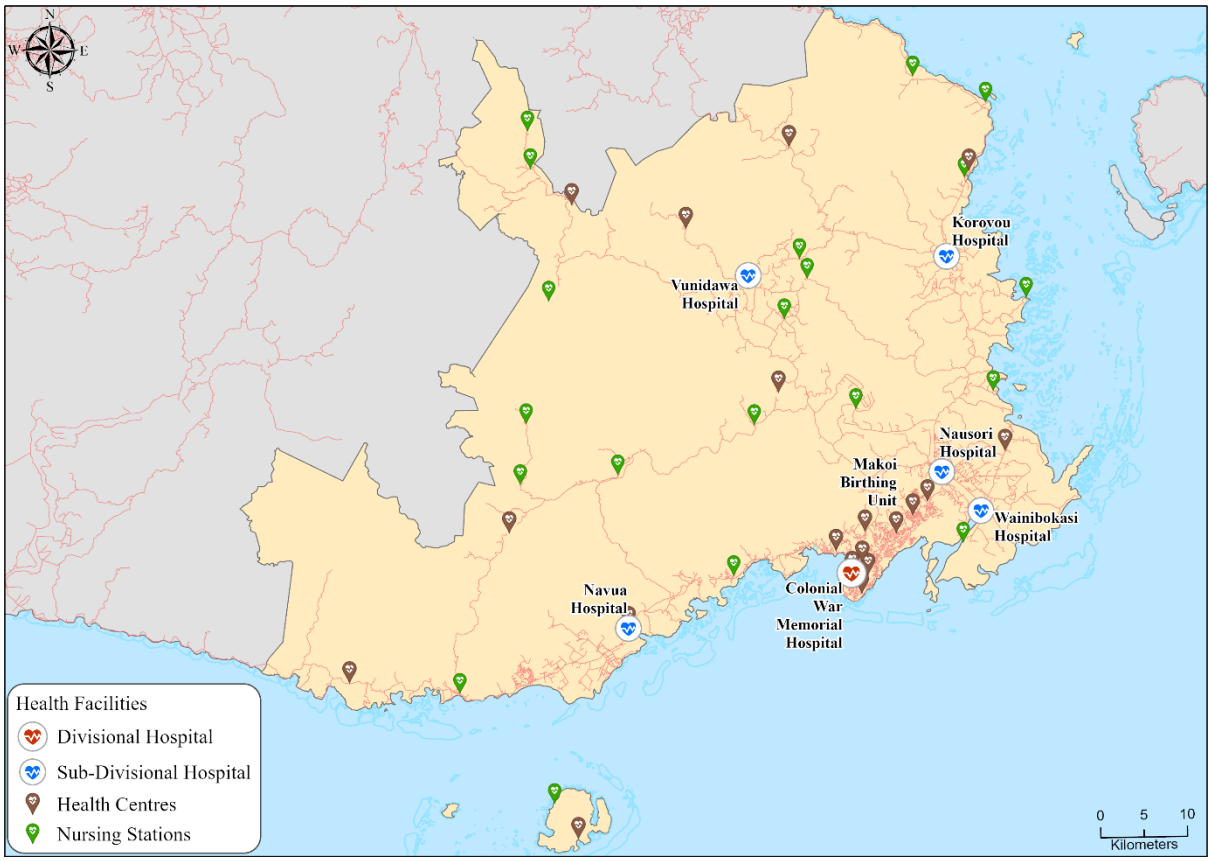


Figure 2.6. Western Division health facilities

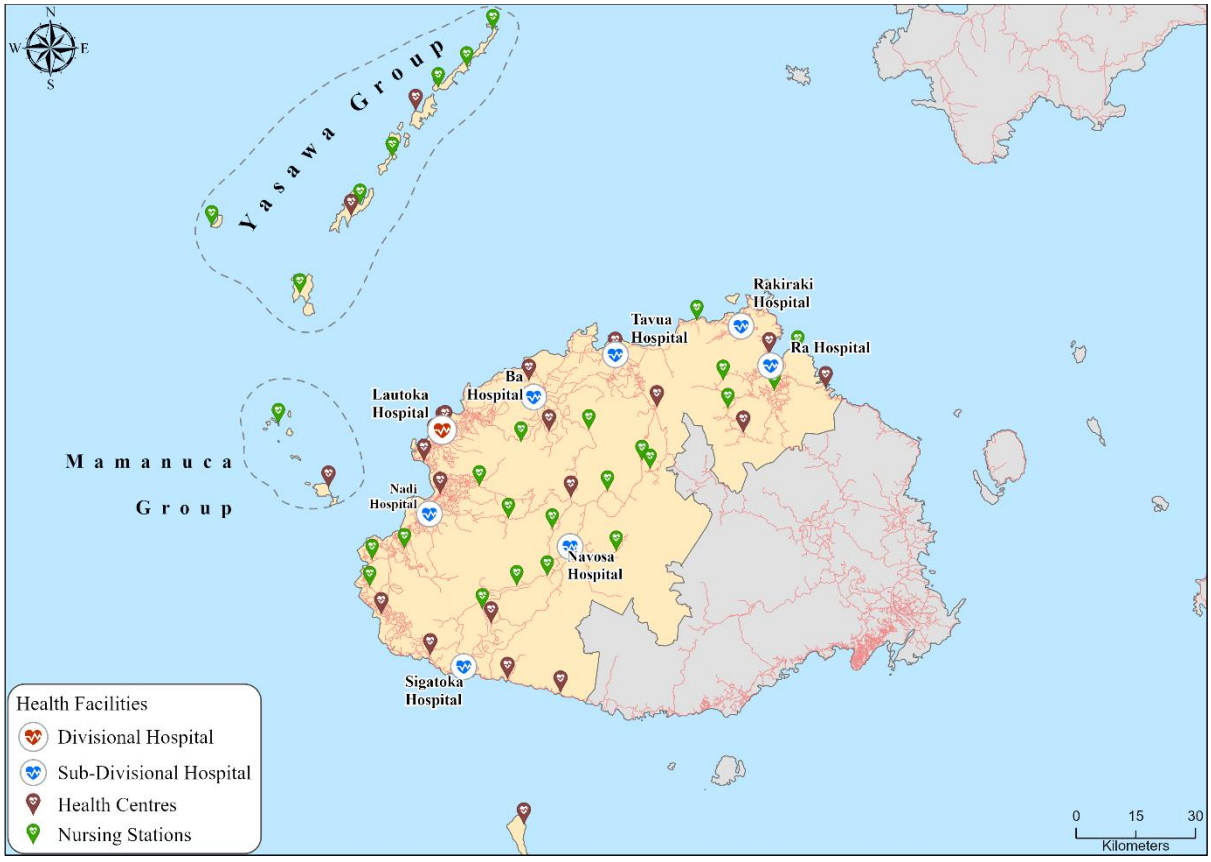


Figure 2.7. Northern Division health facilities

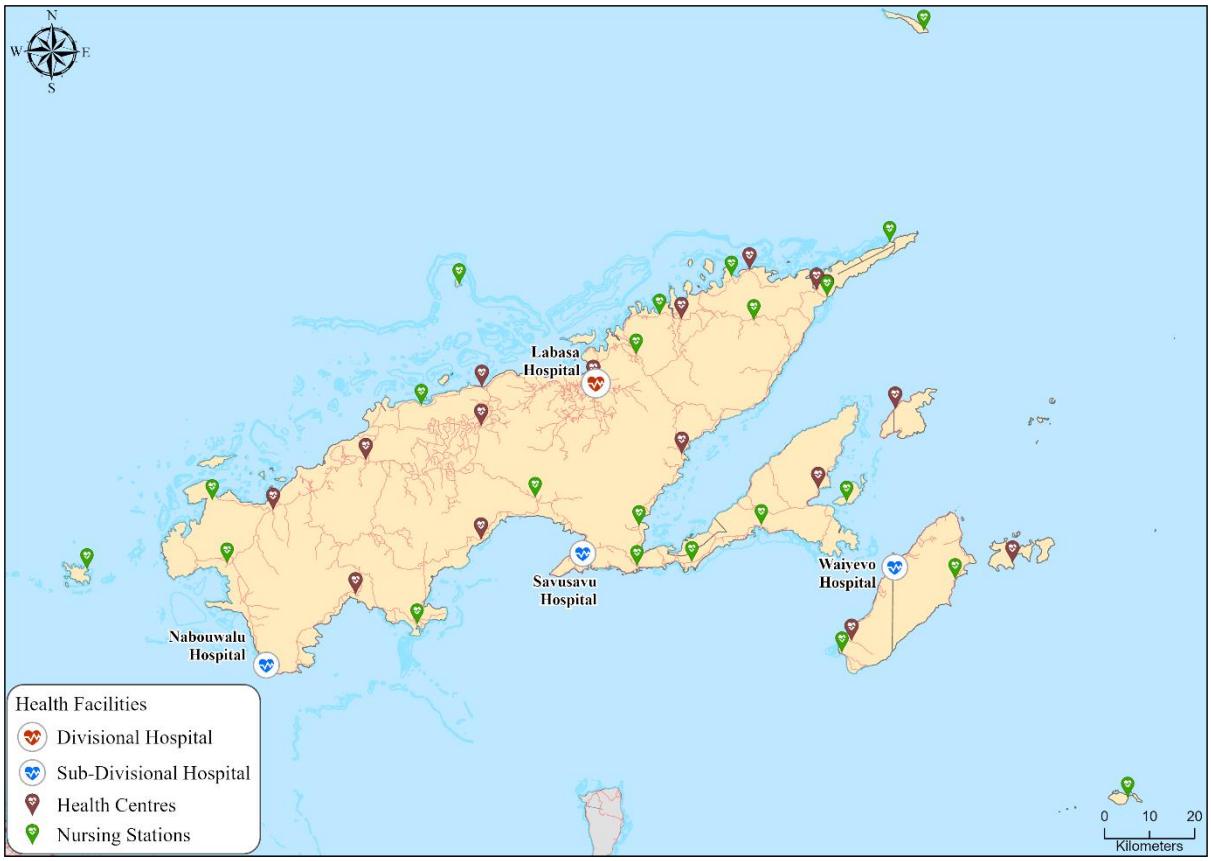
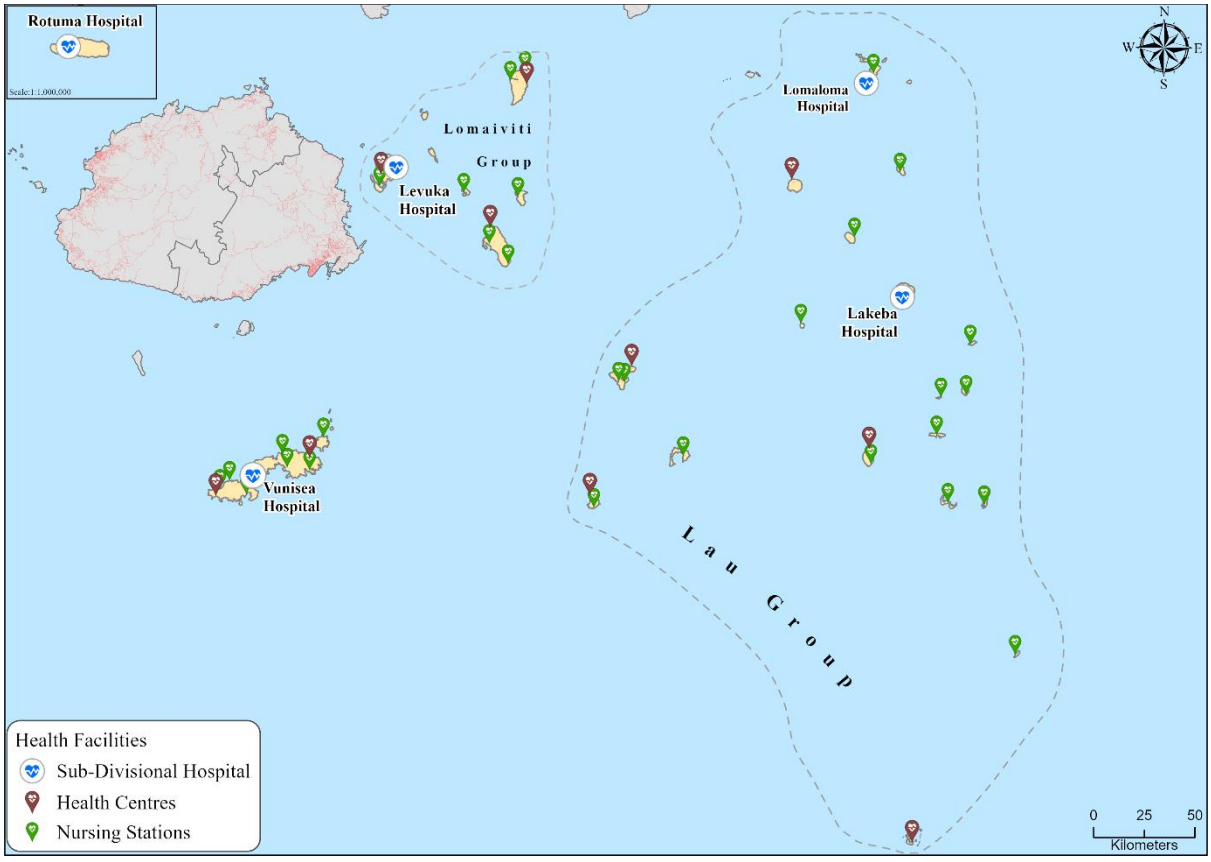


Figure 2.8. Eastern Division health facilities



CHAPTER THREE: ALL-CAUSE MORTALITY AND LIFE EXPECTANCY

Chapter Three presents annual estimates for all-cause mortality and life expectancy by sex and age group during 2016-21 based on mortality data collected by the MHMS. The MHMS death dataset for 2016-21 contains stillbirth records, identifiable by the underlying cause of death being recorded as ICD code P95 (stillbirth) or a separate stillbirth variable being selected. Stillbirths were excluded from all mortality analyses but are outlined by year and sex in Appendix 3. Due to under-enumeration of maternal deaths, particularly in the most recent years (2020-21) (Appendix 4), estimates of maternal mortality could not be calculated for this vital statistics report. The MHMS has recently introduced a new system for identifying and reviewing maternal deaths and plans to publish estimates of maternal mortality in the future.

Pacific Island countries have frequently undertaken aggregate period analyses of mortality data (e.g., 2-5 years grouped together) to minimise stochastic and other variation which often occurs when annual mortality estimates are generated for small populations. Due to the sharp increase in mortality in 2021 during the COVID-19 pandemic (829 recorded COVID-19 deaths) it was determined that presentation of annual rates would be more appropriate for this vital statistics report so as to not dilute or mask the effect of the pandemic on all-cause mortality estimates for 2021. Conversely, such aggregation would inflate the mortality estimates for other years included in the period. For instance, mean annual deaths for 2016-20 when estimated from the years 2016-21 would be inflated artefactually by the COVID-19 mortality of 2021. Fiji did not record its first case of community transmission of COVID-19 until April 2021, and no COVID-19 deaths were recorded in 2019, and only 2 in 2020. Moreover, the mortality data was assessed to be of sufficient size (around 7,500 deaths per year) to generate accurate annual mortality estimates. Aspects of the mortality analyses that may be particularly prone to stochastic or other variation have been highlighted.

Number of Deaths Annually

There were 46,213 deaths recorded by the MHMS for the period 2016-21. The average annual number of deaths between 2016-20 was 7,480, with deaths numbering 8,815 in 2021 during the peak of the COVID-19 pandemic in Fiji, an increase of 1,031 deaths over 2020. During 2016-20 the number of deaths each year fluctuated somewhat, but the overall mortality pattern was a plateau in the number of deaths in both sexes annually, followed by the sharp increase, by more than 10%, in 2021.

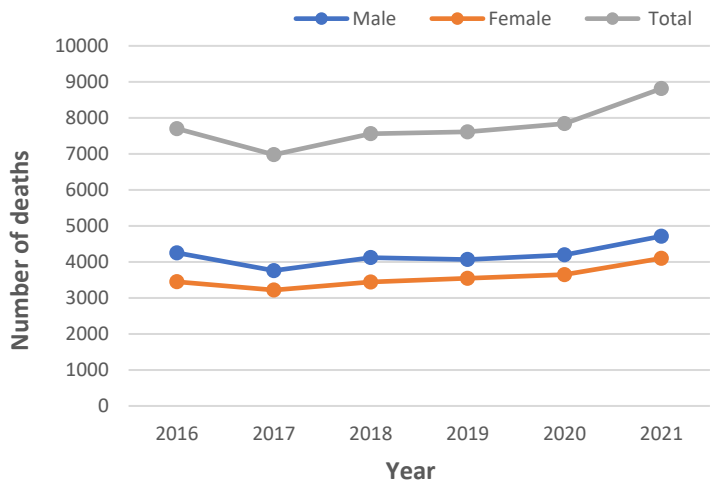
More male than female deaths were recorded across all years, with deaths comprising 54% males and 46% females for the entire six-year period. This annual distribution varied between 53-55% for males, and between 45-47% for females (Table 3.1 and Figure 3.1).

Table 3.1. Number of deaths by sex and year, 2016-21

Year	Male		Female		Total Deaths
	n	%	n	%	
2016	4,190	55.2	3,398	44.8	**7,588**
2017	3,728	53.8	3,197	46.2	**6,925**
2018	4,100	54.6	3,410	45.4	**7,510**
2019	4,058	53.5	3,533	46.5	**7,591**
2020	4,163	53.5	3,621	46.5	**7,784**
2021	4,714	53.5	4,101	46.5	**8,815**
Total	**24,953**	**54.0**	**21,260**	**46.0**	**46,213**

n = total number of deaths; % = distribution of deaths in each sex as a percentage of the total deaths

Figure 3.1. Number of deaths by sex and year, 2016-21



Number and Proportion of Deaths by Age Group

Tables 3.2 and 3.3 present the annual number and percentage distribution of deaths by age group and sex for 2016-21. In both sexes, mortality among infants aged less than one year accounted for 3-6% of deaths annually. This decreased to less than 1% in the 5-to-14-year age groups, before increasing from ages 15 to 19 until around 60-70 years of age. After which the number of deaths slowly declined, due to lower numbers of people in the older 75+ year age groups still living.

Table 3.2. Number and percentage distribution of male deaths by age group, 2016-21

Males												
Age Group	2016		2017		2018		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
<1	168	4.0	206	5.5	176	4.3	162	4.0	159	3.8	172	3.6
1-4	50	1.2	44	1.2	33	0.8	48	1.2	38	0.9	37	0.8
5-9	26	0.6	21	0.6	26	0.6	28	0.7	22	0.5	18	0.4
10-14	25	0.6	16	0.4	25	0.6	26	0.6	24	0.6	30	0.6
15-19	30	0.7	25	0.7	38	0.9	43	1.1	50	1.2	54	1.1
20-24	54	1.3	58	1.6	54	1.3	50	1.2	53	1.3	56	1.2
25-29	61	1.5	64	1.7	64	1.6	49	1.2	61	1.5	59	1.3
30-34	92	2.2	72	1.9	66	1.6	81	2.0	59	1.4	78	1.7
35-39	117	2.8	113	3.0	113	2.8	95	2.3	151	3.6	118	2.5
40-44	146	3.5	143	3.8	133	3.2	168	4.1	144	3.5	173	3.7
45-49	214	5.1	205	5.5	253	6.2	228	5.6	253	6.1	238	5.0
50-54	384	9.2	357	9.6	357	8.7	364	9.0	323	7.8	385	8.2
55-59	521	12.4	461	12.4	515	12.6	498	12.3	487	11.7	556	11.8
60-64	544	13.0	457	12.3	546	13.3	543	13.4	568	13.6	651	13.8
65-69	508	12.1	400	10.7	512	12.5	496	12.2	541	13.0	578	12.3
70-74	482	11.5	377	10.1	482	11.8	439	10.8	496	11.9	528	11.2
75-79	381	9.1	339	9.1	348	8.5	345	8.5	350	8.4	448	9.5
80-84	227	5.4	220	5.9	228	5.6	225	5.5	221	5.3	302	6.4
85+	160	3.8	150	4.0	131	3.2	170	4.2	163	3.9	233	4.9
Total	**4,190**	**100**	**3,728**	**100**	**4,100**	**100**	**4,058**	**100**	**4,163**	**100**	**4,714**	**100**

n = number of deaths; % = distribution of deaths in each age group as a percentage of the total deaths

Table 3.3. Number and percentage distribution of female deaths by age group, 2016-21

Females												
Age group	2016		2017		2018		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
<1	102	3.0	151	4.7	126	3.7	128	3.6	108	3.0	154	3.8
1-4	36	1.1	41	1.3	35	1.0	31	0.9	34	0.9	30	0.7
5-9	14	0.4	25	0.8	19	0.6	19	0.5	24	0.7	21	0.5
10-14	15	0.4	29	0.9	19	0.6	19	0.5	24	0.7	25	0.6
15-19	20	0.6	29	0.9	25	0.7	30	0.8	23	0.6	31	0.8
20-24	47	1.4	42	1.3	43	1.3	36	1.0	39	1.1	29	0.7
25-29	46	1.4	45	1.4	46	1.3	65	1.8	48	1.3	41	1.0
30-34	71	2.1	68	2.1	50	1.5	59	1.7	67	1.9	68	1.7
35-39	86	2.5	83	2.6	72	2.1	82	2.3	90	2.5	110	2.7
40-44	100	2.9	127	4.0	122	3.6	106	3.0	137	3.8	151	3.7
45-49	167	4.9	156	4.9	198	5.8	155	4.4	185	5.1	190	4.6
50-54	245	7.2	269	8.4	247	7.2	282	8.0	261	7.2	299	7.3
55-59	377	11.1	298	9.3	327	9.6	373	10.6	351	9.7	395	9.6
60-64	381	11.2	360	11.3	371	10.9	380	10.8	435	12.0	466	11.4
65-69	385	11.3	354	11.1	406	11.9	401	11.4	430	11.9	525	12.8
70-74	405	11.9	335	10.5	409	12.0	394	11.2	418	11.5	497	12.1
75-79	367	10.8	314	9.8	354	10.4	385	10.9	378	10.4	406	9.9
80-84	280	8.2	247	7.7	276	8.1	308	8.7	308	8.5	336	8.2
85+	254	7.5	224	7.0	265	7.8	280	7.9	261	7.2	327	8.0
Total	**3,398**	**100**	**3,197**	**100**	**3,410**	**100**	**3,533**	**100**	**3,621**	**100**	**4,101**	**100**

n = number of deaths; % = distribution of deaths in each age group as a percentage of the total deaths

Age-Specific Mortality Rates

Age-specific mortality rates are more informative than the total number or proportions of deaths in an age group because they account for different underlying populations in each age group. The age-specific mortality rate is the number of deaths per 1,000 population of a given age group and sex in a given time period. Table 3.4 shows that during 2016-21 in both sexes age-specific mortality rates in the under-five age group were 3-5 deaths per 1,000 population, and in the 5-14 years age groups were less than 1 death per 1,000 population. From 15 years onwards mortality rates slowly increased but remained less than 5 deaths per 1,000 population in both sexes until around 40 years of age. After which the age-specific mortality rates began to sharply increase, particularly from 65 years onwards.

Mortality rates in each age group fluctuated in males and females over time. Excluding 2021, these fluctuations were generally small, and the overall mortality pattern demonstrated a plateau across most age-groups. In 2021, the plateau among children and young and middle-aged adults generally continued in both sexes. In contrast, among older adults aged 60+ years most mortality rates increased markedly, particularly in men aged 75+ years, and women aged 65-74 and 85+ years.

Table 3.4. Age-specific mortality rates by sex, 2016-21

Age	Males						Females					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
0-4	4.7	5.3	4.4	4.4	4.1	4.3	3.1	4.3	3.6	3.5	3.1	3.9
5-9	0.6	0.5	0.6	0.6	0.5	0.4	0.3	0.6	0.4	0.4	0.5	0.5
10-14	0.6	0.4	0.6	0.6	0.6	0.7	0.4	0.7	0.5	0.5	0.6	0.7
15-19	0.8	0.7	1.0	1.1	1.3	1.5	0.6	0.8	0.7	0.8	0.7	0.9
20-24	1.4	1.5	1.5	1.4	1.5	1.6	1.3	1.2	1.2	1.0	1.1	0.8
25-29	1.7	1.8	1.8	1.4	1.8	1.7	1.3	1.3	1.4	1.9	1.4	1.2
30-34	2.6	2.0	1.9	2.3	1.6	2.2	2.1	2.0	1.5	1.7	1.9	2.0
35-39	3.6	3.4	3.3	2.8	4.3	3.4	2.7	2.6	2.2	2.5	2.7	3.3
40-44	5.3	5.2	4.8	6.1	5.3	6.3	3.8	4.9	4.8	4.2	5.4	6.0
45-49	8.4	8.1	10.0	9.0	10.1	9.5	6.9	6.4	8.2	6.4	7.7	7.9
50-54	15.9	14.5	14.2	14.3	12.4	14.6	10.4	11.2	10.1	11.4	10.4	11.7
55-59	25.2	21.7	23.6	22.3	21.2	23.7	18.7	14.4	15.4	17.1	15.7	17.3
60-64	37.3	30.7	36.0	35.1	36.0	40.5	24.8	22.9	23.1	23.1	25.9	27.2
65-69	51.4	39.7	49.8	47.4	50.7	53.2	35.0	31.5	35.3	34.1	35.8	42.8
70-74	77.7	59.2	73.8	65.6	72.3	75.1	53.7	43.1	51.0	47.7	49.2	56.9
75-79	111	97.1	97.8	95.1	94.7	119	79.6	66.0	72.3	76.4	72.9	76.2
80-84	147	141	145	141	137	185	118	101	111	121	118	126
85+	208	203	185	252	253	381	179	159	189	200	187	236

Age-specific mortality rates are per 1,000 male/female population; 2017 population census used as denominator population for 2017 rates, annual population projections generated by Fiji Bureau of Statistics used as denominator population for 2016 and 2018-21 (see appendix 5)

When displayed on a logarithmic scale, age-specific mortality rates from Table 3.4 can more easily show age-specific mortality patterns (Figures 3.2-3.3). A logarithmic scale allows low and high mortality rates to be shown on the same graph, and conventionally is used when reporting such data. All of the annual mortality patterns in Figures 3.2-3.3 follow the expected J-shaped curve, with high mortality among 0–4-year children, followed by a sharp reduction among children aged 5 to 14 years, then higher mortality from around 20 years of age onwards. Both sexes demonstrate the increased mortality among older adults in 2021, which in males is most discernible from 75+ years of age, whilst in females it is evident from 65+ years.

Several additional areas show divergence in the mortality patterns for specific years, such as lower mortality in males aged 10-19 years and 60-74 years in 2017, and lower mortality in females aged 5-19 years in 2016 and 65+ years in 2017. Cause-specific analyses may reveal epidemiological explanations for these, and currently it remains unclear if they are due to stochastic or other variation in the data, or systematic changes in population mortality.

Figure 3.2. Age-specific mortality rates, males, 2016-21

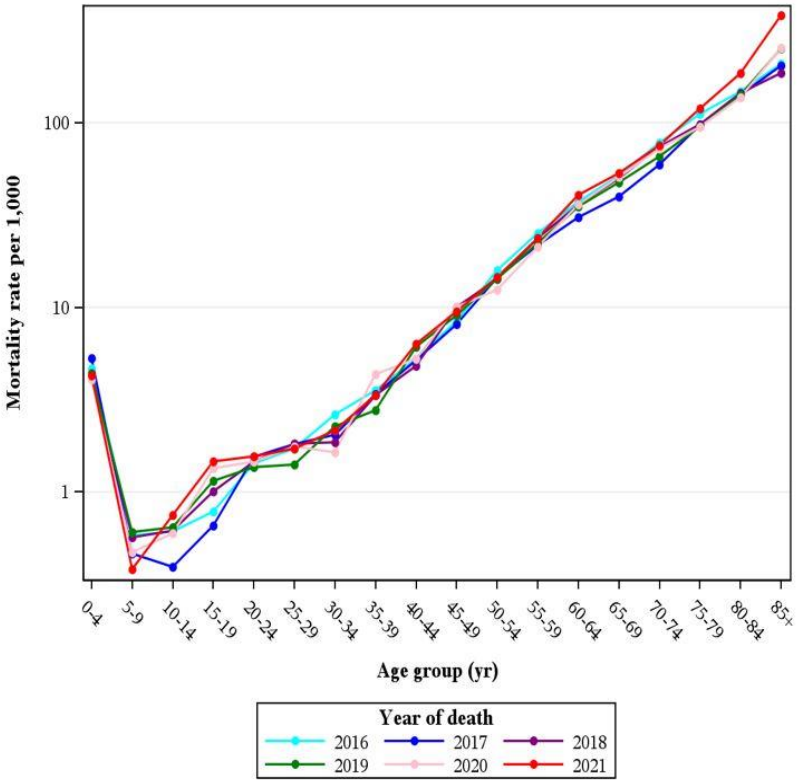
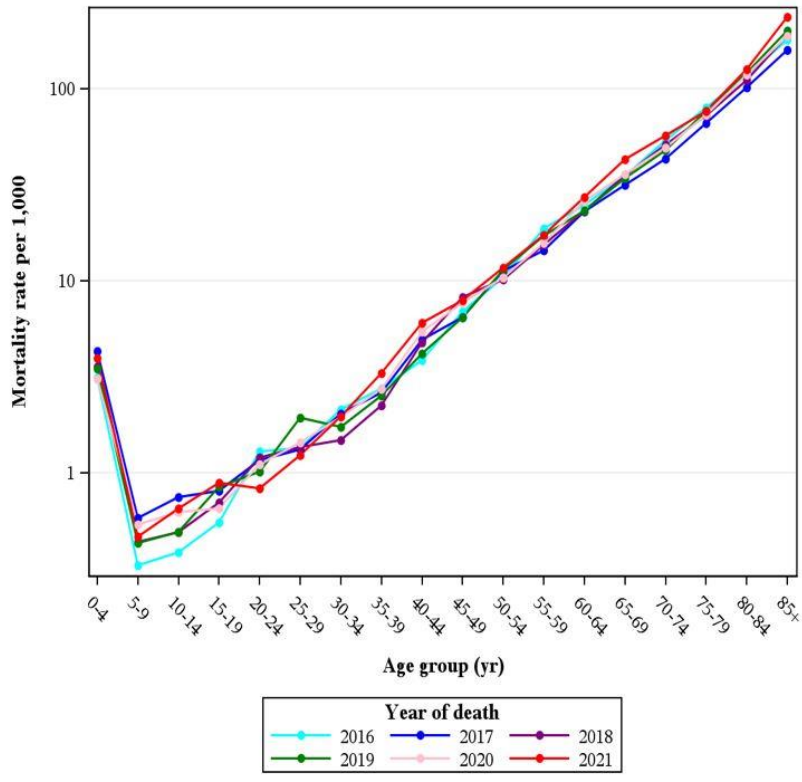


Figure 3.3. Age-specific mortality rates, females, 2016-21



Number of Deaths by Administrative Division of Usual Residence

Tables 3.5 presents annual numbers of deaths by Administrative Division (Northern, Central, Eastern and Western) of usual residence of the deceased for 2016-21; and mortality rates by Administrative Division for 2017 using the 2017 Fiji census as the denominator are also shown. As population projections by Administrative Division were not available for 2016 or 2018-21 at the time of publication of this report, Divisional mortality rates could not be published for these years. Fiji Bureau of Statistics is working to produce population projections by Administrative Division in the near future. The MHMS mortality dataset contains a number of deaths noted as being overseas deaths, as outlined in Table 3.5. The reason for inclusion of overseas deaths is being examined by the MHMS to determine the appropriateness of their inclusion in the national mortality database.

During 2016-20, the number of deaths annually in all divisions remained stable with small fluctuations. In 2021, mortality in the Central Division increased sharply by 23%, from 3,302 deaths in 2020 to 4,065 in 2021, an increase of 763 deaths. In the Western Division mortality increased by 10% from 3,074 deaths in 2020 to 3,382 in 2021, an increase of 308 deaths. In the Northern Division there was no marked mortality increase in 2021, whilst in the Eastern Division the number of deaths declined in 2021 to its lowest level for the six-year period. The 2021 increase in deaths in the Central and Western Divisions is consistent with the distribution of the 829 recorded COVID-19 deaths during that year, where 71% were residents of the Central Division, 28% from the Western Division, and less than 1% resident in the Northern and Eastern Divisions. Whilst only three of the recorded COVID-19 deaths in 2021 were residents of the Eastern Division, the reason for the overall 2021 decline during the peak of the COVID-19 pandemic requires further investigation.

In 2017 the Western and Northern Divisions had the highest mortality rates at 8.2 and 8.1 deaths per 1,000 population, respectively. Mortality in the Central Division was 7.6 deaths per 1,000, and in the Eastern Division it was 4.8 per 1,000. The lower mortality rate in the Eastern Division requires further investigation but may partly be explained by the predominance of subsistence farming and the absence of fast-food establishments in the Eastern Division, which may result in lower non-communicable disease mortality.

Table 3.5. Number of deaths (2016-21) and mortality rates (2017) by Division of usual residence

Division	2016 n	2017 n	2018 N	2019 n	2020 n	2021 n	2017 rate
Central	3,181	2,884	3,184	3,261	3,302	4,065	7.6
Western	2,989	2,755	2,948	2,948	3,074	3,382	8.2
Northern	1,147	1,075	1,137	1,124	1,175	1,193	8.1
Eastern	238	180	203	222	215	167	4.8
Overseas	33	31	38	36	18	8	NA

n = number of deaths; rate = mortality rate per 1,000 population; NA = not applicable
2017 population census used as denominator population in the calculation of 2017 rates

Number of Deaths in Health Facilities and the Community

Figure 3.4 shows the proportion of deaths annually between 2016-21 occurring in health facilities and in the community. During 2016-20, the largest proportion of deaths occurred in health facilities, 51-54% of deaths annually. In 2021 during the peak of the COVID-19 pandemic in Fiji the proportion of deaths in health facilities declined to 49%. This was primarily the result of a number of partial or complete health facility closures across the country due to shortages of human and other resources during the pandemic. Deaths of unknown location remained below 1% throughout 2016-2021.

Figure 3.4. Percentage distribution of deaths in health facilities and the community, 2016-21

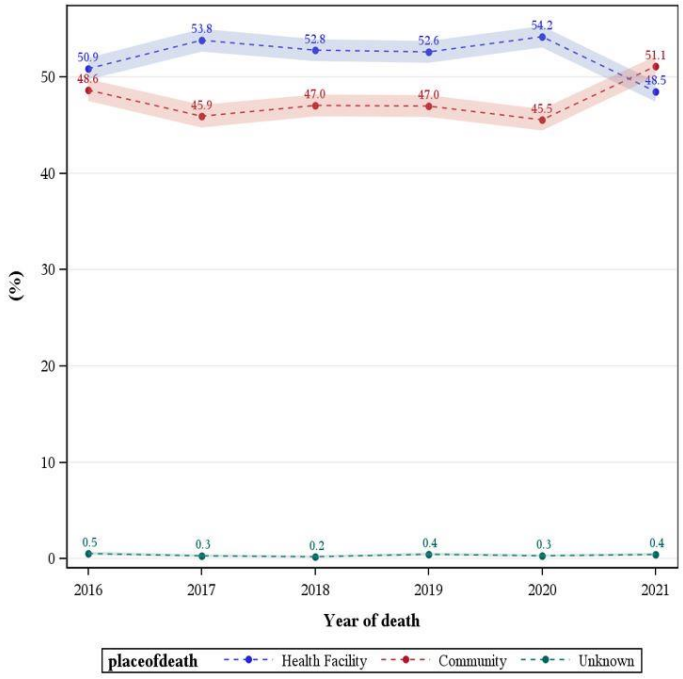


Table 3.6 presents the annual number and percentage distribution of deaths in health facilities and the community by the Administrative Division of usual residence of the deceased during 2016-21. The Western Division had the highest proportion of health facility deaths at 54-59% during 2016-20, followed by decline to 53% in 2021. In the Central Division 50-53% of deaths occurred in health facilities during 2016-20 and declined to 46% in 2021. In the Northern Division 48-50% of deaths were in health facilities during 2016-20, with a small decline to 47% in 2021. In the Eastern Division the proportion of deaths in health facilities was 29-37% during 2016-20, and 32% in 2021.

Differences in the geography of the Administrative Divisions of Fiji may partly explain variation in the proportion of deaths occurring in health facilities compared to the community. In the Central and Western Divisions, with higher proportions of deaths in health facilities, the majority of the population in these divisions live on Fiji's main island of Viti Levu. Travel to health facilities is accessible by road, including to the largest health facilities in Fiji located in the Central Division (CWM Divisional Hospital) and the Western Division (Lautoka Divisional Hospital). By comparison, the geography in the Northern and Eastern Divisions comprises many islands, and for a large proportion of the population, particularly in the Eastern Division, accessing a health facility often involves travelling by boat to a different island.

Table 3.6. Number and percentage distribution of deaths in health facilities compared to the community, by Administrative Division of usual residence, 2016-21

Division	2016		2017		2018		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
Health Facilities												
Central	1,584	49.8	1,512	52.4	1,633	51.3	1,637	50.2	1,736	52.6	1,850	45.5
Western	1,624	54.3	1,589	57.7	1,680	57.0	1,736	58.8	1,820	59.2	1,806	53.4
Northern	557	48.6	549	51.1	555	48.8	539	48.0	587	50.0	558	46.8
Eastern	77	32.4	59	32.8	75	36.9	65	29.3	63	29.3	54	32.3
Total	3,842	50.9	3,709	53.8	3,943	52.8	3,977	52.6	4,206	54.2	4,268	48.5
Community												
Central	1,580	49.7	1,362	47.2	1,545	48.5	1,608	49.3	1,556	47.1	2,185	53.8
Western	1,354	45.3	1,163	42.2	1,264	42.9	1,201	40.7	1,248	40.6	1,570	46.4
Northern	579	50.5	520	48.4	579	50.9	583	51.9	584	49.7	635	53.2
Eastern	161	67.6	121	67.2	127	62.6	157	70.7	150	69.8	112	67.1
Total	3,674	48.6	3,166	45.9	3,515	47.0	3,549	47.0	3,538	45.6	4,502	51.1
Unknown												
Central	17	0.5	10	0.3	6	0.2	16	0.5	10	0.3	30	0.7
Western	11	0.4	3	0.1	4	0.1	15	0.5	6	0.2	6	0.2
Northern	11	1.0	6	0.6	3	0.3	2	0.2	4	0.3	0	0.0
Eastern	0	0.0	0	0.0	1	0.5	0	0.0	2	0.9	1	0.6
Total	39	0.5	19	0.3	14	0.2	33	0.4	22	0.3	37	0.4

n = total number of deaths; % = distribution of deaths; 165 deaths recorded as overseas were excluded from analysis

Neonatal, Infant and Under-Five Mortality

Neonatal deaths are defined as occurring during the first 28 days of life; infant deaths are before a baby reaches one year of age; and under-five deaths are before a child reaches five years of age. The neonatal mortality rate (NMR), infant mortality rate (IMR) and the under-five mortality rate (U5MR) are calculated by dividing these deaths by the number of live births that occurred within the same time period and are expressed as a rate of deaths per 1,000 live births.

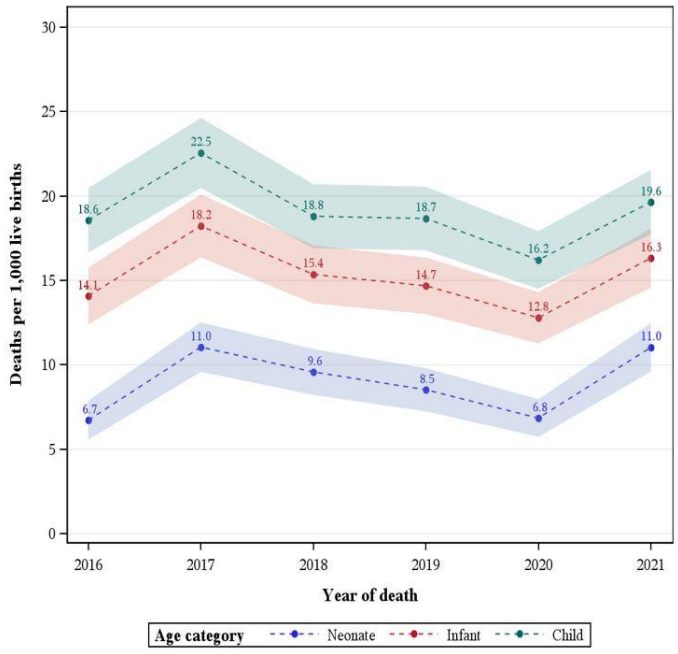
Table 3.7 and Figure 3.5 present the annual number of neonatal, infant and under-five deaths, and the NMR, IMR and U5MR per 1,000 live births during 2016-21. In all three measures of child mortality fluctuations occurred during the six-year period, but the overall mortality patterns showed a plateau. During 2016-21, the NMR varied between 6.7-11.00 deaths per 1,000 live births, the IMR varied between 12.8-18.2 deaths per 1,000 live births, and the U5MR varied between 16.2-22.5 deaths per 1,000 live births. Child mortality was not greatly affected by the peak of the COVID-19 pandemic in Fiji in 2021, with five COVID-19 deaths recorded in children under-five years of age.

Table 3.7. Neonatal, infant and under-five mortality, 2016-21

Year	Live births	Neonatal mortality			Infant mortality			Under-five mortality		
		n	Rate	95%CI	n	Rate	95%CI	n	Rate	95%CI
2016	19,180	129	6.7	5.6-7.9	270	14.1	12.4-15.7	356	18.6	16.7-20.5
2017	19,646	217	11.0	9.6-12.5	358	18.2	16.4-20.1	443	22.5	20.5-24.6
2018	19,690	189	9.6	8.2-10.9	303	15.4	13.6-17.1	371	18.8	16.9-20.7
2019	19,825	169	8.5	7.2-9.8	291	14.7	13.0-16.4	370	18.7	16.8-20.5
2020	21,040	144	6.8	5.7-8.0	269	12.8	11.3-14.3	341	16.2	14.5-17.9
2021	20,217	223	11.0	9.6-12.5	330	16.3	14.6-18.1	397	19.6	17.7-21.5

n = total number of deaths; rates are per 1,000 live births. Live births obtained from the Ministry of Health's CMRIS database used as the denominator in all calculations.

Figure 3.5. Neonatal, infant and under-five mortality rates, 2016-21



Crude Death Rates and Age-Standardised Mortality Rates

Crude death rates and age-standardised mortality rates are two common summary measures used to describe levels of mortality in a population. Crude death rates are calculated by dividing the total number of deaths in the population during a specific time period by the total population during the same time period. In populations where there is a lack of information about the age of the deceased, crude death rates may be one of the few mortality statistics available.

Table 3.8 shows annual crude death rates plateauing in both sexes during 2016-20, followed by a sharp increase in 2021. Between 2016 and 2020 the crude death rate fluctuated between 8.3 to 9.4 deaths per 1,000 males, before a sharp increase to 10.3 in 2021; it fluctuated between 7.3 to 8.2 deaths per 1,000 females during 2016-20, before a sharp increase to 9.2 in 2021. In 2017 there was a sharp decline in the crude death rate in both sexes, followed by an increase in 2018. There are currently no epidemiological explanations for the sharp decline in 2017, and it is unclear if it is due to stochastic or other variation in the data, or a systemic change in population mortality.

Table 3.8. Crude death rate, by sex, 2016-21

Year	Male		Female		Total	
	Rate	95%CI	Rate	95%CI	Rate	95%CI
2016	9.4	9.1-9.7	7.8	7.6-8.1	8.6	8.4-8.8
2017	8.3	8.0-8.6	7.3	7.1-7.6	7.8	7.6-8.0
2018	9.1	8.8-9.4	7.8	7.5-8.0	8.4	8.3-8.6
2019	9.0	8.7-9.2	8.0	7.7-8.3	8.5	8.3-8.7
2020	9.1	8.9-9.4	8.2	7.9-8.4	8.7	8.5-8.9
2021	10.3	10.0-10.6	9.2	8.9-9.5	9.8	9.6-10.0

Crude death rates are per 1,000 population. 2017 census used as the population denominator for 2017 rates, population projections from Fiji Bureau of Statistics used for all other years.

With information available about age at death, the more informative summary measure of mortality is an age-standardised mortality rate, which is calculated by weighting age-specific death rates by a standard population. Age-standardised rates allow the comparison of mortality rates over time or between two different populations without differences or changes in the age structure of the populations influencing the comparison. This is important as a greater proportion of older people in the population structure (as health conditions improve and people live longer) would result in a higher number of deaths (as everyone must eventually die). Under identical health and social conditions, populations with a greater proportion of older people have higher crude death rates than populations with higher proportions of young people.

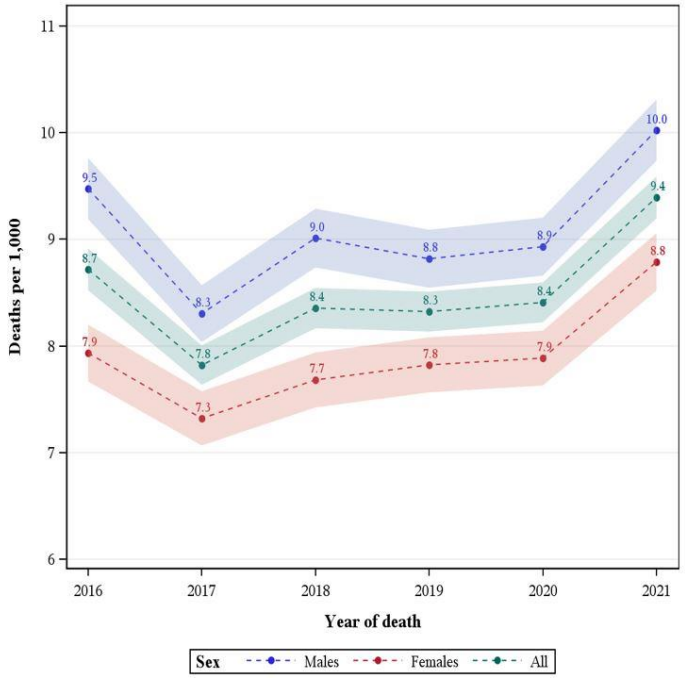
Table 3.9 and Figure 3.6 present age-standardised mortality rates for Fiji during 2016-21, using the 2017 Fiji census population as the standard population. The age-standardised rates fluctuated in both sexes during 2016-20, but the overall pattern was a plateau varying between 8.3-9.5 deaths per 1,000 males and 7.3-7.9 deaths per 1,000 in females. In both sexes there was a sharp increase in 2021 during the peak of the COVID-19 pandemic of around 1 death per 1,000 population, reaching 10 deaths per 1,000 males and 8.8 deaths per 1,000 females. In 2017 there was a sharp decline in the age-standardised mortality rate in both sexes, followed by an increase in 2018. There are currently no epidemiological explanations for the sharp decline in 2017, and it is unclear if it is due to stochastic or other variation in the data, or a systemic change in population mortality.

Table 3.9. Age-standardised mortality rate (2017 census as the standard), by sex, 2016-21

Year	Male		Female		Total	
	Rate	95%CI	Rate	95%CI	Rate	95%CI
2016	9.5	9.2-9.8	7.9	7.7-8.2	8.7	8.5-8.9
2017	8.3	8.0-8.6	7.3	7.1-7.6	7.8	7.6-8.0
2018	9.0	8.7-9.3	7.7	7.4-7.9	8.4	8.2-8.5
2019	8.8	8.5-9.1	7.8	7.6-8.1	8.3	8.1-8.5
2020	8.9	8.7-9.2	7.9	7.6-8.1	8.4	8.2-8.6
2021	10.0	9.7-10.3	8.8	8.5-9.1	9.4	9.2-9.6

Rates are per 1,000 population. 2017 Fiji census used as denominator.

Figure 3.6. Age-standardised mortality rate (2017 census as the standard), by sex, 2016-21



Life Expectancy at Birth

Life expectancy at birth indicates the average number of years a newborn would live if the current patterns of mortality at the time of its birth were to remain the same throughout the person's life. Table 3.10 and Figure 3.7 present annual estimates of life expectancy at birth for males, females and both sexes combined during 2016-21. Lifetables are presented by sex and year in Appendix 6.

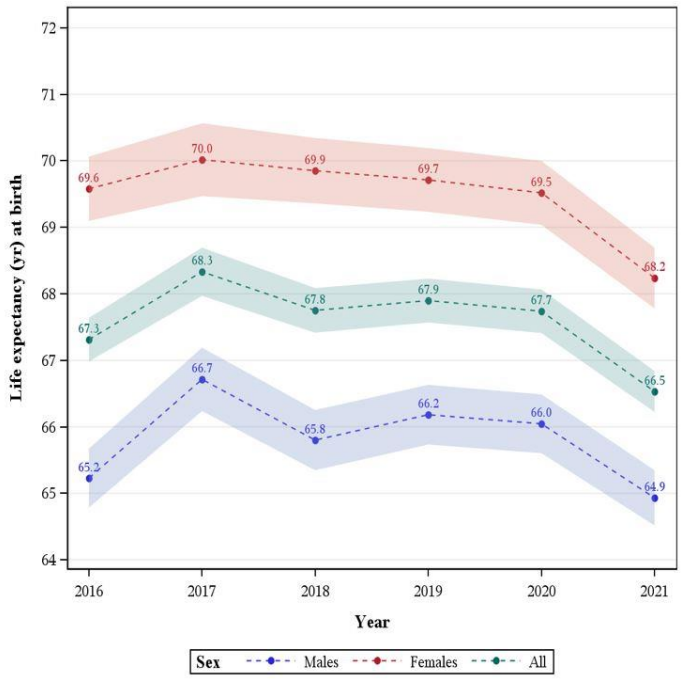
In females, life expectancy at birth plateaued at 69-70 years during 2016-20, and then declined by more than one year from 69.5 in 2020 to 68.2 years in 2021 during the peak of the COVID-19 pandemic in Fiji. In males, life expectancy at birth fluctuated during 2016-20 but the overall pattern was a plateau at around 65-66 years, followed by a decline of more than one year, from 66.0 in 2020 to 64.9 in 2021. In 2017 there was a sharp increase in male life expectancy by more than one year, followed by decline in 2018, reflecting the mortality reduction for that year. There are currently no epidemiological explanations for the steep increase in male life expectancy in 2017, and it is unclear if it is due to stochastic or other variation in the data, or a systemic change in population mortality.

Life expectancy at birth remained higher in females compared to males throughout 2016-21, with females estimated to live on average more than three to four years longer than males. This difference between male and female life expectancy at birth was statistically significant, with no sex-specific 95% confidence intervals overlapping in any year between 2016-21.

Table 3.10. Life expectancy at birth (LE_0), by sex, 2016-21

Year	Male		Female		Total	
	LE	95%CI	LE	95%CI	LE	95%CI
2016	65.2	64.8-65.7	69.6	69.1-70.1	67.3	67.0-67.6
2017	66.7	66.2-67.2	70.0	69.5-70.6	68.3	68.0-68.7
2018	65.8	65.3-66.3	69.9	69.4-70.3	67.8	67.4-68.1
2019	66.2	65.7-66.6	69.7	69.2-70.2	67.9	67.6-68.2
2020	66.0	65.6-66.5	69.5	69.0-70.0	67.7	67.4-68.1
2021	64.9	64.5-65.3	68.2	67.8-68.7	66.5	66.2-66.8

Figure 3.7. Life expectancy at birth (LE_0), by sex, 2016-21



Life Expectancy at Age 40

Life expectancy at age 40 is the average number of years a person aged 40 would be expected to live if they continued to experience the current mortality patterns for the rest of their life. It is a better indicator of premature adult mortality than life expectancy at birth as it is not influenced to the same extent by levels and changes in child mortality. Table 3.11 and Figure 3.8 present annual estimates of life expectancy at age 40 for males, females and both sexes combined during 2016-21.

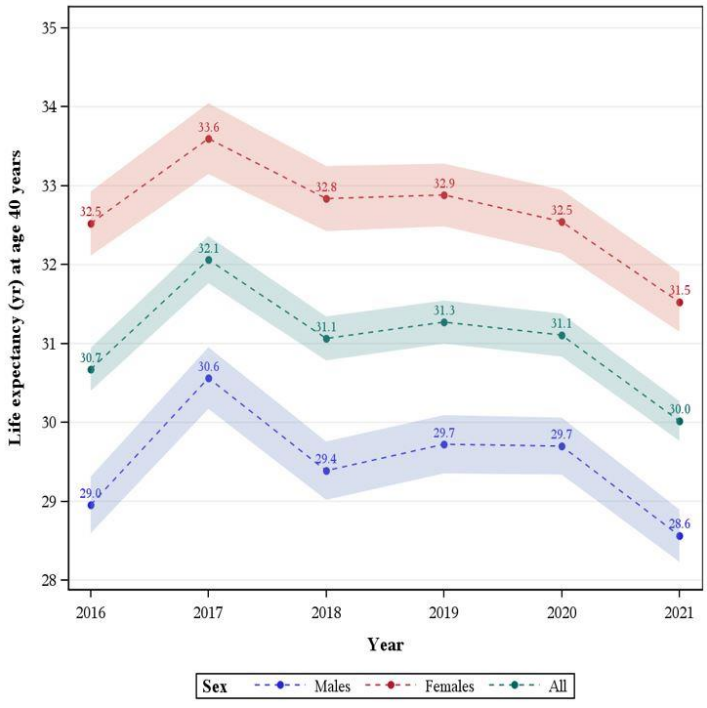
In females, the overall pattern in life expectancy at age 40 during 2016-20 was a plateau at 32-33 years, and then decline by one year in 2021, from 32.5 in 2020 to 31.5 in 2021 during the peak of the COVID-19 pandemic in Fiji. In males, the overall pattern was a plateau at 29-30 years during 2016-20, and then decline from 29.7 in 2020 to 28.6 in 2021. In 2017 there was a sharp increase in male and female life expectancy at age 40, followed by decline in 2018, reflecting the 2017 mortality decrease. Currently there are no epidemiological explanations for the steep increases in 2017, and it is unclear if it is due to stochastic or other variation in the data, or a systemic change in population mortality.

Life expectancy at 40 remained higher in females compared to males throughout 2016-21, with females estimated to live on average three years longer than males. This difference between male and female life expectancy at 40 was statistically significant, indicated by no sex-specific 95% confidence intervals overlapping in any year between 2016-21.

Table 3.11. Life expectancy at age 40 (LE_{40}), by sex, 2016-2021

Year	Male		Female		Total	
	LE	95%CI	LE	95%CI	LE	95%CI
2016	29.0	28.6-29.3	32.5	32.1-32.9	30.7	30.4-30.9
2017	30.6	30.2-31.0	33.6	33.1-34.0	32.1	31.8-32.4
2018	29.4	29.0-29.8	32.8	32.4-33.2	31.1	30.8-31.3
2019	29.7	29.4-30.1	32.9	32.5-33.3	31.3	31.0-31.5
2020	29.7	29.3-30.1	32.5	32.1-32.9	31.1	30.8-31.4
2021	28.6	28.2-28.9	31.5	31.1-31.9	30.0	29.8-30.3

Figure 3.8. Life expectancy at age 40 (LE_{40}), by sex, 2016-21



CHAPTER FOUR: CAUSES OF DEATH

Chapter Four presents causes of death by sex and age group for the population of Fiji during 2016-21, based on mortality data collected by the MHMS. Each table presented in this chapter is ordered from the most to the least frequent cause-of-death category (i.e., ICD-10 chapter). For each cause-of-death category, annual cause-specific mortality rates per 100,000 population are shown by sex for all ages, and for the 0-4 (both sexes combined), 5-14 (both sexes combined), 15-34, 35-59 and 60+ year age-groups. Annual counts of deaths are shown for the top ten cause-of-death categories in each age group, and for the sub-groups contributing the most deaths to those categories. Deaths due to COVID-19 have been outlined in all tables under the 'Codes for special purposes' chapter (U00-U85), which during 2016-21 was exclusively used to record COVID-19 deaths. Denominators used in the calculation of cause-specific mortality rates for 2017 are derived from the 2017 Fiji census, and for 2016 and 2018-21 from population projections produced by the Fiji Bureau of Statistics (Appendix 5).

As outlined in Chapter Three (*All-cause Mortality*), due to the sharp increase in mortality in 2021 during the COVID-19 pandemic (829 recorded COVID-19 deaths) it was determined that presentation of annual cause-specific mortality counts and rates would be more appropriate (and informative) for this vital statistics report in order to understand the effect that the pandemic had not only on deaths recorded as COVID-19, but possible effects on other causes of death (e.g. cardiovascular diseases). Moreover, the mortality data was assessed to be of sufficient size (around 7,500 deaths per year) to generate accurate annual cause-specific mortality estimates by ICD-10 cause-of-death categories (chapters). When these cause-of-death categories were further disaggregated into the subgroups of diseases and conditions that comprise each category (e.g., breast cancer as a subgroup of the cancer category) it was determined that the production of annual rates would be prone to stochastic or other variation due to small numbers in many of the disaggregations. Therefore, the number of deaths is shown for the subgroups contributing the most deaths to the main cause-of-death categories, but mortality rates have not been calculated for these. Aspects of the cause-specific mortality analyses that may be particularly prone to stochastic or other variation have also been highlighted.

Deaths classified as symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (i.e., deaths of unknown cause) account for 2.5% of the total deaths in males and 3.5% of the total deaths in females during 2016-21. Across the different age groups this varied from a low of around 2% in males and females aged 15-34 years, to 3.5% in males and 5% in females aged 60+ years. Because deaths of unknown cause are relatively low, they have not been proportionately redistributed, and are displayed as a separate cause-of-death category in all tables in this chapter.

The MHMS mortality dataset for 2016-21 contains stillbirth records, identifiable by the underlying cause-of-death being recorded as ICD-10 code P95 (stillbirth) or a stillbirth variable being selected. Stillbirths were excluded from all mortality analyses but are outlined by year and sex in Appendix 3. Maternal deaths are identified in the 2016-21 dataset by the underlying cause of death being recorded as ICD-10 codes O00-O99 and/or the separate maternal death variable being selected. This system has under-enumerated maternal deaths during 2016-21, particularly during the most recent years where only one maternal death was identified each year in 2020-21. The MHMS has recently introduced a new system for identifying and reviewing maternal deaths, including obstetric committee review of mortality records and greater alignment with WHO maternal mortality coding guidelines for ICD-10 [10].

[10] World Health Organisation. The WHO application of ICD-10 to deaths during pregnancy, childbirth and the puerperium: ICD-MM. Geneva; WHO: 2012.

Causes of Death in Men, All Ages, 2016-21

Cause-specific mortality rates (per 100,000 males) categorised by ICD-10 cause-of-death chapter for 2016-21 in the total male population are shown in Figure 4.1 (leading cause-of-death categories and COVID-19) and Table 4.1 (all cause-of-death categories). Table 4.2 shows the number of annual deaths in these main cause-of-death categories, and those sub-groups contributing the most deaths to each category.

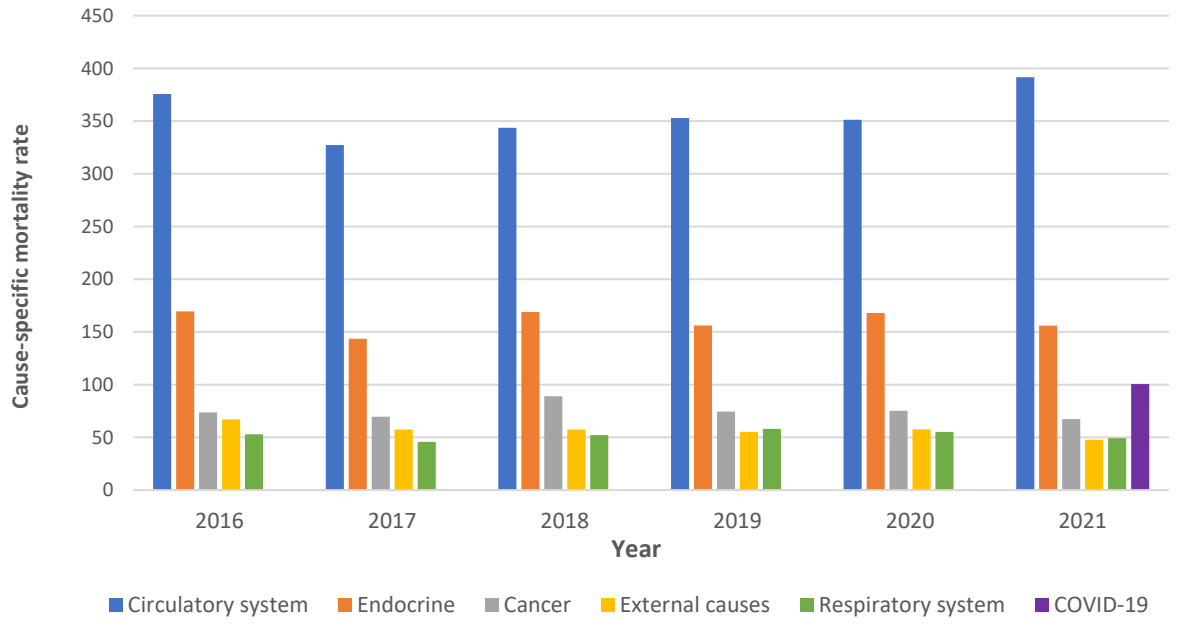
Diseases of the circulatory system was the leading cause-of-death category across all years, with the cause-specific mortality rate fluctuating between 327-392 deaths per 100,000 males. Ischaemic heart diseases contributed around 60% of the deaths in this category, followed by cerebrovascular diseases (≠16%) and then hypertensive diseases (≠11%). Apart from a sharp increase in ischaemic heart disease deaths in 2021, the mortality patterns for the remaining individual circulatory diseases shown in Table 4.2 indicate a plateau.

The second leading cause-of-death category in all years was endocrine, nutritional and metabolic diseases, with the cause-specific mortality rate fluctuating between 144-170 deaths per 100,000 males. More than 90% of the deaths in this category were due to diabetes mellitus, with the mortality pattern generally indicating a plateau in diabetes deaths during 2016-21.

Cancers were the third leading cause-of-death in all years apart from 2021, with the cause-specific mortality rate fluctuating between 67-89 deaths per 100,000 males during 2016-21. Prostate cancer contributed the most deaths (≠14%), followed by liver cancer (≠12%), then leukaemia (≠7%). Approximately 16% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the number of cancer deaths from specified sites (e.g., prostate) are likely to be underestimated.

In 2021, COVID-19 deaths surpassed cancer deaths to be the third leading cause of death in males. The cause-specific mortality rate for COVID-19 in 2021 during the peak of the epidemic in Fiji was 101 deaths per 100,000 males. One COVID-19 death was recorded in males in 2020, and 460 in 2021.

Figure 4.1. Male cause-specific mortality rates (per 100,000 population) for the top-five cause-of-death categories and COVID-19, all ages, 2016-21



Cause-specific mortality rate per 100,000 males; Circulatory system = Diseases of the circulatory system; Endocrine = Endocrine, nutritional, metabolic diseases; External causes = External causes of mortality; Respiratory system = Diseases of the respiratory system.

Table 4.1. Male cause-specific mortality rates (per 100,000 population), all ages, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	I00-I99	Diseases of the circulatory system	375.6	327.2	343.7	352.9	351.2	391.5
2	E00-E88	Endocrine, nutritional, metabolic diseases	169.6	143.6	168.8	156.1	167.9	156.0
3	C00-D48	Cancers	73.7	69.6	89.0	74.4	75.2	67.4
4	V01-Y99	External causes of mortality	67.0	57.5	57.5	55.2	57.6	47.7
5	J00-J98	Diseases of the respiratory system	52.9	45.7	52.1	58.1	55.2	49.2
6	A00-B99	Certain infectious and parasitic diseases	46.6	42.4	42.6	51.7	47.9	54.7
7	N00-N99	Diseases of the genitourinary system	24.9	21.2	28.0	25.8	26.8	34.8
8	K00-K92	Diseases of the digestive system	28.9	25.4	24.2	21.9	25.7	25.8
9	P00-P96	Conditions originating in perinatal period	14.1	23.2	21.5	22.7	25.5	24.1
10	L00-L98	Diseases of skin and subcutaneous tissue	14.3	12.0	13.8	12.4	15.4	19.0
11	G00-G98	Diseases of the nervous system	13.2	14.0	14.9	12.8	14.1	14.9
12	Q00-Q99	Congenital and chromosomal abnormalities	10.5	11.4	10.0	9.9	9.7	9.0
13	D50-D89	Diseases of blood and immune mechanism	6.7	8.5	9.3	9.7	7.9	8.7
14	M00-M99	Diseases of the musculoskeletal system	8.7	6.0	8.7	7.9	8.4	6.3
15	F00-F99	Mental and behavioural disorders	2.5	1.3	2.2	1.5	2.0	1.5
16	H60-H93	Diseases of the ear and mastoid process	0.0	0.4	0.2	0.0	0.9	0.2
17	H00-H59	Diseases of the eye and adnexa	0.4	0.4	0.2	0.0	0.0	0.4
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.2	101
-	R00-R99	Not elsewhere classified (unknown cause)	28.9	21.2	23.1	23.0	23.5	19.2

Table 4.2. Number of male deaths by cause, all ages, 2016-21

ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021	Total
I00-I99	**Diseases of the circulatory system**	**1,677**	**1,468**	**1,549**	**1,598**	**1,598**	**1,790**	**9,680**
I20-I25	Ischaemic heart diseases	955	874	948	969	988	1,214	5,948
I60-I69	Cerebrovascular diseases	280	257	240	255	269	245	1,546
I10-I15	Hypertensive diseases	208	171	186	146	168	158	1,037
I30-I52	Other heart diseases	187	129	125	171	121	122	855
-	All others	47	37	50	57	52	51	294
E00-E88	**Endocrine, nutritional, metabolic diseases**	**757**	**644**	**761**	**707**	**764**	**713**	**4,346**
E08-E14	Diabetes mellitus	677	577	695	637	676	657	3,919
-	All others	80	67	66	70	88	56	427
C00-D48	**Cancers**	**329**	**312**	**401**	**337**	**342**	**308**	**2,029**
C61	Prostate cancer	37	41	46	45	58	58	285
C22	Liver cancer	42	38	48	43	40	34	245
C91-C95	Leukaemia	22	19	30	25	24	18	138
C76-C80 [1]	Ill-defined and/or unspecified site	44	59	55	54	58	54	324
-	All others	184	155	222	170	162	144	1,037
V01-Y99	**External causes of mortality**	**299**	**258**	**259**	**250**	**262**	**218**	**1,546**
W75-W76	Accidental suffocation, hanging, strangulation	26	21	42	50	58	53	250
V00-V89	Motor vehicle accident	50	58	42	38	31	24	243
W65-W74	Accidental drowning and submersion	26	26	34	34	42	31	193
X60-X84	Intentional self-harm (suicide)	6	14	19	10	13	6	68
X58-X59 [2]	Ill-defined cause and/or undetermined intent	93	88	45	86	68	43	423
-	All others	98	51	77	32	50	61	369
J00-J98	**Diseases of the respiratory system**	**236**	**205**	**235**	**263**	**251**	**225**	**1,415**
J40-J47	Chronic lower respiratory disease	129	129	136	129	117	107	747
J09-J18	Influenza and pneumonia	73	51	58	76	61	63	382
-	All others	34	25	41	58	73	55	286
A00-B99	**Certain infectious and parasitic diseases**	**208**	**190**	**192**	**234**	**218**	**250**	**1,292**
A40-A41	Sepsis	108	99	98	148	120	127	700
A15-A19	Tuberculosis	23	23	21	24	26	18	135
A09	Gastroenteritis and colitis	34	25	21	21	12	17	130
-	All others	43	43	52	41	60	88	327
N00-N99	**Diseases of the genitourinary system**	**111**	**95**	**126**	**117**	**122**	**159**	**730**
K00-K92	**Diseases of the digestive system**	**129**	**114**	**109**	**99**	**117**	**118**	**686**
P00-P96	**Conditions originating in perinatal period**	**63**	**104**	**97**	**103**	**116**	**110**	**593**
L00-L98	**Diseases of the skin and subcutaneous tissue**	**64**	**54**	**62**	**56**	**70**	**87**	**393**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**1**	**460**	**461**
U07	Covid-19	0	0	0	0	1	460	461
R00-R99	**Not elsewhere classified (unknown cause)**	**129**	**95**	**104**	**104**	**107**	**88**	**627**
-	**All other causes combined**	**188**	**189**	**205**	**190**	**195**	**188**	**1,155**
	TOTAL	**4,190**	**3,728**	**4,100**	**4,058**	**4,163**	**4,714**	**24,953**

[1] C76-80 and D37-49 included in this subcategory; [2] X58-59 and Y10-34 included in this subcategory.

Causes of Death in Females, All Ages, 2016-21

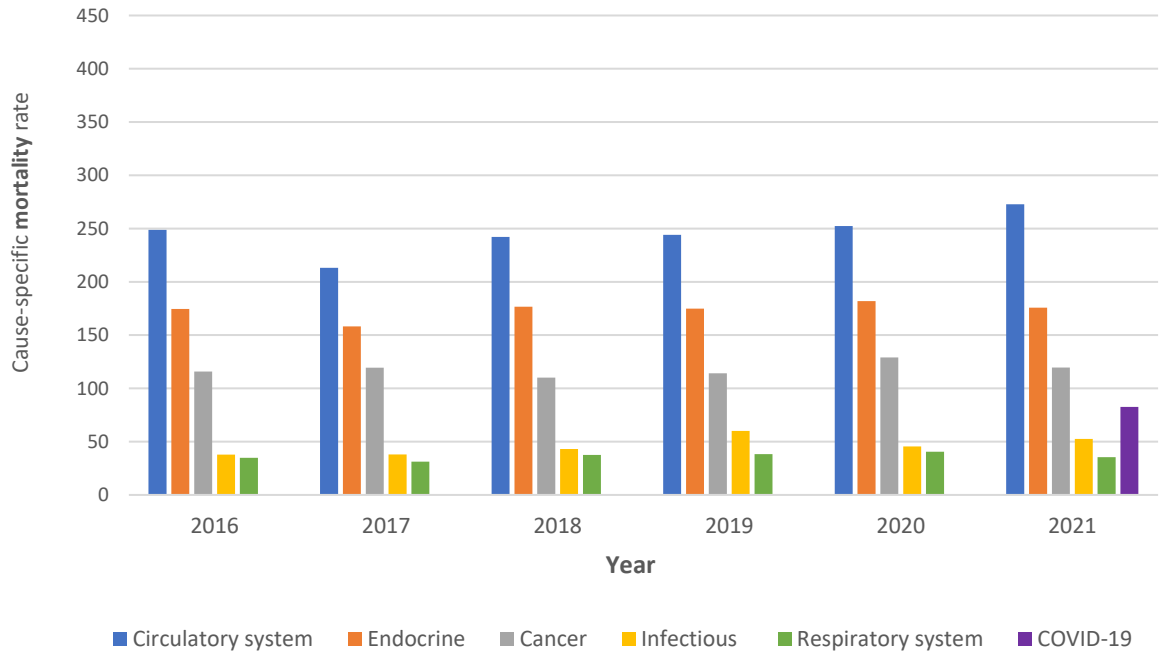
Diseases of the circulatory system was the leading cause-of-death-category across all years in women, with the mortality rate fluctuating between 213-273 deaths per 100,000 females (Figure 4.2, Table 4.3). Ischaemic heart diseases contributed around 45% of the deaths in this category, followed by cerebrovascular diseases (≠25%), then hypertensive diseases (≠16%) (Table 4.4). Apart from a sharp increase in ischaemic heart disease deaths in 2021, the mortality pattern for the remaining individual circulatory diseases shown in Table 4.4 indicate plateaux.

The second leading cause-of-death category in all years was endocrine, nutritional and metabolic diseases, with the mortality rate fluctuating between 158-182 deaths per 100,000 females. More than 93% of the deaths in this category were due to diabetes mellitus, with the mortality pattern generally indicating plateaux in diabetes deaths during 2016-21.

Cancers were the third leading cause-of-death, with the mortality rate fluctuating between 110-129 deaths per 100,000 females during 2016-21. Breast cancer contributed the most deaths (≠28%), followed by cervical cancer (≠17%), then ovarian cancer (≠7%). Approximately 11% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the number of cancer deaths from specified sites (e.g., breast) are likely to be underestimated.

In 2021, the sharp increase in COVID-19 deaths made it the fourth leading cause-of-death category in females. The cause-specific mortality rate for COVID-19 in 2021 during the peak of the epidemic in Fiji was 83 deaths per 100,000 females. One COVID-19 female death was recorded in 2020, and 370 in 2021.

Figure 4.2. Female cause-specific mortality rates (per 100,000 population) for the top-five cause-of-death categories and COVID-19, all ages, 2016-21



Cause-specific mortality rate per 100,000 females; y-axis scale the same as male figure (4.1) to enable easier comparison by sex; Circulatory system = Diseases of the circulatory system; Endocrine = Endocrine, nutritional, metabolic diseases; Infectious = Certain infectious and parasitic diseases; Respiratory system = Diseases of the respiratory system.

Table 4.3. Female cause-specific mortality rates (per 100,000 population), all ages, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	I00-I99	Diseases of the circulatory system	248.8	213.2	242.2	244.2	252.4	272.9
2	E00-E88	Endocrine, nutritional, metabolic diseases	174.6	158.2	176.6	174.8	181.9	175.7
3	C00-D48	Cancers	115.8	119.4	110.0	114.1	129.0	119.5
4	A00-B99	Certain infectious and parasitic diseases	37.8	38.0	43.1	60.0	45.5	52.6
5	J00-J98	Diseases of the respiratory system	34.8	31.2	37.6	38.3	40.5	35.4
6	V01-Y99	External causes of mortality	32.1	34.8	35.5	32.8	28.1	23.9
7	N00-N99	Diseases of the genitourinary system	20.5	17.9	17.1	19.9	21.6	24.8
8	K00-K92	Diseases of the digestive system	17.5	14.4	17.8	15.9	16.7	19.5
9	P00-P96	Conditions originating in perinatal period	8.8	16.7	15.3	18.8	14.6	23.3
10	L00-L98	Diseases of skin and subcutaneous tissue	19.8	16.3	13.7	11.1	14.6	21.7
11	G00-G98	Diseases of the nervous system	9.2	14.2	10.7	7.5	13.3	10.3
12	M00-M99	Diseases of the musculoskeletal system	11.1	8.5	9.8	12.9	10.4	10.3
13	D50-D89	Diseases of blood and immune mechanism	11.8	8.7	11.4	7.0	11.5	8.7
14	Q00-Q99	Congenital and chromosomal abnormalities	5.8	11.7	7.5	7.7	8.1	7.2
15	F00-F99	Mental and behavioural disorders	1.4	1.6	1.8	1.8	1.8	2.9
16	O00-O99	Pregnancy, childbirth and the puerperium	0.5	1.6	0.7	0.7	0.0	0.2
17	H60-H93	Diseases of the ear and mastoid process	0.2	0.0	0.5	0.0	0.2	0.7
18	H00-H59	Diseases of the eye and adnexa	0.2	0.0	0.0	0.5	0.2	0.4
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.2	82.6
-	R00-R99	Not elsewhere classified (unknown cause)	33.0	26.4	25.7	32.2	24.5	25.3

Table 4.4. Number of female deaths by cause, all ages, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
I00-I99	**Diseases of the circulatory system**	**1,079**	**930**	**1,063**	**1,078**	**1,121**	**1,219**	**6,490**
I20-I25	Ischaemic heart diseases	393	399	478	436	465	662	2,833
I60-I69	Cerebrovascular diseases	291	244	252	270	309	263	1,629
I10-I15	Hypertensive diseases	232	144	169	191	189	133	1,058
I30-I52	Other heart diseases	111	98	112	123	88	85	617
-	All others	52	45	52	58	70	76	353
E00-E88	**Endocrine, nutritional, metabolic diseases**	**757**	**690**	**775**	**772**	**808**	**785**	**4,587**
E08-E14	Diabetes Mellitus	705	645	707	722	760	733	4,272
-	All others	52	45	68	50	48	52	315
C00-D48	**Cancers**	**502**	**521**	**483**	**504**	**573**	**534**	**3,117**
C50	Breast cancer	149	138	128	124	173	167	879
C53	Cervical cancer	93	81	71	104	97	80	526
C56	Ovarian cancer	29	41	37	37	48	38	230
C76-C80 [1]	Ill-defined and/or unspecified site	56	63	51	43	58	63	334
-	All others	175	198	196	196	197	186	1,148
A00-B99	**Certain infectious and parasitic diseases**	**164**	**166**	**189**	**265**	**202**	**235**	**1,221**
A40-A41	Sepsis	106	100	122	200	130	166	824
A09	Gastroenteritis and colitis	22	19	22	16	23	23	125
A15-A19	Tuberculosis	16	14	20	20	14	9	93
-	All others	20	33	25	29	35	37	179
J00-J98	**Diseases of the respiratory system**	**151**	**136**	**165**	**169**	**180**	**158**	**959**
J40-J47	Chronic lower respiratory disease	56	57	84	62	57	48	364
J09-J18	Influenza and pneumonia	71	56	49	62	54	57	349
-	All others	24	23	32	45	69	53	246
V01-Y99	**External causes of mortality**	**139**	**152**	**156**	**145**	**125**	**107**	**824**
X00-X09	Exposure to smoke, fire and flames	14	26	14	17	20	8	99
V00-V89	Motor vehicle accident	20	22	19	8	18	10	97
W75-W76	Accidental suffocation, hanging, strangulation	9	12	22	22	17	12	94
X58-X59 [2]	Ill-defined cause and/or undetermined intent	52	54	30	68	43	36	283
-	All others	44	38	71	30	27	41	251
N00-N99	**Diseases of the genitourinary system**	**89**	**78**	**75**	**88**	**96**	**111**	**537**
K00-K92	**Diseases of the digestive system**	**76**	**63**	**78**	**70**	**74**	**87**	**448**
P00-P96	**Conditions originating in perinatal period**	**38**	**73**	**67**	**83**	**65**	**104**	**430**
L00-L98	**Diseases of the skin and subcutaneous tissue**	**86**	**71**	**60**	**49**	**65**	**97**	**428**
U00-U85	**Codes for special purposes: Covid-19**	**0**	**0**	**0**	**0**	**1**	**369**	**370**
U07	Covid-19	0	0	0	0	1	369	370
R00-R99	**Not elsewhere classified (unknown cause)**	**143**	**115**	**113**	**142**	**109**	**113**	**735**
-	**All other causes combined**	**174**	**202**	**186**	**168**	**202**	**182**	**1,114**
	TOTAL	**3,398**	**3,197**	**3,410**	**3,533**	**3,621**	**4,101**	**21,260**

[1] C76-80 and D37-49 included in this subcategory; [2] X58-59 and Y10-34 included in this subcategory.

Causes of Death in Children Aged 0-4 years, 2016-21

Cause-specific mortality rates in children aged 0-4 years (per 100,000 0–4-year population) for 2016-21 (both sexes combined) should be regarded with caution so as to not over-interpret stochastic changes in annual cause-specific mortality estimates due to small numbers of deaths in these cause-of-death disaggregations.

Conditions originating in the perinatal period was the leading cause-of-death category across all years, with the mortality rate fluctuating between 111-228 deaths per 100,000 (Table 4.5). Respiratory and cardiovascular disorders contributed around 50% of deaths in this category, followed by infections specific to the perinatal period (≠16%), then maternal factors and complications of pregnancy, labour and delivery (≠13%) (Table 4.6).

The second leading cause-of-death category was congenital malformations, deformations and chromosomal abnormalities, with the mortality rate fluctuating between 64-93 deaths per 100,000 during 2016-21. Around 50% of deaths in this category were due to malformations of the circulatory system, with the remaining deaths dispersed widely across the category.

External causes of mortality were the third leading cause-of-death category, with the mortality rate fluctuating between 11-53 deaths per 100,000 population during 2016-21. Accidental drowning and submersion contributed the most deaths (≠25%), followed by inhalation of gastric contents (≠20%), then motor vehicle accidents (≠13%). Approximately 12% of deaths were classified as ill-defined or of undetermined intent, and therefore the number of deaths where the cause and intent are known (e.g., accidental drowning) are likely to be underestimated.

COVID-19 deaths remained low in the 0-4 years age group throughout the pandemic, with 5 deaths recorded in 2021 (cause-specific mortality rate of 5 deaths per 100,000).

Table 4.5. Cause-specific mortality rates (per 100,000 population) in children 0-4 years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	P00-P96	Conditions originating in perinatal period	111.0	191.5	172.4	199.5	193.3	228.1
2	Q00-Q99	Congenital and chromosomal abnormalities	67.0	92.5	63.6	70.4	68.7	60.7
3	V01-Y99	External causes of mortality	52.8	40.3	17.2	21.3	30.6	23.0
4	J00-J98	Diseases of the respiratory system	51.7	39.2	24.8	21.3	8.5	13.6
5	A00-B99	Certain infectious and parasitic diseases	38.5	32.6	16.2	21.3	12.7	18.8
6	G00-G98	Diseases of the nervous system	8.8	21.8	21.5	20.3	16.9	16.7
7	I00-I99	Diseases of the circulatory system	15.4	13.1	19.4	9.6	4.2	6.3
8	E00-E88	Endocrine, nutritional, metabolic diseases	7.7	14.1	20.5	7.5	7.4	9.4
9	C00-D48	Cancers	7.7	9.8	16.2	6.4	9.5	10.5
10	K00-K92	Diseases of the digestive system	9.9	14.1	4.3	5.3	2.1	3.1
11	D50-D89	Diseases of blood and immune mechanism	4.4	1.1	2.2	4.3	1.1	1.0
12	L00-L98	Diseases of skin and subcutaneous tissue	3.3	2.2	2.2	0.0	0.0	2.1
13	N00-N99	Diseases of the genitourinary system	2.2	0.0	4.3	0.0	1.1	1.0
14	M00-M99	Diseases of the musculoskeletal system	0.0	0.0	0.0	1.1	0.0	1.0
15	H00-H59	Diseases of the eye and adnexa	0.0	0.0	1.1	0.0	0.0	0.0
16	F00-F99	Mental and behavioural disorders	0.0	0.0	1.1	0.0	0.0	0.0
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.0	5.2
-	R00-R99	Not elsewhere classified (unknown cause)	11.0	9.8	12.9	6.4	4.2	14.6

Table 4.6. Number of deaths by cause in children 0-4 years (both sexes combined), 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
P00-P96	**Conditions originating in perinatal period**	**101**	**176**	**160**	**187**	**183**	**218**	**1,025**
P19-P29	Respiratory and cardiovascular disorders	59	82	79	82	108	106	516
P35-P39	Infections specific to perinatal period	21	29	28	38	24	25	165
P00-P04	Maternal factors, pregnancy/birth complications	3	29	21	26	21	36	136
-	All others	18	36	32	41	30	51	208
Q00-Q99	**Congenital and chromosomal abnormalities**	**61**	**85**	**59**	**66**	**65**	**58**	**394**
Q20-Q28	Malformations of the circulatory system	33	37	35	32	35	28	200
Q65-Q79	Malformations of the musculoskeletal system	1	11	3	8	6	10	39
Q00-Q07	Malformations of the nervous system	8	11	2	6	7	4	38
-	All others	19	26	19	20	17	16	117
V01-Y99	**External causes of mortality**	**48**	**37**	**16**	**20**	**29**	**22**	**172**
W65-W74	Accidental drowning and submersion	9	4	7	9	9	5	43
W78	Inhalation of gastric contents	22	7	3	2	1	0	35
V00-V89	Motor vehicle accident	5	8	0	0	9	1	23
X00-X09	Exposure to smoke, fire and flames	3	6	2	1	5	5	22
X58-X59 [1]	Ill-defined cause and/or undetermined intent	6	4	1	6	1	3	21
-	All others	3	8	3	2	4	8	28
J00-J98	**Diseases of the respiratory system**	**47**	**36**	**23**	**20**	**8**	**13**	**147**
J09-J18	Influenza and pneumonia	37	30	17	13	4	11	112
-	All others	10	6	6	7	4	2	35
A00-B99	**Certain infectious and parasitic diseases**	**35**	**30**	**15**	**20**	**12**	**18**	**130**
A09	Gastroenteritis and colitis	16	13	4	3	7	6	49
A40-A41	Sepsis	12	9	3	6	3	5	38
-	All others	7	8	8	11	2	7	43
G00-G98	**Diseases of the nervous system**	**8**	**20**	**20**	**19**	**16**	**16**	**99**
G00-G05	Meningitis and encephalitis	3	7	6	8	2	4	30
-	All others	5	13	14	11	14	12	69
I00-I99	**Diseases of the circulatory system**	**14**	**12**	**18**	**9**	**4**	**6**	**63**
I60-I69	Cerebrovascular diseases	1	3	5	2	1	0	12
I42	Cardiomyopathy	4	1	2	2	1	0	10
-	All others	9	8	11	5	4	4	41
E00-E88	**Endocrine, nutritional, metabolic diseases**	**7**	**13**	**19**	**7**	**7**	**9**	**62**
E40-E46	Malnutrition	6	9	5	7	4	5	36
-	All others	1	4	14	0	3	4	26
C00-D48	**Cancers**	**7**	**9**	**15**	**6**	**9**	**10**	**56**
K00-K92	**Diseases of the digestive system**	**9**	**13**	**4**	**5**	**2**	**3**	**36**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**0**	**5**	**5**
U07	Covid-19	0	0	0	0	0	5	5
R00-R99	**Not elsewhere classified (unknown cause)**	**10**	**9**	**12**	**6**	**4**	**14**	**55**
-	**All other causes combined**	**9**	**3**	**10**	**5**	**2**	**5**	**34**
	TOTAL	**356**	**443**	**371**	**370**	**341**	**397**	**2,278**

[1] *X58-59 and Y10-34 included in this subcategory.*

Causes of Death in Children Aged 5-14 years, 2016-21

Cause-specific mortality rates in children aged 5-14 years (per 100,000 5–14-year population) for 2016-21 (both sexes combined) should be regarded with caution so as to not over-interpret stochastic changes in annual cause-specific mortality estimates due to small numbers of deaths in these cause-of-death disaggregation's.

External causes of mortality were the leading cause-of-death category across all years, with the mortality rate fluctuating between 11-18 deaths per 100,000 (Table 4.7). Accidental drowning and submersion contributed the most deaths (≠30%), followed by motor vehicle accidents (≠20%), then accidental suffocation, hanging and strangulation (≠12%) (Table 4.8). Approximately 16% of deaths were classified as ill-defined or of undetermined intent, and therefore the number of deaths where the cause and intent are known (e.g., accidental drowning) are likely to be underestimated.

Cancer was the second leading cause-of-death category, with the mortality rate fluctuating between 3-10 deaths per 100,000 population during 2016-21. Leukaemia contributed around 36% of cancer deaths, cancer of the eye, brain and central nervous system around 15%, and bone cancer 10%. Approximately 16% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the number of cancer deaths from specified sites (e.g., bone) are likely to be underestimated.

Certain infectious and parasitic diseases were the third leading cause-of-death category, with the mortality rate fluctuating between 4-10 deaths per 100,000 during 2016-21. Sepsis contributed the most deaths (≠37%), followed by gastroenteritis and colitis (≠13%), with the remaining deaths dispersed widely across the category.

COVID-19 deaths remained low in the 5-14 years age group throughout the pandemic, with 3 deaths recorded in 2021 (cause-specific mortality rate of 1.8 deaths per 100,000).

Table 4.7. Cause-specific mortality rates (per 100,000 population) in children aged 5-14 years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	V01-Y99	External causes of mortality	17.9	14.9	11.3	17.1	14.7	15.8
2	C00-D48	Cancers	6.0	9.5	6.5	9.4	6.5	2.9
3	A00-B99	Certain infectious and parasitic diseases	3.6	9.5	7.1	7.7	5.9	6.4
4	G00-G98	Diseases of the nervous system	3.6	4.8	4.2	4.1	7.6	5.9
5	I00-I99	Diseases of the circulatory system	2.4	5.4	5.3	5.3	5.3	4.7
6	J00-J98	Diseases of the respiratory system	3.0	1.2	4.2	4.1	4.7	3.5
7	E00-E88	Endocrine, nutritional, metabolic diseases	3.6	0.6	2.4	0.6	1.8	2.9
8	K00-K92	Diseases of the digestive system	1.8	1.8	2.4	0.6	2.4	1.8
9	N00-N99	Diseases of the genitourinary system	2.4	1.2	3.0	1.8	1.2	1.2
10	M00-M99	Diseases of the musculoskeletal system	0.6	0.0	3.0	1.8	1.8	2.3
11	Q00-Q99	Congenital and chromosomal abnormalities	1.2	2.4	0.6	0.6	1.2	2.3
12	D50-D89	Diseases of blood and immune mechanism	0.0	1.2	0.0	0.6	1.2	1.8
13	L00-L98	Diseases of skin and subcutaneous tissue	0.6	1.2	0.6	0.0	0.6	0.6
14	H60-H93	Diseases of the ear and mastoid process	0.0	0.0	0.0	0.0	0.6	0.0
15	F00-F99	Mental and behavioural disorders	0.0	0.6	0.0	0.0	0.0	0.0
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.0	1.8
-	R00-R99	Not elsewhere classified (unknown cause)	1.2	0.0	2.4	0.6	0.0	1.2

Table 4.8. Number of deaths by cause in children aged 5-14 years (both sexes combined), 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
V01-Y99	**External causes of mortality**	**30**	**25**	**19**	**29**	**25**	**27**	**155**
W65-W74	Accidental drowning and submersion	9	7	6	6	11	7	46
V00-V89	Motor vehicle accident	7	5	4	7	3	5	31
W75-W76	Accidental suffocation, hanging and strangulation	2	1	1	4	5	6	19
X00-X09	Exposure to smoke, fire and flames	0	7	1	3	1	0	12
X58-X59 [1]	Ill-defined cause and/or undetermined intent	8	5	1	6	1	4	25
-	All others	4	0	6	3	4	5	22
C00-D48	**Cancers**	**10**	**16**	**11**	**16**	**11**	**5**	**69**
C91-C95	Leukaemia	6	5	1	8	2	3	25
C69-C72	Cancer of the eye, brain and central nervous system	0	2	4	2	1	1	10
C40-C41	Bone cancer	0	5	0	1	1	0	7
C76-C80 [2]	Ill-defined and/or unspecified site	1	2	2	4	1	1	11
-	All others	3	2	4	1	6	0	16
A00-B99	**Certain infectious and parasitic diseases**	**6**	**16**	**12**	**13**	**10**	**11**	**68**
A40-A41	Sepsis	1	5	6	6	3	4	25
A09	Gastroenteritis and colitis	1	3	3	0	1	1	9
-	All others	4	8	3	7	6	6	34
G00-G98	**Diseases of the nervous system**	**6**	**8**	**7**	**7**	**13**	**10**	**51**
G80	Cerebral palsy	1	3	2	2	5	2	15
G00-G05	Meningitis and encephalitis	1	0	1	2	1	2	7
-	All others	4	5	4	3	7	6	29
I00-I99	**Diseases of the circulatory system**	**4**	**9**	**9**	**9**	**9**	**8**	**48**
I05-I09	Chronic rheumatic heart diseases	1	6	2	2	4	3	18
I60-I69	Cerebrovascular diseases	1	1	2	2	0	1	7
-	All others	2	2	5	5	5	4	23
J00-J98	**Diseases of the respiratory system**	**5**	**2**	**7**	**7**	**8**	**6**	**35**
J09-J18	Influenza and pneumonia	2	2	2	5	2	6	19
-	All others	3	0	5	2		0	16
E00-E88	**Endocrine, nutritional and metabolic diseases**	**6**	**1**	**4**	**1**	**3**	**5**	**20**
N00-N99	**Diseases of the genitourinary system**	**4**	**2**	**5**	**3**	**2**	**2**	**18**
K00-K92	**Diseases of the digestive system**	**3**	**3**	**4**	**1**	**4**	**3**	**18**
M00-M99	**Musculoskeletal and connective tissue**	**1**	**0**	**5**	**3**	**3**	**4**	**16**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**0**	**3**	**3**
U07	Covid-19	0	0	0	0	0	3	3
R00-R99	**Not elsewhere classified (unknown cause)**	**2**	**0**	**4**	**1**	**0**	**2**	**9**
-	**All other causes combined**	**3**	**9**	**2**	**2**	**6**	**8**	**30**
	TOTAL	**80**	**91**	**89**	**92**	**94**	**94**	**540**

[1] X58-59 and Y10-34 included in this subcategory; [2] C76-80 and D37-49 included in this subcategory.

Causes of Death in Men Aged 15-34 years, 2016-21

Cause-specific mortality rates in men aged 15-34 years (per 100,000 men 15-34 years) for 2016-21 should be treated with caution so as to not over-interpret stochastic changes in annual cause-specific mortality estimates due to small numbers of deaths in the cause-of-death disaggregations.

External causes of mortality were the leading cause-of-death category across all years, with the mortality rate fluctuating between 40-65 deaths per 100,000 (Table 4.9). Accidental suffocation, hanging and strangulation contributed the most deaths (≠22%), followed by motor vehicle accidents (≠18%) and accidental drowning and submersion (≠11%) (Table 4.10). Approximately 24% of deaths were classified as ill-defined or of undetermined intent, and therefore the number of deaths where the cause and intent are known (e.g., intentional self-harm) are likely to be underestimated.

Diseases of the circulatory system was the second leading cause-of-death category, with the mortality rate fluctuating between 23-35 deaths per 100,000 population during 2016-21. Ischaemic heart diseases contributed around 35% of deaths, other heart diseases contributed around 29%, and chronic rheumatic heart diseases 16%.

Certain infectious and parasitic diseases were the third leading cause-of-death category, with the mortality rate fluctuating between 10-29 deaths per 100,000 population during 2016-21. The cause-specific mortality rate doubled in 2021 (29 per 100,000) compared to previous years (10-15 per 100,000) primarily due to a sharp increase in the number of recorded leptospirosis deaths in 2021. During 2016-21, leptospirosis contributed the most deaths (≠44%), followed by sepsis (≠19%) and tuberculosis (≠9%).

COVID-19 deaths remained low in males aged 15-34 years throughout the pandemic, with 10 deaths recorded in 2021 (cause-specific mortality rate of 7.0 deaths per 100,000).

Table 4.9. Cause-specific mortality rates (per 100,000 population) in men aged 15-34 years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	V01-Y99	External causes of mortality	59.3	65.1	39.9	51.8	52.7	43.2
2	I00-I99	Diseases of the circulatory system	28.0	23.3	35.1	28.3	25.7	32.8
3	A00-B99	Certain infectious and parasitic diseases	14.3	10.3	14.4	15.2	13.9	28.6
4	C00-D48	Cancers	11.6	14.4	20.6	20.0	16.7	9.8
5	J00-J98	Diseases of the respiratory system	9.5	7.5	9.6	6.2	16.0	11.8
6	G00-G98	Diseases of the nervous system	12.3	9.6	6.2	11.1	9.0	11.2
7	E00-E88	Endocrine, nutritional, metabolic diseases	3.4	4.8	5.5	2.1	4.2	9.1
8	K00-K92	Diseases of the digestive system	7.5	4.1	4.8	3.5	2.8	2.8
9	D50-D89	Diseases of blood and immune mechanism	1.4	2.1	6.2	3.5	4.2	4.2
10	N00-N99	Diseases of the genitourinary system	4.1	1.4	2.8	1.4	2.8	6.3
11	Q00-Q99	Congenital and chromosomal abnormalities	2.7	2.1	2.1	1.4	2.1	1.4
12	M00-M99	Diseases of the musculoskeletal system	2.7	1.4	1.4	1.4	1.4	0.7
13	L00-L98	Diseases of skin and subcutaneous tissue	0.0	0.0	1.4	0.7	0.7	0.7
14	F00-F99	Mental and behavioural disorders	0.0	1.4	0.0	0.0	0.0	0.0
15	H60-H93	Diseases of the ear and mastoid process	0.0	0.0	0.0	0.0	0.7	0.0
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.0	7.0
-	R00-R99	Not elsewhere classified (unknown cause)	4.8	2.7	2.8	7.6	2.1	2.8

Table 4.10. Number of deaths by cause in men aged 15-34 years, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
V01-Y99	**External causes of mortality**	**87**	**95**	**58**	**75**	**76**	**62**	**453**
W75-W76	Accidental suffocation, hanging, strangulation	12	10	9	22	23	22	98
V00-V89	Motor vehicle accident	13	24	13	9	14	8	81
W65-W74	Accidental drowning and submersion	7	5	8	11	12	9	52
X60-X84	Intentional self-harm (suicide)	3	6	6	3	3	0	21
X58-X59 [1]	Ill-defined cause and/or undetermined intent	27	31	8	23	12	9	110
-	All others	25	19	14	7	12	14	91
I00-I99	**Diseases of the circulatory system**	**41**	**34**	**51**	**41**	**37**	**47**	**251**
I20-I25	Ischaemic heart diseases	17	10	21	12	10	17	87
I30-I52	Other heart diseases	14	10	5	13	17	14	73
I05-I09	Chronic rheumatic heart diseases	4	8	6	7	4	10	39
I60-I69	Cerebrovascular diseases	3	1	13	5	1	3	26
-	All others	3	5	6	4	5	3	26
A00-B99	**Certain infectious and parasitic diseases**	**21**	**15**	**21**	**22**	**20**	**41**	**140**
A27	Leptospirosis	4	2	12	8	8	27	61
A40-A41	Sepsis	6	6	4	6	2	3	27
A15-A19	Tuberculosis	2	4	0	2	2	2	12
-	All others	9	3	5	6	8	9	40
C00-D48	**Cancers**	**17**	**21**	**30**	**29**	**24**	**14**	**135**
C91-C95	Leukaemia	5	3	9	5	6	5	33
C62	Cancer of the testis	4	2	3	2	6	0	17
C69-C72	Cancer of the eye, brain and central nervous system	0	1	4	4	1	1	11
C76-C80 [2]	Ill-defined and/or unspecified site	1	3	3	10	3	2	22
-	All others	7	12	11	8	8	6	52
J00-J98	**Diseases of the respiratory system**	**14**	**11**	**14**	**9**	**23**	**17**	**88**
J40-J47	Chronic lower respiratory disease	5	7	5	1	8	8	34
J09-J18	Influenza and pneumonia	4	3	4	3	8	5	27
-	All others	5	1	5	5	7	4	27
G00-G98	**Diseases of the nervous system**	**18**	**14**	**9**	**16**	**13**	**16**	**86**
G40-G41	Epilepsy and status epilepticus	8	3	3	5	6	3	28
G80	Cerebral palsy	3	4	2	6	3	3	21
-	All others	7	7	4	5	4	10	37
E00-E88	**Endocrine, nutritional and metabolic diseases**	**5**	**7**	**8**	**3**	**6**	**13**	**42**
K00-K92	**Diseases of the digestive system**	**11**	**6**	**7**	**5**	**4**	**4**	**37**
D50-D89	**Diseases of blood and immune mechanisms**	**2**	**3**	**9**	**5**	**6**	**6**	**31**
N00-N77	**Diseases of the genitourinary system**	**6**	**2**	**4**	**2**	**4**	**9**	**27**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**0**	**10**	**10**
U07	Covid-19	0	0	0	0	0	10	10
R00-R99	**Not elsewhere classified (unknown cause)**	**7**	**4**	**4**	**11**	**3**	**4**	**33**
-	**All other causes combined**	**8**	**7**	**7**	**5**	**7**	**4**	**38**
	TOTAL	**237**	**219**	**222**	**223**	**223**	**247**	**1,371**

[1] X58-59 and Y10-34 included in this subcategory; [2] C76-80 and D37-49 included in this subcategory.

Causes of Death in Women Aged 15-34 years, 2016-21

Cause-specific mortality rates in women aged 15-34 years (per 100,000 women 15-34 years) for 2016-21 should be treated with caution so as to not over-interpret stochastic changes in annual cause-specific mortality estimates due to small numbers of deaths in the cause-of-death disaggregations.

External causes of mortality was the leading cause-of-death category across most years, with the mortality rate fluctuating between 14-29 deaths per 100,000 (Table 4.11). Accidental suffocation, hanging and strangulation (≠18%), and exposure to smoke, fire and flames (≠18%) contributed a similar number of deaths, followed by motor vehicle accidents (≠10%) and intentional self-harm (suicide) (≠8%) (Table 4.12). Approximately 27% of deaths were classified as ill-defined or of undetermined intent, and therefore the number of deaths where the cause and intent are known (e.g., intentional self-harm) are likely to be underestimated.

Diseases of the circulatory system was the second leading cause-of-death category, with the mortality rate fluctuating between 17-25 deaths per 100,000 during 2016-21. Chronic rheumatic heart diseases contributed around 32% of deaths, other heart diseases contributed around 26%, and cerebrovascular diseases around 14%.

Cancer was the third leading cause-of-death category, with the mortality rate fluctuating between 14-28 deaths per 100,000 during 2016-21. Breast cancer contributed the most deaths (≠24%), followed by cervical cancer (≠16%) and leukaemia (≠11%). Approximately 8% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the number of cancer deaths from specified sites (e.g., breast) are likely to be underestimated.

COVID-19 deaths remained low in females aged 15-34 years throughout the pandemic, with 11 deaths recorded in 2021 (cause-specific mortality rate of 8.0 deaths per 100,000).

Table 4.11. Cause-specific mortality rates (per 100,000 population) in women aged 15-34 years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	V01-Y99	External causes of mortality	23.5	33.6	23.0	28.8	13.7	16.0
2	I00-I99	Diseases of the circulatory system	24.9	24.3	17.2	22.3	23.8	16.7
3	C00-D48	Cancers	27.8	22.9	14.4	20.2	18.8	21.0
4	A00-B99	Certain infectious and parasitic diseases	9.3	15.0	12.2	15.1	13.0	21.0
5	J00-J98	Diseases of the respiratory system	12.1	3.6	7.2	10.1	13.0	5.8
6	E00-E88	Endocrine, nutritional, metabolic diseases	5.0	5.7	10.8	9.4	6.5	4.4
7	G00-G98	Diseases of the nervous system	5.7	7.2	5.7	6.5	8.7	6.5
8	M00-M99	Diseases of the musculoskeletal system	4.3	7.2	2.9	6.5	10.1	3.6
9	D50-D89	Diseases of blood and immune mechanism	5.0	2.1	8.6	4.3	5.1	8.7
10	N00-N99	Diseases of the genitourinary system	4.3	4.3	0.7	5.8	4.3	3.6
11	K00-K92	Diseases of the digestive system	1.4	1.4	4.3	2.9	6.5	2.9
12	O00-O99	Pregnancy, childbirth and the puerperium	1.4	2.1	2.2	2.2	0.0	0.7
13	L00-L98	Diseases of skin and subcutaneous tissue	2.9	0.0	0.0	0.0	2.2	1.5
14	Q00-Q99	Congenital and chromosomal abnormalities	0.7	0.7	1.4	1.4	0.7	0.0
15	H60-H93	Diseases of the ear and mastoid process	0.0	0.0	0.0	0.0	0.7	0.7
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.0	8.0
-	R00-R99	Not elsewhere classified (unknown cause)	2.9	1.4	7.2	1.4	0.7	1.5

Table 4.12. Number of deaths by cause in women aged 15-34 years, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
V01-Y99	**External causes of mortality**	**33**	**47**	**32**	**40**	**19**	**22**	**193**
W75-W76	Accidental suffocation, hanging, strangulation	4	4	7	8	6	6	35
X00-X09	Exposure to smoke, fire and flames	4	12	5	6	3	4	34
V00-V89	Motor vehicle accident	5	5	2	2	3	2	19
X60-X84	Intentional self-harm (suicide)	1	5	7	1	1	1	16
W65-W74	Accidental drowning and submersion	2	1	2	5	1	1	12
X58-X59 [1]	Ill-defined cause and/or undetermined intent	9	19	4	15	3	2	52
-	All others	8	1	5	3	2	6	25
I00-I99	**Diseases of the circulatory system**	**35**	**34**	**24**	**31**	**33**	**23**	**180**
I05-I09	Chronic rheumatic heart diseases	14	12	8	7	9	7	57
I30-I52	Other heart diseases	3	9	5	9	12	8	46
I60-I69	Cerebrovascular diseases	3	5	2	5	6	5	26
I20-I25	Ischaemic heart diseases	5	3	6	3	0	1	18
-	All others	10	5	3	7	6	2	33
C00-D48	**Cancers**	**39**	**32**	**20**	**28**	**26**	**29**	**174**
C50	Breast cancer	9	11	3	3	5	10	41
C53	Cervical cancer	6	3	5	2	6	6	28
C91-C95	Leukaemia	2	5	4	6	1	1	19
C76-C80 [2]	Ill-defined and/or unspecified site	3	4	0	1	1	5	14
-	All others	19	9	8	16	13	7	72
A00-B99	**Certain infectious and parasitic diseases**	**13**	**21**	**17**	**21**	**18**	**29**	**119**
A40-A41	Sepsis	2	4	8	8	4	16	42
A15-A19	Tuberculosis	5	4	4	4	2	4	23
A27	Leptospirosis	0	5	1	3	7	3	19
-	All others	6	8	4	6	5	6	35
J00-J98	**Diseases of the respiratory system**	**17**	**5**	**10**	**14**	**18**	**8**	**72**
J40-J47	Chronic lower respiratory disease	7	3	4	5	9	4	32
J09-J18	Influenza and pneumonia	8	1	3	5	4	3	24
-	All others	2	1	3	4	5	1	16
E00-E88	**Endocrine, nutritional and metabolic diseases**	**7**	**8**	**15**	**13**	**9**	**6**	**58**
E08-E14	Diabetes mellitus	7	7	12	10	7	5	48
-	All others	0	1	3	3	2	1	10
G00-G98	**Diseases of the nervous system**	**8**	**10**	**8**	**9**	**12**	**9**	**56**
M00-M99	**Musculoskeletal and connective tissue diseases**	**6**	**10**	**4**	**9**	**14**	**5**	**48**
D50-D89	**Diseases of blood and immune mechanisms**	**7**	**3**	**12**	**6**	**7**	**12**	**47**
N00-N77	**Diseases of the genitourinary system**	**6**	**6**	**1**	**8**	**6**	**5**	**32**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**0**	**11**	**11**
U07	Covid-19	0	0	0	0	0	11	11
R00-R99	**Not elsewhere classified (unknown cause)**	**4**	**2**	**10**	**2**	**1**	**2**	**21**
-	**All other causes combined**	**9**	**6**	**11**	**9**	**14**	**8**	**57**
	TOTAL	**184**	**184**	**164**	**190**	**177**	**169**	**1,068**

[1] X58-59 and Y10-34 included in this subcategory; [2] C76-80 and D37-49 included in this subcategory.

Causes of Death in Men Aged 35-59 years, 2016-21

Diseases of the circulatory system was the leading cause-of-death category across all years, with the mortality rate fluctuating between 420-466 deaths per 100,000 men aged 35-59 years during 2016-21 (Table 4.13). The majority of deaths were due to ischaemic heart diseases (≠70%), followed by cerebrovascular diseases (≠11%), other heart diseases (≠7%) and hypertensive diseases (≠7%) (Table 4.14). The overall mortality pattern in these diseases of the circulatory system during 2016-21 indicate plateaux.

The second leading cause-of-death category in all years was endocrine, nutritional and metabolic diseases, with the cause-specific mortality rate fluctuating between 176-218 deaths per 100,000 population. Around 90% of the deaths in this category were due to diabetes mellitus, with the diabetes mortality pattern generally showing a plateau during 2016-21.

Cancers were the third leading cause-of-death, with the mortality rate fluctuating between 79-91 deaths per 100,000 during 2016-21. Liver cancer contributed the most deaths (≠15%), followed by cancer of the bronchus and lung (≠6%) and leukaemia (≠6%). Approximately 19% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the numbers of cancer deaths from specified sites (e.g., liver) are likely to be underestimated.

In men aged 35-59 years, 125 COVID-19 deaths were recorded in 2021, with a mortality rate of 91 deaths per 100,000.

Table 4.13. Cause-specific mortality rates (per 100,000 population) in men aged 35-59 years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	I00-I99	Diseases of the circulatory system	466.4	433.8	419.8	438.0	440.4	450.0
2	E00-E88	Endocrine, nutritional, metabolic diseases	216.8	193.5	217.8	183.8	194.5	175.9
3	C00-D48	Cancers	84.0	80.1	90.6	89.7	78.5	81.4
4	V01-Y99	External causes of mortality	77.9	63.5	70.3	68.2	69.0	51.6
5	J00-J98	Diseases of the respiratory system	52.7	44.6	45.7	51.1	49.2	40.7
6	A00-B99	Certain infectious and parasitic diseases	36.6	41.6	44.9	54.1	45.5	54.5
7	K00-K92	Diseases of the digestive system	35.9	34.0	27.7	34.1	28.6	29.8
8	N00-N99	Diseases of the genitourinary system	24.4	17.4	31.4	29.6	31.6	28.4
9	G00-G98	Diseases of the nervous system	16.0	17.4	18.0	10.4	14.7	15.3
10	L00-L98	Diseases of skin and subcutaneous tissue	9.9	12.1	16.5	11.9	11.7	18.2
11	M00-M99	Diseases of the musculoskeletal system	14.5	9.8	12.0	10.4	9.5	7.3
12	D50-D89	Diseases of blood and immune mechanism	7.6	7.6	12.0	12.6	11.0	11.6
13	Q00-Q99	Congenital and chromosomal abnormalities	0.8	1.5	3.0	2.2	0.7	2.2
14	F00-F99	Mental and behavioural disorders	2.3	0.0	1.5	0.7	0.0	1.5
15	H60-H93	Diseases of the ear and mastoid process	0.0	0.8	0.7	0.0	0.0	0.0
16	H00-H59	Diseases of the eye and adnexa	0.0	0.0	0.0	0.0	0.0	0.7
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.0	90.9
-	R00-R99	Not elsewhere classified (unknown cause)	9.2	9.1	14.2	5.9	11.7	8.7

Table 4.14. Number of deaths by cause in men aged 35-59 years, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
I00-I99	**Diseases of the circulatory system**	**611**	**574**	**561**	**591**	**600**	**619**	**3,556**
I20-I25	Ischaemic heart diseases	433	412	383	410	425	459	2,522
I60-I69	Cerebrovascular diseases	60	68	61	68	69	63	389
I30-I52	Other heart diseases	52	33	47	53	40	41	266
I10-I15	Hypertensive diseases	45	47	48	38	46	38	262
-	All others	21	14	22	22	20	18	117
E00-E88	**Endocrine, nutritional and metabolic diseases**	**284**	**256**	**291**	**248**	**265**	**242**	**1,586**
E08-E14	Diabetes mellitus	242	229	263	219	230	221	1,404
-	All others	42	27	28	29	35	21	182
C00-D48	**Cancers**	**110**	**106**	**121**	**121**	**107**	**112**	**677**
C22	Liver cancer	15	16	19	25	12	16	103
C34	Cancer of bronchus and lung	10	4	6	11	6	4	41
C91-C95	Leukaemia	9	9	7	5	6	3	39
C76-C80 [1]	Ill-defined and/or unspecified site	22	28	19	17	21	24	131
-	All others	54	49	70	63	62	65	363
V01-Y99	**External causes of mortality**	**102**	**84**	**94**	**92**	**94**	**71**	**537**
V00-V89	Motor vehicle accident	28	23	15	15	9	10	100
W75-W76	Accidental suffocation, hanging, strangulation	9	6	14	17	20	16	82
W65-W74	Accidental drowning and submersion	5	11	8	9	10	12	55
X60-X84	Intentional self-harm (suicide)	2	7	11	5	6	3	34
X40-X49	Accidental poisoning	0	2	6	5	6	3	22
X58-X59 [2]	Ill-defined cause and/or undetermined intent	23	27	15	36	23	12	136
-	All others	35	8	25	5	20	15	108
J00-J98	**Diseases of the respiratory system**	**69**	**59**	**61**	**69**	**67**	**56**	**381**
J40-J47	Chronic lower respiratory disease	33	38	38	31	32	24	196
J09-J18	Influenza and pneumonia	23	16	14	16	15	15	99
-	All others	13	5	9	22	20	17	86
A00-B99	**Certain infectious and parasitic diseases**	**48**	**55**	**60**	**73**	**62**	**75**	**373**
A40-A41	Sepsis	21	24	27	45	26	33	176
A15-A19	Tuberculosis	7	9	7	10	11	10	54
A27	Leptospirosis	2	4	6	7	7	17	43
-	All others	18	18	20	11	18	15	100
K00-K92	**Diseases of the digestive system**	**47**	**45**	**37**	**46**	**39**	**41**	**255**
N00-N77	**Diseases of the genitourinary system**	**32**	**23**	**42**	**40**	**43**	**39**	**219**
G00-G98	**Diseases of the nervous system**	**21**	**23**	**24**	**14**	**20**	**21**	**123**
L00-L98	**Diseases of the skin and subcutaneous tissue**	**13**	**16**	**22**	**16**	**16**	**25**	**108**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**0**	**125**	**125**
U07	Covid-19	0	0	0	0	0	125	125
R00-R99	**Not elsewhere classified (unknown cause)**	**12**	**12**	**18**	**8**	**16**	**12**	**78**
-	**All other causes combined**	**33**	**26**	**40**	**35**	**29**	**32**	**195**
	TOTAL	**1,382**	**1,279**	**1,371**	**1,353**	**1,358**	**1,470**	**8,213**

[1] C76-80 and D37-49 included in this subcategory; [2] X58-59 and Y10-34 included in this subcategory.

Causes of Death in Women Aged 35-59 years, 2016-21

Diseases of the circulatory system was the leading cause-of-death category, with the mortality rate fluctuating between 181-208 deaths per 100,000 women aged 35-59 years during 2016-21 (Table 4.15). The majority of deaths were due to ischaemic heart diseases (≠44%), followed by cerebrovascular diseases (≠24%), hypertensive diseases (≠13%) and other heart diseases (≠10%) (Table 4.16). The overall mortality pattern in these diseases of the circulatory system during 2016-21 was a plateau.

Cancers was the second leading cause-of-death, with the cause-specific mortality rate fluctuating between 156-210 deaths per 100,000 during 2016-21. Breast cancer contributed the most deaths (≠33%), followed by cervical cancer (≠20%) and ovarian cancer (≠8%). Approximately 9% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the number of cancer deaths from specified sites (e.g., breast) are likely to be underestimated.

Endocrine, nutritional and metabolic diseases were the third leading cause-of-death category, with the mortality rate fluctuating between 168-200 deaths per 100,000. Around 94% of the deaths in this category were due to diabetes mellitus, with the diabetes mortality pattern generally indicating plateaux in diabetes deaths during 2016-21.

In women aged 35-59 years, 116 COVID-19 deaths were recorded in 2021, with a mortality rate of 89 deaths per 100,000 population.

Table 4.15. Cause-specific mortality rates (per 100,000 population) in women aged 35-59 years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	I00-I99	Diseases of the circulatory system	194.7	181.1	197.5	191.1	201.0	207.6
2	C00-D48	Cancers	189.1	196.9	155.9	192.6	209.4	198.5
3	E00-E88	Endocrine, nutritional, metabolic diseases	200.2	169.2	184.9	177.9	184.8	167.9
4	A00-B99	Certain infectious and parasitic diseases	29.5	26.1	42.3	61.4	39.3	49.6
5	J00-J98	Diseases of the respiratory system	28.7	34.0	43.1	36.5	42.3	45.8
6	V01-Y99	External causes of mortality	25.5	25.3	29.8	32.6	20.8	13.7
7	N00-N99	Diseases of the genitourinary system	19.1	22.9	21.2	17.9	23.9	29.8
8	K00-K92	Diseases of the digestive system	19.1	15.8	18.0	12.4	16.9	19.8
9	M00-M99	Diseases of the musculoskeletal system	14.4	10.3	11.8	16.3	12.3	14.5
10	L00-L98	Diseases of skin and subcutaneous tissue	17.6	16.6	14.9	10.1	6.9	13.7
11	G00-G98	Diseases of the nervous system	11.2	16.6	11.0	5.4	12.3	13.0
12	D50-D89	Diseases of blood and immune mechanism	18.3	11.9	12.5	9.3	13.1	3.1
13	Q00-Q99	Congenital and chromosomal abnormalities	2.4	2.4	1.6	2.3	1.5	1.5
14	F00-F99	Mental and behavioural disorders	1.6	0.8	1.6	0.8	1.5	0.0
15	O00-O99	Pregnancy, childbirth and the puerperium	0.0	3.2	0.0	0.0	0.0	0.0
16	H60-H93	Diseases of the ear and mastoid process	0.8	0.0	0.8	0.0	0.0	0.8
17	H00-H59	Diseases of the eye and adnexa	0.8	0.0	0.0	0.8	0.0	0.8
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	0.0	88.5
-	R00-R99	Not elsewhere classified (unknown cause)	4.8	4.7	10.2	7.8	2.3	5.3

Table 4.16. Number of deaths in women aged 35-59 years, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
I00-I99	**Diseases of the circulatory system**	**244**	**229**	**252**	**246**	**261**	**272**	**1,504**
I20-I25	Ischaemic heart diseases	101	99	117	92	112	138	659
I60-I69	Cerebrovascular diseases	54	58	58	70	67	57	364
I10-I15	Hypertensive diseases	50	23	34	38	29	18	192
I30-I52	Other heart diseases	20	31	23	22	27	26	149
-	All others	19	18	20	24	26	33	140
C00-D48	**Cancers**	**237**	**249**	**199**	**248**	**272**	**260**	**1,465**
C50	Breast cancer	88	76	58	65	102	93	482
C53	Cervical cancer	55	42	35	63	49	46	290
C56	Ovarian cancer	11	27	20	21	20	22	121
C76-C80 [1]	Ill-defined and/or unspecified site	15	18	22	21	24	28	128
-	All others	68	86	64	78	77	71	444
E00-E88	**Endocrine, nutritional and metabolic diseases**	**251**	**214**	**236**	**229**	**240**	**220**	**1,390**
E08-E14	Diabetes mellitus	238	200	217	219	225	202	1,301
-	All others	13	14	19	10	15	18	89
A00-B99	**Certain infectious and parasitic diseases**	**37**	**33**	**54**	**79**	**51**	**65**	**319**
A40-A41	Sepsis	23	17	34	58	29	43	204
A15-A19	Tuberculosis	3	4	7	6	9	5	34
-	All others	11	12	13	15	13	17	81
J00-J98	**Diseases of the respiratory system**	**36**	**43**	**55**	**47**	**55**	**60**	**296**
J40-J47	Chronic lower respiratory disease	16	23	35	26	18	23	141
J09-J18	Influenza and pneumonia	16	13	8	9	18	18	82
-	All others	4	7	12	12	19	19	73
V01-Y99	**External causes of mortality**	**32**	**32**	**38**	**42**	**27**	**18**	**189**
V00-V89	Motor vehicle accident	6	8	5	2	5	4	30
W75-W76	Accidental suffocation, hanging, strangulation	3	4	4	7	3	3	24
X00-X09	Exposure to smoke, fire and flames	5	1	3	6	7	0	22
W65-W74	Accidental drowning and submersion	0	1	3	1	4	1	10
X60-X84	Intentional self-harm (suicide)	0	1	3	4	1	1	10
X58-X59 [2]	Ill-defined cause or undetermined intent	11	9	8	20	5	3	56
-	All others	7	8	12	2	2	6	37
N00-N77	**Diseases of the genitourinary system**	**24**	**29**	**27**	**23**	**31**	**39**	**173**
K00-K92	**Diseases of the digestive system**	**24**	**20**	**23**	**16**	**22**	**26**	**131**
M00-M99	**Musculoskeletal and connective tissue diseases**	**18**	**13**	**15**	**21**	**16**	**19**	**102**
L00-L98	**Diseases of the skin and subcutaneous tissue**	**22**	**21**	**19**	**13**	**9**	**18**	**102**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**0**	**116**	**116**
U07	Covid-19	0	0	0	0	0	116	116
R00-R99	**Not elsewhere classified (unknown cause)**	**6**	**6**	**13**	**10**	**3**	**7**	**45**
-	**All other causes combined**	**44**	**44**	**35**	**24**	**37**	**25**	**209**
	TOTAL	**975**	**933**	**966**	**998**	**1,024**	**1,145**	**6,041**

[1] C76-80 and D37-49 included in this subcategory; [2] X58-59 and Y10-34 included in this subcategory.

Causes of Death in Men Aged 60+ years, 2016-21

Diseases of the circulatory system was the leading cause-of-death category across all years, with the mortality rate fluctuating between 2,290-2,800 deaths per 100,000 men aged 60+ years (Table 4.17). The majority of deaths were due to ischaemic heart diseases (≠57%), followed by cerebrovascular diseases (≠19%), hypertensive diseases (≠13%) and other heart diseases (≠9%) (Table 4.18). Apart from a sharp increase in ischaemic heart disease deaths in 2021, the mortality pattern for the individual circulatory diseases demonstrates plateaux during 2016-21.

The second leading cause-of-death category in all years was endocrine, nutritional and metabolic diseases, with the cause-specific mortality rate fluctuating between 1,005-1,263 deaths per 100,000. Around 93% of the deaths in this category were due to diabetes mellitus, with the diabetes mortality pattern generally showing a plateau in diabetes deaths during 2016-21.

Cancers were the third leading cause-of-death, with the mortality rate fluctuating between 440-632 deaths per 100,000 during 2016-21. Prostate cancer contributed the most deaths (≠22%), followed by cancer of the liver (≠12%) and cancer of the bronchus and lung (≠6%). Approximately 14% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the numbers of cancer deaths from specified sites (e.g., prostate) are likely to be underestimated.

In men aged 60+ years, one COVID-19 death was recorded in 2020, and 318 deaths recorded in 2021. The COVID-19 mortality rate in 2021 was 796 deaths per 100,000.

Table 4.17. Cause-specific mortality rates (per 100,000 population) in men aged 60+ years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	I00-I99	Diseases of the circulatory system	2,785	2,290	2,437	2,485	2,438	2,800
2	E00-E88	Endocrine, nutritional, metabolic diseases	1,263	1,005	1,189	1,175	1,238	1,133
3	C00-D48	Cancers	532.8	460.6	631.7	461.8	514.5	440.3
4	J00-J98	Diseases of the respiratory system	351.6	312.5	370.0	428.1	392.3	352.8
5	A00-B99	Certain infectious and parasitic diseases	310.4	247.8	261.7	306.1	315.9	297.7
6	N00-N99	Diseases of the genitourinary system	192.3	188.6	192.9	189.4	185.9	270.2
7	K00-K92	Diseases of the digestive system	167.5	148.2	158.6	119.3	183.4	175.1
8	V01-Y99	External causes of mortality	159.3	126.6	230.0	134.9	145.2	140.1
9	L00-L98	Diseases of skin and subcutaneous tissue	134.6	99.7	100.4	101.2	135.0	147.6
10	M00-M99	Diseases of the musculoskeletal system	43.9	32.3	52.9	51.9	53.5	45.0
11	D50-D89	Diseases of blood and immune mechanism	41.2	67.3	44.9	44.1	38.2	40.0
12	G00-G98	Diseases of the nervous system	30.2	32.3	39.6	28.5	56.0	37.5
13	F00-F99	Mental and behavioural disorders	22.0	10.8	21.1	15.6	22.9	12.5
14	Q00-Q99	Congenital and chromosomal abnormalities	0.0	5.4	7.9	2.6	12.7	5.0
15	H00-H59	Diseases of the eye and adnexa	5.5	5.4	0.0	0.0	0.0	2.5
16	H60-H93	Diseases of the ear and mastoid process	0.0	2.7	0.0	0.0	5.1	2.5
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	2.5	795.6
-	R00-R99	Not elsewhere classified (unknown cause)	282.9	199.3	200.9	210.1	219.1	157.6

Table 4.18. Number of deaths by cause in men aged 60+ years, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
I00-I99	**Diseases of the circulatory system**	**1,014**	**850**	**922**	**958**	**957**	**1,119**	**5,820**
I20-I25	Ischaemic heart diseases	503	449	541	547	553	738	3,331
I60-I69	Cerebrovascular diseases	217	186	162	181	199	178	1,123
I10-I15	Hypertensive diseases	161	121	135	107	118	120	762
I30-I52	Other heart diseases	115	84	69	99	63	65	495
-	All others	18	10	15	24	24	18	109
E00-E88	**Endocrine, nutritional and metabolic diseases**	**460**	**373**	**450**	**453**	**486**	**453**	**2,675**
E08-E14	Diabetes mellitus	432	343	421	415	442	427	2,480
-	All others	28	30	29	38	44	26	195
C00-D48	**Cancers**	**194**	**171**	**239**	**178**	**202**	**176**	**1,160**
C61	Prostate cancer	35	34	40	38	55	57	259
C22	Liver cancer	27	22	25	17	28	16	135
C34	Cancer of bronchus and lung	15	10	13	15	12	9	74
C16	Stomach cancer	4	7	12	11	7	8	49
C76-C80 [1]	Ill-defined and/or unspecified site	20	25	30	26	32	27	160
-	All others	93	73	119	71	68	59	483
J00-J98	**Diseases of the respiratory system**	**128**	**116**	**140**	**165**	**154**	**141**	**844**
J40-J47	Chronic lower respiratory disease	88	84	89	96	75	75	507
J09-J18	Influenza and pneumonia	26	18	28	42	34	34	182
-	All others	14	14	23	27	45	32	155
A00-B99	**Certain infectious and parasitic diseases**	**113**	**92**	**99**	**118**	**124**	**119**	**665**
A40-A41	Sepsis	73	59	65	90	87	86	460
A09	Gastroenteritis and colitis	14	7	11	13	7	12	64
A15-A19	Tuberculosis	13	10	12	11	10	5	61
-	All others	13	16	11	4	20	16	80
N00-N77	**Diseases of the genitourinary system**	**70**	**70**	**73**	**73**	**73**	**108**	**467**
N17-N19	Renal failure	38	40	28	34	47	68	255
N40	Hyperplasia of prostate	12	17	20	25	14	17	105
-	All others	20	13	25	14	12	23	107
K00-K92	**Diseases of the digestive system**	**61**	**55**	**60**	**46**	**72**	**70**	**364**
V01-Y99	**External causes of mortality**	**58**	**47**	**87**	**52**	**57**	**56**	**357**
L00-L98	**Diseases of the skin and subcutaneous tissue**	**49**	**37**	**38**	**39**	**53**	**59**	**275**
M00-M99	**Musculoskeletal and connective tissue**	**16**	**12**	**20**	**20**	**21**	**18**	**107**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**1**	**318**	**319**
U07	Covid-19	0	0	0	0	1	318	319
R00-R99	**Not elsewhere classified (unknown cause)**	**103**	**74**	**73**	**81**	**86**	**63**	**480**
-	**All other causes combined**	**36**	**46**	**46**	**35**	**53**	**40**	**256**
	TOTAL	**2,302**	**1,943**	**2,247**	**2,218**	**2,339**	**2,740**	**13,789**

[1] *C76-80 and D37-49 included in this subcategory.*

Causes of Death in Women Aged 60+ years, 2016-21

Diseases of the circulatory system was the leading cause-of-death category across all years, with the mortality rate fluctuating between 1,513-1,925 deaths per 100,000 women aged 60+ years (Table 4.19). The majority of deaths were due to ischaemic heart diseases (≠45%), followed by cerebrovascular diseases (≠26%), hypertensive diseases (≠18%) and other heart diseases (≠8%). Apart from a sharp increase in ischaemic heart disease deaths in 2021, the mortality pattern for the individual circulatory diseases shown in Table 4.20 indicate plateaux during 2016-21.

The second leading cause-of-death category in all years was endocrine, nutritional and metabolic diseases, with the cause-specific mortality rate fluctuating between 1,065-1,196 deaths per 100,000. Around 94% of the deaths in this category were due to diabetes mellitus, with the diabetes mortality pattern generally showing a plateau in diabetes deaths during 2016-21.

Cancers were the third leading cause-of-death, with the mortality rate fluctuating between 473-568 deaths per 100,000 population during 2016-21. Breast cancer contributed the most deaths (≠25%), followed by cervical cancer (≠15%) and ovarian cancer (≠7%). Approximately 13% of cancer deaths were classified as ill-defined or from an unspecified site, and therefore the numbers of cancer deaths from specified sites (e.g., breast) are likely to be underestimated.

In women aged 60+ years, one COVID-19 death was recorded in 2020, and 241 deaths recorded in 2021. The COVID-19 mortality rate in 2021 was 507 deaths per 100,000.

Table 4.19. Cause-specific mortality rates (per 100,000 population) in women aged 60+ years, 2016-21

	ICD code	ICD-10 Chapter causes of death	2016	2017	2018	2019	2020	2021
1	I00-I99	Diseases of the circulatory system	1,874	1,513	1,745	1,740	1,759	1,925
2	E00-E88	Endocrine, nutritional, metabolic diseases	1,167	1,065	1,155	1,155	1,196	1,157
3	C00-D48	Cancers	512.8	528.1	560.7	473.1	567.8	496.5
4	A00-B99	Certain infectious and parasitic diseases	233.9	216.8	232.0	336.6	264.6	267.2
5	J00-J98	Diseases of the respiratory system	167.8	159.1	202.7	222.2	210.8	172.5
6	N00-N99	Diseases of the genitourinary system	132.3	94.6	101.3	123.2	124.8	140.9
7	V01-Y99	External causes of mortality	113.4	99.2	159.9	99.0	129.1	98.9
8	L00-L98	Diseases of skin and subcutaneous tissue	137.1	108.4	85.6	79.2	111.8	159.9
9	K00-K92	Diseases of the digestive system	113.4	76.1	103.6	101.2	83.9	113.6
10	D50-D89	Diseases of blood and immune mechanism	47.3	39.2	45.0	28.6	51.6	44.2
11	M00-M99	Diseases of the musculoskeletal system	54.4	32.3	45.0	50.6	32.3	35.8
12	G00-G98	Diseases of the nervous system	30.7	39.2	38.3	17.6	23.7	21.0
13	F00-F99	Mental and behavioural disorders	9.5	11.5	11.3	15.4	12.9	27.3
14	Q00-Q99	Congenital and chromosomal abnormalities	0.0	6.9	9.0	2.2	2.2	4.2
15	H00-H59	Diseases of the eye and adnexa	0.0	0.0	0.0	2.2	2.2	2.1
16	H60-H93	Diseases of the ear and mastoid process	0.0	0.0	2.3	0.0	0.0	2.1
-	U00-U85	Codes for special purposes: Covid-19	0.0	0.0	0.0	0.0	2.2	507.0
-	R00-R99	Not elsewhere classified (unknown cause)	302.5	239.8	189.2	279.4	221.5	204.1

Table 4.20. Number of deaths in women aged 60+ years, 2016-21

ICD code	ICD-10 Chapter Causes of Death	2016	2017	2018	2019	2020	2021	Total
I00-I99	**Diseases of the circulatory system**	**793**	**656**	**775**	**791**	**818**	**915**	**4,748**
I20-I25	Ischaemic heart diseases	286	295	352	341	352	523	2,149
I60-I69	Cerebrovascular diseases	232	179	189	192	236	200	1,228
I10-I15	Hypertensive diseases	178	120	134	148	158	115	853
I30-I52	Other heart diseases	84	54	79	89	44	47	397
-	All others	13	8	21	21	28	30	121
E00-E88	**Endocrine, nutritional and metabolic diseases**	**494**	**462**	**513**	**525**	**556**	**550**	**3,100**
E08-E14	Diabetes mellitus	460	438	473	493	527	526	2,917
-	All others	34	24	40	32	29	24	183
C00-D48	**Cancers**	**217**	**229**	**249**	**215**	**264**	**236**	**1,410**
C50	Breast cancer	52	51	67	56	66	63	355
C53	Cervical	32	36	31	39	42	28	208
C56	Ovarian cancer	11	13	15	12	27	16	94
C76-C80 [1]	Ill-defined and/or unspecified site	37	38	27	18	32	29	181
-	All others	85	91	109	90	97	100	572
A00-B99	**Certain infectious and parasitic diseases**	**99**	**94**	**103**	**153**	**123**	**127**	**699**
A40-A41	Sepsis	76	75	73	129	96	103	552
A09	Gastroenteritis and colitis	10	9	14	7	13	14	67
A15-A19	Tuberculosis	8	5	9	8	3	0	33
-	All others	5	5	7	9	11	10	47
J00-J98	**Diseases of the respiratory system**	**71**	**69**	**90**	**101**	**98**	**82**	**511**
J09-J18	Influenza and pneumonia	28	24	31	45	30	28	186
J40-J47	Chronic lower respiratory disease	32	31	43	31	27	21	185
-	All others	11	14	16	25	41	33	140
N00-N77	**Diseases of the genitourinary system**	**56**	**41**	**45**	**56**	**58**	**67**	**323**
N17-N19	Renal failure	32	23	34	40	39	51	219
-	All other	24	18	11	16	19	16	104
V01-Y99	**External causes of mortality**	**48**	**43**	**71**	**45**	**60**	**47**	**314**
L00-L98	**Diseases of the skin and subcutaneous tissue**	**58**	**47**	**38**	**36**	**52**	**76**	**307**
K00-K92	**Diseases of the digestive system**	**48**	**33**	**46**	**46**	**39**	**54**	**266**
D50-D89	**Diseases of blood and immune mechanisms**	**20**	**17**	**20**	**13**	**24**	**21**	**115**
U00-U85	**Codes for special purposes**	**0**	**0**	**0**	**0**	**1**	**241**	**242**
U07	Covid-19	0	0	0	0	1	241	242
R00-R99	**Not elsewhere classified (unknown cause)**	**128**	**103**	**83**	**127**	**103**	**97**	**641**
-	**All other causes combined**	**40**	**40**	**48**	**40**	**34**	**44**	**246**
	TOTAL	**2,072**	**1,834**	**2,081**	**2,148**	**2,230**	**2,557**	**12,922**

[1] *C76-80 and D37-49 included in this subcategory.*

CHAPTER FIVE: EXCESS MORTALITY

In Epidemiology and Public Health, the term Excess Mortality refers to the number of deaths from all causes during a pandemic or crisis beyond the expected number of deaths during non-pandemic or non-crisis periods. In the context of the COVID-19 pandemic, excess mortality can be a more inclusive measure of the total impact of COVID-19 on deaths due to all-causes compared to the confirmed COVID-19 death count alone. Specifically, the excess mortality analysis will include COVID-19 deaths as well as other deaths due to the pandemic that are reported to be due to other ICD-10 disease categories, such as respiratory or cardiovascular disease.

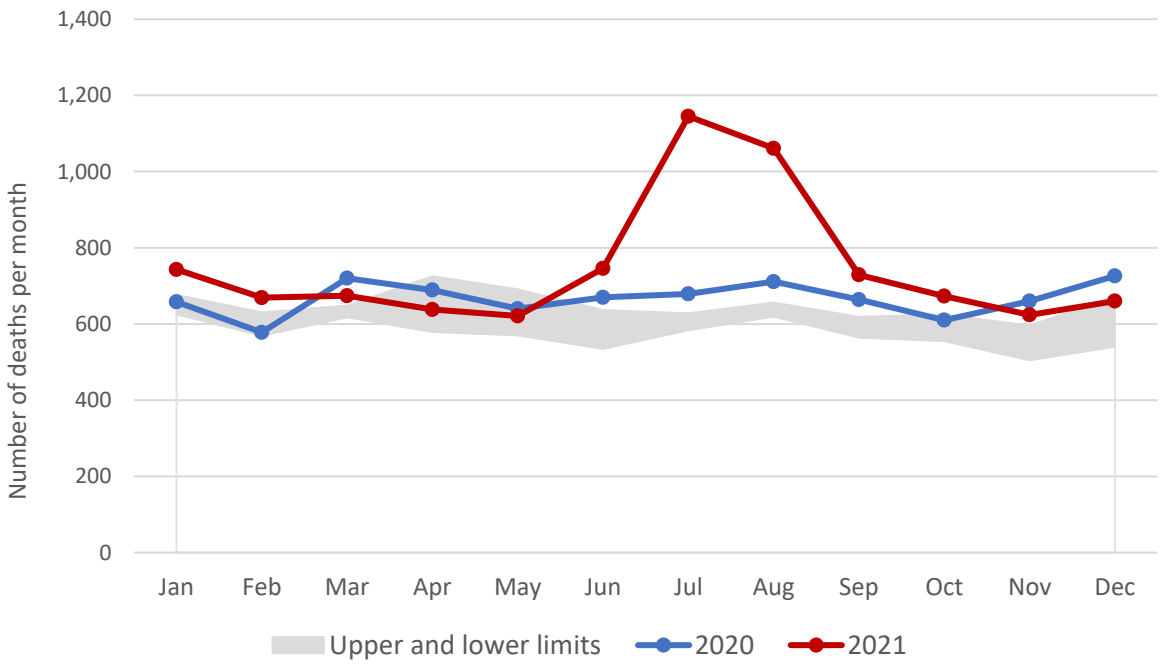
There are two methods of calculating excess mortality, the historical method and the regression methods. Fiji used the historical method to undertake this excess mortality analysis, based on mortality data obtained from the MHMS for 2015-21. Deaths during 2020 and 2021 were compared with the average number of deaths per month during the pre-pandemic period from 2015-19. The 95% confidence interval for the monthly average number of deaths during 2015-19 was calculated using the sample standard deviations. For the final table on excess mortality by month from baseline and threshold, negative values and errors were set to zero.

All figures presented in this chapter show the upper and lower limits (95%CI) of previous (2015-19) deaths by month as the baseline. Deaths during 2020 and 2021 are then shown as separate data points. Analyses are shown for all mortality (both sexes and all ages combined) as well as by sex (male and female), age (0 - 64 years and 65+), location of death (community and health facility), and by cause (natural and unnatural).

Excess Mortality

Figure 5.1 shows the number of deaths by month during 2020 and 2021 compared to the upper and lower limits (95% CI) of the average number of deaths per month during 2015-19. Figure 5.1 shows that excess deaths were observed from June to September 2021.

Figure 5.1. Mortality (all ages and both sexes combined) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19



Excess Mortality by Sex

Excess mortality by sex is shown in Figure 5.2 for males and Figure 5.3 for females. Excess mortality was noted to be higher in males than females. Excess deaths in males and females were consistently noted from June to September 2021.

Figure 5.2. Mortality for males (all ages) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19

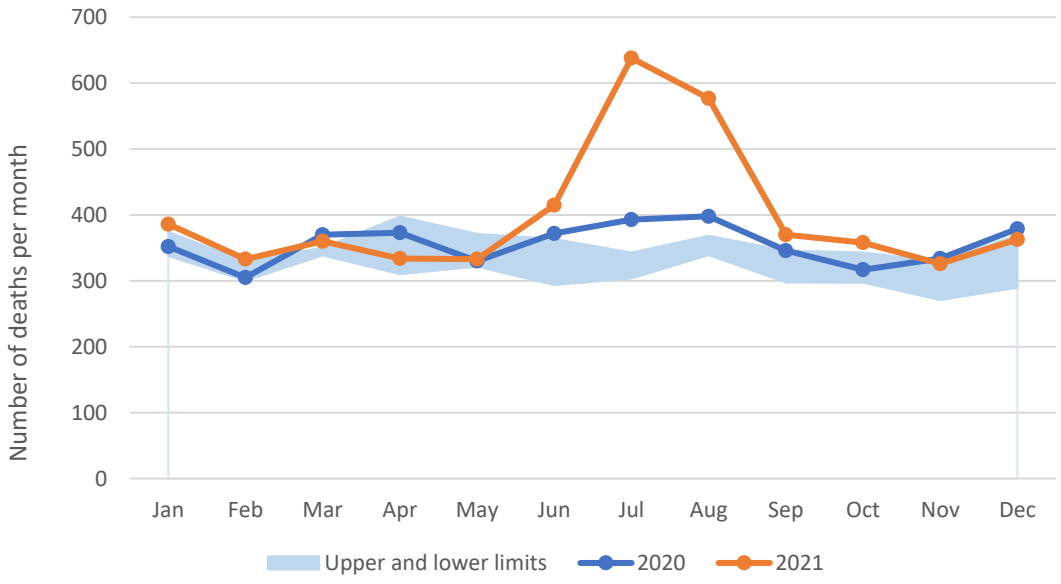
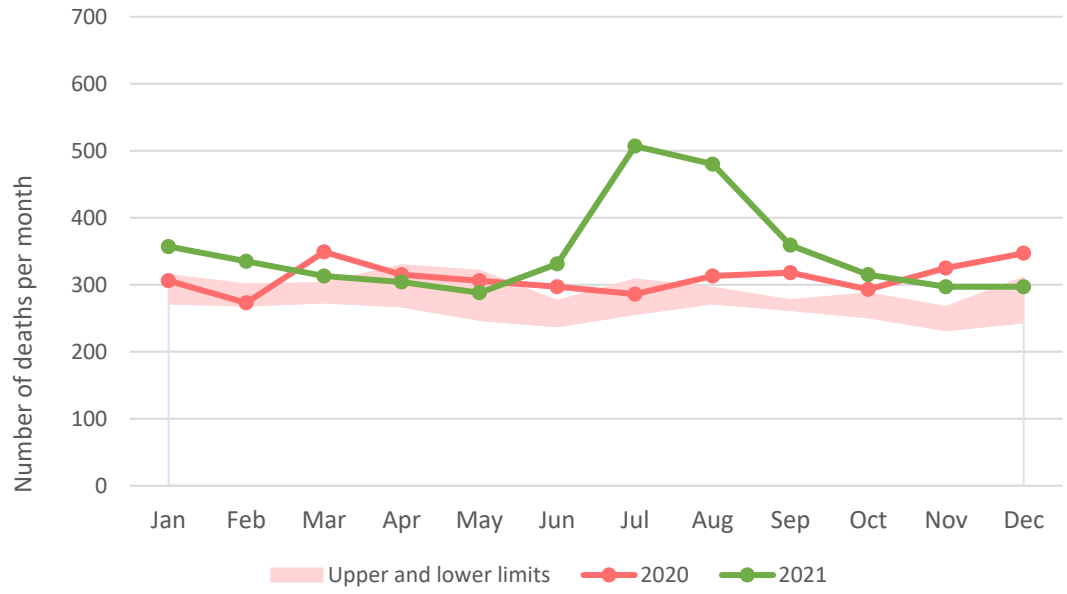


Figure 5.3. Mortality for females (all ages) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19



Excess Mortality by Age

Excess mortality by age is shown in Figure 5.4 for the 0-64 years age group and Figure 5.5 for the 65+ years age group. Excess mortality was observed in people aged 0-64 and 65+ from June to September 2021. Excess mortality was noted to be higher in people aged 65+ than people aged 0-64 years. Specifically, the maximum increase in mortality in people aged 0-64 years was 161% over the average (July 2021) whereas it was 223% over the average (July 2021) in the 65+ years old.

Figure 5.4. Mortality in people aged 0-64 years (both sexes combined) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19

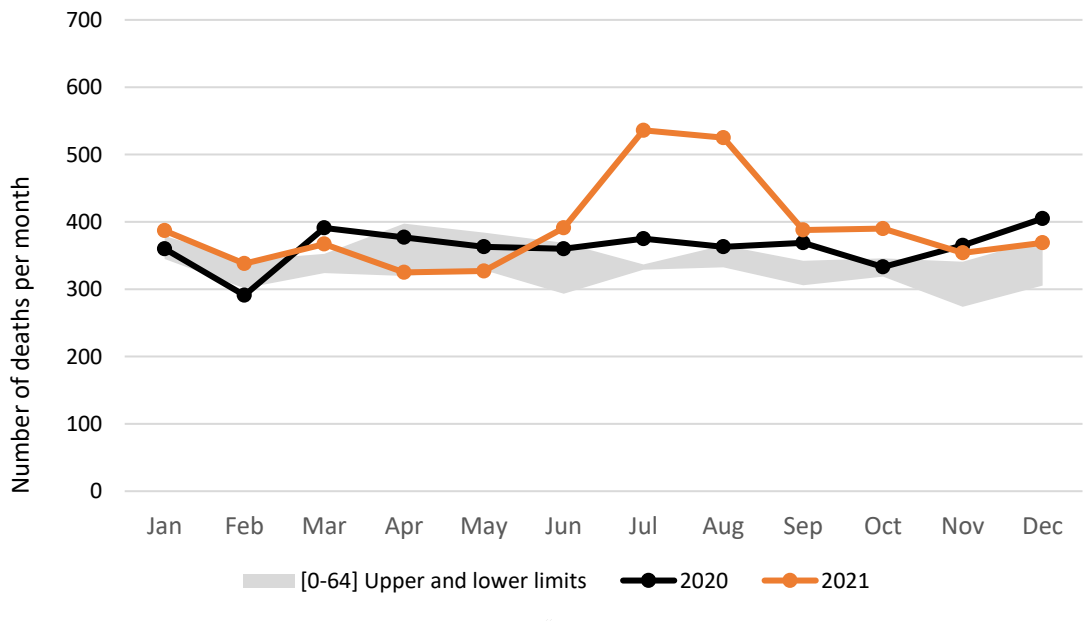
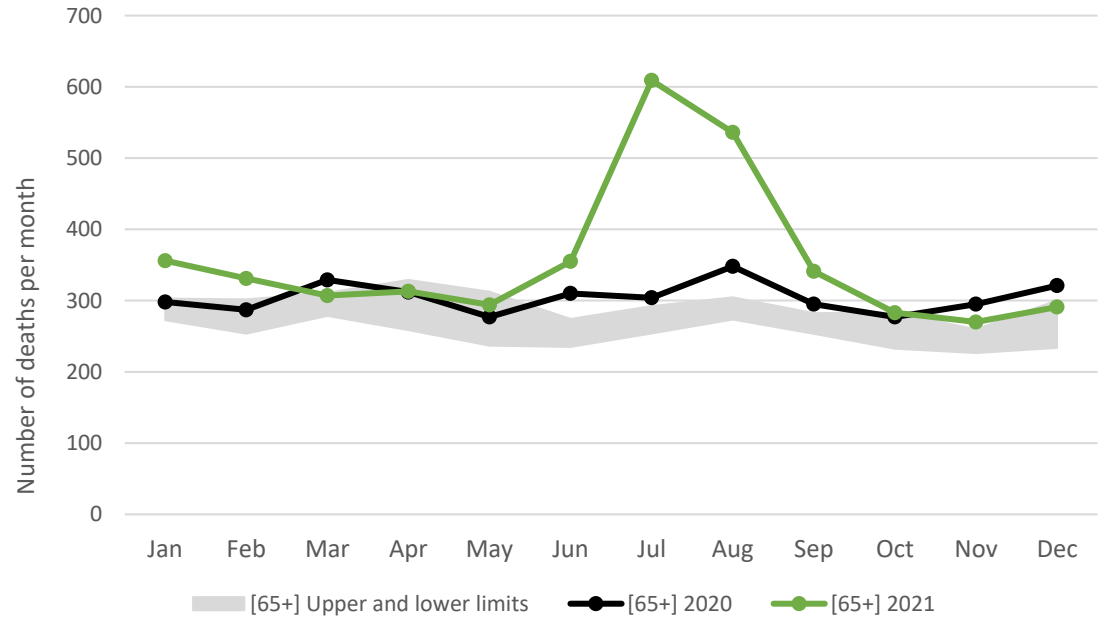


Figure 5.5. Mortality in people aged 65+ years (both sexes combined) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19



Excess Mortality by Place of Occurrence (community and health facilities)

Excess mortality by place of occurrence is shown in Figure 5.6 for deaths in the community and Figure 5.7 for deaths in health facilities. Deaths categorised as community deaths include deaths in the community, at home or at an unknown location; and deaths categorised as healthy facility deaths include deaths in health facilities and deaths before arrival (i.e., whilst in transit) to a facility. Excess mortality was observed in deaths that took place in the community, with the peak starting in June going to October 2021. This level of excess mortality was noted to be higher than in deaths that took place in health facilities and is likely explained by more people choosing to stay at home while severely ill, or perhaps being turned away from facilities due to capacity constraints. Excess mortality was observed in deaths that took place in health facilities from June to September 2021. Much lower but still notable levels of excess mortality were also observed in health facilities from June to December 2020 and from January to March 2021.

Figure 5.6. Mortality in the community (both sexes, all ages) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19

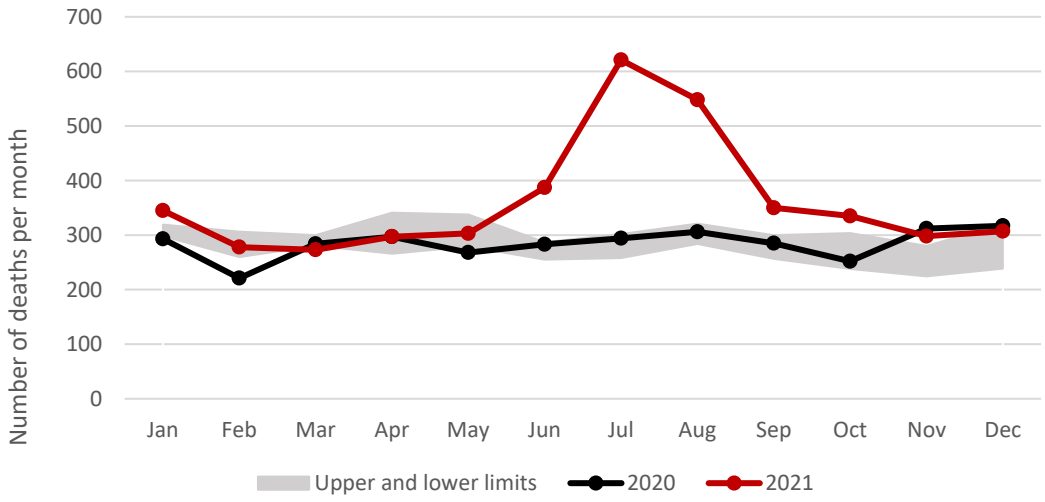
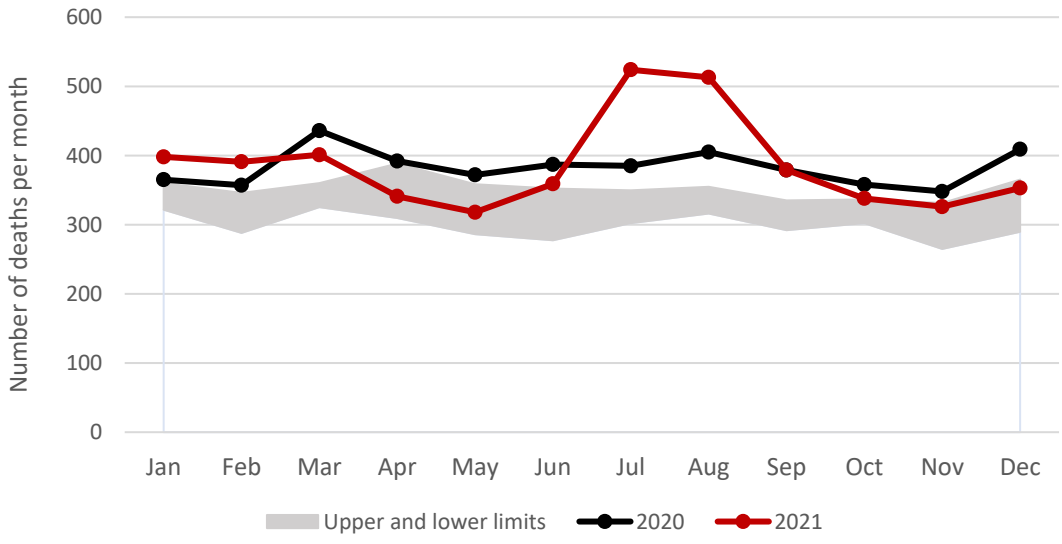


Figure 5.7. Mortality in health facilities (both sexes, all ages) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19



Excess Mortality by Cause

Excess mortality by cause is shown in Figure 5.8 for natural causes and Figure 5.9 for external causes. Natural deaths refer to deaths occurring in the course of nature and from natural causes (such as disease progressing to organ failure) as opposed to accident or violence. Excess deaths were noted to be higher in natural causes from June to September 2021. The observed trend is consistent with the overall pattern of excess mortality, indicating that many of the excess deaths were due to natural causes. There was no trend of excess mortality in deaths due to external causes in either 2020 or 2021. This could be due to small numbers of deaths due to external causes, which makes data difficult to interpret. Moreover, there are some limitations with the historical data methodology, whereby linear increases in deaths are not accounted for.

Figure 5.8. Mortality due to natural causes (both sexes, all ages) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19

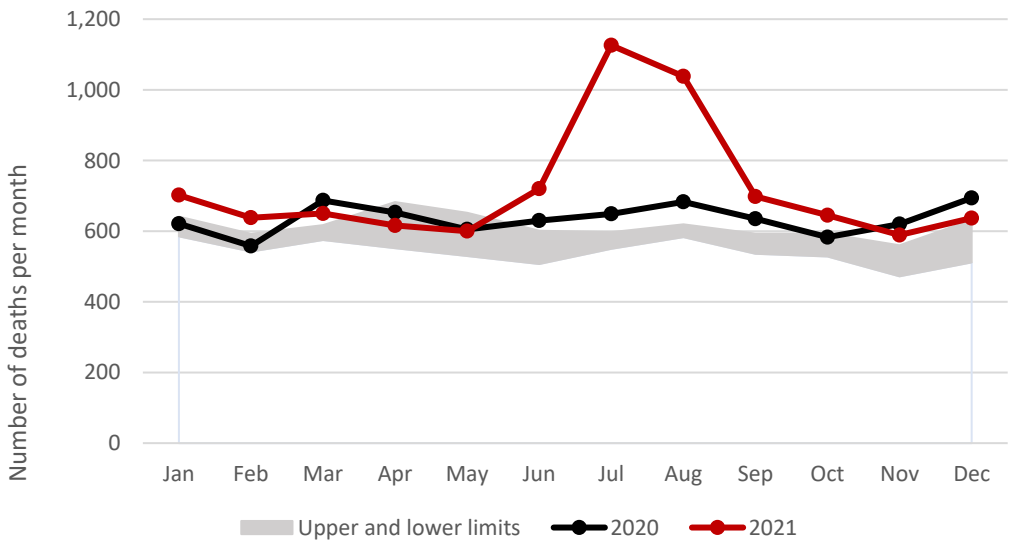
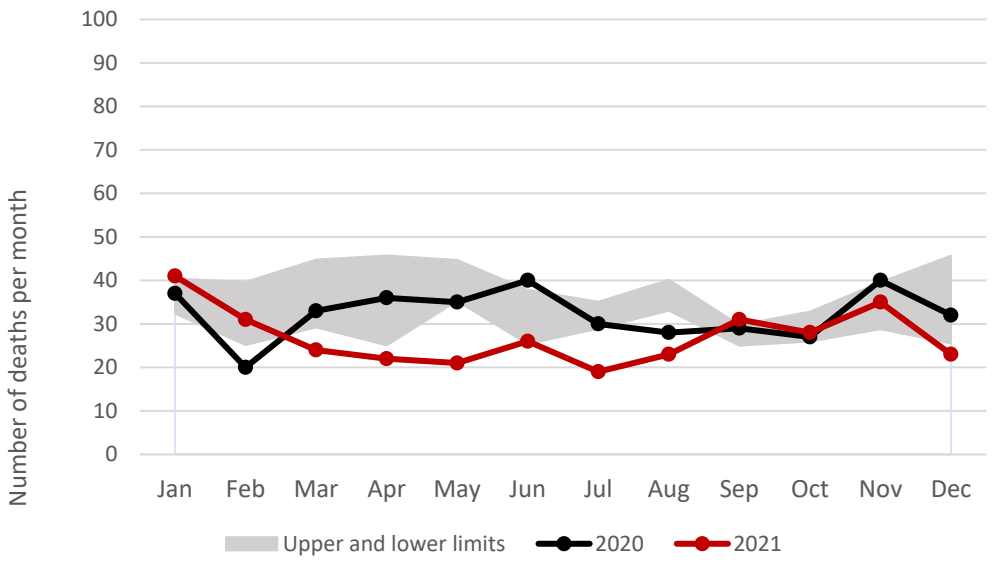


Figure 5.9. Mortality due to external causes (both sexes, all ages) during 2020-21 compared to upper and lower limits (95%CI) of the average deaths per month during 2015-19



APPENDICIES

Appendix 1. Number of births by health facility recorded through the CMRIS, 2016-21

Makoi Birthing Unit is a new health facility that opened in late 2018, and Navosa Hospital opened in early 2021. It is understood that pregnant women from the 'Other Lau Islands' or the 'Other Lomaiviti Islands' in the Eastern Division travel to Suva several weeks before they are due to give birth and reside with relatives or family friends until their baby is born in a health facility in Suva. Similarly, pregnant women from the 'Other Mamanuca Islands' or the 'Yasawa Islands' in the Western Division are understood to travel to Lautoka or Nadi to stay with relatives or family friends to deliver their baby in Lautoka or Nadi hospital.

Code	Facility Name	2016	2017	2018	2019	2020	2021
2	CWM Divisional Hospital	7,939	8,502	8,596	8,194	8,820	8,715
7	Lautoka Divisional Hospital	4,097	4,352	4,315	4,492	4,321	3,767
4	Labasa Divisional Hospital	2,115	1,858	2,104	2,124	2,348	2,088
11	Nadi Hospital	1,087	918	1,041	944	1,115	1,030
13	Nausori Hospital	890	891	791	664	757	744
19	Sigatoka Hospital	623	629	572	603	738	705
1	Ba Hospital	425	502	392	406	415	469
18	Savusavu Hospital	379	403	384	397	440	536
20	Waiyevo Hospital^	255	282	299	272	275	289
14	Navua Hospital	321	257	260	246	134	322
21	Tavua Hospital	256	238	206	239	275	276
16	Rakiraki Hospital	169	152	197	159	257	331
3	Korovou Hospital	179	208	182	225	206	234
30	Makoi Birthing Unit	0 *	0 *	0 *	466	442	235
10	Nabouwalu Hospital	133	157	104	137	148	116
22	Vunidawa Hospital	88	81	68	78	106	197
15	Ra Hospital	72	92	98	91	98	55
8	Levuka Hospital	68	68	39	41	72	48
23	Vunisea Hospital	56	38	29	36	53	41
5	Lakeba Hospital	18	12	6	4	3	4
6	Lomaloma Hospital	9	6	6	5	8	10
24	Wainibokasi Hospital	1	0	1	2	7	1
17	Rotuma Hospital	0	0	0	0	2	1
31	Navosa Hospital	0 *	0 *	0 *	0 *	0 *	3
25	Other Lau Islands	0 ^	0 ^	0 ^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0 ^	0 ^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0 ^	0 ^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0 ^	0 ^	0 ^	0 ^	0 ^
29	All Others	0	0	0	0	0	0
	Total births	**19,180**	**19,646**	**19,690**	**19,825**	**21,040**	**20,217**

*Code = health facility code outlined in the Fiji Bureau of Statistics Standard Operating Procedure of birth data entry; CWM Hospital = Colonial War Memorial Hospital; ^ previously named Taveuni Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1.*

Appendix 2. Estimated completeness of birth data by source and by health facility, 2016-21

2016 Births						
Facility Code	Facility Name	CMRIS	MHMS (PATISPlus)		Civil Registry	
		n	n	%	n	%
2	CWM Divisional Hospital	7,939	1,787	23%	7,715	97%
7	Lautoka Divisional Hospital	4,097	3,593	88%	4,025	98%
4	Labasa Divisional Hospital	2,115	1,173	55%	2,056	97%
11	Nadi Hospital	1,087	11	1.0%	1,068	98%
13	Nausori Hospital	890	0	0.0%	863	97%
19	Sigatoka Hospital	623	303	49%	570	91%
1	Ba Hospital	425	1	0.2%	420	99%
18	Savusavu Hospital	379	0	0.0%	336	89%
20	Waiyevo Hospital^	255	8	3.1%	259	102%
14	Navua Hospital	321	1	0.3%	299	93%
21	Tavua Hospital	256	0	0.0%	244	95%
16	Rakiraki Hospital	169	0	0.0%	108	64%
3	Korovou Hospital	179	0	0.0%	173	97%
30	Makoi Birthing Unit	*	*	*	*	*
10	Nabouwalu Hospital	133	1	0.8%	123	92%
22	Vunidawa Hospital	88	0	0.0%	88	100%
15	Ra Hospital	72	0	0.0%	131	182%
8	Levuka Hospital	68	0	0.0%	67	99%
23	Vunisea Hospital	56	0	0.0%	52	93%
5	Lakeba Hospital	18	0	0.0%	14	78%
6	Lomaloma Hospital	9	0	0.0%	7	78%
24	Wainibokasi Hospital	1	0	0.0%	1	100%
17	Rotuma Hospital	0	0	0.0%	0	0.0%
31	Navosa Hospital	*	*	*	*	*
25	Other Lau Islands	0 ^	0 ^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0 ^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0 ^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0 ^	0 ^	0 ^	0 ^
29	All Others	0	0	0.0%	131	NA
	Blank	0	0	NA	4	NA
	Total births	**19,180**	**6,882**	**35.9%**	**18,844**	**98.2%**

*CMRIS = Consolidated Monthly Reporting Information System; MHMS = Ministry of Health and Medical Services, extracted from PATISPlus; n = number of births per facility; % = completeness when compared to CMRIS; CWM Hospital = Colonial War Memorial Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1; NA = not available as could not be calculated due to no CMRIS figures.*

2017 Births						
Facility Code	Facility Name	CMRIS	MHMS (PATISPlus)		Civil Registry	
		n	n	%	n	%
2	CWM Divisional Hospital	8,502	2,074	24%	7,717	91%
7	Lautoka Divisional Hospital	4,352	4,326	99%	4,014	92%
4	Labasa Divisional Hospital	1,858	2,290	123%	1,960	105%
11	Nadi Hospital	918	224	24%	1,004	109%
13	Nausori Hospital	891	2	0.2%	796	89%
19	Sigatoka Hospital	629	428	68%	534	85%
1	Ba Hospital	502	2	0.4%	425	85%
18	Savusavu Hospital	403	0	0.0%	364	90%
20	Waiyevo Hospital^	282	12	4.3%	243	86%
14	Navua Hospital	257	0	0.0%	253	98%
21	Tavua Hospital	238	1	0.4%	226	95%
16	Rakiraki Hospital	152	2	1.3%	92	61%
3	Korovou Hospital	208	0	0.0%	204	98%
30	Makoi Birthing Unit	*	*	*	*	*
10	Nabouwalu Hospital	157	0	0.0%	134	85%
22	Vunidawa Hospital	81	0	0.0%	72	89%
15	Ra Hospital	92	2	2.2	135	147%
8	Levuka Hospital	68	0	0.0%	52	76%
23	Vunisea Hospital	38	0	0.0%	35	92%
5	Lakeba Hospital	12	1	8.3%	7	58%
6	Lomaloma Hospital	6	1	17%	2	33%
24	Wainibokasi Hospital	0	0	0.0%	1	NA
17	Rotuma Hospital	0	0	0.0%	0	0.0%
31	Navosa Hospital	*	*	*	*	*
25	Other Lau Islands	0 ^	0 ^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0 ^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0 ^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0 ^	0 ^	0 ^	0 ^
29	All Others	0	11	NA	185	NA
	Blank	0	1	NA	3	NA
	Total births	**19,646**	**9,377**	**47.7%**	**18,470**	**94.0%**

*CMRIS = Consolidated Monthly Reporting Information System; MHMS = Ministry of Health and Medical Services, extracted from PATISPlus; n = number of births per facility; % = completeness when compared to CMRIS; CWM Hospital = Colonial War Memorial Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1; NA = not available as could not be calculated due to no CMRIS figures.*

2018 Births						
Facility Code	Facility Name	CMRIS	MHMS (PATISPlus)		Civil Registry	
		n	n	%	n	%
2	CWM Divisional Hospital	8,596	8,464	98%	7,582	88%
7	Lautoka Divisional Hospital	4,315	4,384	102%	4,000	93%
4	Labasa Divisional Hospital	2,104	2,163	103%	2,000	95%
11	Nadi Hospital	1,041	32	3.1%	917	88%
13	Nausori Hospital	791	1	0.1%	748	95%
19	Sigatoka Hospital	572	419	73%	489	85%
1	Ba Hospital	392	1	0.3%	362	92%
18	Savusavu Hospital	384	9	2.3%	333	87%
20	Waiyevo Hospital^	299	243	81%	276	92%
14	Navua Hospital	260	0	0.0%	236	91%
21	Tavua Hospital	206	1	0.5%	187	91%
16	Rakiraki Hospital	197	1	0.5%	137	70%
3	Korovou Hospital	182	0	0.0%	162	89%
30	Makoi Birthing Unit	0	56	NA	39	NA
10	Nabouwalu Hospital	104	1	1.0%	95	91%
22	Vunidawa Hospital	68	0	0.0%	62	91%
15	Ra Hospital	98	0	0.0%	137	140%
8	Levuka Hospital	39	0	0.0%	39	100%
23	Vunisea Hospital	29	0	0.0%	23	79%
5	Lakeba Hospital	6	0	0.0%	5	83%
6	Lomaloma Hospital	6	0	0.0%	4	67%
24	Wainibokasi Hospital	1	0	0.0%	2	200%
17	Rotuma Hospital	0	0	0.0%	0	0.0%
31	Navosa Hospital	*	*	*	*	*
25	Other Lau Islands	0 ^	0 ^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0 ^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0 ^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0 ^	0 ^	0 ^	0 ^
29	All Others	0	5	NA	103	NA
	Blank	0	0	0.0%	0	0.0%
	Total births	**19,690**	**15,780**	**80.1%**	**17,938**	**91.1%**

*CMRIS = Consolidated Monthly Reporting Information System; MHMS = Ministry of Health and Medical Services, extracted from PATISPlus; n = number of births per facility; % = completeness when compared to CMRIS; CWM Hospital = Colonial War Memorial Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1; NA = not available as could not be calculated due to no CMRIS figures.*

2019 Births						
Facility Code	Facility Name	CMRIS	MHMS (PATISPlus)		Civil Registry	
		n	n	%	n	%
2	CWM Divisional Hospital	8,194	5,612	68%	7,805	95%
7	Lautoka Divisional Hospital	4,492	4,668	104%	4,313	96%
4	Labasa Divisional Hospital	2,124	2,326	110%	2,175	102%
11	Nadi Hospital	944	513	54%	875	93%
13	Nausori Hospital	664	2	0.3%	589	89%
19	Sigatoka Hospital	603	471	78%	542	90%
1	Ba Hospital	406	245	60%	377	93%
18	Savusavu Hospital	397	187	47%	350	88%
20	Waiyevo Hospital^	272	284	104%	219	81%
14	Navua Hospital	246	0	0.0%	218	89%
21	Tavua Hospital	239	119	50%	225	94%
16	Rakiraki Hospital	159	2	1.3%	126	79%
3	Korovou Hospital	225	10	4.4%	213	95%
30	Makoi Birthing Unit	466	465	100%	426	91%
10	Nabouwalu Hospital	137	2	1.5%	118	86%
22	Vunidawa Hospital	78	0	0.0%	68	87%
15	Ra Hospital	91	1	1.1%	127	140%
8	Levuka Hospital	41	0	0.0%	37	90%
23	Vunisea Hospital	36	0	0.0%	26	72%
5	Lakeba Hospital	4	0	0.0%	3	75%
6	Lomaloma Hospital	5	0	0.0%	2	40%
24	Wainibokasi Hospital	2	0	0.0%	0	0.0%
17	Rotuma Hospital	0	0	0.0%	0	0.0%
31	Navosa Hospital	*	*	*	*	*
25	Other Lau Islands	0 ^	0 ^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0 ^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0 ^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0 ^	0 ^	0 ^	0 ^
29	All Others	0	6	NA	107	NA
	Blank	0	0	0.0%	1	NA
	Total births	**19,825**	**14,913**	**75.2%**	**18,942**	**95.5%**

*CMRIS = Consolidated Monthly Reporting Information System; MHMS = Ministry of Health and Medical Services, extracted from PATISPlus; n = number of births per facility; % = completeness when compared to CMRIS; CWM Hospital = Colonial War Memorial Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1; NA = not available as could not be calculated due to no CMRIS figures.*

2020 Births						
Facility Code	Facility Name	CMRIS	MHMS (PATISPlus)		Civil Registry	
		n	n	%	n	%
2	CWM Divisional Hospital	8,820	1	0.0%	7,171	81%
7	Lautoka Divisional Hospital	4,321	3,988	92%	3,445	80%
4	Labasa Divisional Hospital	2,348	1,943	83%	1,861	79%
11	Nadi Hospital	1,115	990	89%	806	72%
13	Nausori Hospital	757	0	0.0%	550	73%
19	Sigatoka Hospital	738	719	97%	571	77%
1	Ba Hospital	415	406	98%	366	88%
18	Savusavu Hospital	440	388	88%	315	72%
20	Waiyevo Hospital^	275	261	95%	199	72%
14	Navua Hospital	134	0	0.0%	106	79%
21	Tavua Hospital	275	0	0.0%	228	83%
16	Rakiraki Hospital	257	1	0.4%	134	52%
3	Korovou Hospital	206	0	0.0%	143	69%
30	Makoi Birthing Unit	442	0	0.0%	340	77%
10	Nabouwalu Hospital	148	0	0.0%	93	63%
22	Vunidawa Hospital	106	0	0.0%	75	71%
15	Ra Hospital	98	0	0.0%	135	138%
8	Levuka Hospital	72	0	0.0%	47	65%
23	Vunisea Hospital	53	0	0.0%	30	57%
5	Lakeba Hospital	3	0	0.0%	2	67%
6	Lomaloma Hospital	8	0	0.0%	1	13%
24	Wainibokasi Hospital	7	0	0.0%	0	0.0%
17	Rotuma Hospital	2	0	0.0%	0	0.0%
31	Navosa Hospital	*	*	*	*	*
25	Other Lau Islands	0 ^	0 ^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0 ^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0 ^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0 ^	0 ^	0 ^	0 ^
29	All Others	0	1	NA	106	NA
	Blank	0	0	0.0%	0	0.0%
	Total births	**21,040**	**8,698**	**41.3%**	**16,724**	**79.5%**

*CMRIS = Consolidated Monthly Reporting Information System; MHMS = Ministry of Health and Medical Services, extracted from PATISPlus; n = number of births per facility; % = completeness when compared to CMRIS; CWM Hospital = Colonial War Memorial Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1; NA = not available as could not be calculated due to no CMRIS figures.*

2021 Births						
Facility Code	Facility Name	CMRIS	MHMS (PATISPlus)		Civil Registry	
		n	n	%	n	%
2	CWM Divisional Hospital	8,715	1	0.0%	4,728	54%
7	Lautoka Divisional Hospital	3,767	2,950	78%	2,225	59%
4	Labasa Divisional Hospital	2,088	454	22%	1,411	68%
11	Nadi Hospital	1,030	746	72%	562	55%
13	Nausori Hospital	744	0	0%	530	71%
19	Sigatoka Hospital	705	513	73%	324	46%
1	Ba Hospital	469	267	57%	261	56%
18	Savusavu Hospital	536	435	81%	295	55%
20	Waiyevo Hospital^	289	242	84%	141	49%
14	Navua Hospital	322	0	0.0%	197	61%
21	Tavua Hospital	276	0	0.0%	196	71%
16	Rakiraki Hospital	331	0	0.4%	177	53%
3	Korovou Hospital	234	0	0.0%	138	59%
30	Makoi Birthing Unit	235	0	0.0%	285	121%
10	Nabouwalu Hospital	116	0	0.0%	79	68%
22	Vunidawa Hospital	197	0	0.0%	91	46%
15	Ra Hospital	55	0	0.0%	98	178%
8	Levuka Hospital	48	0	0.0%	71	148%
23	Vunisea Hospital	41	0	0.0%	50	122%
5	Lakeba Hospital	4	0	0.0%	10	250%
6	Lomaloma Hospital	10	0	0.0%	1	10%
24	Wainibokasi Hospital	1	0	0.0%		
17	Rotuma Hospital	1	0	0.0%	2	200%
31	Navosa Hospital	3	0	*	1	33%
25	Other Lau Islands	0 ^	0^	0 ^	0 ^	0 ^
26	Other Lomaiviti Islands	0 ^	0^	0 ^	0 ^	0 ^
27	Other Mamanuca Islands	0 ^	0^	0 ^	0 ^	0 ^
28	Yasawa Islands	0 ^	0^	0 ^	0 ^	0 ^
29	All Others	0	0	NA	116	NA
	Blank	0	0	0.0%	1	NA
	Total births	**20,217**	**5,609**	**27.7%**	**11,990**	**59.3%**

*CMRIS = Consolidated Monthly Reporting Information System; MHMS = Ministry of Health and Medical Services, extracted from PATISPlus; n = number of births per facility; % = completeness when compared to CMRIS; CWM Hospital = Colonial War Memorial Hospital; facility code 9 and 12 no longer in use; * = facility not yet open; ^ = see notes at beginning of appendix 1; NA = not available as could not be calculated due to no CMRIS figures.*

Appendix 3. Stillbirths, by sex, 2026-21

Year	Male	Female	Unknown	Total
2016	87	78	0	165
2017	65	51	1	117
2018	71	69	4	144
2019	73	70	4	147
2020	106	107	6	219
2021	79	82	3	164
Total	**481**	**457**	**18**	**956**

Appendix 4. Maternal deaths, 2016-21

Year	Maternal death variable			UCoD variable	Total
	Direct	Indirect	Coincidental	O00-O99	
2016	3	0	4	(2) ^	7
2017	0	0	0	7	7
2018	0	0	0	2	2
2019	12	1	0	(3) ^	13
2020	7	3	0	0	10
2021	3	3	0	(1) ^	6

UCoD = underlying cause of death; ^ in 2016, 2019 and 2021 maternal deaths with UCoD O00-O9A assigned were already recorded in the maternal death variable as direct maternal deaths, and therefore are not added to the total maternal deaths. For all other years, records with UCoD O00-O9A assigned did not have an entry in the maternal death variable (i.e., it was blank).

Appendix 5. Population denominators used for calculation of rates

Age Group	2016			2017		
	Male	Female	Total	Male	Female	Total
0 – 4 years	46,759	44,220	90,979	47,195	44,702	91,897
5 – 9 years	44,763	42,505	87,267	45,243	43,052	88,295
10 – 14 years	40,880	38,994	79,875	40,715	38,881	79,596
15 - 19 years	38,311	36,320	74,631	38,032	36,056	74,088
20 - 24 years	37,850	36,441	74,290	37,464	36,152	73,616
25 - 29 years	35,467	34,260	69,726	35,253	34,055	69,308
30 - 34 years	35,022	33,269	68,291	35,266	33,552	68,818
35 - 39 years	32,922	31,369	64,290	33,382	31,768	65,150
40 - 44 years	27,787	26,003	53,790	27,697	25,817	53,514
45 - 49 years	25,367	24,220	49,586	25,314	24,190	49,504
50 - 54 years	24,206	23,544	47,750	24,649	23,961	48,610
55 - 59 years	20,710	20,213	40,923	21,263	20,745	42,008
60 - 64 years	14,597	15,368	29,965	14,891	15,724	30,615
65 - 69 years	9,878	10,998	20,876	10,076	11,252	21,328
70 - 74 years	6,202	7,542	13,744	6,367	7,781	14,148
75 - 79 years	3,422	4,613	8,035	3,490	4,756	8,246
80 - 84 years	1,542	2,379	3,921	1,560	2,437	3,997
85+ years	770	1,417	2,187	738	1,411	2,149
Total	446,455	433,675	880,126	448,595	436,292	884,887

Age Group	2018			2019		
	Male	Female	Total	Male	Female	Total
0 - 4yrs	47,631	45,184	92,815	48,067	45,666	93,733
5 - 9yrs	45,723	43,600	89,323	46,204	44,147	90,351
10 - 14yrs	40,550	38,768	79,318	40,384	38,655	79,039
15 - 19 years	37,753	35,792	73,545	37,474	35,528	73,002
20 - 24 years	37,078	35,864	72,942	36,692	35,575	72,267
25 - 29 years	35,040	33,850	68,890	34,826	33,646	68,472
30 - 34 years	35,510	33,835	69,345	35,754	34,118	69,872
35 - 39 years	33,842	32,167	66,010	34,303	32,567	66,869
40 - 44 years	27,607	25,631	53,238	27,517	25,445	52,962
45 - 49 years	25,262	24,160	49,422	25,209	24,131	49,340
50 - 54 years	25,092	24,378	49,470	25,536	24,795	50,331
55 - 59 years	21,816	21,277	43,093	22,369	21,809	44,178
60 - 64 years	15,185	16,080	31,265	15,480	16,436	31,916
65 - 69 years	10,274	11,506	21,780	10,472	11,760	22,232
70 - 74 years	6,532	8,020	14,552	6,697	8,259	14,956
75 - 79 years	3,558	4,899	8,457	3,626	5,042	8,668
80 - 84 years	1,578	2,495	4,073	1,597	2,553	4,149
85+ years	707	1,405	2,111	675	1,399	2,074
Total	450,738	438,911	889,649	452,882	441,531	894,411

Age Group	2020			2021		
	Male	Female	Total	Male	Female	Total
0 – 4 years	48,503	46,148	94,651	48,939	46,630	95,569
5 – 9 years	46,684	44,695	91,378	47,164	45,242	92,406
10 – 14 years	40,219	38,541	78,761	40,054	38,428	78,482
15 - 19 years	37,196	35,263	72,459	36,917	34,999	71,916
20 - 24 years	36,306	35,287	71,593	35,920	34,998	70,918
25 - 29 years	34,613	33,441	68,054	34,399	33,237	67,636
30 - 34 years	35,998	34,402	70,399	36,242	34,685	70,926
35 - 39 years	34,763	32,966	67,729	35,224	33,365	68,589
40 - 44 years	27,427	25,259	52,686	27,337	25,073	52,410
45 - 49 years	25,157	24,101	49,258	25,104	24,072	49,176
50 - 54 years	25,979	25,212	51,191	26,423	25,629	52,051
55 - 59 years	22,923	22,341	45,263	23,476	22,873	46,348
60 - 64 years	15,774	16,792	32,566	16,068	17,148	33,217
65 - 69 years	10,670	12,014	22,684	10,868	12,268	23,136
70 - 74 years	6,862	8,497	15,359	7,027	8,736	15,763
75 - 79 years	3,694	5,185	8,879	3,762	5,328	9,090
80 - 84 years	1,615	2,610	4,226	1,634	2,668	4,302
85+ years	644	1,393	2,036	612	1,387	1,999
Total	455,027	444,147	899,172	457,170	446,766	903,934

Appendix 6. Life Tables

2016 MALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	218	46,759	0.00466	0.02304	100,000	2,304	1.50	6,522,842	491,935	65.2	0.226	64.8	65.7
5-9	5	0.5	26	44,763	0.00058	0.00290	97,696	283	2.50	6,030,907	487,770	61.7	0.204	61.3	62.1
10-14	5	0.5	25	40,880	0.00061	0.00305	97,412	297	2.50	5,543,137	486,319	56.9	0.202	56.5	57.3
15-19	5	0.5	30	38,311	0.00078	0.00391	97,115	379	2.50	5,056,818	484,626	52.1	0.200	51.7	52.5
20-24	5	0.5	54	37,850	0.00143	0.00711	96,736	688	2.50	4,572,192	481,959	47.3	0.198	46.9	47.7
25-29	5	0.5	61	35,467	0.00172	0.00856	96,048	822	2.50	4,090,233	478,184	42.6	0.194	42.2	43.0
30-34	5	0.5	92	35,022	0.00263	0.01305	95,225	1,243	2.50	3,612,050	473,021	37.9	0.191	37.6	38.3
35-39	5	0.5	117	32,922	0.00355	0.01761	93,983	1,655	2.50	3,139,029	465,776	33.4	0.187	33.0	33.8
40-44	5	0.5	146	27,787	0.00525	0.02593	92,328	2,394	2.50	2,673,252	455,653	29.0	0.183	28.6	29.3
45-49	5	0.5	214	25,367	0.00844	0.04131	89,933	3,715	2.50	2,217,600	440,379	24.7	0.178	24.3	25.0
50-54	5	0.5	384	24,206	0.01586	0.07629	86,218	6,578	2.50	1,777,221	414,646	20.6	0.173	20.3	21.0
55-59	5	0.5	521	20,710	0.02516	0.11834	79,640	9,425	2.50	1,362,574	374,639	17.1	0.169	16.8	17.4
60-64	5	0.5	544	14,597	0.03727	0.17046	70,215	11,969	2.50	987,935	321,155	14.1	0.168	13.7	14.4
65-69	5	0.5	508	9,878	0.05143	0.22784	58,246	13,271	2.50	666,780	258,055	11.4	0.168	11.1	11.8
70-74	5	0.5	482	6,202	0.07772	0.32537	44,975	14,634	2.50	408,726	188,293	9.1	0.169	8.8	9.4
75-79	5	0.5	381	3,422	0.11134	0.43549	30,342	13,214	2.50	220,432	118,676	7.3	0.176	6.9	7.6
80-84	5	0.5	227	1,542	0.14725	0.53814	17,128	9,218	2.50	101,757	62,598	5.9	0.180	5.6	6.3
85+	15	0.3	160	770	0.20793	1.00000	7,911	7,911	4.95	39,159	39,159	5.0	0.030	4.9	5.0

2016 FEMALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	138	44,220	0.00312	0.01548	100,000	1,548	1.50	6,958,036	494,581	69.6	0.247	69.1	70.1
5-9	5	0.5	14	42,505	0.00033	0.00165	98,452	162	2.50	6,463,455	491,854	65.7	0.226	65.2	66.1
10-14	5	0.5	15	38,994	0.00038	0.00192	98,290	189	2.50	5,971,602	490,976	60.8	0.225	60.3	61.2
15-19	5	0.5	20	36,320	0.00055	0.00275	98,101	270	2.50	5,480,625	489,830	55.9	0.223	55.4	56.3
20-24	5	0.5	47	36,441	0.00129	0.00643	97,831	629	2.50	4,990,795	487,583	51.0	0.222	50.6	51.4
25-29	5	0.5	46	34,260	0.00134	0.00669	97,202	650	2.50	4,503,212	484,385	46.3	0.218	45.9	46.8
30-34	5	0.5	71	33,269	0.00213	0.01061	96,552	1,025	2.50	4,018,827	480,197	41.6	0.215	41.2	42.0
35-39	5	0.5	86	31,369	0.00274	0.01361	95,527	1,301	2.50	3,538,630	474,384	37.0	0.211	36.6	37.5
40-44	5	0.5	100	26,003	0.00385	0.01905	94,226	1,795	2.50	3,064,246	466,646	32.5	0.208	32.1	32.9
45-49	5	0.5	167	24,220	0.00690	0.03389	92,432	3,133	2.50	2,597,600	454,328	28.1	0.203	27.7	28.5
50-54	5	0.5	245	23,544	0.01041	0.05071	89,299	4,528	2.50	2,143,272	435,175	24.0	0.197	23.6	24.4
55-59	5	0.5	377	20,213	0.01865	0.08910	84,771	7,553	2.50	1,708,097	404,971	20.1	0.193	19.8	20.5
60-64	5	0.5	381	15,368	0.02479	0.11673	77,218	9,013	2.50	1,303,126	363,555	16.9	0.189	16.5	17.2
65-69	5	0.5	385	10,998	0.03501	0.16095	68,204	10,977	2.50	939,572	313,578	13.8	0.184	13.4	14.1
70-74	5	0.5	405	7,542	0.05370	0.23671	57,227	13,546	2.50	625,993	252,269	10.9	0.180	10.6	11.3
75-79	5	0.5	367	4,613	0.07956	0.33179	43,681	14,493	2.50	373,724	182,171	8.6	0.177	8.2	8.9
80-84	5	0.5	280	2,379	0.11769	0.45466	29,188	13,271	2.50	191,553	112,763	6.6	0.173	6.2	6.9
85+	15	0.3	254	1,417	0.17924	1.00000	15,917	15,917	4.95	78,790	78,790	5.0	0.056	4.8	5.1

2017 MALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	250	47,195	0.00530	0.02614	100,000	2,614	1.50	6,671,357	490,851	66.7	0.243	66.2	67.2
5-9	5	0.5	21	45,243	0.00046	0.00232	97,386	226	2.50	6,180,506	486,366	63.5	0.218	63.0	63.9
10-14	5	0.5	16	40,715	0.00039	0.00196	97,160	191	2.50	5,694,140	485,325	58.6	0.217	58.2	59.0
15-19	5	0.5	25	38,032	0.00066	0.00328	96,970	318	2.50	5,208,816	484,052	53.7	0.215	53.3	54.1
20-24	5	0.5	58	37,464	0.00155	0.00771	96,651	745	2.50	4,724,763	481,394	48.9	0.213	48.5	49.3
25-29	5	0.5	64	35,253	0.00182	0.00904	95,906	867	2.50	4,243,370	477,364	44.2	0.209	43.8	44.7
30-34	5	0.5	72	35,266	0.00204	0.01016	95,039	965	2.50	3,766,006	472,784	39.6	0.206	39.2	40.0
35-39	5	0.5	113	33,382	0.00339	0.01678	94,074	1,579	2.50	3,293,221	466,424	35.0	0.203	34.6	35.4
40-44	5	0.5	143	27,697	0.00516	0.02549	92,495	2,357	2.50	2,826,797	456,583	30.6	0.199	30.2	31.0
45-49	5	0.5	205	25,314	0.00810	0.03969	90,138	3,577	2.50	2,370,214	441,747	26.3	0.195	25.9	26.7
50-54	5	0.5	357	24,649	0.01448	0.06989	86,561	6,049	2.50	1,928,468	417,680	22.3	0.190	21.9	22.7
55-59	5	0.5	461	21,263	0.02168	0.10283	80,511	8,279	2.50	1,510,788	381,859	18.8	0.186	18.4	19.1
60-64	5	0.5	457	14,891	0.03069	0.14251	72,232	10,294	2.50	1,128,929	335,426	15.6	0.185	15.3	16.0
65-69	5	0.5	400	10,076	0.03970	0.18057	61,938	11,184	2.50	793,504	281,730	12.8	0.183	12.5	13.2
70-74	5	0.5	377	6,367	0.05921	0.25788	50,754	13,089	2.50	511,774	221,048	10.1	0.183	9.7	10.4
75-79	5	0.5	339	3,490	0.09713	0.39078	37,665	14,719	2.50	290,726	151,530	7.7	0.185	7.4	8.1
80-84	5	0.5	220	1,560	0.14103	0.52133	22,947	11,963	2.50	139,196	84,826	6.1	0.186	5.7	6.4
85+	15	0.3	150	738	0.20325	1.00000	10,984	10,984	4.95	54,370	54,370	5.0	0.044	4.9	5.0

2017 FEMALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	192	44,702	0.00430	0.02125	100,000	2,125	1.50	7,001,742	492,563	70.0	0.280	69.5	70.6
5-9	5	0.5	25	43,052	0.00058	0.00290	97,875	284	2.50	6,509,178	488,667	66.5	0.249	66.0	67.0
10-14	5	0.5	29	38,881	0.00075	0.00372	97,591	363	2.50	6,020,511	487,049	61.7	0.247	61.2	62.2
15-19	5	0.5	29	36,056	0.00080	0.00401	97,228	390	2.50	5,533,462	485,166	56.9	0.244	56.4	57.4
20-24	5	0.5	42	36,152	0.00116	0.00579	96,838	561	2.50	5,048,297	482,788	52.1	0.241	51.7	52.6
25-29	5	0.5	45	34,055	0.00132	0.00659	96,277	634	2.50	4,565,509	479,801	47.4	0.239	47.0	47.9
30-34	5	0.5	68	33,552	0.00203	0.01008	95,643	964	2.50	4,085,708	475,805	42.7	0.236	42.3	43.2
35-39	5	0.5	83	31,768	0.00261	0.01298	94,679	1,229	2.50	3,609,903	470,322	38.1	0.233	37.7	38.6
40-44	5	0.5	127	25,817	0.00492	0.02430	93,450	2,271	2.50	3,139,581	461,573	33.6	0.229	33.1	34.0
45-49	5	0.5	156	24,190	0.00645	0.03173	91,179	2,893	2.50	2,678,008	448,663	29.4	0.224	28.9	29.8
50-54	5	0.5	269	23,961	0.01123	0.05460	88,286	4,820	2.50	2,229,344	429,379	25.3	0.219	24.8	25.7
55-59	5	0.5	298	20,745	0.01436	0.06933	83,466	5,787	2.50	1,799,966	402,860	21.6	0.214	21.1	22.0
60-64	5	0.5	360	15,724	0.02289	0.10828	77,678	8,411	2.50	1,397,106	367,365	18.0	0.211	17.6	18.4
65-69	5	0.5	354	11,252	0.03146	0.14584	69,268	10,102	2.50	1,029,740	321,084	14.9	0.207	14.5	15.3
70-74	5	0.5	335	7,781	0.04305	0.19435	59,166	11,499	2.50	708,656	267,083	12.0	0.204	11.6	12.4
75-79	5	0.5	314	4,756	0.06602	0.28334	47,667	13,506	2.50	441,573	204,570	9.3	0.202	8.9	9.7
80-84	5	0.5	247	2,437	0.10135	0.40432	34,161	13,812	2.50	237,003	136,275	6.9	0.201	6.5	7.3
85+	15	0.3	224	1,411	0.15875	1.00000	20,349	20,349	4.95	100,727	100,727	5.0	0.086	4.8	5.1

2018 MALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	209	47,631	0.00439	0.02170	100,000	2,170	1.50	6,580,032	492,405	65.8	0.231	65.3	66.3
5-9	5	0.5	26	45,723	0.00057	0.00284	97,830	278	2.50	6,087,627	488,455	62.2	0.210	61.8	62.6
10-14	5	0.5	25	40,550	0.00062	0.00308	97,552	300	2.50	5,599,173	487,010	57.4	0.208	57.0	57.8
15-19	5	0.5	38	37,753	0.00101	0.00502	97,252	488	2.50	5,112,163	485,039	52.6	0.206	52.2	53.0
20-24	5	0.5	54	37,078	0.00146	0.00726	96,764	702	2.50	4,627,124	482,063	47.8	0.202	47.4	48.2
25-29	5	0.5	64	35,040	0.00183	0.00909	96,062	873	2.50	4,145,061	478,125	43.2	0.199	42.8	43.5
30-34	5	0.5	66	35,510	0.00186	0.00925	95,188	881	2.50	3,666,936	473,740	38.5	0.195	38.1	38.9
35-39	5	0.5	113	33,842	0.00334	0.01656	94,308	1,561	2.50	3,193,196	467,635	33.9	0.192	33.5	34.2
40-44	5	0.5	133	27,607	0.00482	0.02380	92,746	2,207	2.50	2,725,561	458,213	29.4	0.189	29.0	29.8
45-49	5	0.5	253	25,262	0.01002	0.04885	90,539	4,423	2.50	2,267,348	441,636	25.0	0.184	24.7	25.4
50-54	5	0.5	357	25,092	0.01423	0.06869	86,116	5,916	2.50	1,825,712	415,790	21.2	0.178	20.9	21.6
55-59	5	0.5	515	21,816	0.02361	0.11145	80,200	8,939	2.50	1,409,922	378,654	17.6	0.175	17.2	17.9
60-64	5	0.5	546	15,185	0.03596	0.16495	71,261	11,755	2.50	1,031,268	326,921	14.5	0.175	14.1	14.8
65-69	5	0.5	512	10,274	0.04984	0.22157	59,507	13,185	2.50	704,347	264,572	11.8	0.175	11.5	12.2
70-74	5	0.5	482	6,532	0.07379	0.31149	46,322	14,429	2.50	439,776	195,537	9.5	0.178	9.1	9.8
75-79	5	0.5	348	3,558	0.09781	0.39295	31,893	12,532	2.50	244,238	128,135	7.7	0.187	7.3	8.0
80-84	5	0.5	228	1,578	0.14445	0.53063	19,361	10,273	2.50	116,104	71,121	6.0	0.196	5.6	6.4
85+	15	0.3	131	707	0.18542	1.00000	9,087	9,087	4.95	44,983	44,983	5.0	0.043	4.9	5.0

2018 FEMALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	161	45,184	0.00356	0.01766	100,000	1,766	1.50	6,985,181	493,819	69.9	0.251	69.4	70.3
5-9	5	0.5	19	43,600	0.00044	0.00218	98,234	214	2.50	6,491,362	490,636	66.1	0.229	65.6	66.5
10-14	5	0.5	19	38,768	0.00049	0.00245	98,020	240	2.50	6,000,726	489,502	61.2	0.227	60.8	61.7
15-19	5	0.5	25	35,792	0.00070	0.00349	97,780	341	2.50	5,511,224	488,050	56.4	0.225	55.9	56.8
20-24	5	0.5	43	35,864	0.00120	0.00598	97,440	582	2.50	5,023,174	485,742	51.6	0.222	51.1	52.0
25-29	5	0.5	46	33,850	0.00136	0.00677	96,857	656	2.50	4,537,433	482,646	46.8	0.219	46.4	47.3
30-34	5	0.5	50	33,835	0.00148	0.00736	96,201	708	2.50	4,054,787	479,236	42.1	0.216	41.7	42.6
35-39	5	0.5	72	32,167	0.00224	0.01113	95,493	1,063	2.50	3,575,551	474,808	37.4	0.213	37.0	37.9
40-44	5	0.5	122	25,631	0.00476	0.02352	94,430	2,221	2.50	3,100,743	466,599	32.8	0.210	32.4	33.2
45-49	5	0.5	198	24,160	0.00820	0.04015	92,209	3,703	2.50	2,634,144	451,790	28.6	0.204	28.2	29.0
50-54	5	0.5	247	24,378	0.01013	0.04941	88,507	4,373	2.50	2,182,353	431,601	24.7	0.197	24.3	25.0
55-59	5	0.5	327	21,277	0.01537	0.07400	84,134	6,226	2.50	1,750,752	405,104	20.8	0.192	20.4	21.2
60-64	5	0.5	371	16,080	0.02307	0.10907	77,908	8,497	2.50	1,345,648	368,296	17.3	0.188	16.9	17.6
65-69	5	0.5	406	11,506	0.03529	0.16213	69,410	11,253	2.50	977,352	318,919	14.1	0.184	13.7	14.4
70-74	5	0.5	409	8,020	0.05100	0.22616	58,157	13,153	2.50	658,433	257,904	11.3	0.179	11.0	11.7
75-79	5	0.5	354	4,899	0.07226	0.30602	45,004	13,772	2.50	400,529	190,591	8.9	0.175	8.6	9.2
80-84	5	0.5	276	2,495	0.11063	0.43331	31,232	13,533	2.50	209,938	122,328	6.7	0.166	6.4	7.0
85+	15	0.3	265	1,405	0.18863	1.00000	17,699	17,699	4.95	87,610	87,610	5.0	0.058	4.8	5.1

2019 MALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	210	48,067	0.00437	0.02161	100,000	2,161	1.50	6,618,230	492,437	66.2	0.229	65.7	66.6
5-9	5	0.5	28	46,204	0.00061	0.00303	97,839	296	2.50	6,125,793	488,456	62.6	0.209	62.2	63.0
10-14	5	0.5	26	40,384	0.00064	0.00321	97,543	313	2.50	5,637,337	486,932	57.8	0.207	57.4	58.2
15-19	5	0.5	43	37,474	0.00115	0.00572	97,230	556	2.50	5,150,405	484,758	53.0	0.205	52.6	53.4
20-24	5	0.5	50	36,692	0.00136	0.00679	96,673	656	2.50	4,665,648	481,726	48.3	0.201	47.9	48.7
25-29	5	0.5	49	34,826	0.00141	0.00701	96,017	673	2.50	4,183,922	478,402	43.6	0.198	43.2	44.0
30-34	5	0.5	81	35,754	0.00227	0.01126	95,344	1,074	2.50	3,705,520	474,035	38.9	0.195	38.5	39.2
35-39	5	0.5	95	34,303	0.00277	0.01375	94,270	1,296	2.50	3,231,485	468,109	34.3	0.191	33.9	34.7
40-44	5	0.5	168	27,517	0.00611	0.03007	92,974	2,795	2.50	2,763,376	457,879	29.7	0.188	29.4	30.1
45-49	5	0.5	228	25,209	0.00904	0.04422	90,178	3,988	2.50	2,305,497	440,921	25.6	0.182	25.2	25.9
50-54	5	0.5	364	25,536	0.01425	0.06882	86,190	5,932	2.50	1,864,577	416,122	21.6	0.176	21.3	22.0
55-59	5	0.5	498	22,369	0.02226	0.10544	80,259	8,463	2.50	1,448,455	380,136	18.0	0.173	17.7	18.4
60-64	5	0.5	543	15,480	0.03508	0.16125	71,796	11,577	2.50	1,068,319	330,036	14.9	0.172	14.5	15.2
65-69	5	0.5	496	10,472	0.04737	0.21175	60,219	12,751	2.50	738,283	269,215	12.3	0.171	11.9	12.6
70-74	5	0.5	439	6,697	0.06555	0.28161	47,467	13,367	2.50	469,068	203,918	9.9	0.170	9.5	10.2
75-79	5	0.5	345	3,626	0.09514	0.38430	34,100	13,105	2.50	265,150	137,739	7.8	0.168	7.4	8.1
80-84	5	0.5	225	1,597	0.14091	0.52100	20,995	10,939	2.50	127,412	77,631	6.1	0.149	5.8	6.4
85+	15	0.3	170	675	0.25185	1.00000	10,057	10,057	4.95	49,781	49,781	5.0	0.031	4.9	5.0

2019 FEMALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	159	45,666	0.00348	0.01726	100,000	1,726	1.50	6,971,291	493,959	69.7	0.245	69.2	70.2
5-9	5	0.5	19	44,147	0.00043	0.00215	98,274	211	2.50	6,477,332	490,842	65.9	0.224	65.5	66.3
10-14	5	0.5	19	38,655	0.00049	0.00245	98,063	241	2.50	5,986,489	489,713	61.0	0.222	60.6	61.5
15-19	5	0.5	30	35,528	0.00084	0.00421	97,822	412	2.50	5,496,777	488,080	56.2	0.220	55.8	56.6
20-24	5	0.5	36	35,575	0.00101	0.00505	97,410	492	2.50	5,008,697	485,821	51.4	0.217	51.0	51.8
25-29	5	0.5	65	33,646	0.00193	0.00961	96,918	932	2.50	4,522,876	482,263	46.7	0.214	46.2	47.1
30-34	5	0.5	59	34,118	0.00173	0.00861	95,987	826	2.50	4,040,613	477,868	42.1	0.210	41.7	42.5
35-39	5	0.5	82	32,567	0.00252	0.01251	95,160	1,191	2.50	3,562,745	472,825	37.4	0.206	37.0	37.8
40-44	5	0.5	106	25,445	0.00417	0.02061	93,970	1,937	2.50	3,089,920	465,006	32.9	0.203	32.5	33.3
45-49	5	0.5	155	24,131	0.00642	0.03161	92,033	2,909	2.50	2,624,914	452,891	28.5	0.197	28.1	28.9
50-54	5	0.5	282	24,795	0.01137	0.05529	89,124	4,928	2.50	2,172,023	433,298	24.4	0.191	24.0	24.7
55-59	5	0.5	373	21,809	0.01710	0.08201	84,196	6,905	2.50	1,738,725	403,716	20.7	0.186	20.3	21.0
60-64	5	0.5	380	16,436	0.02312	0.10928	77,291	8,446	2.50	1,335,010	365,337	17.3	0.181	16.9	17.6
65-69	5	0.5	401	11,760	0.03410	0.15710	68,844	10,815	2.50	969,672	317,183	14.1	0.176	13.7	14.4
70-74	5	0.5	394	8,259	0.04771	0.21312	58,029	12,367	2.50	652,489	259,227	11.2	0.170	10.9	11.6
75-79	5	0.5	385	5,042	0.07636	0.32060	45,662	14,639	2.50	393,263	191,710	8.6	0.164	8.3	8.9
80-84	5	0.5	308	2,553	0.12066	0.46349	31,022	14,379	2.50	201,552	119,166	6.5	0.153	6.2	6.8
85+	15	0.3	280	1,399	0.20017	1.00000	16,644	16,644	4.95	82,387	82,387	5.0	0.050	4.9	5.0

2020 MALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	197	48,503	0.00406	0.02010	100,000	2,010	1.50	6,604,605	492,964	66.0	0.226	65.6	66.5
5-9	5	0.5	22	46,684	0.00047	0.00235	97,990	231	2.50	6,111,641	489,372	62.4	0.207	62.0	62.8
10-14	5	0.5	24	40,219	0.00060	0.00298	97,759	291	2.50	5,622,269	488,067	57.5	0.206	57.1	57.9
15-19	5	0.5	50	37,196	0.00134	0.00670	97,468	653	2.50	5,134,202	485,707	52.7	0.203	52.3	53.1
20-24	5	0.5	53	36,306	0.00146	0.00727	96,815	704	2.50	4,648,496	482,314	48.0	0.199	47.6	48.4
25-29	5	0.5	61	34,613	0.00176	0.00877	96,111	843	2.50	4,166,182	478,446	43.3	0.195	43.0	43.7
30-34	5	0.5	59	35,998	0.00164	0.00816	95,268	778	2.50	3,687,736	474,394	38.7	0.191	38.3	39.1
35-39	5	0.5	151	34,763	0.00434	0.02149	94,490	2,030	2.50	3,213,342	467,375	34.0	0.189	33.6	34.4
40-44	5	0.5	144	27,427	0.00525	0.02591	92,460	2,396	2.50	2,745,967	456,310	29.7	0.184	29.3	30.1
45-49	5	0.5	253	25,157	0.01006	0.04905	90,064	4,418	2.50	2,289,657	439,276	25.4	0.179	25.1	25.8
50-54	5	0.5	323	25,979	0.01243	0.06029	85,646	5,164	2.50	1,850,381	415,322	21.6	0.172	21.3	21.9
55-59	5	0.5	487	22,923	0.02125	0.10087	80,483	8,118	2.50	1,435,058	382,117	17.8	0.168	17.5	18.2
60-64	5	0.5	568	15,774	0.03601	0.16517	72,364	11,953	2.50	1,052,941	331,940	14.6	0.167	14.2	14.9
65-69	5	0.5	541	10,670	0.05070	0.22500	60,412	13,593	2.50	721,001	268,076	11.9	0.167	11.6	12.3
70-74	5	0.5	496	6,862	0.07228	0.30610	46,819	14,331	2.50	452,924	198,267	9.7	0.167	9.3	10.0
75-79	5	0.5	350	3,694	0.09474	0.38299	32,488	12,443	2.50	254,657	131,333	7.8	0.167	7.5	8.2
80-84	5	0.5	221	1,615	0.13683	0.50976	20,045	10,218	2.50	123,325	74,681	6.2	0.144	5.9	6.4
85+	15	0.3	163	644	0.25330	1.00000	9,827	9,827	4.95	48,644	48,644	5.0	0.030	4.9	5.0

2020 FEMALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	142	46,148	0.00308	0.01527	100,000	1,527	1.50	6,951,910	494,656	69.5	0.245	69.0	70.0
5-9	5	0.5	24	44,695	0.00054	0.00268	98,473	264	2.50	6,457,254	491,706	65.6	0.226	65.1	66.0
10-14	5	0.5	24	38,541	0.00062	0.00311	98,209	305	2.50	5,965,548	490,283	60.7	0.224	60.3	61.2
15-19	5	0.5	23	35,263	0.00065	0.00326	97,904	319	2.50	5,475,265	488,722	55.9	0.221	55.5	56.4
20-24	5	0.5	39	35,287	0.00111	0.00551	97,585	538	2.50	4,986,543	486,581	51.1	0.219	50.7	51.5
25-29	5	0.5	48	33,441	0.00144	0.00715	97,047	694	2.50	4,499,962	483,502	46.4	0.216	45.9	46.8
30-34	5	0.5	67	34,402	0.00195	0.00969	96,353	934	2.50	4,016,460	479,432	41.7	0.212	41.3	42.1
35-39	5	0.5	90	32,966	0.00273	0.01356	95,420	1,294	2.50	3,537,028	473,864	37.1	0.209	36.7	37.5
40-44	5	0.5	137	25,259	0.00542	0.02676	94,126	2,518	2.50	3,063,164	464,333	32.5	0.206	32.1	32.9
45-49	5	0.5	185	24,101	0.00768	0.03766	91,607	3,450	2.50	2,598,831	449,413	28.4	0.198	28.0	28.8
50-54	5	0.5	261	25,212	0.01035	0.05046	88,158	4,448	2.50	2,149,418	429,668	24.4	0.191	24.0	24.8
55-59	5	0.5	351	22,341	0.01571	0.07559	83,710	6,327	2.50	1,719,750	402,730	20.5	0.186	20.2	20.9
60-64	5	0.5	435	16,792	0.02590	0.12165	77,382	9,413	2.50	1,317,020	363,378	17.0	0.183	16.7	17.4
65-69	5	0.5	430	12,014	0.03579	0.16426	67,969	11,164	2.50	953,642	311,934	14.0	0.178	13.7	14.4
70-74	5	0.5	418	8,497	0.04919	0.21902	56,805	12,442	2.50	641,707	252,920	11.3	0.173	11.0	11.6
75-79	5	0.5	378	5,185	0.07291	0.30833	44,363	13,679	2.50	388,787	187,619	8.8	0.168	8.4	9.1
80-84	5	0.5	308	2,610	0.11799	0.45557	30,684	13,979	2.50	201,168	118,475	6.6	0.162	6.2	6.9
85+	15	0.3	261	1,393	0.18741	1.00000	16,706	16,706	4.95	82,693	82,693	5.0	0.055	4.8	5.1

2021 MALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	209	48,939	0.00427	0.02113	100,000	2,113	1.50	6,493,212	492,605	64.9	0.212	64.5	65.3
5-9	5	0.5	18	47,164	0.00038	0.00191	97,887	187	2.50	6,000,607	488,970	61.3	0.194	60.9	61.7
10-14	5	0.5	30	40,054	0.00075	0.00374	97,701	365	2.50	5,511,637	487,590	56.4	0.193	56.0	56.8
15-19	5	0.5	54	36,917	0.00146	0.00729	97,335	709	2.50	5,024,047	484,904	51.6	0.190	51.2	52.0
20-24	5	0.5	56	35,920	0.00156	0.00776	96,626	750	2.50	4,539,143	481,255	47.0	0.185	46.6	47.3
25-29	5	0.5	59	34,399	0.00172	0.00854	95,876	819	2.50	4,057,887	477,333	42.3	0.180	42.0	42.7
30-34	5	0.5	78	36,242	0.00215	0.01070	95,057	1,017	2.50	3,580,555	472,742	37.7	0.176	37.3	38.0
35-39	5	0.5	118	35,224	0.00335	0.01661	94,040	1,562	2.50	3,107,813	466,293	33.0	0.173	32.7	33.4
40-44	5	0.5	173	27,337	0.00633	0.03115	92,478	2,881	2.50	2,641,519	455,187	28.6	0.169	28.2	28.9
45-49	5	0.5	238	25,104	0.00948	0.04631	89,597	4,149	2.50	2,186,333	437,613	24.4	0.162	24.1	24.7
50-54	5	0.5	385	26,423	0.01457	0.07029	85,448	6,006	2.50	1,748,720	412,225	20.5	0.155	20.2	20.8
55-59	5	0.5	556	23,476	0.02368	0.11180	79,442	8,882	2.50	1,336,495	375,005	16.8	0.150	16.5	17.1
60-64	5	0.5	651	16,068	0.04051	0.18394	70,560	12,979	2.50	961,490	320,353	13.6	0.148	13.3	13.9
65-69	5	0.5	578	10,868	0.05319	0.23472	57,581	13,515	2.50	641,137	254,117	11.1	0.145	10.9	11.4
70-74	5	0.5	528	7,027	0.07514	0.31628	44,066	13,937	2.50	387,020	185,486	8.8	0.141	8.5	9.1
75-79	5	0.5	448	3,762	0.11907	0.45879	30,129	13,823	2.50	201,534	116,086	6.7	0.137	6.4	7.0
80-84	5	0.5	302	1,634	0.18487	0.63217	16,306	10,308	2.50	85,448	55,759	5.2	0.110	5.0	5.5
85+	15	0.3	233	612	0.38072	1.00000	5,998	5,998	4.95	29,689	29,689	5.0	0.010	4.9	5.0

2021 FEMALES														
Age Group	Years	Lin. Adj.	Number of Deaths	Estimated Population	(mx)	(qx)	(lx)	(dx)	(ax)	(tx)	(Lx)	(ex)	SE (ex)	(ex) LCL	(ex) UCL
0-4	5	0.3	184	46,630	0.00395	0.01954	100,000	1,954	1.50	6,823,732	493,162	68.2	0.233	67.8	68.7
5-9	5	0.5	21	45,242	0.00046	0.00232	98,046	227	2.50	6,330,570	489,663	64.6	0.213	64.1	65.0
10-14	5	0.5	25	38,428	0.00065	0.00325	97,819	318	2.50	5,840,907	488,301	59.7	0.211	59.3	60.1
15-19	5	0.5	31	34,999	0.00089	0.00442	97,501	431	2.50	5,352,606	486,429	54.9	0.209	54.5	55.3
20-24	5	0.5	29	34,998	0.00083	0.00413	97,070	401	2.50	4,866,177	484,349	50.1	0.205	49.7	50.5
25-29	5	0.5	41	33,237	0.00123	0.00615	96,669	594	2.50	4,381,828	481,860	45.3	0.203	44.9	45.7
30-34	5	0.5	68	34,685	0.00196	0.00975	96,075	937	2.50	3,899,968	478,031	40.6	0.200	40.2	41.0
35-39	5	0.5	110	33,365	0.00330	0.01635	95,138	1,555	2.50	3,421,937	471,799	36.0	0.196	35.6	36.4
40-44	5	0.5	151	25,073	0.00602	0.02967	93,582	2,776	2.50	2,950,138	460,970	31.5	0.192	31.1	31.9
45-49	5	0.5	190	24,072	0.00789	0.03870	90,806	3,514	2.50	2,489,168	445,244	27.4	0.184	27.1	27.8
50-54	5	0.5	299	25,629	0.01167	0.05668	87,292	4,948	2.50	2,043,925	424,088	23.4	0.176	23.1	23.8
55-59	5	0.5	395	22,873	0.01727	0.08277	82,344	6,816	2.50	1,619,836	394,679	19.7	0.171	19.3	20.0
60-64	5	0.5	466	17,148	0.02717	0.12723	75,528	9,609	2.50	1,225,157	353,616	16.2	0.166	15.9	16.5
65-69	5	0.5	525	12,268	0.04279	0.19329	65,919	12,741	2.50	871,541	297,740	13.2	0.162	12.9	13.5
70-74	5	0.5	497	8,736	0.05689	0.24903	53,177	13,243	2.50	573,801	232,780	10.8	0.155	10.5	11.1
75-79	5	0.5	406	5,328	0.07621	0.32006	39,935	12,781	2.50	341,021	167,720	8.5	0.147	8.3	8.8
80-84	5	0.5	336	2,668	0.12593	0.47888	27,153	13,003	2.50	173,302	103,258	6.4	0.127	6.1	6.6
85+	15	0.3	327	1,387	0.23583	1.00000	14,150	14,150	4.95	70,043	70,043	5.0	0.033	4.9	5.0

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