

**National Health
Information
Bulletin
2016**

National Health Information Bulletin 2016

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Preface

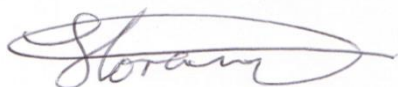
The Health Information Unit continues to provide key statistical information on the health status of the Cook Islands through this annual bulletin for the years up to 2016. This is the result of the continuous dedication invested by all health staff involved routinely in documenting their day to day work which contributes to the compiling of this useful report. The centralized electronic patient management database MedTech32 continued to be the main data source for the health indicators. The establishment of the national core indicators enabled the Ministry to tailor the information in this report to cover the individual elements in producing these indicators in a time series and trends.

The information contained in this report will be used by Te Marae Ora Cook Islands Ministry of Health (MOH) to broaden the needs for epidemiology and for public health needs, assessing progress towards the health outcome targets, formulating future plans and advice to the Minister of Health on how the health needs can be addressed. These will also provide some basic tabulated data readily available to Researchers.

It is the Ministry's aim to ensure that government and the wider community including International stakeholders, are provided with timely, reliable and quality health statistics.

For more detailed information and those not published in this report, inquiries are to be made through the Secretary of Health and/or the Director of Funding and Planning.

Meitaki Maata



.....
Mr Tearoa M.C. Iorangi
MANAGER HEALTH INFORMATION UNIT

Acknowledgements

The availability of health information is critical in allowing the Ministry of Health to ask and answer the right questions about health care in the Cook Islands. It is for this reason that the Health Information Unit (HIU) produces annual statistical bulletins which reflects the health sector performance from the data received from the patient management system MedTech32, departmental registers and various health facilities reporting across the country.

The Unit is constantly striving to improve its publishing of this important document and other related information products, aligning it with requests and feedback from various data users within the ministry, in country and abroad.

With the support of World Health Organisation (WHO) in 2013, the Ministry undertook an assessment of its Health Information System (HIS), which leads to the development of the first National Health Information Strategic Plan 2015-2019. A central activity within this plan was the development of the National Core Indicator set that was finalised in 2014 and is now in the second year of implementation.

HIU extends its acknowledgement to WHO for the funding support towards the implementation of several activities highlighted in the plan enabling the Ministry to deliver trainings to the Outer Islands health staff in improving their data entry practices for quality and complete data.

Gratitude is also extended to all health staff that had assisted through their day to day duties in providing and documenting the services that are provided, resulting as the core data required for the compiling of this bulletin and the national core indicators.

A special acknowledgement to the following staff in their effort and contributions to this edition of the bulletin, as part of a mini data analysis training provided by HIU to strengthen skills and to develop a culture of information use among data collectors and users, enabling them to work with data collected for this report. Participants are as follows;

- Toa Pole
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Key Facts

KEY FACTS	2014	2015	2016
2016 Population estimates, residents only – June quarter	13,600	13,000	11,500
Total number of births	223	218	243
Total number of deaths	131	118	101
Crude Birth Rate (CBR per 1,000)	16.4	16.8	21.1
Crude Death Rate (CDR per 1,000)	9.6	9.1	8.8
Total Fertility Rate (TFR per woman)	2.2	2.1	2.4
Teenage (adolescent) Fertility Rate	51.9	40.2	40.2
Life Expectancy at birth (5 year period)			
Males		71.5	69.6
Females		76.8	77.6
Life Expectancy at age 40 (5 year period)			
Males		35.0	33.5
Females		38.3	39.0
Fetal Mortality Rate (FMR per 1,000)	0.0	4.6	4.1
Infant Mortality Rate (IMR per 1,000)	0.0	4.6	8.2
Under 5 Mortality (U5M per 1,000)		4.0	4.0
Adult Mortality (% , 5 year period)			
Males		16.1	22.9
Females		10.7	10.9
NCD Mortality (%)			
Aged 15-64	19.1	21.2	25.7
Aged 65+	55.7	62.7	52.5
NCD Premature Death (%)			
Aged 30-69		23.1	23.9

Introduction

Cook Islands

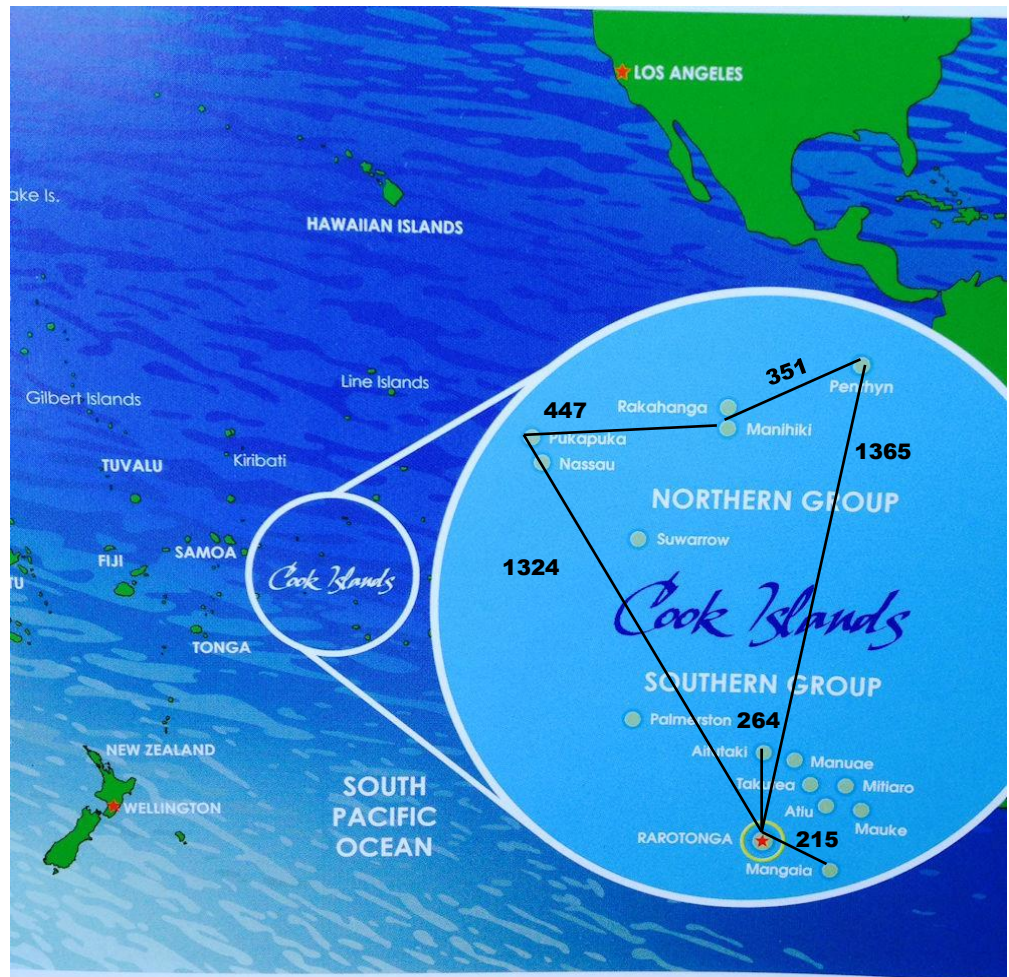
The Cook Islands is a country made up of 15 islands and atolls with a land area of 240 square kilometers (km²) scattered over 2 million km² of the Pacific Ocean. The Cook Islands consists of two main groups, in the north is the Northern Group Islands and in the south is the Southern Group Islands. The majority of the population lives in the Southern Group with Rarotonga the main and largest of the islands, and is the site of the main urban centre of Avarua. These islands are located within 8 and 23 degrees south and between 156 and 167 degrees west. Such distances over the wide ocean linking these small island populations is imposing challenges to the development of transportation and communication systems.

The islands are named after Captain James Cook who visited them in 1773 and 1777. In 1888, the Cook Islands became a British protectorate and were transferred to New Zealand in 1901. In 1965, the Cook Islands chose to become self-governance in free association with New Zealand for the functions of defence and foreign affairs, although for the latter the Cook Islands is largely independent. The free association means that all Cook Islanders are New Zealand citizens.

The Cook Islands is governed by a Prime Minister who is the leader of the majority party in the legislature, and the legislature is elected by popular vote every four years.

The major economic activities in the Cook Islands are tourism and financial services, with market-oriented agricultural production the main source of income on some islands. There were economic troubles in 1996-1997 but were resolved through a programme of reforms including public service, public asset devolvement and economic strengthening and stimulation, supported largely by New Zealand and the Asian Development Bank.

Indigenous Cook Islanders make up most of the population, with a steadily increasing population of expatriates, largely composed of New Zealanders, Filipinos and people from other Pacific Island countries, notably Fiji. English and Cook Islands Maori are the official languages, with Cook Islands Maori the main language of communication.



Health information system

The Cook Islands has an established health information system (HIS), which is producing an adequate amount of information for use in decision-making in planning. The primary health management information system is MedTech32. It offers a relatively user-friendly platform for health workers to enter and access patient information from all islands. The system allows for basic information for many hospital activities including daily recording of patient management, in-patient admission, transfer and discharge; outpatient case registrations, invoicing and consultations; surgery details; special clinic services; laboratory services; prescription records; radiology services; discharge planning, pregnancy and birth records; post natal follow ups; immunization records; oral health; and death registrations for individuals and families.

Health facilities on the Te Pa Enuā (Outer Islands) are able to connect to MedTech32 via the internet providing, an important information 'bridge' back to the central Ministry of Health on Rarotonga.

All of the remaining information systems are mostly paper based and slowly moving into electronic Microsoft Excel spreadsheets. These include data from the community health services on communicable disease programs and surveillance, and community health nursing. Information from recent surveys and on-field services is also of paper-based, excel spreadsheets and not integrated into MedTech32. But future plans are to get these data electronically stored as a component of the data warehouse.

HIU continued to use the International Statistical Classification of Diseases (ICD10) to code its morbidity and mortality data (that is the underlying cause of death as certified by a Medical Officer or Nurse Practitioners in some of the Outer Islands). The Mortality tabulation list 1 with 103 conditions or groupings is used in the Cook Islands for the coding of its underlying causes of death.

Data Sources

There are several indicator sets in use in the Cook Islands and many are not completely compatible due to differences in indicator definitions, hence 20 national core indicators were developed to give a broader picture of health, and the operation of the Ministry of Health activities identified in the National Health Information Strategy 2015-2019. Such activities include capacity building with certifiers and coders to reduce the proportion of deaths coded to ill-defined causes; and to improve on completions of several specifically designed MedTech32 templates, to become the main data source register and act as the main data collection tools as well for most of these indicators. Also apart from just data entry trainings on the use of these data are provided to users enabling them to analyze what they have inputted or documented as a means of developing a culture of information use among data collectors and users. These are specifically the;

- Outpatient triaging & cardiovascular risk assessment (CVR1)
- NCD register (NCDREG)
- Cancer (CANCER)
- Fish Poisoning (FISH)
- Dengue-Zika-Chickungunya (DENZIK)
- Syndrome (SYND) - for acute fever & rash, diarrhea, prolonged fever and influenza like-illness (ILI)
- Admission (ADM)
- Discharged (DIS)
- Death (D)
- Injury Surveillance (CIIS)
- Road Traffic accident (MVA)
- Baby birth details (BIRTH)
- Mothers details (BIRTH2)
- Outpatient Stats (OPD)
- OPD Triage Template (TRIAGE)
- Body Mass Index (BMI)
- Patient Referral NZ (REFER)
- Patient Referral OI (REFOI)
- Dental details (DENT1, DENT2, DENT3, DENT4, DENT5, DENT6)

Furthermore, through the disease classifications for all patients consulted at any of the health facility in the Cook Islands and other modules associated with MedTech32, such as the appointment books system and the invoicing system.

Limitations

Data in this bulletin does not include;

- Births and deaths of patients referred overseas
- Patients referred and living overseas for chronic conditions
- Non Cook Islanders
- Those lost in June 2014 to May 2015 due to a MedTech32 problem experienced but for the following areas only:
 - Notifiable diseases
 - Morbidity classifications
 - Outpatient consultations

Not that data for 2015 has been updated and information provided in this release might be different from those previously published, as these are being revised. The 2016 information produced are of provisional status and may change in future publishing of these annual bulletins.

Medtech32

This is a highly modular fully featured practice management system. Medtech32 provides the stability required to maintain the integrity of your data. It features a very stable database has become integral in optimizing the efficiency of many medical practices and can be utilized in both primary and secondary health care environments.

Its major core functionality includes;

- Demographics – records containing extensive information on patient demographic
- Clinical Notes – covers medications, disease classifications and electronic receipt of pathology and radiology results, an outbox
- Recalls and Screening – templates necessary for any special requirements, as well as the basic recalls including: hypertension, cervical screening, and diabetes. The recall function vastly increases practice efficiency and the facility is available to automatically generate recall letters
- Prescribing
- Accounts – provides comprehensive accounting functions and is able to generate a wide range of standard and customized reports

And also provides other functions such as;

- Health Assessment and Management Tools – includes a cardiovascular risk assessment tool, growth charts, and Ministry of Health treatment guidelines
- A Drawing Tool for Anatomical References
- Attachments Manager – able to link files directly to an individual patient record
- Interface with Laboratory Results – to receive electronic lab results that can then be charted and graphed
- Geocoding for Demographic Information
- Query Builder – useful reporting tool that provides the ability to interrogate most of the data that has been entered into MedTech32
- Immunisation – interfaces with the national immunization register
- Interfacing with Third Party Applications

Population

The total population of the Cook Islands as reported in the 2011 Census is 17,794. This number includes both residents (people permanently living in the Cook Islands) and visitors that were present during the time of the census, but does not include those Cook Islands residents that were away during that time. This population count reflects a decline of 1,775 people from the 2006 census (19,569). For resident Cook Islanders a total of 14,977 were reported in the 2011 census with 7,490 males and a few less with 7,487 females.

71 percent of this population is residing on the main Island Rarotonga with 22 percent living on the Outer Islands of Aitutaki, Atiu, Mangaia, Mauke and Mitiaro, whereas the rest (7 percent) are living in the Northern Islands.

While the majority of people are living in Rarotonga, almost 17 percent of those aged 60 years and more preferred to live back in the Southern group Islands of Aitutaki, Atiu, Mangaia, Mauke and Mitiaro, more than those living on Rarotonga with only 13 percent. For those less than 15 years, over 38 percent are living back in the Northern Group Islands of Palmerston, Manihiki, Rakahanga, Pukapuka, Nassau and Penrhyn, more than those living on Rarotonga with almost 24 percent.

Table 1: Populations by region and age groups, Cook Islands: 2011

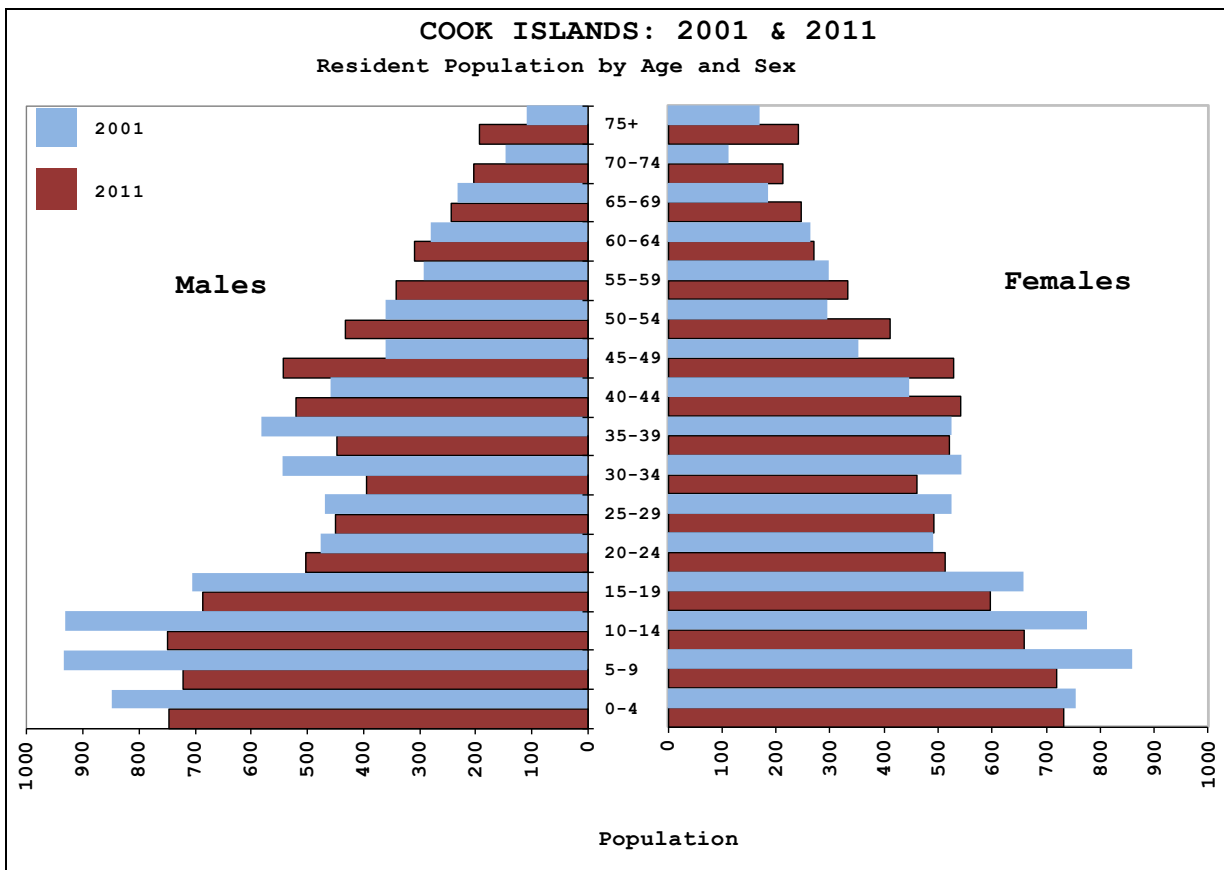
Region	Age Group				Total
	0-14	15-44	45-59	> 59	
COOK ISLANDS	Total Population				
	4,627	7,584	3,204	2,379	17,794
Rarotonga	3,119	5,904	2,395	1,677	13,095
Southern Group excl. Raro	1,081	1,275	629	601	3,586
Northern Group	427	405	180	101	1,113
COOK ISLANDS	Resident Population				
	4,332	6,130	2,590	1,925	14,977
Rarotonga	2,869	4,594	1,836	1,273	10,572
Southern Group excl. Raro	1,036	1,131	574	552	3,293
Northern Group	427	405	180	100	1,112
COOK ISLANDS	Percentage Distribution - Total population				
	26	42.6	18	13.4	100
Rarotonga	23.8	45.1	18.3	12.8	73.6
Southern Group excl. Raro	30.1	35.6	17.5	16.8	20.2
Northern Group	38.4	36.4	16.2	9.1	6.3

Population pyramids, sometimes called an age picture diagram are often viewed as the most effective way to graphically depict the age and sex structure of a population.

As shown in **Figure 1** below is the Cook Islands population pyramid for 2001 and 2011 census. It is obvious that there is a decline in the population of the Cook Islands in this ten year period among the young age groups from 0-39 years. There is also the shift of the 15-39 year age groups, showing the continuous sign of outward migration at the young ages. These are the 5-29 cohort groups in 2001 that would have been in the 15-39 cohorts. The main incentives for the move could be for further education, higher wages and more employment opportunities overseas.

It should also be noted that a lot more of our older population is living more than 65 years indicating a shift to a decade of healthier and active population. This is an increase from six percent in 2001 to nine percent in 2011 census.

Figure 1: Population pyramid - resident population



Births

Live births

The total number of births occurring in the Cook Islands continued to decline over the last ten years (2007-2016) as seen in **Table 2** below. Between these periods, total births varied between 320 in 2007 and 243 in 2016. Sex distribution for the last three years does not have much difference in number, and had a sex ratio of one male to one female.

Table 2: Live births by sex and year, Cook Islands: 2007-2016

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Male	157	163	147	137	152	163	133	117	107	125
Female	163	130	133	152	132	129	128	106	111	118
Total	320	293	280	289	284	292	261	223	218	243

Due to fluctuations in the annual number of births in the Cook Islands, a three year rolling average was used to smooth out these fluctuations so that at any given point that may be unusually high or low does not distort overall trends. Based on the trends shown in **Figure 2**, it is evident that the overall trend in the number of births is consistently declining despite the increase in 2016. The decline shows the continuous outward migration of the people as reported in the 2011 population census, with almost all of the Islands showing a decline since the 2001 census.

**Figure 2: Three year rolling average number of births
COOK ISLANDS: 2007-2016**

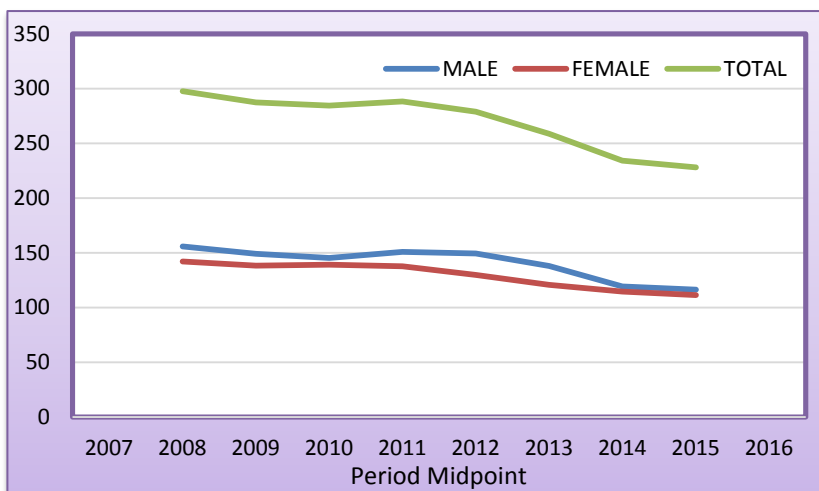


Table 3: Births by sex

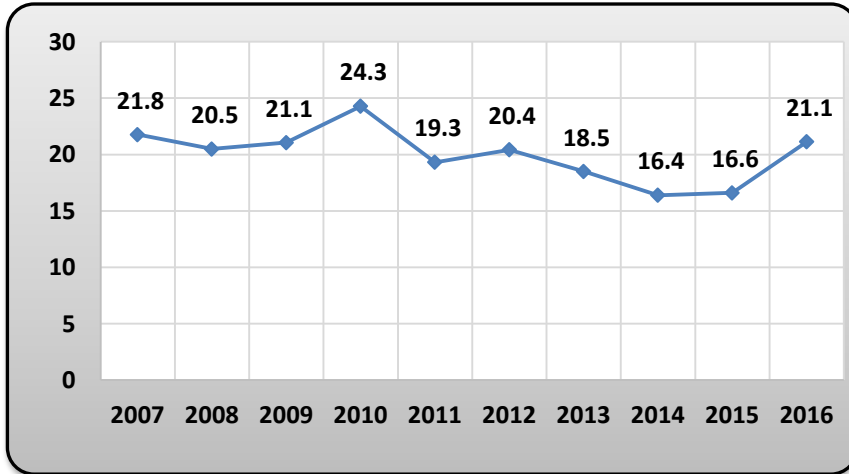
YEAR	Live Birth	
	Number	3 Year Average
2007	320	
2008	293	298
2009	280	287
2010	289	284
2011	284	288
2012	292	279
2013	261	259
2014	223	234
2015	218	228
2016	243	
Total	2,703	270

A total of 2,703 live births were reported from 2007 to 2016. The majority of these births were males with 1,401, compared to females with 1,302, giving a sex ratio of almost 108 males for every 100 females born. The average number of babies born in the Cook Islands over this last 10 years is 270 babies per year.

Crude birth rates

Crude birth rate (CBR) depicts the number of live births occurring in a year per thousand populations. In the case of the Cook Islands this rate is calculated per thousand resident populations, as the number of births reported only referred to those of Cook Island residents, including those with permanent resident (PR) status. As illustrated below, the graph shows fluctuations ranging from the lowest of 16 births in 2014 to 24 births in 2010. There is also an upward trend showing from 2014 to 2016 births.

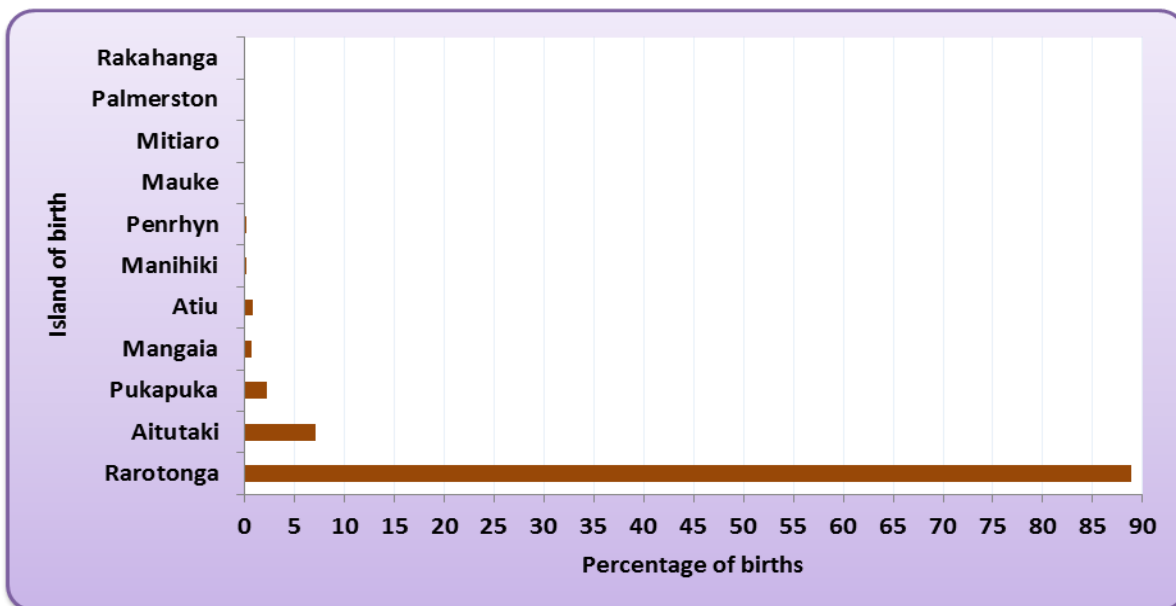
Figure 3: Crude birth rates, Cook Islands: 2007-2016



Births by Island

Highlighted in the figure below is, that almost 90 percent of births in the Cook Islands are delivered on the main island of Rarotonga. For the last ten years the following are the only Islands having births, namely Rarotonga, Aitutaki, Mangaia and Atiu in the Southern Group region and Pukapuka, Manihiki and Penrhyn in the Northern Group region.

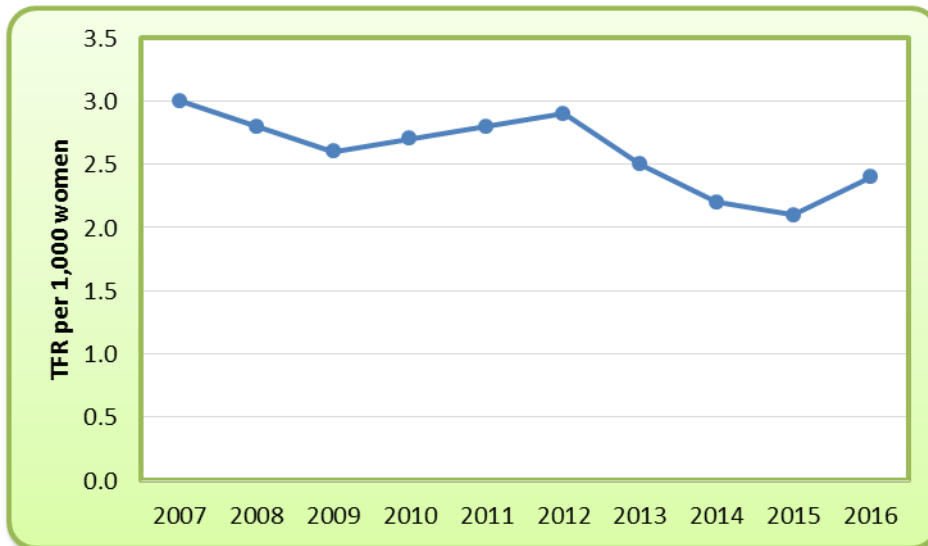
Figure 4: Percentage distribution of births by Island, Cook Islands: 2007-2016



Fertility

Total fertility rate (TFR) is a measure of the average number of children a woman would give birth to during her lifetime if she were to pass through her child-bearing years (15-49 years) experiencing the present day age specific fertility rates. **Figure 5** shows TFR that have continuously declined steadily from three births per woman to two.

Figure 5: Total fertility rate, Cook Islands: 2007-2016

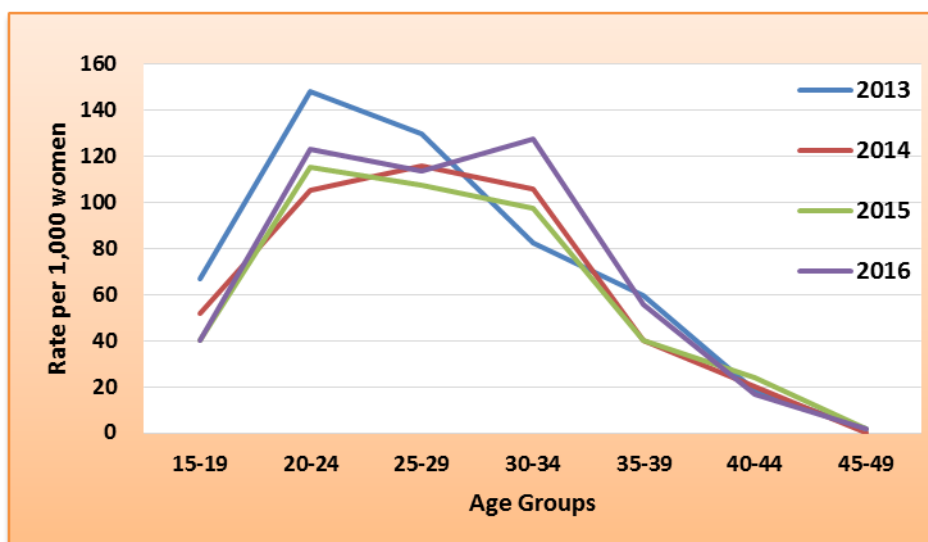


YEAR	TFR
2007	3.0
2008	2.8
2009	2.6
2010	2.7
2011	2.8
2012	2.9
2013	2.5
2014	2.2
2015	2.1
2016	2.4

In **Figure 6**, the highest number of births in the Cook Islands in 2016 occurs among mothers aged between 30 to 34 years with another peak in the age of 20 to 24 years. This is unlike other earlier years where fertility is evident among 20 to 24 year olds and then gradually declining.

The number of births to adolescent mothers aged 15 to 19 remains at 40 per thousand in the last two years following a decline from 52 per thousand in 2014. This could be due to easily accessible contraceptive services in the community.

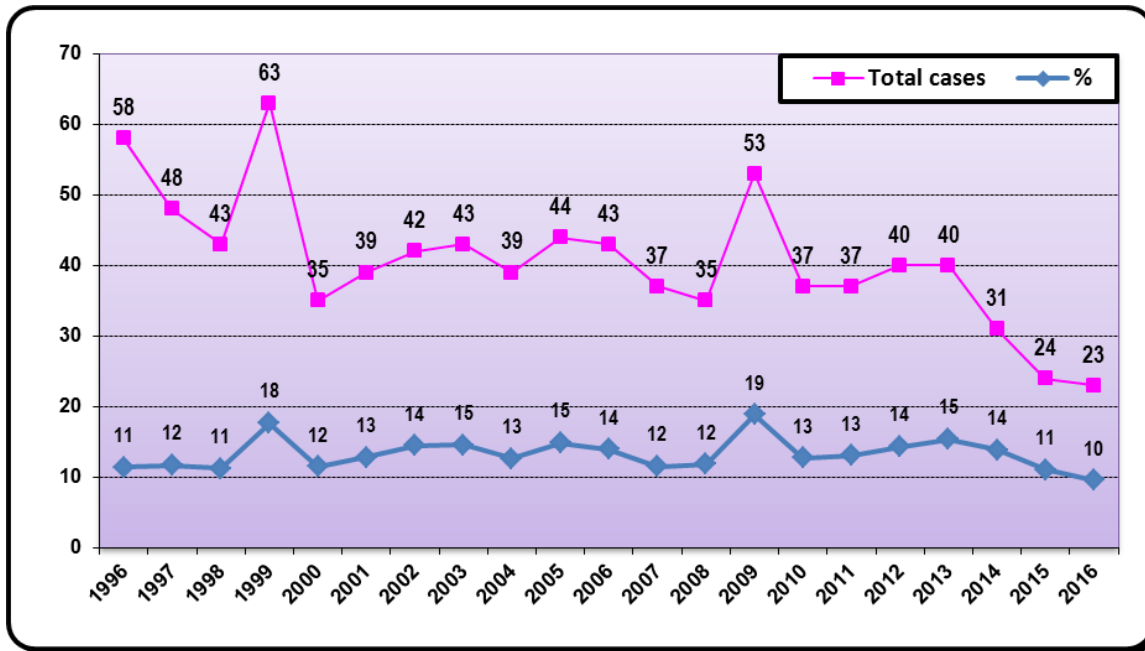
Figure 6: Age-specific fertility rates, Cook Islands: 2013-2016



Teenage pregnancy

The number of births to adolescent mothers aged 15 to 19 is showing fluctuations from the highest of 63 in 1999 to 23 in 2016. The percentage of these mothers to the total mothers that have given birth, ranges below twenty percent, that is, with the highest of 19 percent in 2009 to ten percent recorded for 2016.

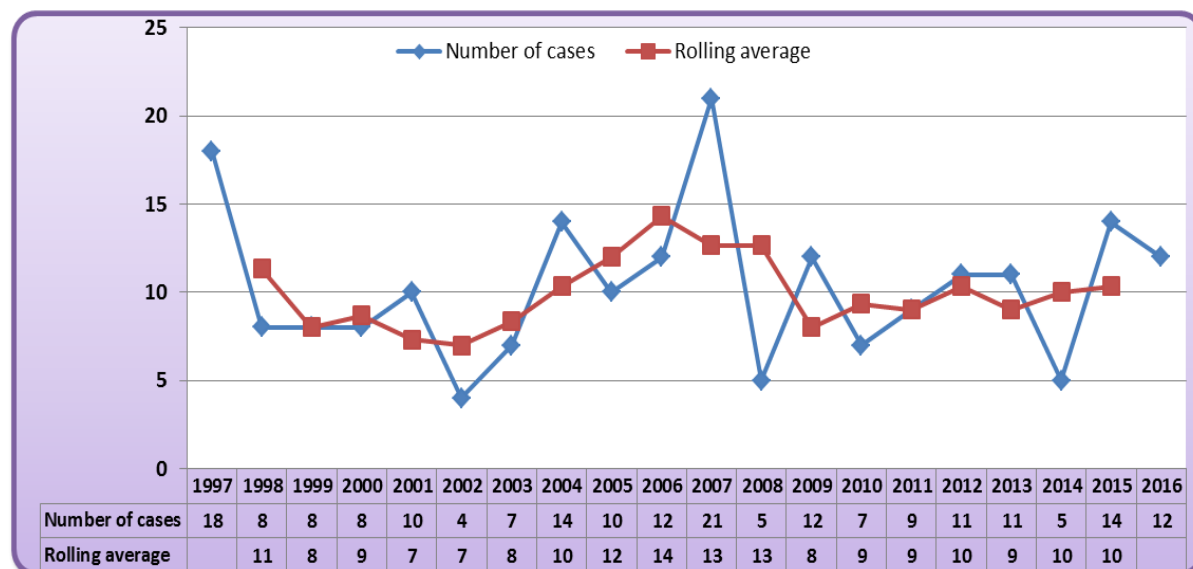
Figure 7: Teenage pregnancy and percentages to births, Cook Islands: 2007-2016



Birth weight

The normal birth weight during delivery is those weighing at 2500 to 4200 grams and those of low birth weight infants are those born at a weight of less than 2500 grams. **Figure 8** shows fluctuations in the number of births with low birth weight ranging between 21 births in 2007 to a lowest of four in 2002. However to smoothen this fluctuations a rolling average of three years was used to identify if the trend is increasing or declining. As a result, even though the number of cases showed a decline but the average is clearly showing an upward trend from 2012 to 2016.

Figure 8: Number of births with birth weight less than 2500g, Rarotonga: 1997-2016



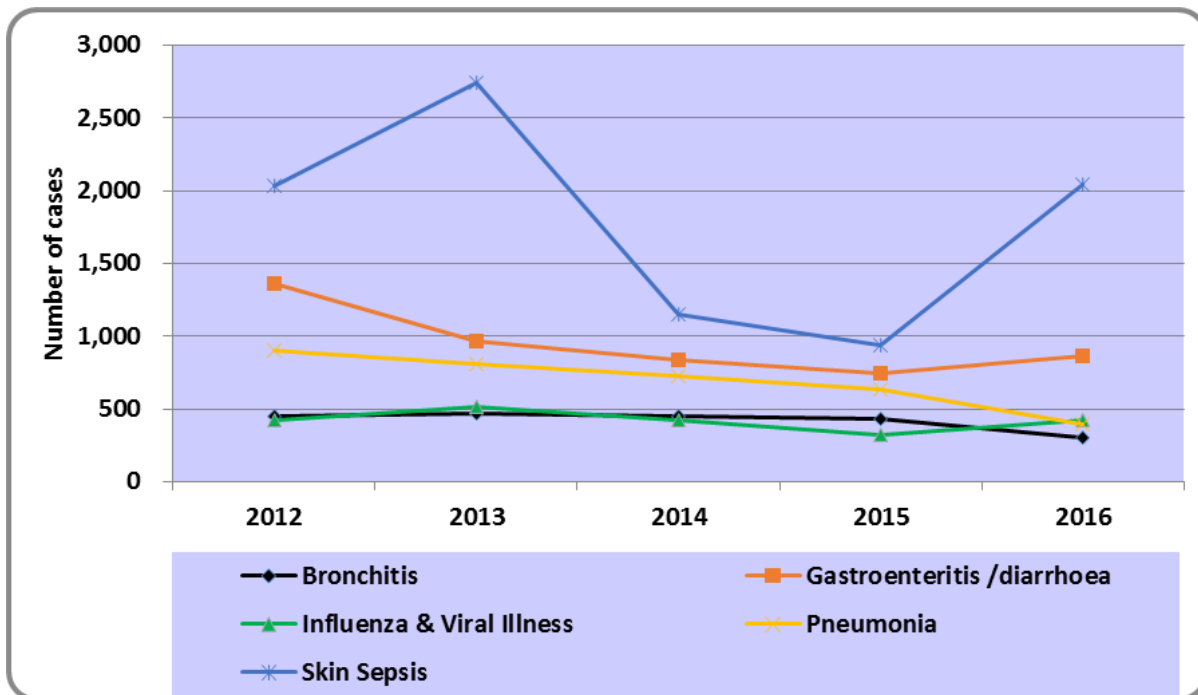
Notifiable diseases

A notifiable (reportable) disease is any disease that is required by law to be reported to government authorities. The collation of information allows the authorities to monitor the disease, and provides early warning of possible outbreaks. Note that these cases are from clinically diagnosed only. Also the low number of cases reported in 2014 and 2015 are due to our electronic patient management information system MedTech32 problem, resulting in the loss of some data in this area from June 2014 to May 2015.

Top five diseases

The top five infectious diseases reported in the Cook Islands between 2012 and 2016 are: skin sepsis, gastroenteritis/diarrhea, pneumonia, bronchitis and influenza & viral illness. Skin sepsis reported the highest number of cases amongst these five infections.

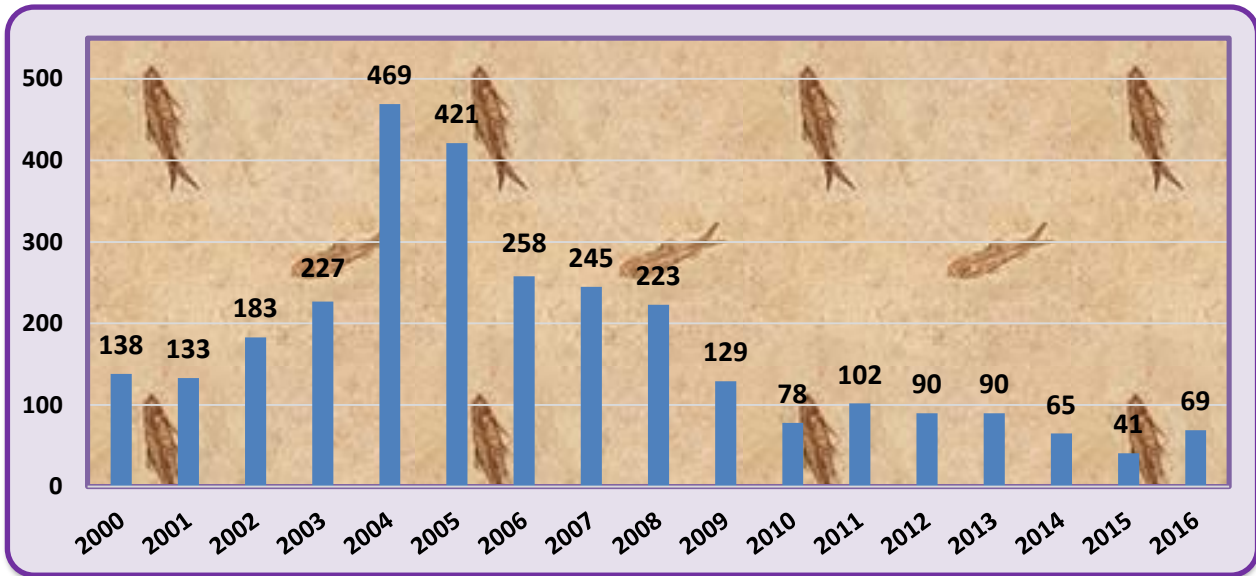
Figure 9: Top five notifiable diseases by year, Cook Islands: 2012-2016



Ciguatera poisoning

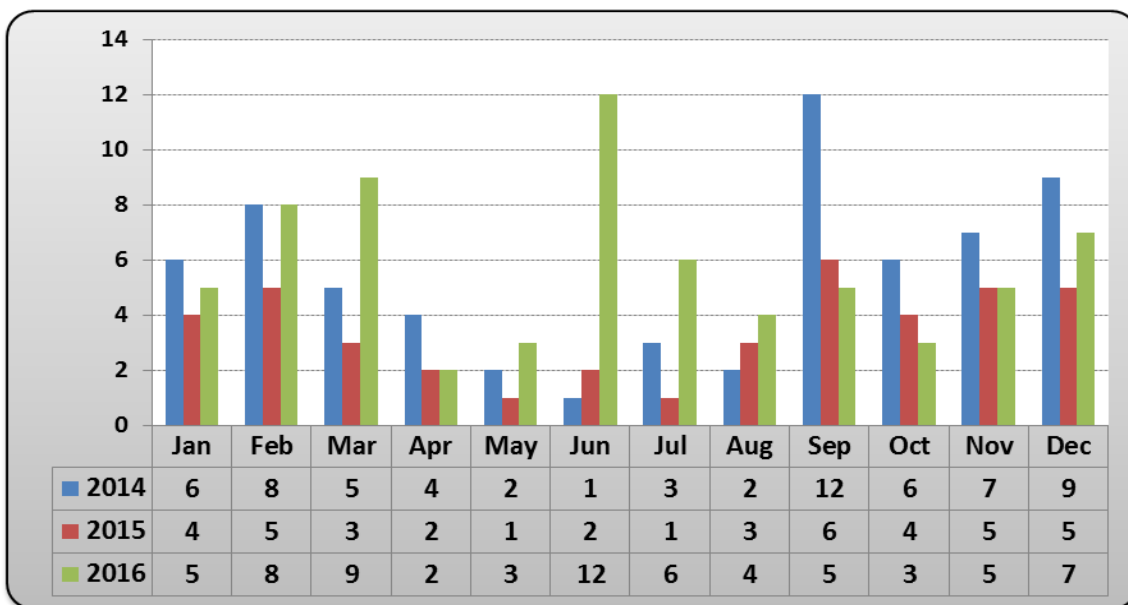
Ciguatera (fish poisoning) is a food borne illness caused by eating fish that is contaminated by ciguatera toxin. These toxins are commonly found among large reef fishes. The toxin is harmless to the fish however, when consumed by human being they become poisonous and can cause nausea, pain, cardiac and neurological symptoms.

Figure 10: Ciguatera poisoning cases by year, Cook Islands: 2000-2016



A monthly average of 5 cases was reported in 2014, 3 in 2015 and 6 in 2016. For these three years, cases were identified throughout all months of the year with 12 cases reported in June 2016 which is unusual as compared to the other two years and is also in the winter month.

Figure 11: Ciguatera poisoning cases, Cook Islands: 2014-2016



Morbidity/disability

For the last two years (2015-2016) the main causes of admissions in the Cook Islands were patients with Heart diseases, comprising of 15 percent in 2015 and 12 percent in 2016. The top ten leading causes of patients being admitted for further care can be seen in the graphs below with a 64 percent in 2016 and 75 percent in 2015 of total morbidity. Note that the numbers reported are for cases of morbidity diagnosed and not the number of patients seen.

Figure 12: Ten leading causes of inpatient morbidity, Cook Islands: 2015-2016

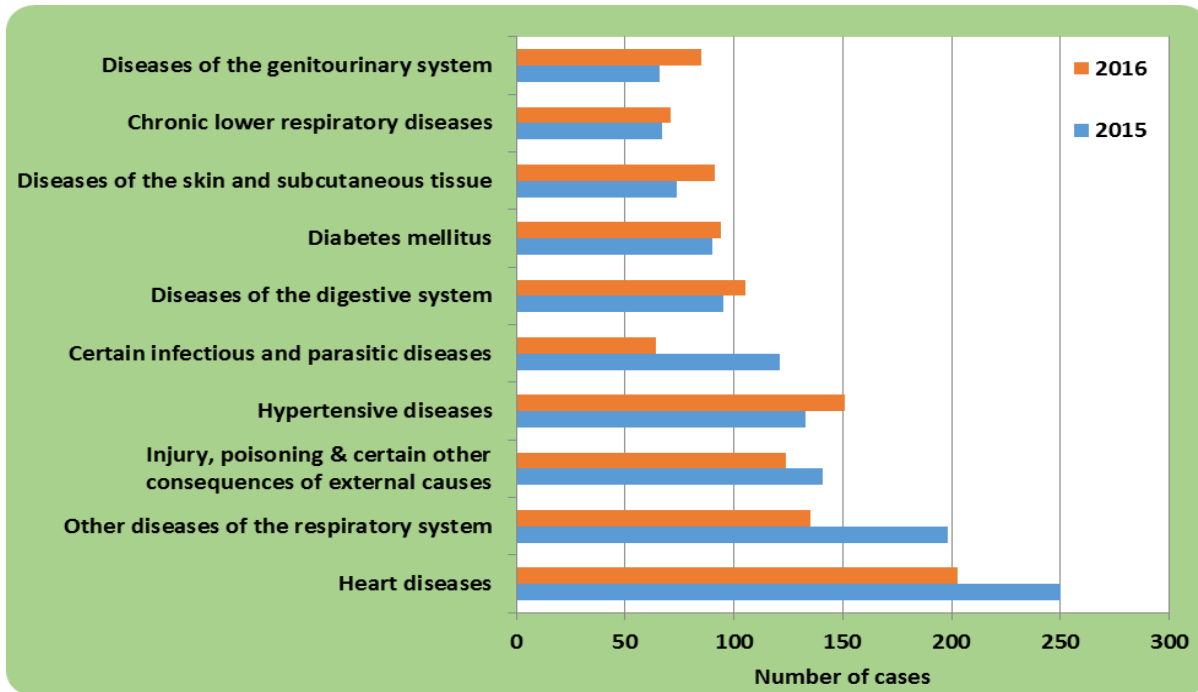


Figure 13: Leading causes of inpatient morbidity by sex, Cook Islands: 2016

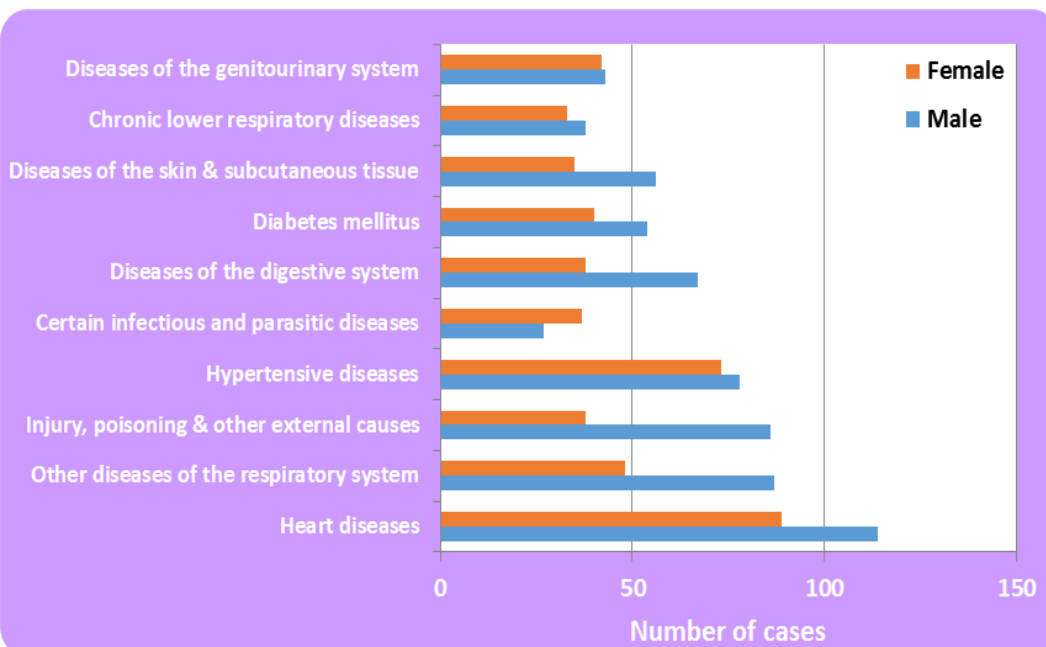


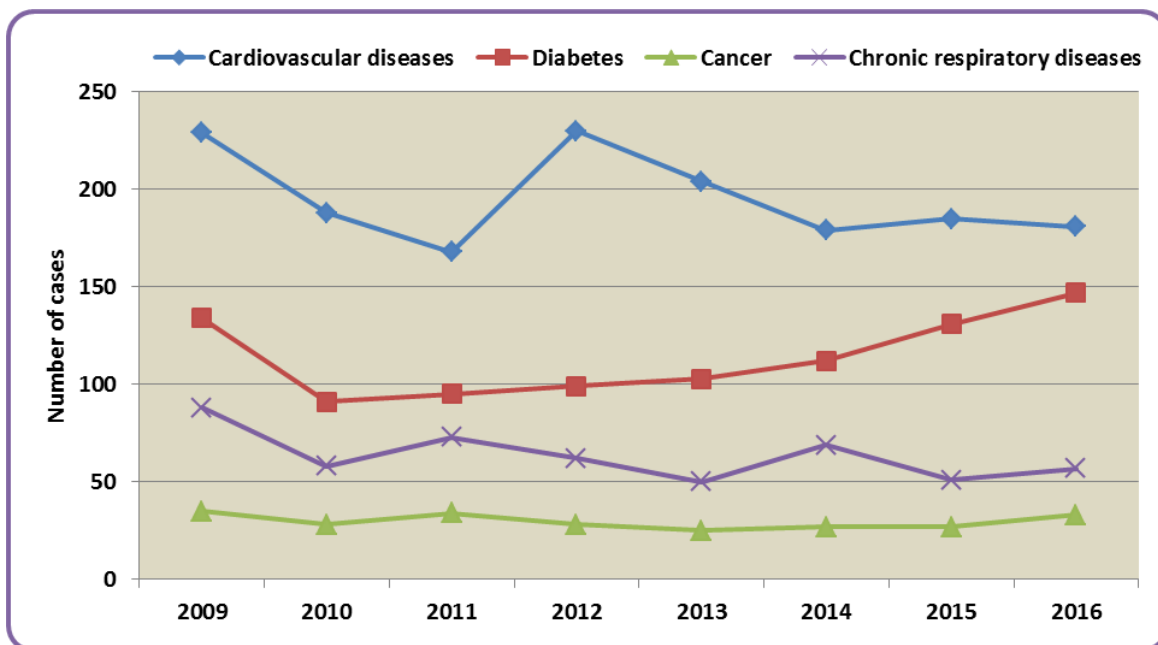
Figure 13 shows that a lot more males are being admitted in all main groups of morbidity than females in 2016. Patients with Heart diseases are the main causes seen with over 100 cases reported.

Non Communicable diseases

The Ministry continues in its effort to provide awareness on Non Communicable diseases (NCD) in the Cook Islands like any other country that is facing this epidemic. The four main NCD are cardiovascular diseases (inclusive of hypertension, stroke (CVA), heart diseases, heart failure, myocardial infarction, renal impairment and end stage renal failure), diabetes, chronic respiratory diseases (inclusive of asthma, bronchiectasis, emphysema and chronic bronchitis) and cancer.

The following line graph displays the incidence of non-communicable diseases from 2009 to 2016 in the Cook Islands. Cardiovascular diseases (commonly known as heart attack) are the most common NCD type in the Cook Islands, while cancer is the least and for a majority of them are only confirmed when they have died. For the last five years cardiovascular diseases peaked to almost 250 new cases diagnosed in 2012 and gradually declined below 200 cases in 2016. Unlike diabetes it has continued in an upward trend to almost 150 cases, but for some of them, they are cases previously diagnosed with other NCD conditions and is now confirmed for diabetes, a situation we don't want to be in.

Figure 14: NCD new cases by year, Cook Islands: 2009-2016

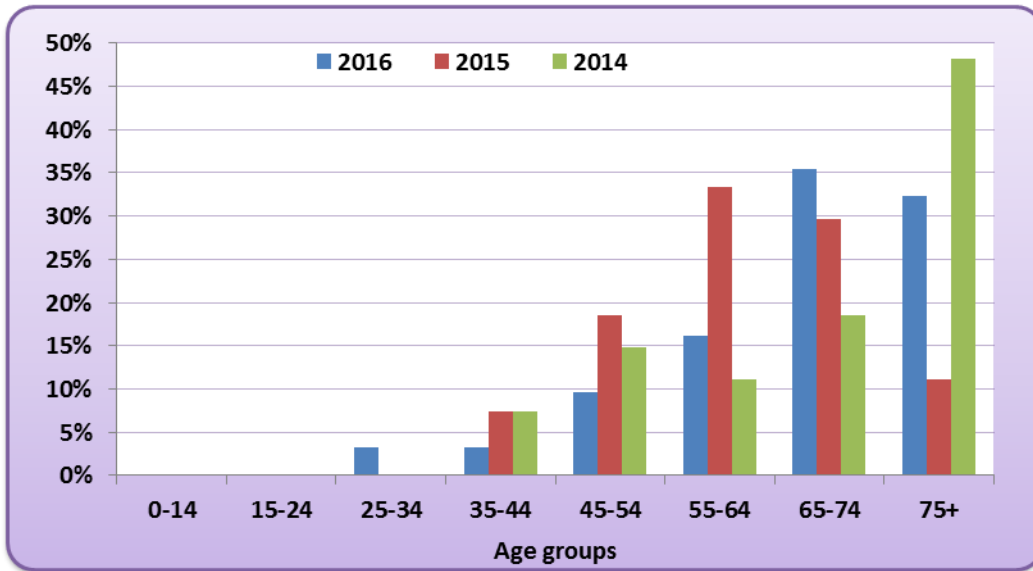


Cancer

For the last ten years (2007-2016), a total of 283 cases of cancer were diagnosed, averaging of just over 28 confirmed cases each year.

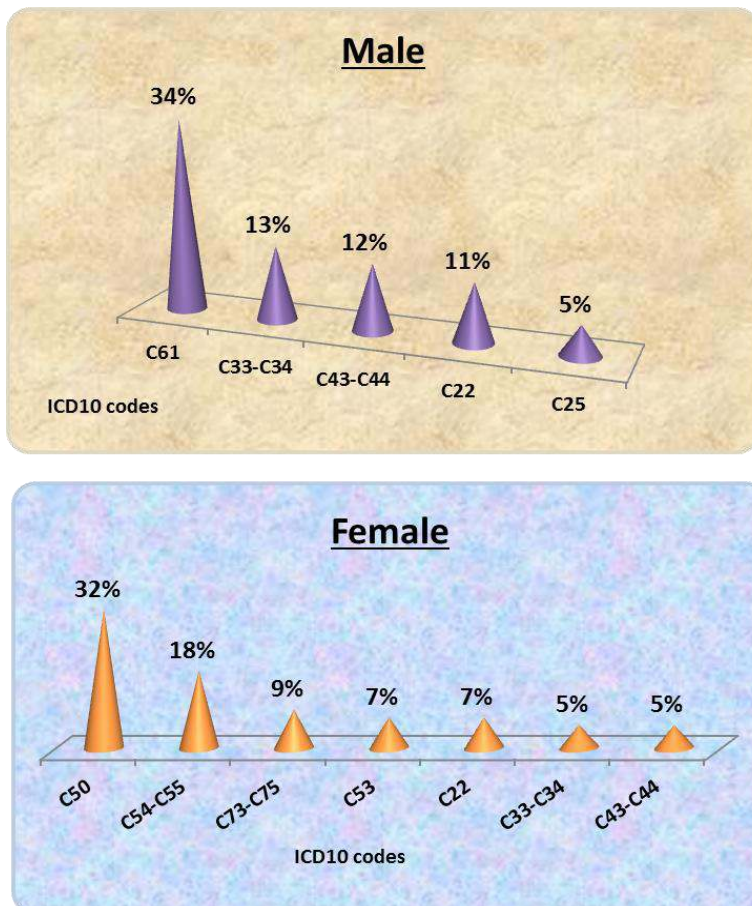
In the graph below it is obvious that almost 50 percent of all cancer cases in 2014 are those aged 75 years and over. This is followed by those in 2016 with 35 percent in the 65-74 age groupings. For the three years almost 60 percent (59%) of these cases were for people aged 65 years and over.

Figure 15: Cancer new cases (%) by age groupings, Cook Islands: 2014-2016



Prostate is the highest site for cancer amongst the male population as seen in the figure below with 34 percent of the total 76 cases diagnosed in the last five years (2012-2016). Followed by, those cancers of the trachea, bronchus and the lungs with 13 percent. For females the highest sites are of the breast with 32 percent and followed by those unspecified parts of the uterus with 18 percent.

Figure 16: Cancer new cases (%) by sex and type, Cook Islands: 2012-2016



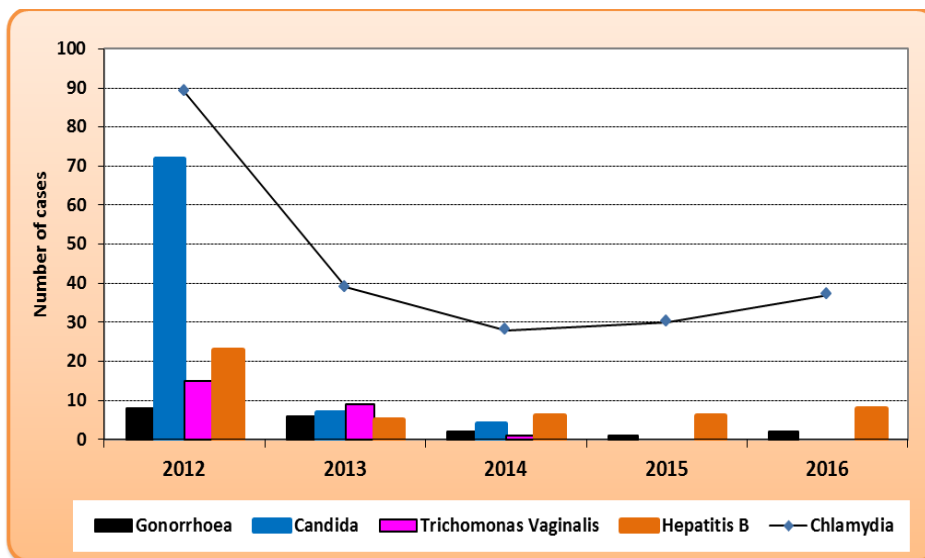
ICD10 codes	
C22	Liver & intrahepatic bile ducts
C25	Pancreas
C33-C34	Trachea, bronchus & lungs
C43-C44	Melanoma & neoplasms of skin
C50	Breast
C53	Cervix uteri
C54-C55	Other & unspecified parts of uterus
C61	Prostate
C73-C75	Thyroid & other endocrine glands

Sexually Transmitted Infections

Sexually transmitted infections (STI) continued to decline in numbers within the last eight years (2009-2016) in the Cook Islands from a total of 330 cases in 2009 to 48 in 2016. Chlamydia continues to be the most prevalent type throughout the years making over half of the total diagnosed, that is, from 49 percent in 2009 to 77 percent in 2016. These are all laboratory confirmed cases.

Figure 17 shows that chlamydia is the main STI in the Cook Islands for the last five years (2012-2016) ranging from 90 cases in 2012 to almost 40 in 2016.

Figure 17: Positively new STI cases, Cook Islands: 2012-2016



STI	2009	2010	2011	2012	2013	2014	2015	2016
Gonorrhoea	56	23	29	8	6	2	1	2
Syphilis	2	2	2	7	0	0	1	1
Candida	70	35	30	72	7	4	0	0
Non Specific Urethritis	22	32	20	55	6	0	0	0
Trichomonas Vaginalis	13	18	9	15	9	1	0	0
Chlamydia	161	117	104	89	39	28	30	37
Hepatitis B	6	23	13	23	5	6	6	8

Transport crashes

There had been a high number of road traffic crashes occurring in the Cook Islands mainly driving on motor bikes as a result from speeding, driving carelessly on the road and driving under the influence of alcohol. For some of these crashes it had been caused due to the condition of the roads and also with domestic animals mainly dogs wandering freely across public roads.

Figure 18 shows the high number of hospitalized transport crashes to the Rarotonga hospital due to the severity of the injury and those with alcohol consumption for the years 2007 to 2016. The number of crashes in this ten year period ranges between 42 in 2016 to 84 in 2007 at an average of almost 57 cases a year.

Alcohol related crashes shows a decline over the years from 42 in 2007 to 19 in 2016. However looking at these rates in comparison to the overall number of crashes for the same period (**Figure 19**), this is really high reported at an average of 50 percent a year. That is for every two crashes occurring one of it is of alcohol related.

Figure 18: Admissions due to Transport crashes, Rarotonga: 2007-2016

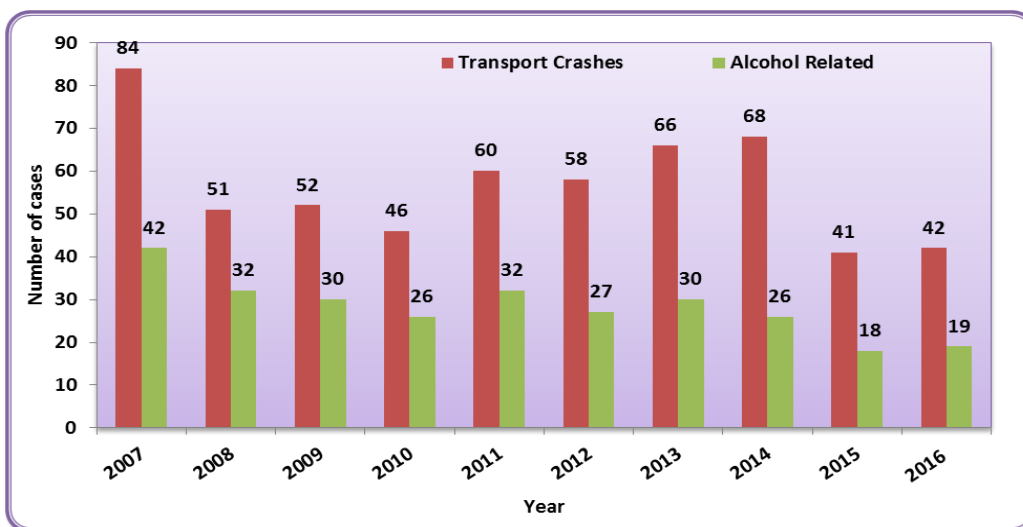


Figure 19: Percentage alcohol related crashes, Rarotonga: 2007-2016

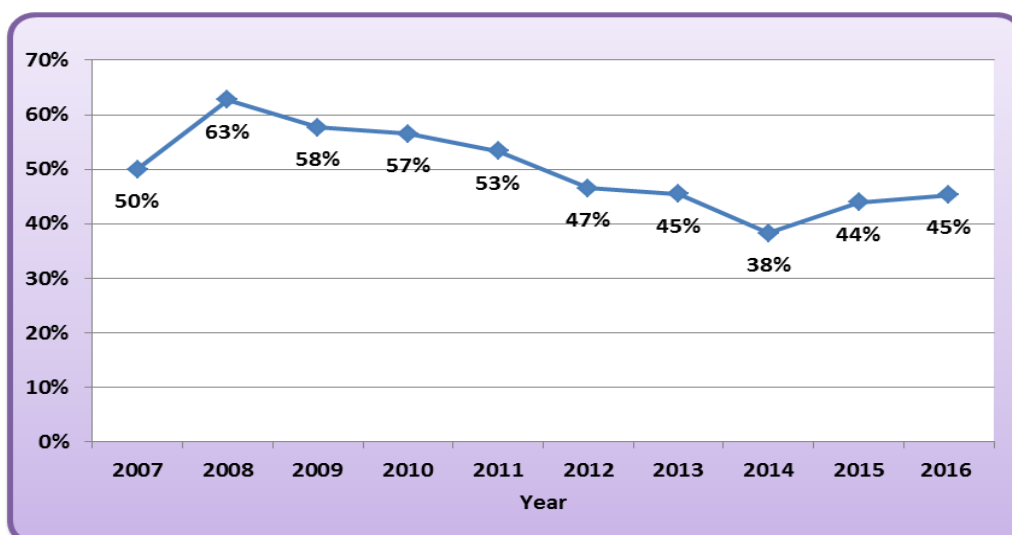
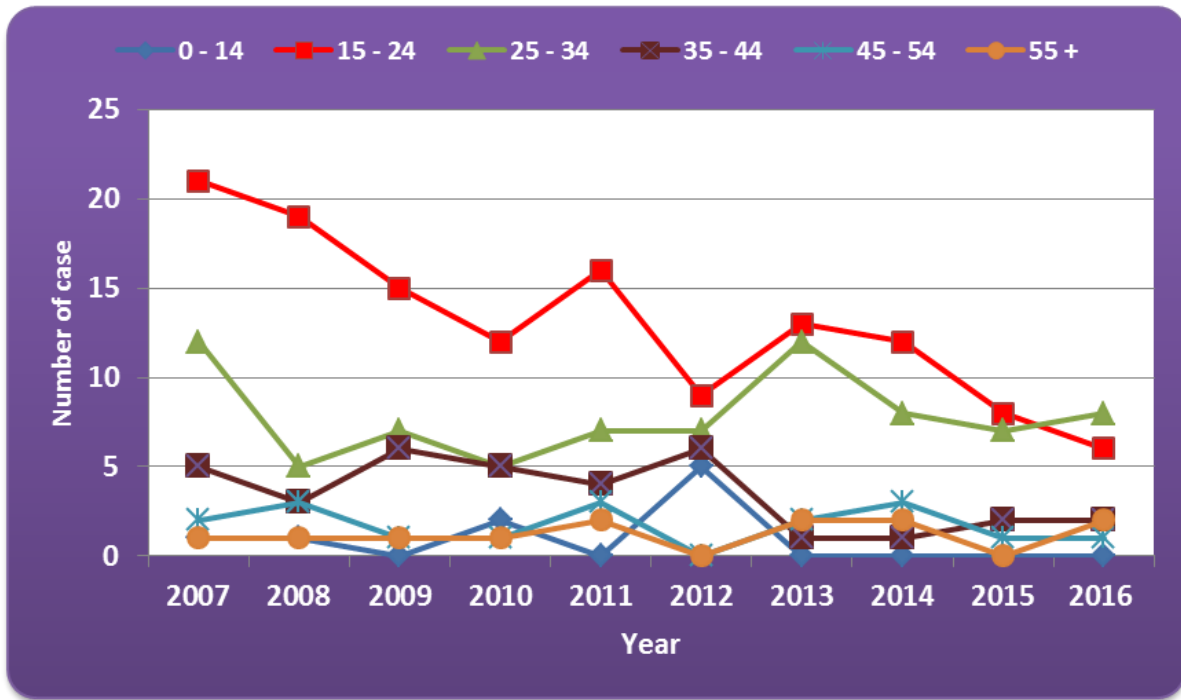


Figure 20 shows that 15-24 year age groupings are mostly involved in alcohol related motor vehicle crashes that required hospital admissions seen in the last ten years (2007-2016). However these numbers have gradually declined from 21 cases in 2007 to 6 reported in 2016.

Figure 20: Transport crashes by age groupings, Rarotonga: 2007-2016



For the last ten years almost 50 percent of all alcohol related transport accidents that were admitted due to the severity of the injuries were from the 15 to 24 year age groupings, at an average of almost 27 cases each year. This is followed by those in the 25 to 34 year age groupings with an average of 14 cases.

**Table 4: Admitted alcohol related transport crashes
Rarotonga: 2007-2016**

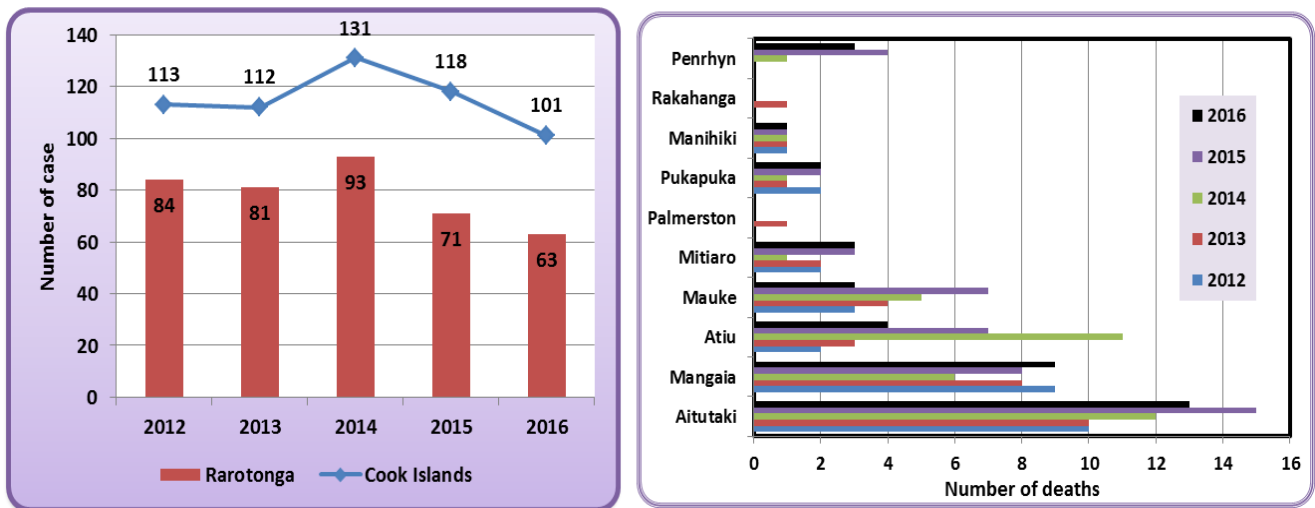
Age group	2007-2016	Average	%
0 - 14	11	1.1	2.0%
15 - 24	269	26.9	48.9%
25 - 34	140	14.0	25.5%
35 - 44	76	7.6	13.8%
45 - 54	39	3.9	7.1%
55 +	15	1.5	2.7%
Total	550	55.0	100.0%

Mortality

These refers' to all deaths occurring in the Cook Islands for Cook Islanders. All deaths that occur in the Hospital or any Health Centre are to be issued a death certificate with a copy given to the family before burial. For those that died outside the Hospital or Health Centre, a Coroner's decision is required before burial of which a report is required to be completed by the Medical Officer or Nurse Practitioner in Charge.

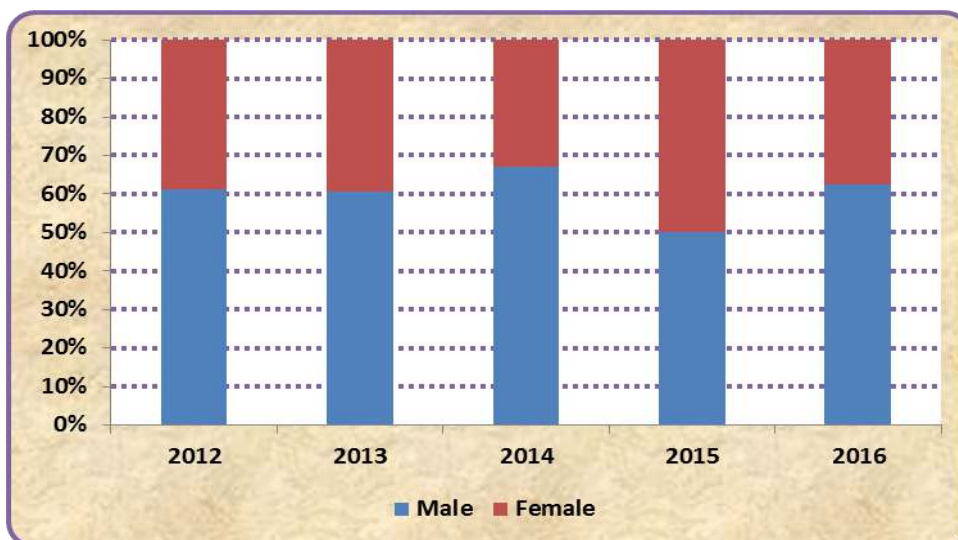
Figure 21 shows the number of deaths occurring in the Cook Islands as a total and by Islands during the years 2012-2016. As expected the majority of death occurs on Rarotonga with over 70 percent for years 2012 to 2014 and declined to 60 percent in 2015 and 2016, indicating a trend for chronic cases preferring to spend their final days of life on their home island. For Te Pa Enuā, Aitutaki reported the most number of deaths in this five year period with an average of 12 people annually.

Figure 21: Number of deaths by Island, Cook Islands: 2012-2016



Mortality in the Cook Islands had always been dominated by male and this is clearly seen in the graph (**Figure 22**) below, reporting over 60 percent on average for the last five years (2012-2016).

Figure 22: Percentage distribution of deaths by sex, Cook Islands: 2012-2016

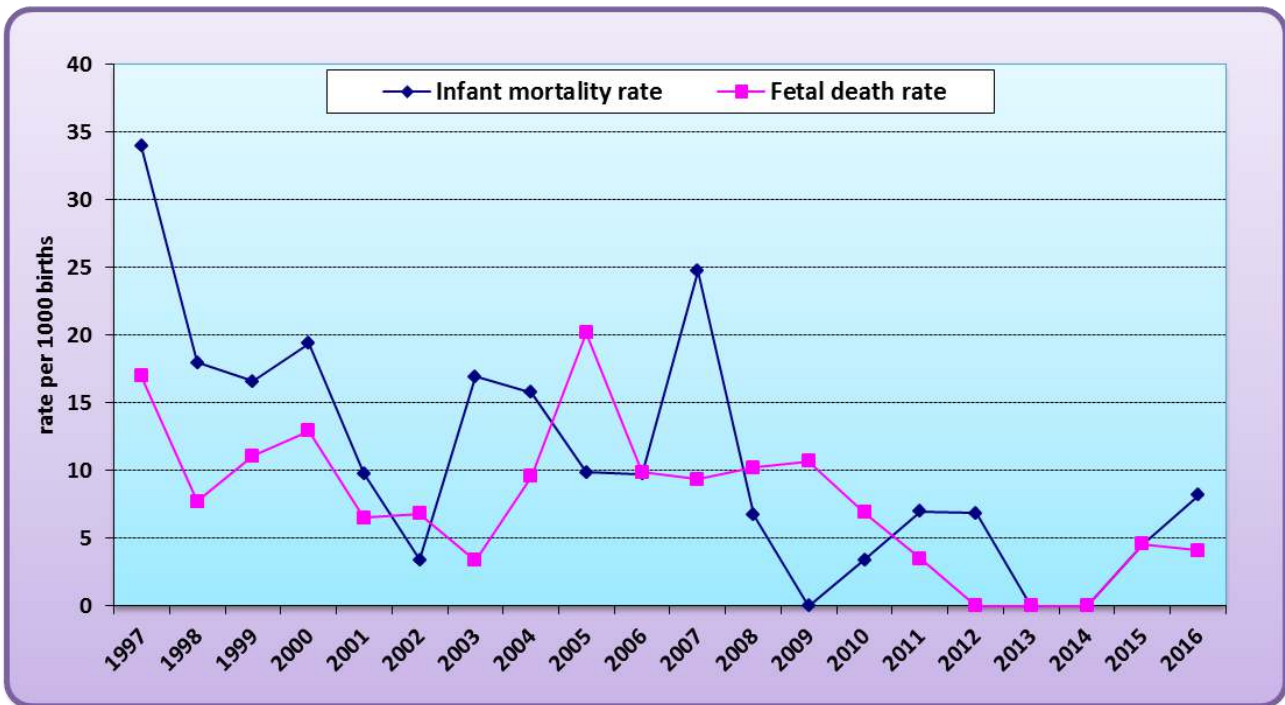


Infant and fetal death rates

Infant mortality rate (IMR) remains below ten since 2007 when it significantly dropped from 25 deaths to almost seven per 1,000 live births in the Cook Islands. These changes are attributed by some of the prevention measures implemented by the Ministry of Health to improve IMR. Such measures as the promotion of good nutritional practices and raising awareness programs for antenatal and postnatal services.

Fetal deaths also known as stillbirths did also magnificent improvements to remain below ten deaths since 2009 (see **Figure 23**). This also further improved to remain below five deaths in the last six years (2011-2016).

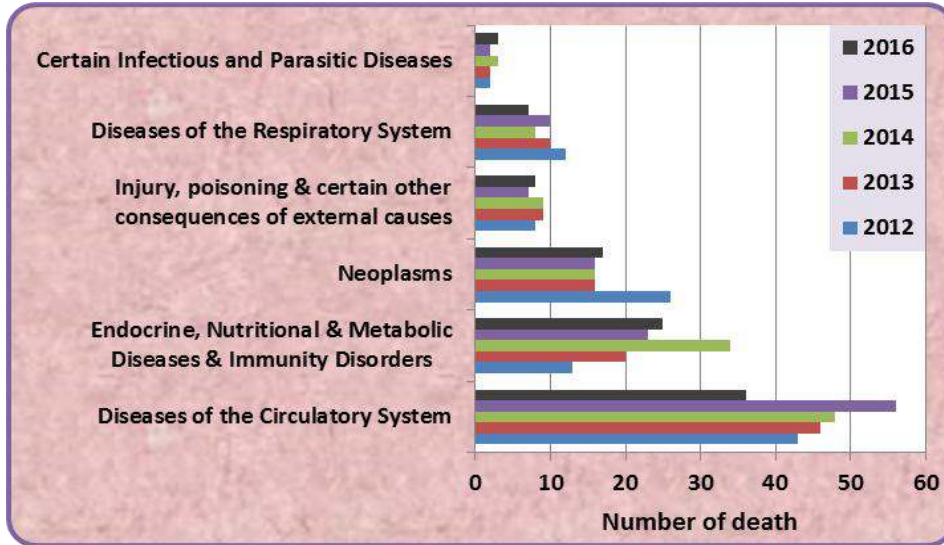
Figure 23: Infant and fetal death rates, Cook Islands: 1997-2016



Causes of death

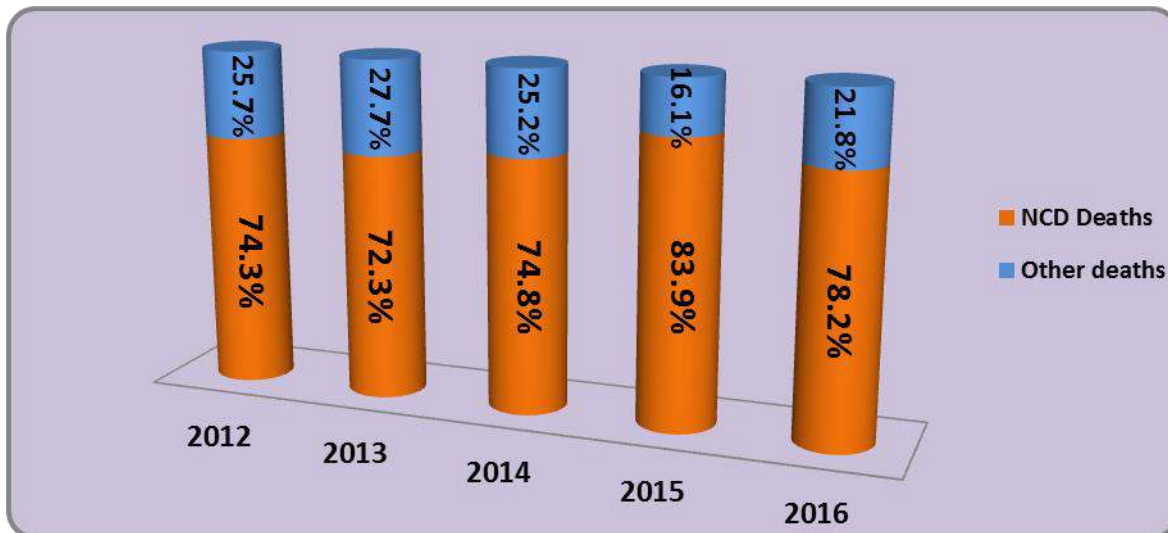
Seen in the graph below, (Figure 24) that diseases of the circulatory system groupings (hypertension, stroke and diseases associated with the heart) were reported as the main underlying causes of deaths in the Cook Islands for the last five years that is from 2012 to 2016.

Figure 24: Causes of death by ICD10 main groups, Cook Islands: 2012-2016



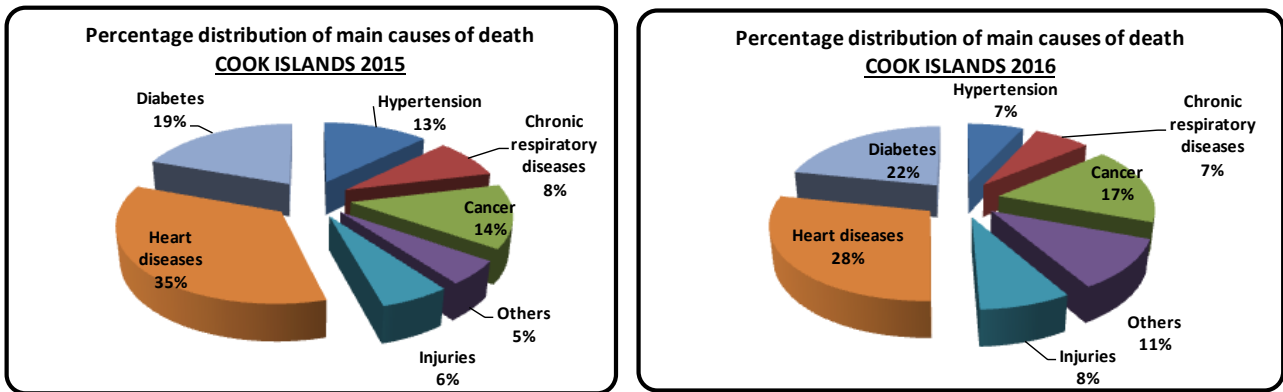
The number of deaths from NCD continued to dominant as expected reporting over seventy percent of the overall deaths for the last five years as seen in Figure 25.

Figure 25: NCD deaths (%), Cook Islands: 2012-2016



The graph below (**Figure 26**) shows that the main cause of death as reported in the Cook Islands for the last two years is that of heart diseases, even though it declined from 35 percent in 2015 to 28 percent in 2016. Those dying from diabetes slightly increased from 19 to 22 percent in 2016.

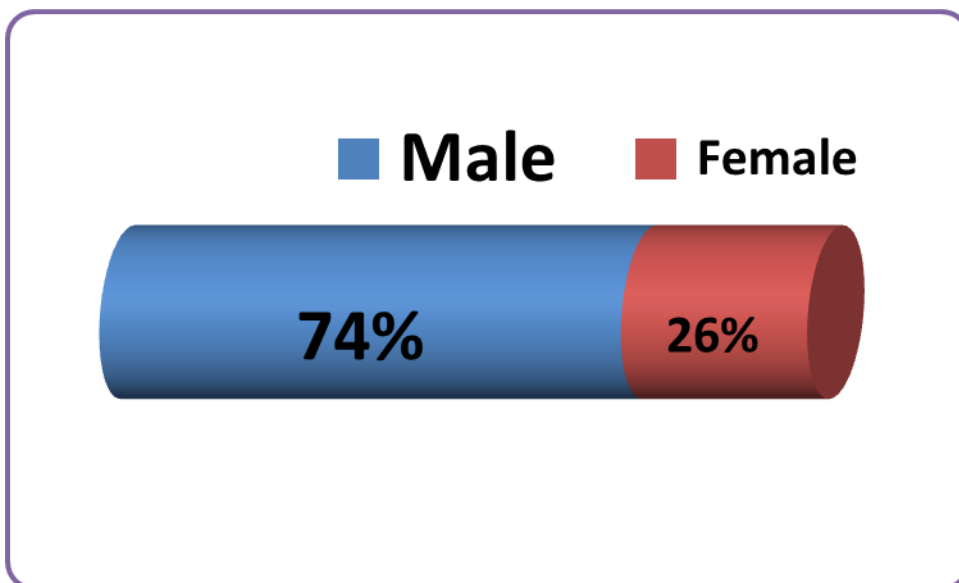
Figure 26: Main causes of deaths (%), Cook Islands: 2015-2016



Suicide

A total of nineteen deaths on suicide occurred within the last ten years from 2007 to 2016, in the Cook Islands with fourteen of them being males and five of females. The youngest being a fourteen year old.

Figure 27: Percentage of suicide deaths by sex, Cook Islands: 2007-2016



Health Services

Te Marae Ora is the main provider of health care in the Cook Islands and has a regulatory function through various legislations in protecting Public Health. Health services range from Public health (inclusive of primary care) to secondary care. These services are supplemented by visiting specialist teams and access to tertiary services is through referral to overseas health providers. There are also a small number of private health providers on the island. Overall, the Cook Islands are relatively well equipped to provide basic primary and secondary level care.

Facilities

Below table shows the various health facilities in the Cook Islands. It should be noted that there are only two hospitals in the country, on Rarotonga and Aitutaki. Other islands only have Health Centre's, with the provision of basic health services that are managed by Nurse Practitioners and for some by a Registered Nurse.

Table 5: Health facilities available by region & island, Cook Islands: 2016

REGION & ISLAND	Census Districts	Hospital Beds	Out-patient Clinics	Dental Clinics	Health Centres	Child Welfare Clinics	Private Medical Clinics	Private Dental Clinics
COOK ISLANDS	44	139	14	5	12	45	2	2
RAROTONGA	12	70	2	1	0	28	2	2
SOUTHERN GROUP excl. Rarotonga	20	51	5	4	4	15	0	0
Aitutaki	4	28	1	1	0	8	0	0
Mangaia	6	6	1	1	1	6	0	0
Atiu	5	9	1	1	1	1	0	0
Mauke	3	6	1	1	1	0	0	0
Mitiaro	2	2	1	0	1	0	0	0
NORTHERN GROUP	12	18	7	0	8	2	0	0
Palmerston	1	0	1	0	1	0	0	0
Pukapuka	3	4	1	0	1	2	0	0
Nassau	1	0	1	0	1	0	0	0
Manihiki	2	8	2	0	2	0	0	0
Rakahanga	3	2	1	0	1	0	0	0
Penrhyn	2	4	1	0	2	0	0	0

Referrals

In the Cook Islands all 12 of the inhabitant Outer Islands (Te Pa Enea) refer patients to the main Island of Rarotonga for further health care and management. For more complicated cases they are further referred to New Zealand.

Figure 28 shows the number of patients referred from Te Pa Enea to Rarotonga Hospital and those referred overseas mainly to New Zealand from Rarotonga for the last ten years, that is, from 2007 to 2016. For those patients referred overseas in this period, it's from 116 cases reported in 2014 to a maximum of 182 in 2007, at an average of almost 150 cases a year. For Te Pa Enea the numbers showed a decline from 289 in 2010 to 165 in 2008 at an average of 236 patients a year.

Figure 28: Number of patients referred, Cook Islands: 2007-2016

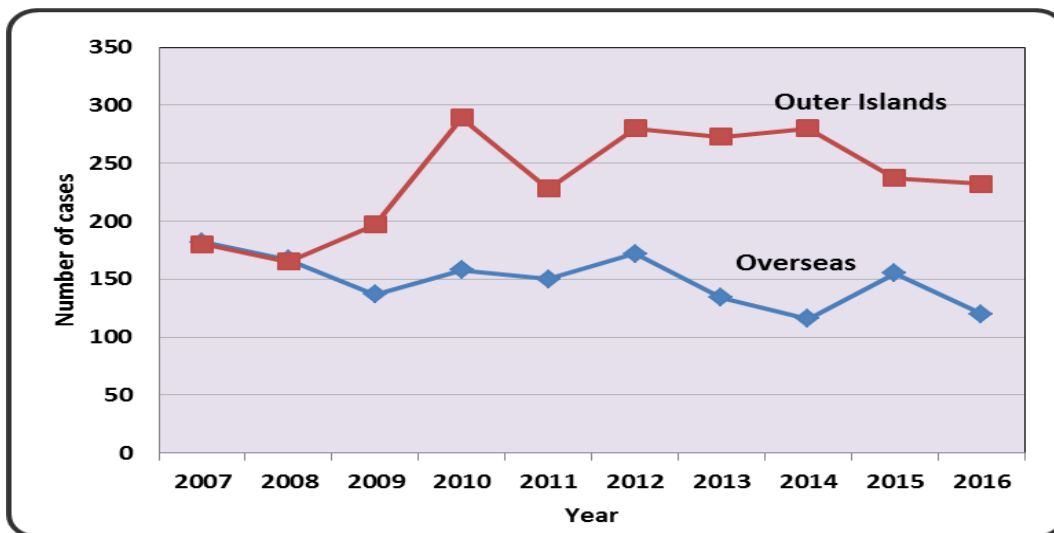
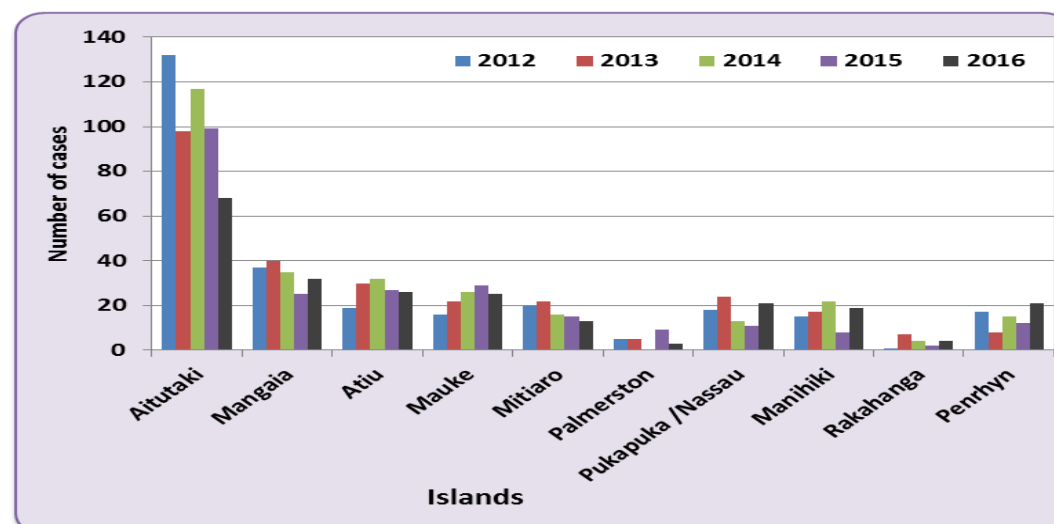


Figure 29, shows that the majority of the referrals to Rarotonga for the last five years (2012-2016) were received from the Island of Aitutaki at an average of just over 85 patients a year. This is followed by the Island of Mangaia with an average of 36 patients a year and the Island of Atiu with 25 patients a year. In the Northern Group islands, at an average of 18 patients do get referred to Rarotonga in a year with 16 from Penrhyn and 13 from Manihiki.

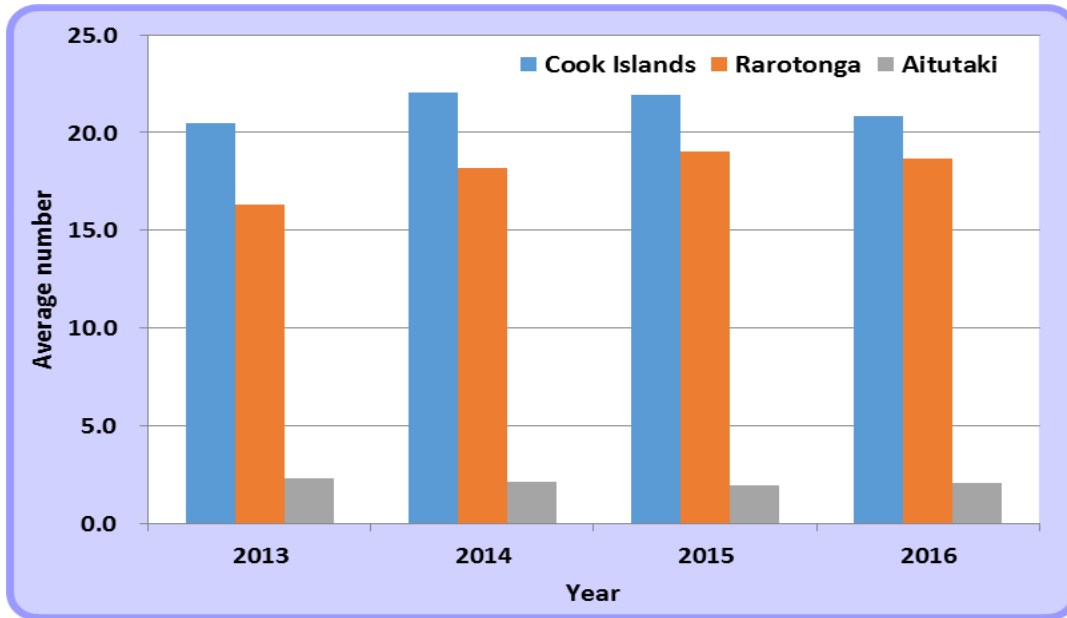
Figure 29: Number of patients received by island, Cook Islands: 2012-2016



Hospital Occupancy

This reflects to the utilization of our health facility in the Cook Islands based on the total number of inpatient days. **Figure 30** shows that on the average for the last four years (2013-2016) in the Cook Islands 20 of the 139 hospital beds are occupied daily. In Rarotonga it has a hospital bed of 70, with an average occupied bed of 16 in 2013 to 19 in 2016 admissions daily. Whereas in Aitutaki it has a hospital bed of 28 with an average occupied bed of 2 admissions daily for these four years.

Figure 30: Admissions average occupied beds, Cook Islands: 2013-2016



In the Cook Islands bed occupancy remains steady at 15 percent throughout 2013 to 2016. For Rarotonga, bed occupancy increased from 23 percent in 2013 to almost 27 percent in 2016 indicating an increase in the number of admissions or patients are staying longer due to their conditions being admitted. In Aitutaki this shows a declining trend from 8 percent in 2013 to 7 percent in 2016.

Figure 31: Admissions bed occupancy (%), Cook Islands: 2013-2016

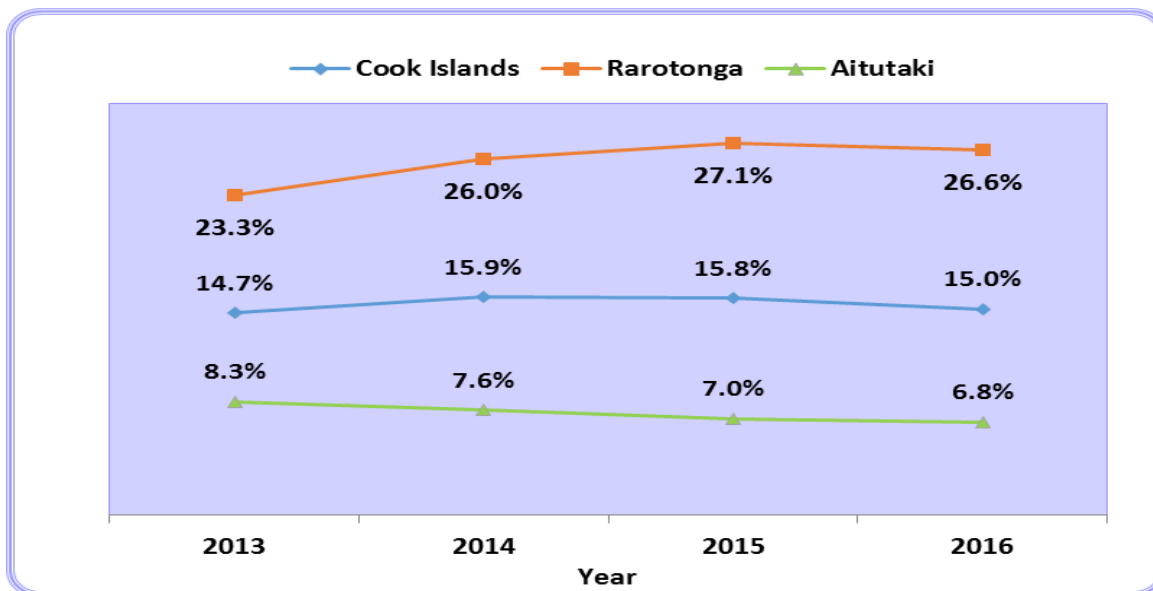
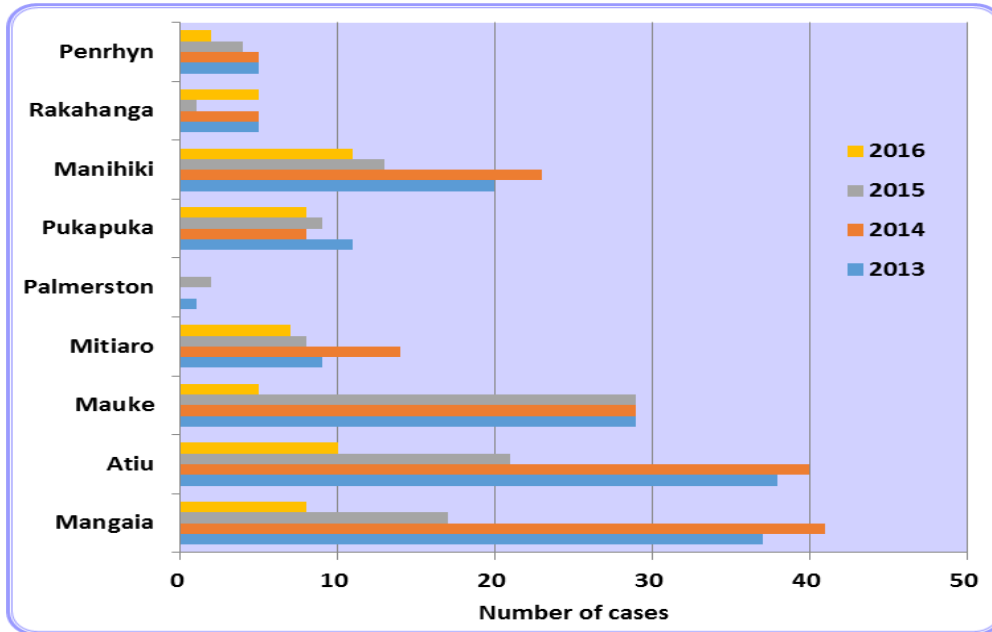


Figure 32 shows the number of admissions in the islands health centres from 2013 to 2016. Clearly there is a significant movement of patients to the main hospital and/or further overseas with 2016 admissions mostly below ten in a year.

Figure 32: Number of admissions by Island, Cook Islands: 2013-2016

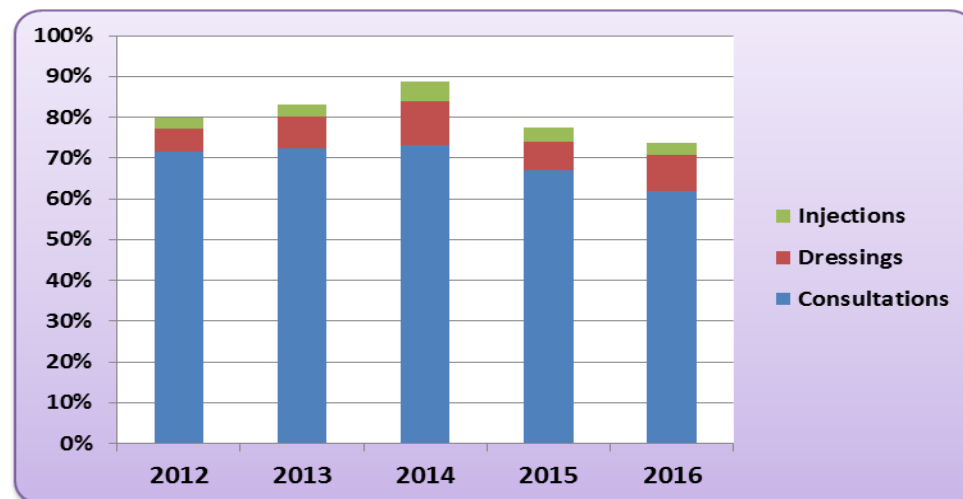


Outpatient Services

The outpatient department in the Cook Islands provides the following services to all patients attending the hospitals and health centres; consultations, dressings, injections, minor operations including other services required for specialised clinics and the visiting specialists.

For the past 5 years, over 30,000 consultations were recorded from hospital visits at the general outpatients. Other common services provided in the outpatient are the dressings of open wounds and injections.

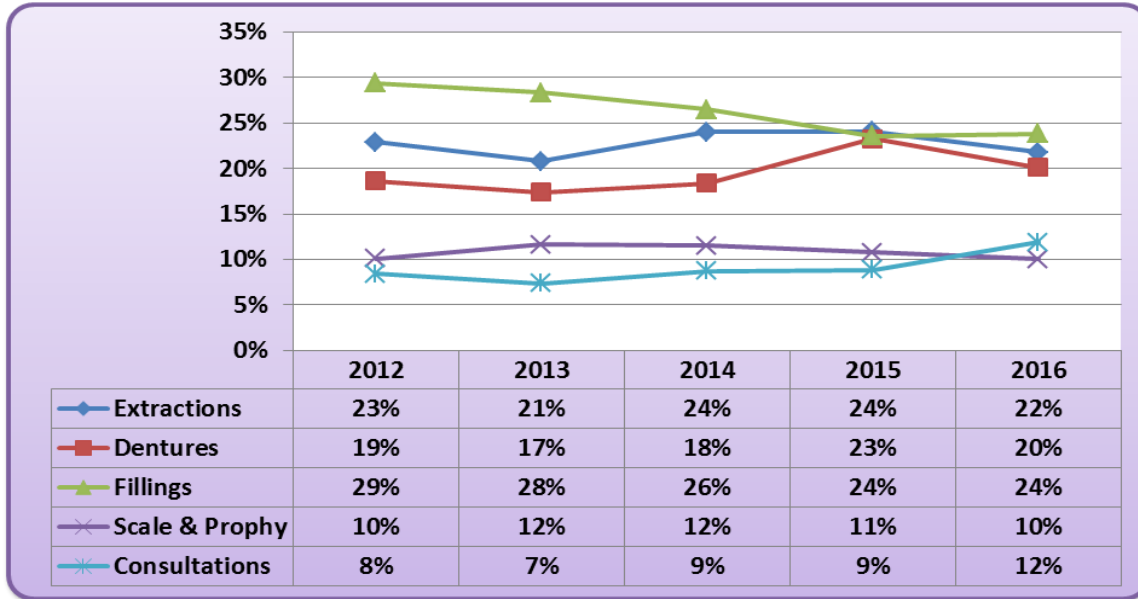
Figure 33: Outpatient consultations (%), Cook Islands: 2012-2016



Dental Services

The most common dental services provided over the last 5 years (2012-2016) are for Tooth Fillings ranging from almost 30 percent in 2012 to 25 percent in 2016. Tooth Extractions and Dentures followed next, between 21 to 24 percent and 17 to 23 percent respectively.

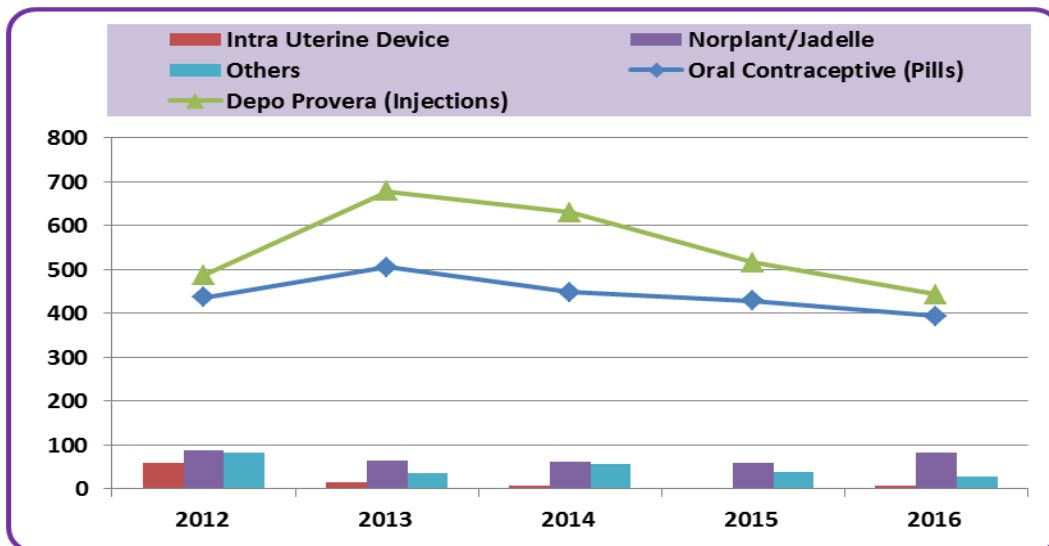
Figure 34: Common dental services (%) provided, Cook Islands: 2012-2016



Family Planning

A total of 3,655 Cook Islanders in the child bearing ages of 15-49 years were reported in the 2011 population census. The two common methods of contraceptives that are used are the injections (Depo Provera) ranging from 42 percent to almost 53 percent and the pills (Oral contraceptives) ranging from 37 to 44 percent as reported for the last five years (2012-2016). In 2016 over 46 percent uses injections and almost 38 percent uses pills, of all those reporting to have used any method of contraceptives.

Figure 35: Current users of family planning, Cook Islands: 2012-2016



ANNEXES

- 1. Listing of Tables**
- 2. Life Tables**
- 3. Core Indicators**
- 4. Definitions**

Annex 1: Listing of tables

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TABLES

1. POPULATION

**Table 1.1: Total population by region & island, gender and four major age groupings
COOK ISLANDS 2011**

REGION & ISLAND	Both		0 - 14		15 - 44		45 - 59		60 +		
	gender	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
COOK ISLANDS	17,794	8,815	8,979	2,368	2,259	3,651	3,933	1,600	1,604	1,196	1,183
RAROTONGA	13,095	6,460	6,635	1,596	1,523	2,816	3,088	1,186	1,209	862	815
SOUTHERN GROUP excluding Rarotonga	3,586	1,777	1,809	560	521	617	658	316	313	284	317
Aitutaki	2,038	994	1,044	304	297	373	416	174	174	143	157
Mangaia	572	287	285	101	85	82	90	46	46	58	64
Atiu	480	233	247	77	78	71	82	45	43	40	44
Mauke	307	162	145	47	32	56	46	28	35	31	32
Mitiaro	189	101	88	31	29	35	24	23	15	12	20
NORTHERN GROUP	1,113	578	535	212	215	218	187	98	82	50	51
Palmerston	60	28	32	11	14	12	10	2	3	3	5
Pukapuka	451	221	230	84	106	84	72	34	33	19	19
Nassau	73	36	37	18	17	12	15	5	3	1	2
Manihiki	239	136	103	43	28	45	40	37	23	11	12
Rakahanga	77	38	39	6	12	18	15	8	7	6	5
Penrhyn	213	119	94	50	38	47	35	12	13	10	8
Suvarrow	0	0	0	0	0	0	0	0	0	0	0

**Table 1.2: Resident Population by Region & Island, gender and Four Major Age Groupings
COOK ISLANDS 2011**

REGION & ISLAND	Both		0 - 14		15 - 44		45 - 59		60 +		
	gender	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
COOK ISLANDS	14,977	7,490	7,487	2,220	2,112	3,003	3,127	1,316	1,274	951	974
RAROTONGA	10,572	5,278	5,294	1,471	1,398	2,241	2,353	923	913	643	630
SOUTHERN GROUP excluding Rarotonga	3,293	1,635	1,658	537	499	544	587	295	279	259	293
Aitutaki	1,774	868	906	284	275	310	353	155	145	119	133
Mangaia	562	283	279	101	85	80	87	45	43	57	64
Atiu	468	228	240	74	78	70	77	44	41	40	44
Mauke	300	155	145	47	32	49	46	28	35	31	32
Mitiaro	189	101	88	31	29	35	24	23	15	12	20
NORTHERN GROUP	1,112	577	535	212	215	218	187	98	82	49	51
Palmerston	60	28	32	11	14	12	10	2	3	3	5
Pukapuka	451	221	230	84	106	84	72	34	33	19	19
Nassau	73	36	37	18	17	12	15	5	3	1	2
Manihiki	238	135	103	43	28	45	40	37	23	10	12
Rakahanga	77	38	39	6	12	18	15	8	7	6	5
Penrhyn	213	119	94	50	38	47	35	12	13	10	8
Suvarrow	0	0	0	0	0	0	0	0	0	0	0

Table 1.3: Resident population by sex, island and five year age groupings

COOK ISLANDS 2011

Sex: Both

Island/Region	Total	Age Groups																
		< 05	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75 - 79	80 +
COOK ISLANDS	14,977	1,481	1,443	1,408	1,283	1,015	944	856	969	1,063	1,070	844	676	580	490	418	249	188
RAROTONGA	10,572	1,002	940	927	916	745	727	672	750	784	749	602	485	397	336	278	163	99
SOUTHERN GROUP (excluding Rarotonga)	3,293	338	360	338	281	186	154	128	169	213	242	176	156	156	129	122	75	70
Aitutaki	1,774	192	200	167	149	121	102	88	90	113	130	98	72	70	65	53	37	27
Mangaia	562	50	69	67	46	13	15	18	29	46	38	26	24	36	32	24	14	15
Atiu	468	55	49	48	36	26	17	16	21	31	33	26	26	25	15	23	10	11
Mauke	300	21	25	33	27	21	17	4	18	8	25	19	19	15	15	15	7	11
Mitiaro	189	20	17	23	23	5	3	2	11	15	16	7	15	10	2	7	7	6
NORTHERN GROUP	1,112	141	143	143	86	84	63	56	50	66	79	66	35	27	25	18	11	19
Palmerston	60	2	9	14	9	1	0	3	2	7	0	3	2	2	1	0	1	4
Pukapuka	451	61	66	63	39	44	21	14	16	22	29	24	14	6	12	6	7	7
Nassau	73	9	9	17	9	4	5	1	5	3	5	3	0	0	2	1	0	0
Manihiki	238	29	17	25	12	19	13	14	9	18	28	23	9	12	5	3	0	2
Rakahanga	77	8	6	4	4	6	8	4	5	6	4	4	7	4	1	3	1	2
Penrhyn	213	32	36	20	13	10	16	20	13	10	13	9	3	3	4	5	2	4
Suvarrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sex: Male

COOK ISLANDS	7,490	748	723	749	686	503	451	394	448	521	542	432	342	310	244	204	114	79
RAROTONGA	5,278	504	464	503	484	365	345	309	351	387	366	311	246	213	172	139	77	42
SOUTHERN GROUP (excluding Rarotonga)	1,635	176	190	171	145	91	81	58	69	100	128	87	80	79	61	56	32	31
Aitutaki	868	102	103	79	73	60	50	42	41	44	74	46	35	35	32	27	15	10
Mangaia	283	28	37	36	23	6	8	7	8	28	16	15	14	20	15	10	6	6
Atiu	228	23	24	27	17	10	12	6	9	16	18	10	16	10	7	11	4	8
Mauke	155	14	16	17	17	11	9	3	6	3	10	11	7	11	7	5	4	4
Mitiaro	101	9	10	12	15	4	2	0	5	9	10	5	8	3	0	3	3	3
NORTHERN GROUP	577	68	69	75	57	47	25	27	28	34	48	34	16	18	11	9	5	6
Palmerston	28	0	3	8	5	1	0	0	2	4	0	1	1	2	0	0	0	1
Pukapuka	221	27	24	33	26	23	8	8	9	10	19	11	4	3	6	4	4	2
Nassau	36	3	6	9	5	2	1	1	2	1	5	0	0	0	1	0	0	0
Manihiki	135	16	12	15	8	12	5	8	4	8	15	14	8	6	2	1	0	1
Rakahanga	38	4	2	0	3	3	5	1	2	4	3	3	2	4	0	1	0	1
Penrhyn	119	18	22	10	10	6	6	9	9	7	6	5	1	3	2	3	1	1
Suvarrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sex: Female

Island/Region	Total	Age Groups																
		< 05	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75 - 79	80 +
COOK ISLANDS	7,487	733	720	659	597	512	493	462	521	542	528	412	334	270	246	214	135	109
RAROTONGA	5,294	498	476	424	432	380	382	363	399	397	383	291	239	184	164	139	86	57
SOUTHERN GROUP (excluding Rarotonga)	1,658	162	170	167	136	95	73	70	100	113	114	89	76	77	68	66	43	39
Aitutaki	906	90	97	88	76	61	52	46	49	69	56	52	37	35	33	26	22	17
Mangaia	279	22	32	31	23	7	7	11	21	18	22	11	10	16	17	14	8	9
Atiu	240	32	25	21	19	16	5	10	12	15	15	16	10	15	8	12	6	3
Mauke	145	7	9	16	10	10	8	1	12	5	15	8	12	4	8	10	3	7
Mitiaro	88	11	7	11	8	1	1	2	6	6	6	2	7	7	2	4	4	3
NORTHERN GROUP	535	73	74	68	29	37	38	29	22	32	31	32	19	9	14	9	6	13
Palmerston	32	2	6	6	4	0	0	3	0	3	0	2	1	0	1	0	1	3
Pukapuka	230	34	42	30	13	21	13	6	7	12	10	13	10	3	6	2	3	5
Nassau	37	6	3	8	4	2	4	0	3	2	0	3	0	0	1	1	0	0
Manihiki	103	13	5	10	4	7	8	6	5	10	13	9	1	6	3	2	0	1
Rakahanga	39	4	4	4	1	3	3	3	3	2	1	1	5	0	1	2	1	1
Penrhyn	94	14	14	10	3	4	10	11	4	3	7	4	2	0	2	2	1	3
Suvarrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2. HEALTH STATUS

**Table 2.1: Number and rate of births, deaths, infant deaths, maternal deaths and foetal deaths
COOK ISLANDS: 1987-2016**

YEAR	Live Births		Deaths		Deaths under 1 yr		Maternal Deaths		Foetal Deaths	
	Number	Crude Rate	Number	Crude Rate	Number	Rate	Number	Rate	Number	Rate
1987	428	24.5	116	6.5	16	37.4	0	0	2	4.7
1988	425	24.3	93	5.3	3	7.0	0	0	4	9.3
1989	453	25.9	101	5.6	12	26.4	1	2	6	13.1
1990	465	26.6	127	6.9	12	25.8	0	0	2	4.3
1991	479	25.7	140	7.5	15	31.3	0	0	7	14.4
1992	529	30.2	114	6.5	5	9.5	1	2	4	7.5
1993	507	29.3	105	6.1	6	11.8	0	0	5	9.8
1994	568	30.9	114	6.2	3	5.3	0	0	4	7.0
1995	514	27.9	115	6.3	2	4.0	1	2	2	3.9
1996	510	27.1	105	5.6	12	23.5	0	0	4	7.8
1997	412	23.5	134	7.7	14	34.0	0	0	7	16.7
1998	389	23.3	111	6.6	7	18.0	0	0	3	7.7
1999	361	23.1	96	6.2	6	16.6	0	0	4	11.0
2000	309	20.6	127	8.5	6	19.4	0	0	4	12.8
2001	306	21.7	79	5.6	3	9.8	0	0	2	6.5
2002	293	19.8	100	6.8	1	3.4	0	0	2	6.8
2003	295	21.2	88	6.3	5	16.9	0	0	1	3.4
2004	313	23.2	106	7.9	5	16.0	0	0	3	9.5
2005	297	21.7	95	6.9	3	10.1	0	0	6	19.8
2006	304	20.5	94	6.4	3	9.9	0	0	3	9.8
2007	320	21.8	100	6.8	8	25.0	0	0	3	9.3
2008	293	20.5	65	4.5	2	6.8	0	0	3	10.1
2009	280	21.1	82	6.2	0	0.0	0	0	3	10.6
2010	289	24.3	97	8.2	1	3.5	0	0	2	6.9
2011	284	19.3	108	7.3	2	7.0	0	0	1	3.5
2012	292	20.4	113	7.9	2	6.8	0	0	0	0.0
2013	261	18.5	112	7.9	0	0.0	0	0	0	0.0
2014	223	16.4	131	9.6	0	0.0	0	0	0	0.0
2015	218	16.8	118	9.1	1	4.6	0	0	1	4.6
2016	243	21.1	101	8.8	2	8.2	0	0	1	4.1

- Note: 1 - Source for population data is the mid-year population estimated at June Quarter, Statistics Office
 2 - Crude birth rate and crude death rate are calculated per 1,000 resident population as of 1992
 3 - Deaths of children under one year of age per 1,000 live births
 4 - Total Birth does not include Stillbirth
 5 - Resident population comprises only those normally resident in the Cook Islands

**Table 2.2: Live births by region, island, year and sex
COOK ISLANDS: 2013-2016**

REGION & ISLAND	2013			2014			2015			2016		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
COOK ISLANDS	261	133	128	223	117	106	218	107	111	243	125	118
RAROTONGA	227	112	115	209	112	97	203	98	105	222	112	110
SOUTHERN GROUP excluding Rarotonga	26	18	8	12	4	8	10	7	3	17	11	6
Aitutaki	22	15	7	10	4	6	9	7	2	12	8	4
Mangaia	3	2	1	1	0	1	0	0	0	3	1	2
Atiu	1	1	0	1	0	1	1	0	1	2	2	0
Mauke	0	0	0	0	0	0	0	0	0	0	0	0
Mitiaro	0	0	0	0	0	0	0	0	0	0	0	0
NORTHERN GROUP	8	3	5	2	1	1	5	2	3	4	2	2
Palmerston	0	0	0	0	0	0	0	0	0	0	0	0
Pukapuka/Nassau	8	3	5	2	1	1	5	2	3	3	1	2
Manihiki	0	0	0	0	0	0	0	0	0	1	1	0
Rakahanga	0	0	0	0	0	0	0	0	0	0	0	0
Penrhyn	0	0	0	0	0	0	0	0	0	0	0	0

**Table 2.3: Mothers given birth by region & island and age of mother
COOK ISLANDS: 2016**

REGION & ISLAND	Total	Age of Mother							
		< 15	15-19	20-24	25-29	30-34	35-39	40-44	45 +
COOK ISLANDS	241	1	23	63	56	59	29	9	1
RAROTONGA	220	1	21	55	52	55 ^{aa}	27	8	1
SOUTHERN GROUP excluding Rarotonga	17	0	1	6	3	4	2	1	0
Aitutaki	12	0	0	4	2	4	1	1	0
Mangaia	3	0	1	1	0	0	1	0	0
Atiu	2	0	0	1	1	0	0	0	0
Mauke	0	0	0	0	0	0	0	0	0
Mitiaro	0	0	0	0	0	0	0	0	0
NORTHERN GROUP	4	0	1	2	1	0	0	0	0
Palmerston	0	0	0	0	0	0	0	0	0
Pukapuka/Nassau	3	0	0	2	1	0	0	0	0
Manihiki	1	0	1	0	0	0	0	0	0
Rakahanga	0	0	0	0	0	0	0	0	0
Penrhyn	0	0	0	0	0	0	0	0	0

Note: ^{aa} Denote 2 pair of twins

**Table 2.4: Mothers given birth by region & island and age of mother
COOK ISLANDS: 2015**

REGION & ISLAND	Age of Mother								
	Total	< 15	15-19	20-24	25-29	30-34	35-39	40-44	45 +
COOK ISLANDS	216	0	24	59	53	45	21	13	1
RAROTONGA	201	0	22	55 ^a	50 ^a	41	20	12	1
SOUTHERN GROUP excluding Rarotonga	10	0	1	3	2	2	1	1	0
Aitutaki	9	0	1	2	2	2	1	1	0
Mangaia	0	0	0	0	0	0	0	0	0
Atiu	1	0	0	1	0	0	0	0	0
Mauke	0	0	0	0	0	0	0	0	0
Mitiaro	0	0	0	0	0	0	0	0	0
NORTHERN GROUP	5	0	1	1	1	2	0	0	0
Palmerston	0	0	0	0	0	0	0	0	0
Pukapuka/Nassau	5	0	1	1	1	2	0	0	0
Manihiki	0	0	0	0	0	0	0	0	0
Rakahanga	0	0	0	0	0	0	0	0	0
Penrhyn	0	0	0	0	0	0	0	0	0

Note: ^a Denote 1 pair of twins

**Table 2.5: Mothers given birth and fertility rates by age groupings
COOK ISLANDS: 2007-2016**

Age Group	Female Resident Population		Number of Mothers									
	2006	2011	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
15-19	630	597	37	35	54	37	37	41	40	31	24	24
20-24	545	512	97	82	72	85	70	80	76	54	59	63
25-29	473	493	72	72	67	55	71	65	64	57	53	56
30-34	554	462	68	60	45	57	47	56	38	49	45	59
35-39	551	521	26	33	37	38	40	33	31	21	21	29
40-44	540	542	19	14	7	17	17	16	10	11	13	9
45-49	457	528	2	0	0	2	1	0	1	0	1	1
Total	3,750	3,655	321	296	282	291	283	291	260	223	216	241
Age-Specific Fertility Rate (per 1'000 Women)												
15-19			59	56	86	59	62	69	67	52	40	40
20-24			178	150	132	156	137	156	148	105	115	123
25-29			152	152	142	116	144	132	130	116	108	114
30-34			123	108	81	103	102	121	82	106	97	128
35-39			47	60	67	69	77	63	60	40	40	56
40-44			35	26	13	31	31	30	18	20	24	17
45-49			4	0	0	4	2	0	2	0	2	2
General Fertility Rate (GFR / 1'000 Women)			86	79	75	78	77	80	71	61	59	66
Total Fertility Rate (TFR)			3.0	2.8	2.6	2.7	2.8	2.9	2.5	2.2	2.1	2.4

GFR = Total Number of Births/Female Population of CBA (15-49).

TFR = The average number of children that would be born alive to a woman during her childbearing years in her lifetime.

Note: Mothers whose age is < 15 are included in the 15-19 age groups, those whose age is > 49 are included in the 45-49 age groups.

**Table 2.6: Suspected cases of notifiable diseases by year
COOK ISLANDS: 2012-2016**

Disease	Year				
	2012	2013	2014	2015	2016
Acute Respiratory Infection	9,879	9,181	9,933	9,235	8,753
Asthma	116	84	52	31	66
Bronchitis	450	465	450	435	303
Chickenpox	44	37	51	19	51
Chikungunya				11	0
Conjunctivitis	246	199	152	171	100
Dengue	6	4	5	0	0
Diarrhoea child/adult	260	221	182	143	204
Diarrhoea infant	19	17	5	7	3
Fish Poisoning	90	90	65	41	69
Food Poisoning	46	40	34	28	54
Gastroenteritis	1,085	725	653	594	655
Influenza & Viral Illness	420	514	420	324	424
Measles	0	1	0	0	0
Meningitis	0	2	1	0	1
Mumps	4	5	1	0	2
Otitis Media	300	270	268	317	231
Pneumonia	901	813	725	637	397
Rheumatic fever (acute & chronic)	40	15	7	10	24
Scabies	285	317	162	140	206
Skin Sepsis	2,032	2,746	1,152	938	2,046
Whooping Cough (Pertussis)	7	4	0	0	1

Note: Diphtheria, Filariasis, Leprosy and Yaws are excluded due to zero values in this 5 years reported

**Table 2.7: Ciguatera (Fish poisoning) cases seen by year and month
COOK ISLANDS: 2000-2016**

Year	MONTH												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2000	9	14	17	9	14	11	0	5	15	9	24	11	138
2001	13	24	7	8	7	6	7	17	13	15	12	4	133
2002	32	25	18	22	19	7	3	4	9	22	13	9	183
2003	20	20	16	28	12	14	5	9	22	19	33	29	227
2004	65	40	45	44	47	23	26	33	39	22	46	39	469
2005	25	17	49	59	50	41	29	33	26	32	31	29	421
2006	25	16	27	27	20	13	12	15	30	31	24	18	258
2007	24	25	20	27	27	23	18	12	20	24	7	18	245
2008	28	36	15	14	20	13	14	14	17	19	18	15	223
2009	19	13	13	9	11	8	7	8	5	11	16	9	129
2010	5	10	10	7	11	9	11	2	4	1	5	3	78
2011	5	3	9	20	8	4	13	10	6	9	6	9	102
2012	10	13	4	4	6	5	6	6	8	11	12	5	90
2013	11	8	6	13	0	3	6	6	4	8	21	4	90
2014	6	8	5	4	2	1	3	2	12	6	7	9	65
2015	4	5	3	2	1	2	1	3	6	4	5	5	41
2016	5	8	9	2	3	12	6	4	5	3	5	7	69

Table 2.8: Inpatient morbidity (diseases) by main group, year and sex

COOK ISLANDS: 2014-2016

ICD 10 Code	CAUSE	2014		2015		2016	
		Male	Female	Male	Female	Male	Female
	Hospital Admissions	826	964	696	955	756	993
A00-B99	I Certain infectious and parasitic diseases	47	41	67	54	27	37
C00-D48	II Neoplasms	29	4	12	5	9	3
D50-D89	III Diseases of blood & blood-forming organs & certain disorders involving the immune mechanism	12	13	10	21	10	19
E00-E90	IV Endocrine, nutritional and metabolic diseases	70	57	73	66	82	71
F00-F99	V Mental and behavioural disorders	35	6	20	11	21	15
G00-G99	VI Diseases of the nervous system	10	19	14	14	13	10
H00-H59	VII Diseases of the eye and adnexa	28	31	11	22	23	34
H60-H95	VIII Diseases of the ear and mastoid process	2	0	1	3	0	0
I00-I99	IX Diseases of the circulatory system	200	169	216	170	192	164
J00-J99	X Diseases of the respiratory system	81	95	134	131	125	81
K00-K93	XI Diseases of the digestive system	65	56	54	41	67	38
L00-L99	XII Diseases of the skin and subcutaneous tissue	44	33	41	33	56	35
M00-M99	XIII Diseases of the musculoskeletal system and connective tissue	28	5	21	7	35	10
N00-N99	XIV Diseases of the genitourinary system	35	46	24	42	43	42
O00-O99	XV Pregnancy, childbirth and the puerperium	0	281	0	229	0	275
P00-P96	XVI Certain conditions originating in the perinatal period	0	0	0	4	0	2
Q00-Q99	XVII Congenital malformations, deformations and chromosomal abnormalities	0	0	0	1	0	0
R00-R99	XVIII Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	55	43	73	78	33	45
S00-T98	XIX Injury, poisoning and certain other consequences of external causes	156	83	76	65	86	38
V01-Y98	XX External causes of morbidity and mortality	59	48	26	24	27	26

**Table 2.9: Ten leading causes of inpatient morbidity by sex
COOK ISLANDS: 2016**

Rank	CAUSE	Male	Female	Both Sexes	%
	ALL CAUSES	650	473	1,123	64.2
1	Heart diseases	114	89	203	11.6
2	Hypertensive diseases	78	73	151	8.6
3	Other diseases of the respiratory system	87	48	135	7.7
4	Injury, poisoning & certain other consequences of external causes	86	38	124	7.1
5	Diseases of the digestive system	67	38	105	6.0
6	Diabetes mellitus	54	40	94	5.4
7	Diseases of the skin and subcutaneous tissue	56	35	91	5.2
8	Diseases of the genitourinary system	43	42	85	4.9
9	Chronic lower respiratory diseases	38	33	71	4.1
10	Certain infectious and parasitic diseases	27	37	64	3.7

**Table 2.10: Ten leading causes of inpatient morbidity by sex
COOK ISLANDS: 2015**

Rank	CAUSE	Male	Female	Both Sexes	%
	ALL CAUSES	658	576	1,234	74.7
1	Heart diseases	152	98	250	15.1
2	Other diseases of the respiratory system	103	95	198	12.0
3	Injury, poisoning & certain other consequences of external causes	76	65	141	8.5
4	Hypertensive diseases	64	69	133	8.1
5	Certain infectious and parasitic diseases	66	54	120	7.3
6	Diseases of the digestive system	54	41	95	5.8
7	Diabetes mellitus	47	43	90	5.5
8	Diseases of the skin and subcutaneous tissue	41	33	74	4.5
9	Chronic lower respiratory diseases	31	36	67	4.1
10	Diseases of the genitourinary system	24	42	66	4.0

**Table 2.11: Inpatient morbidity by sex and age groupings
COOK ISLANDS: 2016**

ICD10 CODE	DISEASE	Sex: MALE											Sex: FEMALE										
		Age Group											Age Group										
		0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total		
A00-B99	I Certain infectious and parasitic diseases	7	2	1	3	0	4	2	4	4	27	8	3	4	6	4	2	5	1	7	40		
	A00-A09 Intestinal and infectious diseases	4	1	1	2	0	2	2	4	1	17	5	1	4	5	3	2	3	0	4	27		
	A15-A19 Respiratory tuberculosis	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
	A40-A41 Septicaemia	0	0	0	0	0	1	0	0	3	4	0	1	0	0	0	0	0	0	0	3		
	A50-A89 Viral diseases	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1		
	A90-A94, A96-A99 Other arthropod borne viral fevers and viral haemorrhagic fevers	3	0	0	0	0	0	0	0	0	3	3	0	0	0	1	0	1	0	0	5		
	Remainder of certain infectious and parasitic diseases	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	3		
C00-D48	II Neoplasms	0	0	0	0	0	1	4	4	5	14	0	0	0	0	1	3	2	4	1	11		
	C25 Malignant neoplasm of pancreas	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0		
	C33-C34 Malignant neoplasm of trachea, bronchus and lung	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	1	2		
	C50 Malignant neoplasm of breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1		
	C53 Malignant neoplasm of cervix uteri	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0		
	C61 Malignant neoplasm of prostate	0	0	0	0	0	0	2	2	4	8	0	0	0	0	0	0	0	0	0	0		
	Other	0	0	0	0	0	1	2	2	0	5	0	0	0	0	1	2	2	3	0	8		
D50-D89	III Diseases of the blood & blood forming organs & certain disorders involving the immune mechanism	1	0	0	0	3	1	0	3	2	10	0	1	3	2	1	2	1	7	2	19		
	D50-D64 Anaemias	1	0	0	0	3	1	0	3	2	10	0	1	3	2	1	2	1	7	2	19		
E00-E90	IV Endocrine, nutritional & metabolic diseases & immunity disorders	0	0	0	2	8	14	15	16	27	82	0	0	1	3	3	6	17	18	23	71		
	E10-E14 Diabetes mellitus	0	0	0	1	5	8	10	13	17	54	0	0	1	1	2	4	12	8	12	40		
	Remainder of endocrine, nutritional and metabolic diseases	0	0	0	1	3	6	5	3	10	28	0	0	0	2	1	2	5	10	11	31		
F00-F99	V Mental and behavioural disorders	0	0	2	2	1	3	4	2	7	21	0	1	4	2	0	3	2	0	3	15		
	F10-F19 Mental & behavioural disorders due to psychoactive substance use	0	0	1	2	1	0	1	1	0	6	0	0	2	0	0	0	0	0	0	2		
	Remainder of mental and behavioural disorders	0	0	1	0	0	3	3	1	7	15	0	1	2	2	0	3	2	0	3	13		
G00-G98	VI Diseases of the nervous system	0	1	0	4	1	2	0	1	4	13	1	2	1	0	2	1	1	1	1	10		
H00-H59	VII Diseases of the eye and adnexa	0	0	0	0	0	1	10	6	6	23	1	1	0	0	0	0	3	11	18	34		
H60-H95	VIII Diseases of the ear and mastoid process	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
I00-I99	IX Diseases of the circulatory system	1	1	0	2	9	26	34	53	66	192	0	1	1	4	8	19	36	40	55	164		
	I00-I09 Acute Rheumatic fever and chronic rheumatic heart diseases	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2		
	I10-I15 Hypertensive diseases	0	0	0	0	5	13	12	18	30	78	0	0	1	1	5	6	19	17	24	73		
	I20-I25 Ischaemic heart diseases	0	1	0	1	2	1	8	4	7	24	0	0	0	1	1	3	7	5	3	20		
	I26-I52 Other heart diseases	1	0	0	0	1	9	11	26	18	66	0	0	0	1	2	7	5	14	19	48		
	I60-I69 Cerebrovascular diseases	0	0	0	1	1	2	2	5	9	20	0	0	0	1	0	1	4	4	6	16		
	Remainder of diseases of the circulatory system	0	0	0	0	0	1	1	0	2	4	0	0	0	0	0	1	1	0	3	5		
J00-J99	X Diseases of the respiratory system	28	13	9	3	7	9	9	15	32	125	20	10	3	5	5	7	11	6	14	81		
	J00-J06 Acute respiratory infections	0	1	4	3	2	5	2	2	4	23	1	2	0	1	0	1	0	1	3	9		
	J10-J11 Influenza	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0		
	J12-J18 Pneumonia	2	2	3	0	2	2	0	4	3	18	2	2	0	2	2	1	2	1	3	15		
	J20-J22 Other acute lower respiratory infections	15	0	0	0	0	1	0	1	0	17	12	0	0	0	0	0	0	0	0	12		
	J30-J39 Other diseases of upper respiratory tract	4	0	0	0	1	0	1	3	7	16	0	0	1	0	0	1	0	1	2	5		
	J40-J47 Chronic lower respiratory diseases	6	5	1	0	0	0	5	3	18	38	3	6	1	0	3	4	8	3	5	33		
	Remainder of diseases of the respiratory system	1	5	1	0	2	1	1	1	0	12	2	0	1	2	0	0	1	0	1	7		
K00-K93	XI Diseases of the digestive system	1	5	5	5	9	8	7	21	6	67	0	0	6	4	7	5	2	7	7	38		
	K25-K27 Gastric and duodenal ulcer	0	0	0	0	2	1	0	1	0	4	0	0	0	0	0	0	0	0	0	0		
	K35-K38 Diseases of appendix	0	5	3	2	3	0	1	1	1	16	0	0	2	1	3	1	1	1	0	9		
	K40-K46 Hernia	1	0	2	1	2	2	4	6	2	20	0	0	0	1	0	0	0	1	0	2		
	K70-K77 Diseases of the liver	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0		
	Remainder of diseases of the digestive system	0	0	0	2	2	5	2	13	2	26	0	0	4	2	4	4	1	5	7	27		
L00-L99	XII Diseases of the skin and subcutaneous tissue	0	1	3	1	8	10	11	12	10	56	2	1	2	0	5	2	8	5	10	35		
M00-M99	XIII Diseases of the musculoskeletal system and connective tissue	0	2	0	4	5	9	7	6	2	35	0	0	0	2	0	1	2	2	3	10		
N00-N99	XIV Diseases of the genitourinary system	0	2	2	3	4	6	5	6	15	43	0	0	3	11	7	5	4	7	5	42		
	N00-N16 Glomerular & renal tubulo-interstitial diseases	0	2	2	0	0	1	0	1	0	6	0	0	1	1	0	2	1	0	0	5		
	Remainder of diseases of the genitourinary system	0	0	0	3	4	5	5	5	15	37	0	0	2	10	7	3	3	7	5	37		
O00-O99	XV Pregnancy, childbirth and the puerperium	0	0	0	0	0	0	0	0	0	0	1	0	86	134	53	1	0	0	0	275		
	O00-O07 Pregnancy with abortive outcome	0	0	0	0	0	0	0	0	0	0	0	0	2	6	6	0	0	0	0	14		
	O10-O16 Oedema, proteinuria & hypertensive disorders in pregnancy, childbirth and the puerperium	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	4		
	O20-O29 Other maternal disorders predominantly related to pregnancy	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4		
	O30-O48 Maternal care related to the fetus & amniotic cavity and possible delivery problems	0	0	0	0	0	0	0	0	0	0	1	0	5	1	0	0	0	0	0	7		
	O60-O75 Complications of labour and delivery	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1		
	O80-O84 Delivery	0	0	0	0	0	0	0	0	0	0	0	0	77	124	43	1	0	0	0	245		
P00-P99	XVI Certain conditions originating in the perinatal period	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2		
R00-R99	XVIII Symptoms, signs and abnormal clinical and laboratory findings, nec	5	4	5	6	1	1	2	2	7	33	6	3	5	3	3	4	5	8	8	45		
S00-T98	XIX Injury, poisoning & certain other consequences of external causes	5	10	22	10	13	10	6	9	1	86	1	2	13	6	5	4	3	3	1	38		
	S00-S09 Injuries to the head	4	3	9	7	6	2	0	3	0	34	1	0	9	2	0	0	0	0	0	12		
	S10-S29 Injuries to the neck and the thorax	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0		
	S30-S39 Injuries to the abdomen, lower back, lumbar spine and pelvis	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0		
	S40-S69 Injuries to the shoulder, upper arm, elbow, forearm, wrist & hand	0	4	5	2	1	2	0	0	0	14	0	1	2	0	1	0	0	0	0	4		
	S70-S99 Injuries to the hip, thigh, knee, lower leg, ankle and foot	1	3	6	1	6	3	4	2	1	27	0	0	2	3	2	2	3	3	1	16		
	T36-T50 Poisoning by drugs, medicaments and biological substances	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0		
	T51-T65 Toxic effects of substances chiefly																						

**Table 2.12: Inpatient Morbidity by Sex and Age Groupings
COOK ISLANDS: 2015**

ICD10 CODE	DISEASE	Sex: MALE										Sex: FEMALE									
		0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total
A00-B99	I Certain infectious and parasitic diseases	20	11	3	3	6	3	3	8	10	67	13	5	10	9	2	5	1	8	7	60
A00-A09	Intestinal and infectious diseases	17	8	1	2	3	3	3	3	6	46	7	3	3	7	2	3	1	6	4	36
A33-A35	Tetanus	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
A40-A41	Septicaemia	0	0	0	0	0	0	0	1	2	3	0	0	0	2	0	0	0	0	0	2
A90-A94, A96-A99	Other arthropod borne viral fevers and viral haemorrhagic fevers	2	3	1	0	2	0	0	2	2	12	4	2	5	0	0	1	0	2	2	16
	Remainder of certain infectious and parasitic diseases	1	0	1	1	1	0	0	1	0	5	2	0	2	0	0	1	0	0	1	6
C00-D48	II Neoplasms	0	0	0	0	0	1	0	5	6	12	0	0	0	0	0	0	0	4	1	5
C15	Malignant neoplasm of oesophagus	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
C16	Malignant neoplasm of stomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
C18-C21	Malignant neoplasm of colon, rectum and anus	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
C22	Malignant neoplasm of liver and intrahepatic bile ducts	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	1	0	1
C33-C34	Malignant neoplasm of trachea, bronchus and lung	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
C50	Malignant neoplasm of breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
C61	Malignant neoplasm of prostate	0	0	0	0	0	0	0	3	4	7	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	3
D50-D89	III Diseases of the blood & blood forming organs & certain disorders involving the immune mechanism	0	0	0	0	0	2	1	2	4	10	0	0	2	0	2	2	2	9	2	21
D50-D64	Anaemias	0	0	0	0	0	2	1	2	4	9	0	0	2	0	2	2	2	9	2	19
	Remainder of the blood & blood forming organs & certain disorders	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	2
E00-E90	IV Endocrine, nutritional & metabolic diseases & immunity disorders	1	0	2	5	4	17	12	18	14	73	1	0	0	3	4	8	9	20	21	66
E10-E14	Diabetes mellitus	0	0	1	1	2	13	8	12	10	47	0	0	0	2	3	5	6	17	10	43
	Remainder of endocrine, nutritional and metabolic diseases	1	0	1	4	2	4	4	6	4	26	1	0	0	1	1	3	3	3	11	23
F00-F99	V Mental and behavioural disorders	0	0	6	6	3	1	1	1	2	20	0	0	1	3	1	0	1	1	4	11
F10-F19	Mental & behavioural disorders due to psychoactive substance use	0	0	6	3	2	1	0	0	0	12	0	0	1	3	1	0	0	0	0	4
	Remainder of mental and behavioural disorders	0	0	0	3	1	0	1	1	2	8	0	0	0	0	1	0	1	1	4	7
G00-G98	VI Diseases of the nervous system	0	2	0	1	4	2	2	1	2	14	0	7	1	1	0	1	2	2	0	14
H00-H59	VII Diseases of the eye and adnexa	0	0	1	0	1	0	4	0	5	11	0	0	0	0	0	1	4	6	11	22
H60-H95	VIII Diseases of the ear and mastoid process	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0	3
I00-I99	IX Diseases of the circulatory system	0	0	2	1	16	40	51	47	59	216	0	0	2	9	6	19	20	44	70	170
I10-I15	Hypertensive diseases	0	0	0	0	4	13	17	16	14	64	0	0	0	5	5	15	7	18	19	69
I20-I25	Ischaemic heart diseases	0	0	2	0	3	2	7	5	6	25	0	0	0	2	0	1	4	5	9	21
I26-I52	Other heart diseases	0	0	0	1	8	21	19	21	33	103	0	0	2	1	1	3	8	17	35	67
I60-I69	Cerebrovascular diseases	0	0	0	0	3	7	4	6	20	0	0	0	0	0	0	1	4	5	10	
	Remainder of diseases of the circulatory system	0	0	0	0	1	1	1	1	0	4	0	0	0	1	0	0	0	0	0	2
J00-J99	X Diseases of the respiratory system	48	22	4	4	2	7	12	13	22	134	29	14	13	8	5	9	17	15	21	131
J00-J06	Acute respiratory infections	2	6	1	1	0	2	0	3	6	21	5	7	7	4	2	4	6	2	4	41
J12-J18	Pneumonia	6	5	2	2	0	3	1	2	5	26	5	1	1	1	0	1	4	2	4	19
J20-J22	Other acute lower respiratory infections	24	0	0	0	0	0	1	0	1	26	10	0	0	1	0	0	0	0	0	11
J30-J39	Other diseases of upper respiratory tract	0	1	0	1	0	2	3	2	5	14	0	1	0	0	1	1	0	2	4	9
J40-J47	Chronic lower respiratory diseases	12	6	0	0	0	0	7	3	3	31	4	4	5	1	2	2	5	7	6	36
	Remainder of diseases of the respiratory system	4	4	1	0	2	0	0	3	2	16	5	1	0	1	0	1	2	2	3	15
K00-K93	XI Diseases of the digestive system	2	5	3	5	4	5	8	12	10	54	1	1	8	8	9	3	5	2	4	41
K25-K27	Gastric and duodenal ulcer	0	0	0	0	0	0	1	4	2	7	0	0	0	0	0	0	0	1	0	1
K35-K38	Diseases of appendix	0	4	1	2	2	1	1	2	3	16	0	0	4	5	5	2	2	1	1	20
K40-K46	Hernia	2	1	1	1	1	1	3	3	1	14	0	0	0	2	1	2	0	1	6	
K70-K77	Diseases of the liver	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0
	Remainder of diseases of the digestive system	0	0	1	2	1	3	3	2	2	14	1	1	4	3	2	0	1	0	2	14
L00-L99	XII Diseases of the skin and subcutaneous tissue	1	3	5	5	2	6	11	5	3	41	3	3	3	0	3	3	3	7	8	33
M00-M99	XIII Diseases of the musculoskeletal system and connective tissue	0	3	1	3	0	2	6	4	2	21	0	1	1	0	3	0	0	1	1	7
N00-N99	XIV Diseases of the genitourinary system	1	1	0	0	1	4	3	4	10	24	0	3	5	9	3	7	3	6	6	42
N00-N16	Glomerular & renal tubulo-interstitial diseases	1	1	0	0	0	0	0	1	0	3	0	2	2	2	0	1	0	0	0	7
	Remainder of diseases of the genitourinary system	0	0	0	0	1	4	3	3	10	21	0	1	3	7	3	6	3	6	6	35
O00-O99	XV Pregnancy, childbirth and the puerperium	0	0	0	0	0	0	0	0	0	0	0	0	86	103	38	2	0	0	0	229
O00-O07	Pregnancy with abortive outcome	0	0	0	0	0	0	0	0	0	0	0	0	8	4	7	2	0	0	0	21
O10-O16	Oedema, proteinuria & hypertensive disorders in pregnancy, childbirth and the puerperium	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
O20-O29	Other maternal disorders predominantly related to pregnancy	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
O30-O48	Maternal care related to the fetus & amniotic cavity and possible delivery problems	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
O60-O75	Complications of labour and delivery	0	0	0	0	0	0	0	0	0	0	0	0	5	8	1	0	0	0	0	14
O80-O84	Delivery	0	0	0	0	0	0	0	0	0	0	0	0	72	85	29	0	0	0	0	186
P00-P99	XVI Certain conditions originating in the perinatal period	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	4
R00-R99	XVIII Symptoms, signs and abnormal clinical and laboratory findings, nec	8	8	3	10	9	7	7	12	9	73	12	11	5	7	7	11	5	11	9	78
S00-T98	XIX Injury, poisoning & certain other consequences of external causes	6	17	16	11	3	12														

Table 2.13: Prevalence and incidence of NCD cases by year

COOK ISLANDS: 2009-2016

Year	Resident Population Estimate	Cardiovascular diseases	Diabetes	Cancer	chronic respiratory diseases
2009	13,300	1,402	658	145	590
2010	11,900	1,571	740	171	640
2011	14,700	1,730	831	200	709
2012	14,300	1,944	927	228	767
2013	14,100	2,140	1,030	245	815
2014	13,600	2,310	1,140	264	879
2015	13,000	2,475	1,267	282	925
2016	11,500	2,656	1,414	315	982
Incidence					
2009		229	134	35	88
2010		188	91	28	58
2011		168	95	34	73
2012		230	99	28	62
2013		204	103	25	50
2014		179	112	27	69
2015		185	131	27	51
2016		181	147	33	57
Incidence percentage of increase					
2009		1.7	1.0	0.3	0.7
2010		1.6	0.8	0.2	0.5
2011		1.1	0.6	0.2	0.5
2012		1.6	0.7	0.2	0.4
2013		1.4	0.7	0.2	0.4
2014		1.3	0.8	0.2	0.5
2015		1.4	1.0	0.2	0.4
2016		1.6	1.3	0.3	0.5

Note: ⁽¹⁾ Source of population data is the Statistics Office (MFEM) - June quarter

⁽²⁾ Cardiovascular diseases includes hypertension, stroke, renal failure, heart failure, heart diseases, myocardial infarction

⁽³⁾ Chronic respiratory diseases includes chronic bronchitis, asthma, emphysema, bronchiectasis

Table 2.14: Incidence of cancer cases by site, sex and age groupings.
COOK ISLANDS: 2016

ICD 10 CODE	SITE	MALE									% Distribution
		0-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total	
C00 - D48	ALL SITES	0	0	1	0	1	2	8	5	17	100.0
C00-C14	Malignant neoplasm of lip, oral cavity and pharynx			0	0	1	0	0	0	1	5.9
C25	Malignant neoplasm of pancreas			0	0	0	1	0	0	1	5.9
C43-C44	Melanoma and other malignant neoplasms of skin			0	0	0	1	5	2	8	47.1
C61	Malignant neoplasms of prostate			0	0	0	0	1	3	4	23.5
C67	Malignant neoplasm of bladder			0	0	0	0	1	0	1	5.9
C69-C72	Malignant neoplasm of eye, brain, other part of central nervous system			1	0	0	0	0	0	1	5.9
C82-C85	Non-Hodgkin's lymphoma			0	0	0	0	1	0	1	5.9
		FEMALE									
C00 - D48	ALL SITES	0	0	0	1	2	3	3	5	14	100.0
C18-C21	Malignant neoplasm of colon, rectum and anus				0	0	0	1	0	1	7.1
C33-C34	Malignant neoplasm of trachea, bronchus and lung				0	0	0	0	1	1	7.1
C43-C44	Melanoma and other malignant neoplasm of skin			1	0	1	0	1	1	3	21.4
C50	Malignant neoplasm of breast			0	1	1	0	1	3	3	21.4
C53	Malignant neoplasm of cervix uteri			0	0	1	0	2	3	3	21.4
C73-C75	Malignant neoplasm of thyroid and other endocrine glands			0	1	0	2	0	3	3	21.4

Table 2.15: Incidence of cancer cases by site, sex and age groupings.
COOK ISLANDS: 2015

ICD 10 CODE	SITE	MALE									% Distribution
		0-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total	
C00 - D48	ALL SITES	0	0	0	2	2	2	3	3	12	100.0
C15	Malignant neoplasm of oesophagus				0	0	0	1	0	1	8.3
C16	Malignant neoplasm of stomach				1	0	0	0	0	1	8.3
C18-C21	Malignant neoplasm of colon, rectum and anus			0	1	0	0	1	2	2	16.7
C25	Malignant neoplasm of pancreas			0	0	1	0	0	1	1	8.3
C61	Malignant neoplasms of prostate			0	0	1	1	2	4	4	33.3
C60, C62-C63	Other malignant neoplasms of male genital organs			0	1	0	0	0	1	1	8.3
C76-C80	Malignant neoplasm of ill-defined, secondary & unspecified sites			1	0	0	0	0	1	1	8.3
C97	Malignant neoplasms of independent (primary) multiple sites			0	0	0	1	0	1	1	8.3
		FEMALE									
C00 - D48	ALL SITES	0	0	0	0	3	7	5	0	15	100.0
C22	Malignant neoplasm of liver & intrahepatic bile ducts				0	1	0	0	1	1	6.7
C33-C34	Malignant neoplasm of trachea, bronchus and lung				0	1	0	0	1	1	6.7
C50	Malignant neoplasm of breast				1	2	1	0	4	4	26.7
C54-C55	Malignant neoplasms of other and unspecified parts of uterus				1	2	2	0	5	5	33.3
C56	Malignant neoplasms of ovary				1	0	0	0	1	1	6.7
C51-C52, C57-C58	Other malignant neoplasms of female genital organs				0	1	0	0	1	1	6.7
C90	Multiple myeloma and malignant plasma cell neoplasms				0	0	1	0	1	1	6.7
C91-C95	Leukaemia				0	0	1	0	1	1	6.7

**Table 2.16: Admissions due to transport crashes
RAROTONGA: 2007-2016**

Type of Accident	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Transport Crashes	84	51	52	46	60	58	66	68	41	42
Male	63	24	35	28	41	35	46	42	22	24
Female	21	27	17	18	19	23	20	26	19	18
Alcohol Related	42	32	30	26	32	27	30	26	18	19
Percentage Alcohol Related	50%	63%	58%	57%	53%	47%	45%	38%	44%	45%
Alcohol Related Deaths	3	4	2	2	4	2	4	4	3	1
Non Alcohol Related Deaths	2	0	0	0	0	2	2	1	2	0

**Table 2.17: Admissions due to alcohol related transport crashes
by age groupings and year
RAROTONGA: 2007- 2016**

Age Group	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
0 - 14	1	1	0	2	0	7	0	0	0	0
15 - 24	21	19	15	12	16	6	13	12	8	6
25 - 34	12	5	7	5	7	5	12	8	7	8
35 - 44	5	3	6	5	4	9	1	1	2	2
45 - 54	2	3	1	1	3	0	2	3	1	1
55 +	1	1	1	1	2	0	2	2	0	2
Total	42	32	30	26	32	27	30	26	18	19

Table 2.18: Mortality by region & island, year and sex
COOK ISLANDS: 2013-2016

REGION & ISLAND	2013			2014			2015			2016		
	Both	Male	Female	Both	Male	Female	Both	Male	Female	Both	Male	Female
COOK ISLANDS	112	68	44	131	88	43	118	59	59	101	63	38
RAROTONGA	81	50	31	93	65	28	71	34	37	63	44	19
SOUTHERN GROUP excluding Rarotonga	27	15	12	35	22	13	40	21	19	32	16	16
Aitutaki	10	4	6	12	8	4	15	5	10	13	5	8
Mangaia	8	4	4	6	4	2	8	5	3	9	5	4
Atiu	3	3	0	11	6	5	7	5	2	4	3	1
Mauke	4	3	1	5	3	2	7	5	2	3	1	2
Mitiaro	2	1	1	1	1	0	3	1	2	3	2	1
NORTHERN GROUP	4	3	1	3	1	2	7	4	3	6	3	3
Palmerston	1	1	0	0	0	0	0	0	0	0	0	0
Pukapuka/Nassau	1	1	0	1	0	1	2	2	0	2	1	1
Manihiki	1	0	1	1	0	1	1	0	1	1	0	1
Rakahanga	1	1	0	0	0	0	0	0	0	0	0	0
Penrhyn	0	0	0	1	1	0	4	2	2	3	2	1

Note: 1. Excludes all tourists and contractors dying in the Cook Islands
2. Excludes all deaths to Cook Islanders occurring overseas

**Table 2.19: Selected common causes of mortality by year and rate
COOK ISLANDS: 2014-2016**

Cause of Death	2014		2015		2016	
	Number of death	Rate per 100,000	Number of death	Rate per 100,000	Number of death	Rate per 100,000
Diseases of the Circulatory System	48	352.9	56	430.8	36	313.0
Hypertension	18	132.4	15	115.4	7	60.9
Ischaemic heart disease	11	80.9	14	107.7	5	43.5
Cerebrovascular Disease	6	44.1	9	69.2	13	113.0
Heart Failure	3	22.1	9	69.2	0	0.0
Other	10	73.5	9	69.2	11	95.7
Neoplasms	16	117.6	16	123.1	17	147.8
Liver and intrahepatic bile ducts	2	14.7	1	7.7	1	8.7
Trachea, Bronchus & Lungs	3	22.1	1	7.7	6	52.2
Prostate	5	36.8	4	30.8	3	26.1
Female Breast	2	14.7	1	7.7	2	17.4
Other	4	29.4	9	69.2	5	43.5
Diseases of the Respiratory System	8	58.8	10	76.9	7	60.9
Pneumonia	6	44.1	5	38.5	2	17.4
Bronchitis, Emphysema & Asthma	2	14.7	4	30.8	4	34.8
Other	0	0.0	1	7.7	1	8.7
Endocrine, Nutritional & Metabolic Diseases & Immunity Disorders	34	250.0	23	176.9	25	217.4
Diabetes Mellitus	32	235.3	23	176.9	22	191.3
Other	2	14.7	0	0.0	3	26.1
Symptoms, Signs & Ill-Defined Conditions	3	22.1	1	7.7	0	0.0
Certain Infectious and Parasitic Diseases	3	22.1	2	15.4	3	26.1
Septicaemia	3	22.1	2	15.4	3	26.1
Other	0	0.0	0	0.0	0	0.0
Injury, poisoning and certain other consequences of external causes	9	66.2	7	53.8	8	69.6
Injuries to the head	6	44.1	7	53.8	5	43.5
Other	3	22.1	0	0.0	3	26.1
Mental and behavioural disorders due to use of alcohol	0	0.0	0	0.0	0	0.0
Diseases of the Nervous System	2	14.7	0	0.0	1	8.7
Diseases of the Digestive System	7	51.5	0	0.0	0	0.0
Ulcer of Stomach and Duodenum	2	14.7	0	0.0		0.0
Chronic Liver disease and Cirrhosis	4	29.4	0	0.0		0.0
Other	1	7.4	0	0.0		0.0
Certain Conditions Originating in the Perinatal Period	0	0.0	1	7.7	0	0.0
Congenital malformations, deformations & chromosomal abnormalities	0	0.0	0	0.0	2	17.4
Diseases of the Genitourinary System	1	7.4	2	15.4	0	0.0
EXTERNAL CAUSES OF INJURY AND POISONING	9	66.2	7	53.8	8	69.6
Transport accidents	6	44.1	5	38.5	1	8.7
Intentional self-harm	1	7.4	1	7.7	3	26.1
Other	2	14.7	1	7.7	4	34.8

Note: 1. Rates are calculated per 100,000 resident population

2. Source for population data is Statistics Cook Islands Quarterly Statistical Bulletin

**Table 2.22: Laboratory positive new cases by disease and year
RAROTONGA, COOK ISLANDS: 2012-2016**

	YEAR				
	2012	2013	2014	2015	2016
STD					
Gonorrhoea	8	6	2	1	2
HIV	0	0	0	0	0
Syphilis	7	0	0	1	1
Candida	72	7	4	0	0
Non Specific Urethritis	55	6	0	0	0
Trichomonas Vaginalis	15	9	1	0	0
Chlamydia	89	39	28	30	37
Hepatitis B	23	5	6	6	8
OTHERS					
Tuberculosis	1	0	0	0	0
Dengue Fever	6	4	5	0	2
Chikungunya				11	0

3. MEDICAL AND HEALTH SERVICES AND FACILITIES

**Table 3.1: Number of cases referred overseas and to Rarotonga
COOK ISLANDS: 2002-2016**

Period	Overseas	Island										
		TOTAL	Aitutaki	Mangaia	Atu	Mauke	Mitiaro	Palmerston	Pukapuka		Rakahanga	Penrhyn
								/Nassau	Manihiki			
2002	149	164	50	30	19	15	5	0	14	9	0	22
2003	165	172	53	24	17	23	1	0	12	10	1	31
2004	166	176	49	35	23	28	1	0	20	5	0	15
2005	169	255	85	37	18	43	10	0	29	20	1	12
2006	154	187	64	27	36	9	6	0	26	15	0	4
2007	182	180	53	22	25	39	15	3	12	9	0	2
2008	167	165	57	37	13	5	6	1	21	7	0	18
2009	137	197	61	30	29	22	11	3	21	11	0	9
2010	158	289	98	62	27	17	27	8	22	8	4	16
2011	150	228	70	41	20	18	13	9	17	13	10	17
2012	172	280	132	37	19	16	20	5	18	15	1	17
2013	134	273	98	40	30	22	22	5	24	17	7	8
2014	116	280	117	35	32	26	16	0	13	22	4	15
2015	155	237	99	25	27	29	15	9	11	8	2	12
2016	120	232	68	32	26	25	13	3	21	19	4	21
QUARTER												
2012 Mar	44	34	13	5	2	1	3	0	3	4	0	3
Jun	45	133	67	23	11	8	4	3	6	4	1	6
Sep	47	70	24	7	4	5	5	2	9	6	0	8
Dec	36	43	28	2	2	2	8	0	0	1	0	0
2013 Mar	43	46	10	7	5	4	3	2	5	8	0	2
Jun	34	102	35	24	13	7	9	0	7	4	2	1
Sep	22	70	34	1	10	6	6	0	3	3	4	3
Dec	35	55	19	8	2	5	4	3	9	2	1	2
2014 Mar	35	58	20	6	10	4	3	0	2	7	0	6
Jun	26	90	40	15	10	9	4	0	0	8	3	1
Sep	28	67	25	5	8	9	6	0	7	4	0	3
Dec	27	65	32	9	4	4	3	0	4	3	1	5
2015 Mar	42	60	25	5	3	1	6	7	7	3	0	3
Jun	37	103	43	12	16	16	6	1	1	3	1	4
Sep	39	35	15	3	2	11	2	0	1	0	0	1
Dec	37	39	16	5	6	1	1	1	2	2	1	4
2016 Mar	34	63	14	8	5	7	4	2	5	7	3	8
Jun	24	75	27	15	9	9	2	0	4	3	1	5
Sep	30	50	15	4	3	4	5	0	7	6	0	6
Dec	32	44	12	5	9	5	2	1	5	3	0	2

**Table 3.2: Patients admitted and discharged from hospital
by region & island and bed occupancy
COOK ISLANDS: 2016**

REGION & ISLAND	Number of				Average Occupied Bed	% Bed Occupancy
	Admissions	Discharges	Bed Days Used	Bed Days Available		
COOK ISLANDS	1,799	1,746	7,609	50,735	20.8	15.0
RAROTONGA	1,462	1,452	6,803	25,550	18.6	26.6
SOUTHERN GROUP excluding Rarotonga	311	276	743	18,615	2.0	4.0
Aitutaki	281	245	693	10,220	1.9	6.8
Mangaia	8	7	11	2,190	0.0	0.5
Atiu	10	16	27	3,285	0.1	0.8
Mauke	5	3	5	2,190	0.0	0.2
Mitiaro	7	5	7	730	0.0	1.0
NORTHERN GROUP	26	18	63	6,570	0.2	1.0
Palmerston	0	0	0	0	0.0	0.0
Pukapuka/Nassau	8	5	17	1,460	0.0	1.2
Manihiki	11	8	40	2,920	0.1	1.4
Rakahanga	5	5	6	730	0.0	0.8
Penrhyn	2	0	0	1,460	0.0	0.0

**Table 3.3: Patients admitted and discharged from hospital
by region & island and bed occupancy
COOK ISLANDS: 2015**

REGION & ISLAND	Number of				Average Occupied Bed	% Bed Occupancy
	Admissions	Discharges	Bed Days Used	Bed Days Available		
COOK ISLANDS	1,840	1,809	8,010	50,735	21.9	15.8
RAROTONGA	1,504	1,487	6,936	25,550	19.0	27.1
SOUTHERN GROUP excluding Rarotonga	307	299	901	18,615	2.5	4.8
Aitutaki	232	221	716	10,220	2.0	7.0
Mangaia	17	18	61	2,190	0.2	2.8
Atiu	21	25	83	3,285	0.2	2.5
Mauke	29	26	4	2,190	0.0	0.2
Mitiaro	8	9	37	730	0.1	5.1
NORTHERN GROUP	29	23	173	6,570	0.5	2.6
Palmerston	2	2	5	0	0.0	0.0
Pukapuka/Nassau	9	8	117	1,460	0.3	8.0
Manihiki	13	7	35	2,920	0.1	1.2
Rakahanga	1	1	2	730	0.0	0.3
Penrhyn	4	5	14	1,460	0.0	1.0

**Table 3.4: Patients admitted and discharged from, or dying in hospital
by month and bed occupancy
RAROTONGA: 2016**

Month	Number of			Total Discharges & Deaths	Number of Bed Days		Average Occupied Bed	% Bed Occupancy
	Admissions	Discharges	Deaths		Available	Used		
January	118	117	2	119	2,170	547	17.6	25.2
February	110	105	1	106	1,960	596	21.3	30.4
March	119	121	6	127	2,170	653	21.1	30.1
April	163	157	0	157	2,100	548	18.3	26.1
May	138	137	1	138	2,170	640	20.6	29.5
June	109	104	0	104	2,100	648	21.6	30.9
July	110	103	3	106	2,170	547	17.6	25.2
August	143	128	2	130	2,170	523	16.9	24.1
September	105	114	0	114	2,100	429	14.3	20.4
October	112	114	1	115	2,170	582	18.8	26.8
November	113	101	1	102	2,100	451	15.0	21.5
December	122	129	5	134	2,170	639	20.6	29.4
Total	1,462	1,430	22	1,452	25,550	6,803	18.6	26.6

**Table 3.5: Patients admitted and discharged from, or dying in hospital
by month and bed occupancy
RAROTONGA: 2015**

Month	Number of			Total Discharges & Deaths	Number of Bed Days		Average Occupied Bed	% Bed Occupancy
	Admissions	Discharges	Deaths		Available	Used		
January	108	98	4	102	2,170	504	16.3	23.2
February	118	100	3	103	1,960	592	21.1	30.2
March	122	102	7	109	2,170	581	18.7	26.8
April	188	177	4	181	2,100	638	21.3	30.4
May	118	121	3	124	2,170	625	20.2	28.8
June	112	111	3	114	2,100	567	18.9	27.0
July	129	119	3	122	2,170	532	17.2	24.5
August	142	142	3	145	2,170	655	21.1	30.2
September	135	138	0	138	2,100	604	20.1	28.8
October	93	101	3	104	2,170	420	13.5	19.4
November	115	107	3	110	2,100	577	19.2	27.5
December	124	130	5	135	2,170	641	20.7	29.5
Total	1,504	1,446	41	1,487	25,550	6,936	19.0	27.1

**Table 3.6: Outpatient consultations by year, sex and age groups
COOK ISLANDS 2012-2016**

Year	Total	Age Groups															Unknown
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	
2012	35,836	4,097	4,279	2,232	2,204	2,291	1,752	1,839	1,661	2,018	2,183	2,338	1,735	1,693	1,727	3,763	24
2013	37,906	5,033	3,573	2,323	2,455	2,202	1,905	1,918	1,675	2,206	2,399	2,658	1,993	1,930	1,806	3,815	15
2014	19,087	1,597	1,942	1,247	1,160	1,180	1,100	1,063	926	1,118	1,299	1,413	1,210	1,033	842	1,949	8
2015	31,401	3,571	2,834	1,757	1,790	1,708	1,619	1,599	1,513	1,704	2,161	2,375	2,007	1,815	1,510	3,433	5
2016	46,601	5,736	3,134	2,666	2,771	2,695	2,475	2,117	2,188	2,585	3,187	3,599	3,344	2,642	2,406	5,044	12
Sex: Male																	
2012	18,243	2181	2169	1181	1157	1025	828	812	708	976	1092	1337	882	979	944	1962	10
2013	19,320	2640	1834	1218	1221	1002	829	840	718	1107	1228	1473	1020	1083	982	2116	9
2014	9,673	891	990	651	592	557	544	449	479	480	709	737	622	517	439	1,012	4
2015	15,770	2,001	1,442	912	882	777	773	603	678	789	1,126	1,254	982	945	812	1,793	1
2016	23,897	3,067	1,579	1,411	1,320	1,187	1,166	940	1,087	1,221	1,827	1,857	1,810	1,435	1,332	2,653	5
Sex: Female																	
2012	17,593	1916	2110	1051	1047	1266	924	1027	953	1042	1091	1001	853	714	783	1801	14
2013	18,586	2393	1739	1105	1234	1200	1076	1078	957	1099	1171	1185	973	847	824	1699	6
2014	9,414	706	952	596	568	623	556	614	447	638	590	676	588	516	403	937	4
2015	15,631	1,570	1,392	845	908	931	846	996	835	915	1,035	1,121	1,025	870	698	1,640	4
2016	22,704	2,669	1,555	1,255	1,451	1,508	1,309	1,177	1,101	1,364	1,360	1,742	1,534	1,207	1,074	2,391	7

**Table 3.7: CURRENT USERS - Women on Family Planning Contraceptives by Year
COOK ISLANDS: 2009-2016**

Contraceptive Type	YEAR							
	2009	2010	2011	2012	2013	2014	2015	2016
All Methods	1,237	1,290	1,166	1,150	1,296	1,201	1,040	990
Prevalence Rate (%)	33.0	34.4	31.9	31.5	35.5	32.9	28.5	27.1
Oral Contraceptive (Pills)	575	588	514	436	505	448	428	393
Intra Uterine Device	9	12	40	59	14	6	2	7
Depo Provera (Injections)	565	576	494	487	677	630	515	442
Norplant/Jadelle	29	35	70	86	65	60	58	81
Others	59	79	48	82	35	57	37	27

Annex 2: Life Tables

Life table for Males: 2012-2016

Age group	x	nx	Reported Resident population		Deaths Dx	Mortality rate mx	Probability of dying qx	Probability of surviving px	Deaths		Years lived		Life expectancy ex
			ax	(Nx)					lx	dx	Lx	Tx	
<5	0	5	0.2	748	1	0.0011	0.0053	0.9947	100000	532	497870	6961717	69.62
5-9	5	5	0.5	723	0	0.0000	0.0000	1.0000	99468	0	497338	6463847	64.98
10-14	10	5	0.5	749	1	0.0008	0.0040	0.9960	99468	398	496344	5966509	59.98
15-19	15	5	0.5	686	3	0.0038	0.0188	0.9812	99070	1860	490700	5470166	55.22
20-24	20	5	0.5	503	1	0.0020	0.0099	0.9901	97210	962	483647	4979465	51.22
25-29	25	5	0.5	451	1	0.0031	0.0154	0.9846	96249	1482	477537	4495819	46.71
30-34	30	5	0.5	394	0	0.0010	0.0051	0.9949	94766	480	472632	4018282	42.40
35-39	35	5	0.5	448	2	0.0049	0.0243	0.9757	94286	2287	465714	3545650	37.61
40-44	40	5	0.5	521	1	0.0023	0.0115	0.9885	91999	1053	457363	3079936	33.48
45-49	45	5	0.5	542	5	0.0096	0.0468	0.9532	90946	4261	444079	2622572	28.84
50-54	50	5	0.5	432	2	0.0037	0.0183	0.9817	86685	1591	429451	2178494	25.13
55-59	55	5	0.5	342	7	0.0216	0.1026	0.8974	85095	8734	403640	1749043	20.55
60-64	60	5	0.5	310	5	0.0161	0.0775	0.9225	76361	5919	367007	1345403	17.62
65-69	65	5	0.5	244	10	0.0418	0.1892	0.8108	70442	13330	318883	978396	13.89
70-74	70	5	0.5	204	4	0.0196	0.0935	0.9065	57111	5338	272213	659513	11.55
75+	75	15	0.5	193	26	0.1337	1.0000	0.0000	51774	51774	387300	387300	7.48

Life table for Females: 2012-2016

Age group	x	nx	Reported Resident population		Deaths Dx	Mortality rate mx	Probability of dying qx	Probability of surviving px	Deaths		Years lived		Life expectancy ex
			ax	(Nx)					lx	dx	Lx	Tx	
<5	0	5	0.2	733	0	0.0005	0.0027	0.9973	100000	272	498911	7762361	77.62
5-9	5	5	0.5	720	0	0.0000	0.0000	1.0000	99728	0	498639	7263451	72.83
10-14	10	5	0.5	659	0	0.0003	0.0015	0.9985	99728	151	498261	6764812	67.83
15-19	15	5	0.5	597	1	0.0010	0.0050	0.9950	99577	499	496635	6266551	62.93
20-24	20	5	0.5	512	0	0.0000	0.0000	1.0000	99077	0	495387	5769916	58.24
25-29	25	5	0.5	493	0	0.0008	0.0040	0.9960	99077	401	494384	5274529	53.24
30-34	30	5	0.5	462	0	0.0009	0.0043	0.9957	98676	426	492316	4780145	48.44
35-39	35	5	0.5	521	1	0.0019	0.0096	0.9904	98250	938	488904	4287829	43.64
40-44	40	5	0.5	542	1	0.0011	0.0055	0.9945	97312	537	485215	3798925	39.04
45-49	45	5	0.5	528	3	0.0053	0.0262	0.9738	96774	2532	477541	3313710	34.24
50-54	50	5	0.5	412	1	0.0019	0.0097	0.9903	94242	911	468934	2836169	30.09
55-59	55	5	0.5	334	3	0.0102	0.0496	0.9504	93332	4633	455076	2367235	25.36
60-64	60	5	0.5	270	3	0.0096	0.0470	0.9530	88699	4170	433069	1912158	21.56
65-69	65	5	0.5	246	6	0.0252	0.1185	0.8815	84529	10021	397592	1479089	17.50
70-74	70	5	0.5	214	3	0.0140	0.0677	0.9323	74508	5046	359926	1081497	14.52
75+	75	21	0.5	241	23	0.0963	1.0000	0.0000	69462	69462	721571	721571	10.39

Life table for Males: 2011-2015

Age group	x	nx	ax	Reported Resident population (Nx)	Deaths Dx	Mortality rate mx	Probability of dying qx	Probability of surviving px	lx	dx	Years lived Lx	Tx	Life expectancy ex
<5	0	5	0.2	748	0.6	0.0008	0.0040	0.9960	100000	400	498401	7152080	71.52
5-9	5	5	0.5	723	0.2	0.0003	0.0014	0.9986	99600	138	497657	6653679	66.80
10-14	10	5	0.5	749	0.0	0.0000	0.0000	1.0000	99463	0	497313	6156022	61.89
15-19	15	5	0.5	686	0.4	0.0006	0.0029	0.9971	99463	290	496589	5658710	56.89
20-24	20	5	0.5	503	2.8	0.0056	0.0275	0.9725	99173	2722	489059	5162121	52.05
25-29	25	5	0.5	451	1.2	0.0027	0.0132	0.9868	96451	1275	479066	4673062	48.45
30-34	30	5	0.5	394	1.4	0.0036	0.0176	0.9824	95176	1676	471689	4193996	44.07
35-39	35	5	0.5	448	0.4	0.0009	0.0045	0.9955	93500	416	466458	3722306	39.81
40-44	40	5	0.5	521	2.2	0.0042	0.0209	0.9791	93083	1945	460555	3255848	34.98
45-49	45	5	0.5	542	0.8	0.0015	0.0074	0.9926	91139	670	454018	2795293	30.67
50-54	50	5	0.5	432	5.0	0.0116	0.0562	0.9438	90468	5088	439622	2341275	25.88
55-59	55	5	0.5	342	1.6	0.0047	0.0231	0.9769	85380	1974	421966	1901653	22.27
60-64	60	5	0.5	310	6.8	0.0219	0.1040	0.8960	83406	8672	395350	1479687	17.74
65-69	65	5	0.5	244	4.8	0.0197	0.0938	0.9063	74734	7006	356154	1084337	14.51
70-74	70	5	0.5	204	10.2	0.0500	0.2222	0.7778	67728	15051	301012	728183	10.75
75+	75	16	0.5	193	23.8	0.1233	1.0000	0.0000	52677	52677	427171	427171	8.11

Life table for Females: 2011-2015

Age group	x	nx	ax	Reported Resident population (Nx)	Deaths Dx	Mortality rate mx	Probability of dying qx	Probability of surviving px	lx	dx	Years lived Lx	Tx	Life expectancy ex
<5	0	5	0.2	733	0.6	0.0008	0.0041	0.9959	100000	408	498368	7681186	76.81
5-9	5	5	0.5	720	0.2	0.0003	0.0014	0.9986	99592	138	497615	7182818	72.12
10-14	10	5	0.5	659	0.2	0.0003	0.0015	0.9985	99454	151	496892	6685203	67.22
15-19	15	5	0.5	597	0.6	0.0010	0.0050	0.9950	99303	498	495271	6188311	62.32
20-24	20	5	0.5	512	0.2	0.0004	0.0020	0.9980	98805	193	493544	5693041	57.62
25-29	25	5	0.5	493	0.4	0.0008	0.0040	0.9960	98612	399	492064	5199496	52.73
30-34	30	5	0.5	462	0.0	0.0000	0.0000	1.0000	98213	0	491066	4707432	47.93
35-39	35	5	0.5	521	1.0	0.0019	0.0096	0.9904	98213	938	488721	4216366	42.93
40-44	40	5	0.5	542	0.6	0.0011	0.0055	0.9945	97275	537	485034	3727645	38.32
45-49	45	5	0.5	528	2.8	0.0053	0.0262	0.9738	96738	2531	477363	3242611	33.52
50-54	50	5	0.5	412	0.8	0.0019	0.0097	0.9903	94207	910	468758	2765248	29.35
55-59	55	5	0.5	334	3.4	0.0102	0.0496	0.9504	93297	4631	454906	2296490	24.61
60-64	60	5	0.5	270	2.6	0.0096	0.0470	0.9530	88666	4169	432907	1841584	20.77
65-69	65	5	0.5	246	6.4	0.0260	0.1221	0.8779	84497	10320	396685	1408677	16.67
70-74	70	5	0.5	214	2.6	0.0121	0.0590	0.9410	74177	4373	359951	1011992	13.64
75+	75	19	0.5	241	25.8	0.1071	1.0000	0.0000	69804	69804	652041	652041	9.34

Annex 3: Core Indicator Summary

Indicator	2015	2016
<i>Definition</i>		
1. Total fertility rate (TFR per woman) <i>The average number of children that would be born alive to a woman during their lifetime</i>	2.1	2.4
2. Number of births <i>The number of live births in a given year by Island</i>	218	243
Rarotonga	203	222
Aitutaki	9	12
Mangaia	0	3
Atiu	1	2
Mauke	0	0
Mitiaro	0	0
Palmerston	0	0
Pukapuka/Nassau	5	3
Manihiki	0	1
Rakahanga	0	0
Penrhyn	0	0
3. Immunization coverage (overall) <i>Percentage of children under 5 years of age who have received at least one dose of the following vaccinations in a given year</i>		
BCG	99	100
DTP3	99	99
Polio3	99	99
Measles/Rubella	97	90
Tetanus	99	99
HepB3	99	99
4. Crude death rate (CDR per 1,000 population) <i>The number of deaths occurring during a given year per 1,000 resident population</i>	9.1	8.8

Indicator	2015	2016
<i>Definition</i>		
5. Distribution of top 10 causes of death (%) <i>Distribution of main causes of death as percentage of total deaths</i>		
1 Diabetes mellitus	19.5	21.8
Male	16.9	17.5
Female	22.0	34.2
2 Other heart diseases	15.3	10.9
Male	18.6	9.5
Female	11.9	13.2
3 Hypertension diseases	12.7	6.9
Male	10.2	6.3
Female	15.3	7.9
4 Ischaemic heart diseases	11.9	5.0
Male	11.9	4.8
Female	11.9	5.3
5 Other malignant neoplasms	10.2	13.9
Male	13.6	12.7
Female	6.8	15.8
6 Cerebrovascular diseases	7.6	12.9
Male	8.5	15.9
Female	6.8	7.9
7 Pneumonia	4.2	2.0
Male	5.1	1.6
Female	3.4	2.6
8 Transport accidents	5.9	7.9
Male	3.4	1.6
Female	5.1	0.0
9 Malignant neoplasm of prostate (Male)	3.4	3.0
10 Chronic lower respiratory diseases	3.4	4.0
Male	0.0	6.3
Female	8.5	0.0
6. Infant mortality rate (IMR per 1,000 live births) <i>A probability of death derived from a life table and expressed as rate per 1000 live births</i>	4.6	8.2
7. Life expectancy at birth (Both) <i>The average number of years that a newborn could expect to live, if they experienced mortality conditions prevailing at the time</i>	74.1	73.6
Male	71.5	69.6
Female	76.8	77.6

Indicator		2015	2016
<i>Definition</i>			
8. Distribution of top 10 causes of morbidity (%)	<i>The percentage distribution of the main causes of morbidity in a given year</i>		
1	Heart diseases	15.1	11.6
	Male	23.1	17.5
	Female	17.0	18.8
2	Other diseases of the respiratory system	12.0	7.7
	Male	15.7	12.0
	Female	16.5	15.4
3	Injury, poisoning & certain other consequences of external causes	8.5	7.1
	Male	11.6	13.4
	Female	11.3	10.1
4	Hypertensive diseases	8.1	8.6
	Male	9.7	13.2
	Female	12.0	8.0
5	Certain infectious and parasitic diseases	7.3	3.7
	Male	10.0	10.3
	Female	9.4	8.0
6	Diseases of the digestive system	5.8	6.0
	Male	8.2	8.3
	Female	7.1	8.5
7	Diabetes mellitus	5.5	5.4
	Male	7.1	8.6
	Female	7.5	7.4
8	Diseases of the skin and subcutaneous tissue	4.5	5.2
	Male	6.2	6.6
	Female	5.7	8.9
9	Chronic lower respiratory diseases	4.1	4.1
	Male	4.7	5.8
	Female	6.3	7.0
10	Diseases of the genitourinary system	4.0	4.9
	Male	3.6	4.2
	Female	7.3	7.8
9. Top 5 notifiable diseases (%)	<i>The percentage distribution of the most common notifiable diseases in a given year</i>		
1	Skin sepsis	3.0	4.4
2	Diarrhoea	2.3	1.8
3	Pneumonia	1.7	0.9
4	Bronchitis	1.1	0.7
5	Influenza & Viral illness	1.0	0.9

Indicator	2015	2016
<i>Definition</i>		
10. Vaccine preventable conditions		
<i>The number of new cases for the following vaccine preventative conditions</i>		
Diphtheria	0	0
Hepatitis B	6	8
Measles	0	0
Mumps	1	0
Poliomyelitis	0	0
Tetanus	0	0
Tuberculosis (TB)	0	0
Whooping cough (Pertussis)	0	0
11. Maternal Deaths	0	0
<i>The number of female deaths from any cause related to or aggravated by pregnancy or its management during pregnancy and child birth or within 42 days of termination of pregnancy</i>		
12. Laboratory positive new cases for HIV/AIDS and STIs		
<i>The number of laboratory confirmed new cases for HIV/AIDS and STIs in a given year</i>		
HIV/AIDS	0	0
Gonorrhoea	1	2
Male	1	2
Female	0	0
Syphilis	1	1
Male	1	1
Female	0	0
Candidiasis	0	0
Male	0	0
Female	0	0
Trichomonas vaginalis	0	0
Male	0	0
Female	0	0
Chlamydia	30	37
Male	1	7
Female	29	30

Indicator	2015	2016
<i>Definition</i>		
13. Domestic Patient referrals (Total)	237	232
<i>The number of patients referred from the Outer Islands (Pa Enua) to the main hospital in Rarotonga in a given year</i>		
Male	98	100
< 5	3	6
5-9	8	3
10-14	6	7
15-19	2	4
20-24	4	6
25-29	1	5
30-34	2	4
35-39	4	7
40-44	6	5
45-49	5	4
50-54	7	12
55-59	10	9
60-64	9	7
65-69	7	8
70+	24	13
Female	139	132
< 5	2	2
5-9	7	0
10-14	18	6
15-19	13	7
20-24	8	15
25-29	10	9
30-34	12	18
35-39	3	12
40-44	7	8
45-49	6	10
50-54	6	7
55-59	3	6
60-64	7	6
65-69	5	5
70+	32	21

Indicator	2015	2016
<i>Definition</i>		
14. International Patient referrals (Total)	155	120
<i>The number of patients referred from the main hospital in Rarotonga to New Zealand in a given year</i>		
Male	78	56
< 5	4	7
5-9	7	0
10-14	5	1
15-19	5	3
20-24	3	1
25-29	1	1
30-34	0	0
35-39	0	3
40-44	7	4
45-49	10	2
50-54	1	4
55-59	4	4
60-64	5	9
65-69	10	8
70+	16	9
Female	77	64
< 5	4	4
5-9	5	0
10-14	4	3
15-19	4	0
20-24	2	2
25-29	3	0
30-34	4	5
35-39	3	9
40-44	13	2
45-49	7	4
50-54	6	3
55-59	3	4
60-64	6	6
65-69	4	4
70+	9	18

Indicator	2015	2016
<i>Definition</i>		
15. Number of Health Professionals (per 1,000 population)		
<i>The number of selected health professionals per 1,000 population in a given year</i>		
Doctors	1.2	1.2
Nurses	6.2	6.5
Dentist	1.0	1.2
Allied health	1.0	1.2
16. Annual Inpatients (Total)	1,649	1,746
<i>The number of patients admitted in the hospitals and health centers in a given year</i>		
Male	696	754
< 5	120	119
5-14	80	70
15-24	51	59
25-34	51	67
35-44	49	81
45-54	76	57
55-64	88	88
65-74	82	115
75+	99	98
Female	953	992
< 5	99	93
5-14	70	166
15-24	168	223
25-34	172	129
35-44	95	73
45-54	69	31
55-64	69	82
65-74	108	92
75+	103	103

Indicator	2015	2016
<i>Definition</i>		
17. Annual Outpatient Consultations (Total)	31,401	36,601
<i>The number of patients seen in the outpatient department in a given year</i>		
Male	15,770	23,897
< 5	2,001	3,067
5-9	1,442	1,579
10-14	912	1,411
15-19	882	1,320
20-24	777	1,187
25-29	773	1,166
30-34	603	940
35-39	678	1,087
40-44	789	1,221
45-49	1,126	1,827
50-54	1,254	1,857
55-59	982	1,810
60-64	945	1,435
65-69	812	1,332
70+	1,793	2,653
Female	15,631	22,704
< 5	1,570	2,669
5-9	1,392	1,555
10-14	845	1,255
15-19	908	1,451
20-24	931	1,508
25-29	846	1,309
30-34	996	1,177
35-39	835	1,101
40-44	915	1,364
45-49	1,035	1,360
50-54	1,121	1,742
55-59	1,025	1,534
60-64	870	1,207
65-69	698	1,074
70+	1,640	2,391

Indicator	2015	2016
<i>Definition</i>		
18. Total Health Budget as a percentage of GDP	3.8	3.5
<i>The level of total expenditure on health expressed as a percentage of gross domestic product (GDP)</i>		
19. Mental Disorder cases (Total)	29	86
Male	12	49
< 19	0	1
20-24	2	6
25-29	2	4
30-34	2	4
35-39	0	3
40-44	0	5
45-49	2	3
50-54	3	4
55-59	0	0
60+	3	19
Female	17	37
< 19	2	4
20-24	0	3
25-29	2	1
30-34	1	5
35-39	3	1
40-44	1	1
45-49	2	0
50-54	1	5
55-59	1	3
60+	4	14
20. Top 5 Causes of Dental Consultations (%)		
1 Extractions	24.1	21.8
2 Dentures	23.3	20.1
3 Fillings	23.6	23.9
4 Cleaning, prophylaxis, or polishing	10.8	10.0
5 General examinations or consultations	8.8	11.9

Annex 4: Definitions

- Adult Mortality (${}_{45}q_{15}$):** The probability of dying between the ages of 15-60 that is, the probability of a 15 year old dying before reaching the age of 60, if subject to current age – specific mortality rates between those ages.
- Age-specific mortality rate:** The number of deaths for a specific age group per 100,000 populations in the same age group.
- Bed occupancy rate:** This is the measure of utilization of the available bed capacity. It indicates the percentage of beds occupied by patients in a defined period of time, usually a year. In calculating, the total number of inpatient days divided by the number of beds available and then multiplied by the number of days in the period.
- Cause of Death:** The underlying cause of death determined to be the primary condition leading to death, based on the international rules and sequential procedure set forth for manual classification of the underlying causes of death (*International Classification of Diseases and Related Health Problems*).
- Endemic:** A disease is endemic in a place when it is constantly present in that area to some degree
- Epidemic:** A widespread occurrence (outbreak) of an infectious disease in a community at a particular time.
- Fetal Death:** Death prior to the complete expulsion or extraction from the mother of a product of conception, which has passed through at least the 20th week of gestation. The fetus shows no signs of life such as heartbeat, pulsation of the umbilical cord, or movement of voluntary muscles.
- Incidence:** Refers to the occurrence of new cases of disease or injury in a population over a specific period of time.
- Infant Death:** Death occurring to an individual of less than one year (365 days) of age.
- Infant mortality rate:** In calculating, the number of infant deaths is divided by the number of live births and then multiplied by 1,000.
- Life Table:** A tabular display of life expectancy and the probability of dying at each age for a given population, according to the age-specific death rates prevailing at that time. The life table gives an organized, complete picture of a population's mortality.

- Live Birth:** The complete expulsion or extraction from the mother of a baby, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other signs of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of the voluntary muscles.
- Morbidity:** Refers to disease and illness in a population.
- Pandemic:** When a large number of people are affected at the same time and is world-wide in distribution.
- Population growth rate:** The rate at which a population is increasing (or decreasing) in a given year due to natural increase and net migration, expressed as a percentage of the base population. *Formula: $\frac{((\text{current year} - \text{previous year}) / \text{previous year}) * 100}{5 - \text{census years}} = \%$*
- Prevalence:** is a measurement of all individuals (new and old) of a disease during a defined period
- Sporadic:** When the disease occurs in a community in occasional scattered instances.
- Stillbirth:** A baby born with no signs of life at or after 28 weeks of gestation. This is also referred to as intrauterine fetal death (IUFD).
- Stillbirth rate:** In calculating, the number of stillbirths is divided by the number of live births and stillbirths and then multiplied by 1,000.
- Teenage Mother:** A woman under 20 years of age on the date of delivery.