

# Ministry of Health



**Annual Report  
January - December  
2016**



**Ministry of Health**



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Abbreviations and acronyms

ADB	Asian Development Bank
CSO	Civil Society Organization
DFAT	Department of Foreign Affairs and Trade
DWS	Disability Welfare Scheme
ED	Executive Director
EPI	Expanded Program on Immunization
HINARI	Health InterNetwork Access to Research Initiative
HPU	Health Promotion Unit
ICPD	International Conference on Population and Development
ICT	Information and Communication Technology
IEC	Information, Education, Communication
JICA	Japan International Cooperation Agency
KAILA	
KAP	Knowledge, Attitudes and Practices
LA	Legislative Assembly
MDAs	Ministries, Departments and Agencies
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications
MRSA	Methicillin-Resistant Staphylococcus Aureus
NCD	Non Communicable Disease
NHERC	National Health Ethics and Research Committee
NHSP	National Health Strategic Plan
NZAID	New Zealand Aid programme
POLHN	Pacific Open Learning Health Net
PSC	Public Service Commission
SCH	Shriners Hospital for Children
SPC	Secretariat of the Pacific Community
STEPS	STEPwise approach to Surveillance
T2DM	Type 2 Diabetes Mellitus
THSSP	Tonga Health Sector Support Program
TMHDA	Tonga Mental Health and Disability Association
TSDF	Tonga Strategic Development Framework
UNFPA	United Nations Population Funds
WHO	World Health Organization

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# Foreword from the Hon. Minister of Health



The Ministry of Health strives to follow as closely as possible the concept of leaving no one behind, which is widely accepted as the key principle for Sustainable Development and Universal Health Coverage (UHC). Although it will be a long and possibly challenging journey, we have made reasonable progress forward.

At the beginning of 2016, the Ministry conducted a series of community consultations on Universal Coverage and Sustainable Development Goals, which cover the communities, churches and schools in key areas of Tongatapu, Vava'u, Ha'apai, 'Eua and Niua. This is the first public awareness programme that we have jointly implemented with the Tonga Family Health Association (TFHA) under the financial assistance of the United Nations Population Fund.

The Ministry of Health also placed more emphasis on Community Health Development through projects such as the refurbishment of the Public Health Building, the design of the Hu'atolitoli Mental Health Facility in addition to projects that were commenced in 2015, such as a new Hospital at Niuatoputapu, the refurbishment of the Prince Ngu Hospital at Vava'u, commencement of the process of relocating of the Niu'ui Hospital of Ha'apai (from the Natural Disaster red zone), the renovation of the Nomuka Health Centre, and the building of a boundary fence for the Niu'eiki Hospital.

These infrastructural developments cannot operate on their own without comprehensive services. The Ministry is developing a package of essential services, which defines the minimum level of services that will be delivered at each facility throughout Tonga. This work (funded by DFAT) will help with resource allocation and enable the public to better understand the range of services that will be available. We are also strengthening the internal referral processes to improve accessibility to different levels of service delivery within the Health Centres and Outer Islands hospitals, thereby moving us closer to our goal of Universal Health Coverage.

Corporate Services are recognized as a key component for Health System Strengthening and Development. The Ministry underwent a Corporate Services Review with the aim of improving the efficiency of the services that they provide. It is anticipated that recommendations from this reform will enable Corporate Services to improve the standards of performance to a level that will better support the other divisions to deliver health services to the public.

I wish to acknowledge that we could not have achieved the key milestones outlined in this report if it was not for the support from the public, other-government and non-government organizations, development partners, overseas partners, and friends who have contributed during this reporting period to the strengthening of our health system.

Hon. Dr. Saia Ma'u Piukala

**Minister for Health**



# Message from the Chief Executive Officer for Health



plan

The financial commitment from the government toward the health sector has constantly improved up until 2016, increasing from an estimated budget of TOP\$26 million in 2014/15 to TOP\$34 million (provisional estimates) for the 2016/17 financial year.

The National Non-Communicable Disease (NCD) Strategy 2015-2020 was launched in February 2016 by the Prime Minister, Hon. 'Akilisi Pohiva. It signified a strong partnership between the Ministry of Health and the Tonga Health Foundation, but represents a nation-wide multi-sectoral approach which includes international development partners such as Australian Aid (DFAT), World Health Organization (WHO) and Secretariat of the Pacific Community. This includes an AUD\$2.1 million dollar agreement between the Tonga

Health Foundation and the Government of Australia to support implementation in the next 5 years. This is part of the AUD\$10 million bilateral support to the Ministry of Health through the Tonga Health Sector Support Project, Phase 2.

There were two major outbreaks of communicable diseases, Zika virus and MRSA, in 2016. Tonga publically declared the Zika virus outbreak on the 1<sup>st</sup> Feb 2017, due to the observed increase in symptoms of Acute Fever and Rash (AFR) as well as the results of blood sample tests confirming the disease from New Zealand and Tahiti (French Polynesia). On the 6<sup>th</sup> of March, the suspected cases were as high as 1257 females and 916 males with only 47 confirmed cases. Of these infected cases, 19 were pregnant women, but there were no reported complications. I would like to acknowledge the participation of the public in terms of community cleaning campaigns supported by DFAT, WHO, Red Cross as well as the Government, which have resulted in reduction of much of this risk.

Although MRSA was initially identified in 2015, a more intense intervention was carried out in 2016, including hospital inspections/hygiene assessments and identification of key areas that needed to be addressed urgently. The intervention also included ongoing education sessions for patients, families and attendants about MRSA, and control measures through fact sheets and weekly presentations as well as ongoing in-service training sessions for staff and healthcare workers in the hospitals.

The Ministry received a donation of medical equipment worth TOP\$1 million in Non-project Grant Aid from the Government of Japan. This valuable equipment is an asset to our health system and will improve the delivery of health services in our Hospitals.

While there are new health threats, such as Zika virus and MRSA, and challenges in delivering health care services, the Ministry of Health continues to uphold our core function to the public in serving their health needs. The appreciation of good health by the government, other stakeholders and even the public at large plays a significant role in promoting good health and supporting the concept of Universal Health Coverage and the Health in All Policy.

Dr. Siale 'Akau'ola

**Chief Executive Officer for Health**



# 1. INTRODUCTION

## 1.1 Legislation

In implementing its services and activities, the Ministry is governed by the following Acts:

- Therapeutic Goods Act 2001 (Amendment Act 2004)
- Pharmacy Act 2001 (Amendment Act 2004)
- Nurses Act 2001 (Amendment Act 2004, 2014)
- Medical and Dental Practice Act 2001 (Amendment Act 2004)
- Health Practitioners Review Act 2001 (Amendment Act 2004)
- Mental Health Act 2001 (Amendment Act 2004)
- Tobacco Act 2001 (Amendment Act 2014)
- Drugs and Poisons Act 1930 (Amendment Act 2001)
- Public Health Act 2008 (Amendment Act 2008)
- Health Services Act 1991 (Amendment Act 2010)
- Health Promotion Act 2007 (Amendment Act 2010)

## 1.2 Values/ Functions

The Ministry of Health is responsible for the delivery of preventive and curative health services in the country. In doing so, the Ministry's core business involves the:

- provision of health services within the Kingdom of Tonga
- provision of policy advice to the Minister of Health
- negotiating, management, and monitoring of funds allocated by government and donor agencies
- administration of health legislation
- collection, management, and dissemination of health information.

## 1.3 Our Mission and Vision

Our mission and vision statements were reviewed as part of the consultation process to ensure that they still accurately reflect our core purpose and long term goals, and give our personnel a clear sense of direction and purpose. As a result of the consultation process, the mission and vision statements were amended. Our revised mission and vision statements are provided below:

### ► Our Mission

To improve the health of the nation by providing quality care through promotion of good health, reducing morbidity, disability and premature (death) mortality.

## ► Our Vision

To be the highest health care Provider in the Pacific as judged by international standards in 2020.

### 1.4 Our Core Values

The Ministry of Health and its staff are committed to achieving our Mission and Vision. To this end, in 1999, the Ministry adopted a number of core values. These remain true today and can be seen in our policies and procedures and the way in which managers and staff carry out their roles and responsibilities. In addition, a further core value of 'Partnerships in health' was identified during the consultation process.

Our core values are:

- Commitment to quality care
- Professionalism, integrity, and accountability
- Care and compassion
- Commitment to staff training and development
- Partnership in health

### 1.5 Mandate

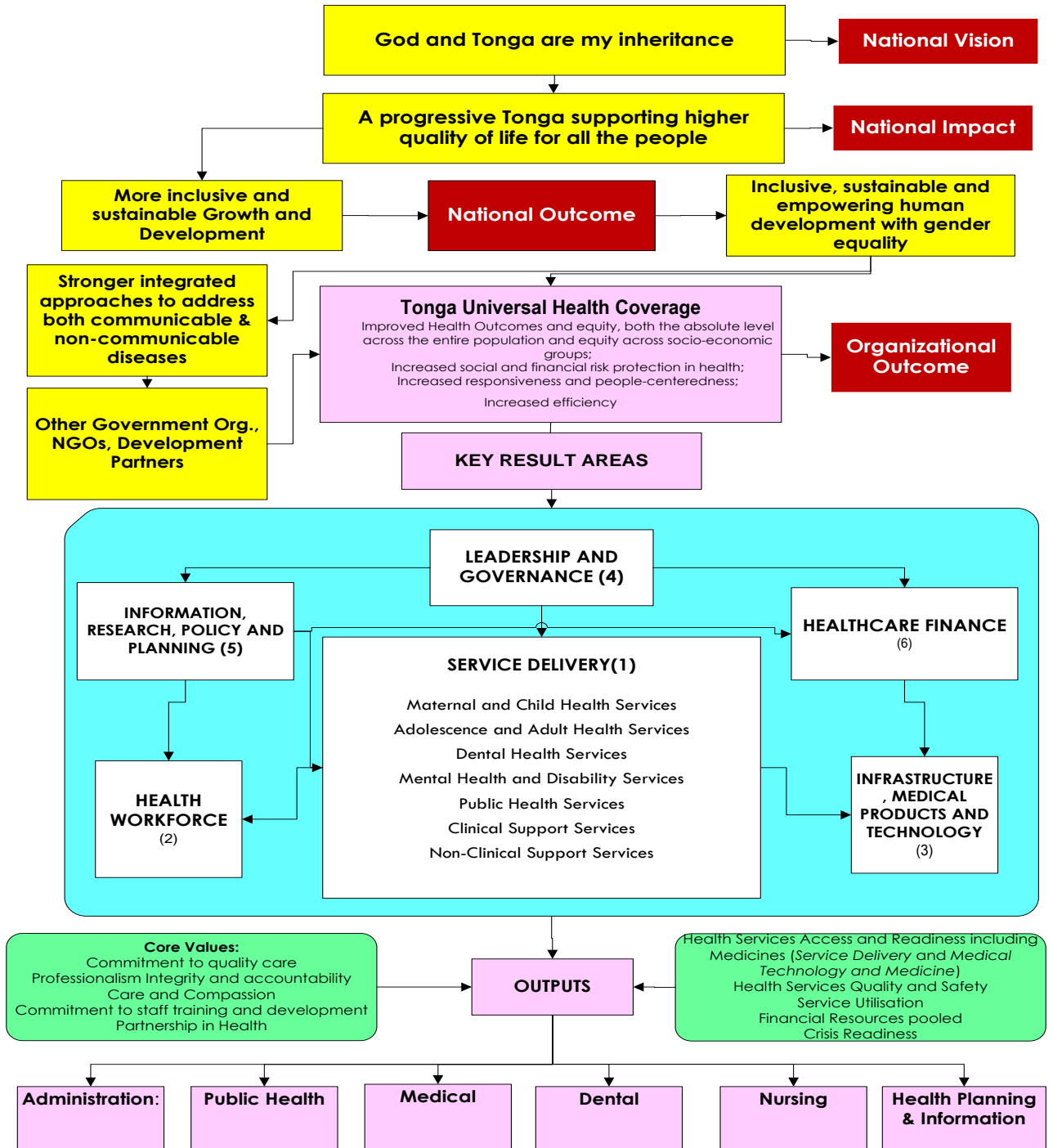
**Table 1: MOH Stakeholders and their relationships**

Stakeholder	Customer of MOH	Supplier to MOH	Partner with MOH	Oversight of MOH
Cabinet	✓	✓	✓	
LA	✓	✓	✓	
MDAs	✓	✓	✓	✓
Public Enterprises	✓	✓	✓	✓
Private Businesses	✓	✓	✓	✓
CSO, Churches	✓	✓	✓	✓
General Public	✓	✓	✓	✓
Development Partners	✓	✓	✓	

The Ministry is currently working to define the minimum essential health care services to be delivered at the Community Health Centres. It marks the Ministry's desire to better define and classify the range of their services by type and level. This is in order to present the Ministry with options for service delivery using finite resources.

## 1.6 TSDF Impacts and Outcomes Supported by Health Outputs

Figure 1: MOH Results Map



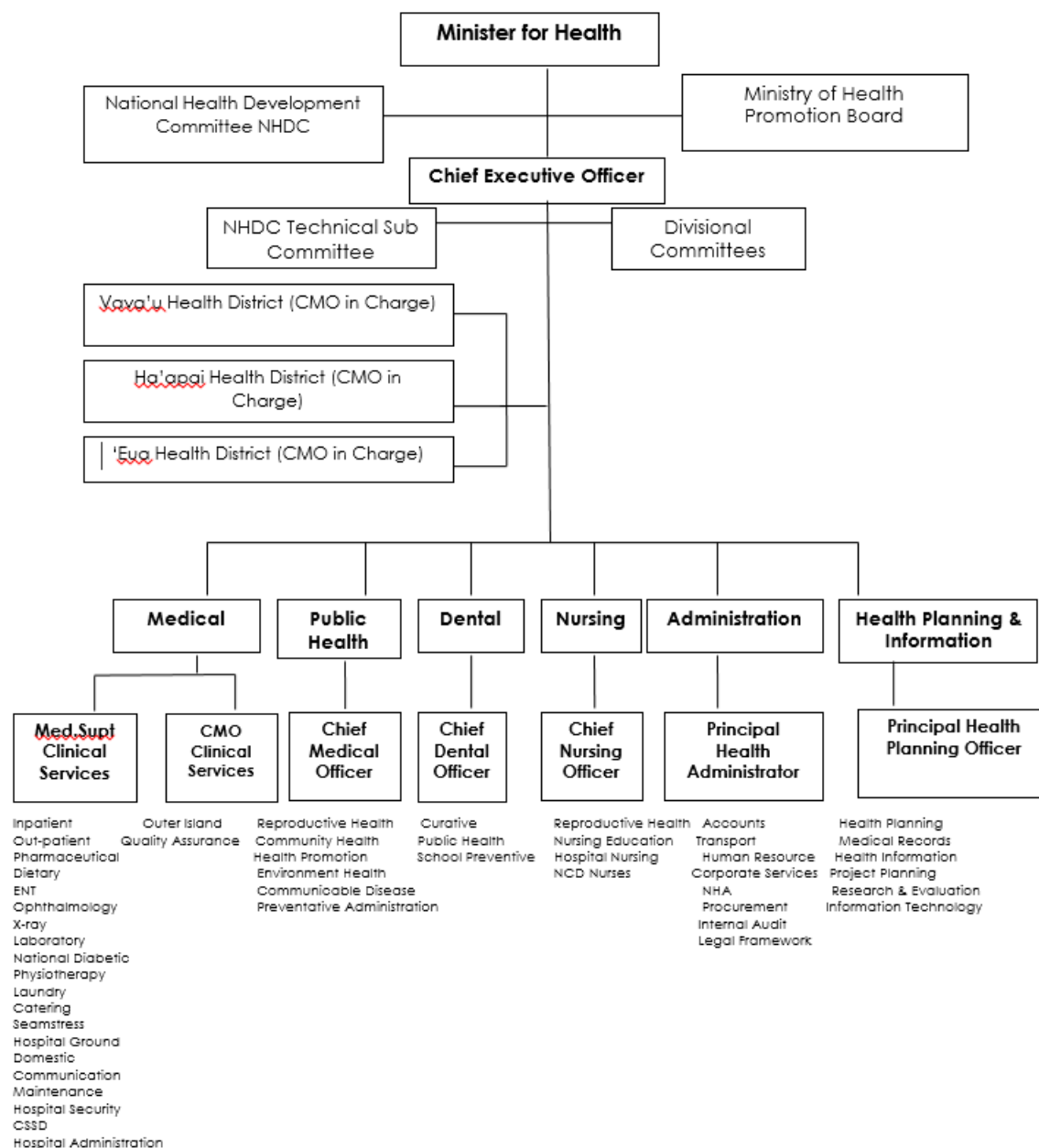
## 1.7 National Health Indicators

**Table 2: Health Indicators for Tonga, 2012 – 2016**

	INDICATOR	2016	2015	2014	2013	2012
1	Estimated population ('000)	100.7	103.3	103.3	103.3	103.2
2	Annual population growth	0.2	0.2	0.2	0.2	0.2
3	Percentage of population less than 14 years (per 100)	38	38	38	38	38
	Percentage of population 65 years and over (per 100)	6	6	6	6	6
4	Percentage of urban population (per 100)	23	23	23	23	23
5	Rate of natural increase (per 1,000)		19.6	18.6	19.2	18.9
6	Crude Birth Rate (per 1,000)	23.5	24.9	25.1	24.3	24.1
7	Crude Death Rate (per 1,000)	6.0	5.3	6.5	5.1	5.2
8	Maternal Mortality Rate (per 100,000)	0	37	0	76.2	77.5
9	Life Expectancy at Birth (combined)					
	Life Expectancy (Male)	65	65	65	65	65
	Life Expectancy (Female)	69	69	69	69	69
10	Infant Mortality Rate (per 1,000)	7.4	10.3	10.9	9.5	12.0
11	Perinatal Mortality Rate (per 1,000 live births)	12.1	11.4	12.8	9.6	15.4
12	Total Health expenditure ('000)	32.6	30210	26210	20504	19547
	Per Capita	324	292	254	198	189
13	Immunization coverage	99.7	99.8	99.5	99.8	99.8
14	Percentage of infants attended by trained personnel (receive > 3 home visits or child clinics)	98.6	99.8	NA	NA	NA
15	Percentage of married couples practicing contraception	31.9	32.4	36.4	35.6	35
16	Percentage of pregnant women attending antenatal care	98.7	97.7	98.6	98.5	97.5
17	Total Fertility Rate	3.3	3.4	3.6	3.4	3.5
18	Perioperative Mortality Rate	0.193	0.144	0.118	0.124	0.466

## 2. MINISTRY'S ORGANISATIONAL STRUCTURE

Figure 2: MOH Organizational Structure





### 3. MINISTRY'S HUMAN RESOURCES MANAGEMENT

**Table 3 Staff Ratio, 2015/16 and 2016/17**

Post	2015/ 16	Est. Pop. 2014	Pop. Ratio	End of 2016	Est. Pop. 2016	Pop. Ratio	Int. Stand.
Doctors	66	103283	0.639	71	108425	0.6548	
Dentist	13	103283	0.1259	14	108425	0.1291	
Health Officer	20	103283	0.1936	19	108425	0.1752	
Nurses	391	103283	3.7857	454	108425	4.1872	
Student Nurse	98	103283	0.9488	83	108425	0.7655	
WHO Standards							
Doctors/Nurses/Health Officer	477	103283	4.61837 86	544	108425	5.0173	4.45



## 4. MINISTRY'S FINANCIAL PLANNING AND PERFORMANCE

### ► Ministry of Health Total Budget by Recurrent, Development, and Key Payments (Cash and In-kind) in millions

To deliver the six (6) programs and thirteen (13) sub-programs of the Ministry and to implement 334 activities, the budget required by MOH is shown in the table below.

**Table 4: Ministry of Health Total Budget by Recurrent, Development, and Key Payments (Cash and In-kind) in millions**

Budget (\$m)	FY 2015/16	Corporate Plan & Budget			
		FY 2016/17		FY 2017/18	FY 2018/19
	Provisional Outcome	Original Budget	Provisional Outcome	Requested Budget	Projection
<b>Total Budget</b>					
<i>Established and Unestablished staff</i>	22.52	23.77	25.22	25.96	26.96
Established Staff (10xx)	21.93	23.60	24.36	25.86	26.86
Unestablished Staff (11xx)	0.59	0.17	0.86	0.10	0.10
<i>Ministry Operational Costs</i>	16.82	16.83	17.77	20.51	20.51
Travel and Communication (12xx)	0.92	0.37	0.72	0.80	0.80
Maintenance and Operations (13xx)	1.29	1.84	1.69	1.92	1.92
Purchase of Goods and Services (14xx)	14.58	14.61	15.31	17.10	17.10
Grants and Transfers (15xx)	0.03	0.00	0.05	0.70	0.70
<i>Ministry Assets</i>	1.19	1.33	4.34	9.25	9.25
Assets	1.19	1.33	4.34	9.25	9.25
<b>Total Ministry Expenditure</b>	<b>40.53</b>	<b>41.94</b>	<b>47.33</b>	<b>55.72</b>	<b>56.72</b>
<b>Recurrent Budget</b>					
<i>Established and Unestablished staff</i>	22.52	23.77	25.22	25.96	25.96
Established Staff (10xx)	21.93	23.60	24.36	25.86	25.86
Unestablished Staff (11xx)	0.59	0.17	0.86	0.10	0.10
<i>Ministry Operational Costs</i>	9.89	8.79	9.21	12.83	12.83
Travel and Communication (12xx)	0.68	0.37	0.62	0.71	0.71
Maintenance and Operations (13xx)	1.23	1.39	1.08	1.85	1.85

		Corporate Plan & Budget			
Budget (\$m)	FY 2015/16	FY 2016/17		FY 2017/18	FY 2018/19
	Provisional Outcome	Original Budget	Provisional Outcome	Requested Budget	Projection
Purchase of Goods and Services (14xx)	7.99	7.02	7.51	9.63	9.63
Grants and Transfers (15xx)	-	0.00	0.00	0.63	0.63
<i>Ministry Assets</i>	<i>0.44</i>	<i>0.03</i>	<i>0.08</i>	<i>0.16</i>	<i>0.16</i>
Assets	0.44	0.03	0.08	0.16	0.16
<b>Total Ministry Recurrent Expenditure</b>	<b>32.85</b>	<b>32.60</b>	<b>34.50</b>	<b>38.94</b>	<b>38.94</b>
<b>Development Budget</b>					
<i>Established and Unestablished staff</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>1.00</i>
Established Staff (10xx)	-	-	-	-	1.00
Unestablished Staff (11xx)	-	-	-	-	-
<i>Ministry Operational Costs</i>	<i>6.92</i>	<i>8.04</i>	<i>8.56</i>	<i>7.68</i>	<i>7.68</i>
Travel and Communication (12xx)	0.24	-	0.10	0.09	0.09
Maintenance and Operations (13xx)	0.06	0.45	0.62	0.06	0.06
Purchase of Goods and Services (14xx)	6.59	7.59	7.80	7.46	7.46
Grants and Transfers (15xx)	0.03	-	0.05	0.07	0.07
<i>Ministry Assets</i>	<i>0.75</i>	<i>1.30</i>	<i>4.27</i>	<i>9.10</i>	<i>9.10</i>
Assets	0.75	1.30	4.27	9.10	9.10
<b>Total Ministry Development Expenditure</b>	<b>7.67</b>	<b>9.34</b>	<b>12.83</b>	<b>16.78</b>	<b>17.78</b>



## 5. MINISTRY'S OUTPUT AND PERFORMANCE

### 5.1 Ministry Highlights

#### 5.1.1 Universal Health Coverage and SDGs Consultation

The Ministry of Health in conjunction with Tonga Family Health Association provided a National SDGs Awareness programmes to communities and schools from March-November 2016, with the financial assistance of the United Nations Population Fund (UNFPA).

Lack of consultation was blamed for the late commencement of MDG-related work in most countries, including Tonga. Additionally, lack of preparedness of countries partially contributed to failure to support and embrace MDG concepts consistently up to the final stages. In order to avoid these issues, the Ministry started the consultations process throughout the country, with special emphasis on health related goals and targets.

National Consultation was the primary recommendation of the MDGs Final Report for Tonga 2015, and it was also a recommendation of the Tonga delegation to the Global Launching of SDGs in New York in 2015.



This consultation was led by the Hon. Minister of Health with senior staff from the Ministry, including: Chief Nursing Officer, Supervising Public Health Sister, Senior Public Health Sister, Principal Health

Planning Officer, Health Promotion Staff, UNFPA Program Analyst, Executive Director of the Tonga Family Health Association, Programme Manager, Tonga Family Health Association, Clinic Nurses, and Finance Staff. This programme covered Niuatopotupu, Vava'u, Ha'apai, 'Eua and a significant part of Tongatapu.



In schools, consultation sessions typically began in the morning with a 30-40 minute description of the SDGs programmes as part of the school's normal assembly programme. The consultation team also visited schools during lunch breaks, and held wider community consultations in the evenings.

The following objectives guided the consultation;

- to present the Tonga final report of MDGs key milestones and challenges
- to raise awareness of the SDG framework in local contexts
- to clarify Tonga's unfinished businesses from MDGs, specifically the SRHR, FP, maternal and child health, HIV/STI, gender and poverty
- to highlight the linkages between the national plan and SDGs
- to develop a clear framework for working with the communities on implementing the SDGs.

**Table 5: Details of the consultations are shown below.**

Date	District/Church/School	Time	Total Participants
<b>Vava'u Island: 4 – 8 April 2016</b>			
4/04	District & Town Officers Governor's office, Neiafu	5pm	41
5/04	Mailefihi & Siulikutapu College	8.30am	518
5/04	Leimatu'a Village	7pm	36
6/04	Chanel College	8.30am	279
6/04	Neiafu Village	6pm	22
6/04	Tefisi Village	9pm	53
7/04	Tailulu College	8.30am	238
7/04	Makave College	6pm	61
7/04	Pangaimotu Village	8pm	68
8/04	Prince Ngu Hospital	9am	22
8/04	Ta'anea Village	6pm	47
<b>Total Participants</b>			<b>1,385</b>
<b>Ha'apai Island: 7-12 October 2016</b>			
7/10	Ha'afeva Is	12pm	21
7/10	'Uiha Is	4.30pm	16
8/10	Kauvai Is	10am	21



8/10	Lotofoa district	2pm	23
9/10	Catholic Church, Pangai	7pm	129
10/10	Ha'apai High School	8.30am	121
10/10	Pangai Gov't Primary School	10am	119
10/10	Pangai district & town officers	12pm	12
10/10	Tongoleleka district	6pm	57
11/10	Taufa'ahau – Pilolevu College	8.30am	83
11/10	Ha'apai Local Gov't	12pm	16
11/10	St. Joseph College	1pm	68
12/10	Tailulu College	8.30am	65
<b>Total Participant</b>			<b>751</b>
<b>'Eua Island: 14 – 18 October 2017</b>			
14/10	'Eua Middle School	11.30am	59
14/10	Niu'eiki Hospital	3.30pm	22
14/10	Mu'a District	6:00pm	25
15/10	Houma District	6pm	23
17/10	Hofangahau College	8.30am	113
17/10	Angaha Gov't Primary School	2pm	340
18/10	'Eua High School	8.30am	520
14/10	'Eua Middle School	11.30am	59
<b>Total Participants</b>			<b>1,161</b>
<b>Tongatapu Island: 24 October – 2 December 2017</b>			
24/10	5 Gov't Primary School (Ma'ufanga, Fasi moe Afi, Ngele'ia, Havelu, Popua)	2pm	117
25/10	Red Cross Society – 'Ofa, Tui moe 'Amanaki Centre	11am	45
26/10	Tapunisiliva College	10am	64
26/10	Hoi Gov't Primary School	3pm	69
27/10	Tupou High School, Nukunuku Campus	10am	257
27/10	Fatai Gov't Primary School	2pm	131
2/12	Havelu Middle School, LDS	8.30am	420
<b>Total Participants</b>			<b>1,103</b>
<b>Niuaatoputapu: 14-18 Oct 2017</b>			<b>150</b>
<b>Overall Total Participants</b>			<b>4550</b>

### **United Nations General Assembly – Bilateral Meeting with the UNFPA**

The bilateral meeting with the UNFPA Deputy Director, Dr. Natalia Kanem, was held on the 23 September 2016, at the UNFPA Headquarters office, New York. The meeting was also attended by the Ministry of Health's Principal Health Planning Officer, Mr. Sione Hufanga, and also Ms. Dawn Minott, Special Assistant of the Deputy Executive Director.



Dr. Kanem welcomed the Minister of Health of Tonga and conveyed greetings from the ED. She also complimented the government of Tonga for being a strong supporter of ICPD issues and also the Minister himself for being a strong advocate of SDG issues. In response, the Hon. Minister conveyed appreciation from his government for the support UNFPA has provided in the promotion of gender equality and family planning.

The Hon. Minister explained that although some schools in Tonga are reluctant to teach sexuality education, the Tonga Family Health Association has managed to put such issues on the table. Related messages are communicated through innovative means such as drama. He also emphasized the importance of the impact of climate change for the Pacific region. He made specific reference to Tuvalu and the possible long-term impacts of being submerged. Tonga is also vulnerable to natural disasters such as cyclones.

Dr. Kanem informed the meeting that in addition to regular programme support, UNFPA can also provide support in humanitarian situations to ensure that pregnant women can have safe deliveries even under such conditions. She also offered to provide support to Tonga with regard to gender issues. In response, the Minister indicated that his government has been promoting the discussion and popularization of CEDAW to enable the general public to understand that CEDAW is designed to promote the rights of women, instead of promoting abortions or gay marriage as is the predominant misconception.

The Hon. Minister also provided a brief account of the KAILA project which he had assisted in establishing in the Pacific, following the 70th Session of the UN General Assembly in 2015. Fourteen countries committed to the implementation of the project which promotes ICPD issues among others.

### 5.1.2 Medical Equipment from the Government of Japan

The Hon. Minister of Health received a donation of Medical Equipment presented by His Excellency, Mr Yukio Numata, the Ambassador Extraordinary and Plenipotentiary of Japan to the Kingdom of Tonga on the 4<sup>th</sup> Feb 2016.



The donated equipment included:

- Mobile X-ray unit (2 units)
- Auto distillation apparatus (2 units)
- Infant incubator (7 units)
- Infant warmer (9 units)
- Phototherapy unit (5 units)
- Infusion pump (14 units)
- Emergency medical kit (3 units)
- Suction unit (2 units)
- Doppler fetal detector (2 units)
- Gastrostomy surgical instrument set (1 unit)
- Prostate surgical instrument set (1 unit)
- Craniotomy/brain surgical instrument set (1 unit)
- Large scale gynaecologic surgical instrument set (2 unit)
- Caesarean section surgical instrument set (2 unit)
- Electrosurgical knife (2 unit)



This donation was funded through the non-project grant aid to strengthen partnership and cooperation for the development of health services in Tonga and contribute to improving the quality of services rendered to the people of Tonga.

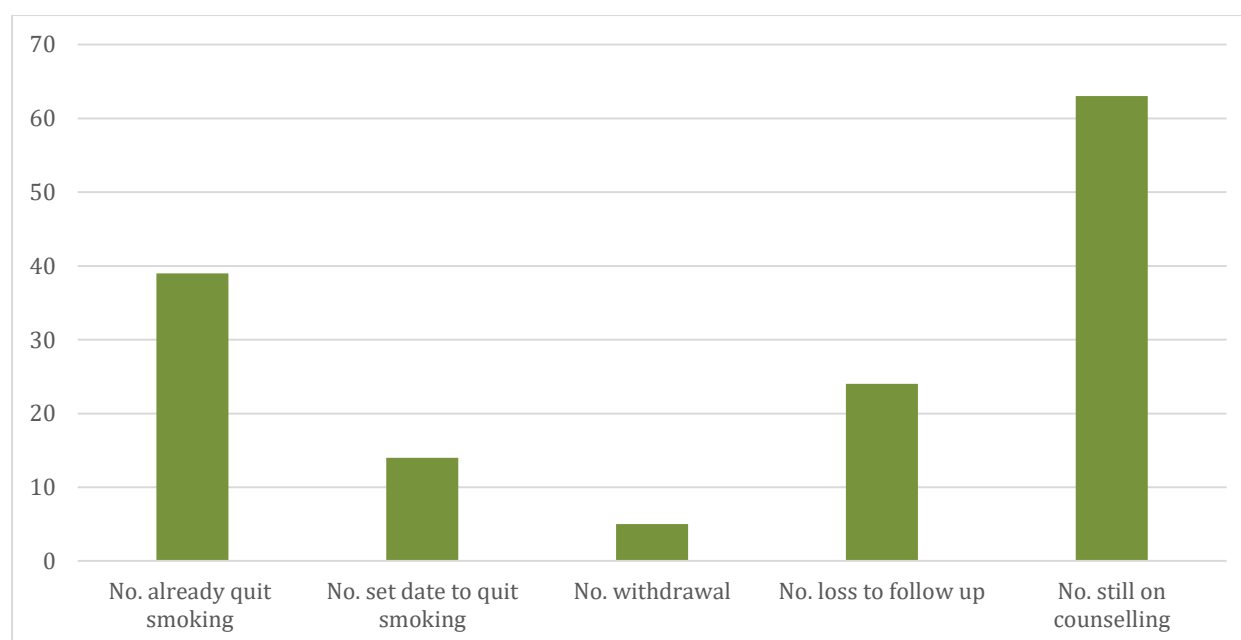
### 5.1.3 Tobacco Campaign

The interventions to control tobacco consumption in Tonga continued to be strengthened, particularly relating to legislative and policy interventions. Favourable results were observed in 2016. The new Tobacco Control (Amendment) Act 2014 was put into force in Feb 2016, which strictly prohibited smoking in a range of public places to protect the public from second hand smoking.

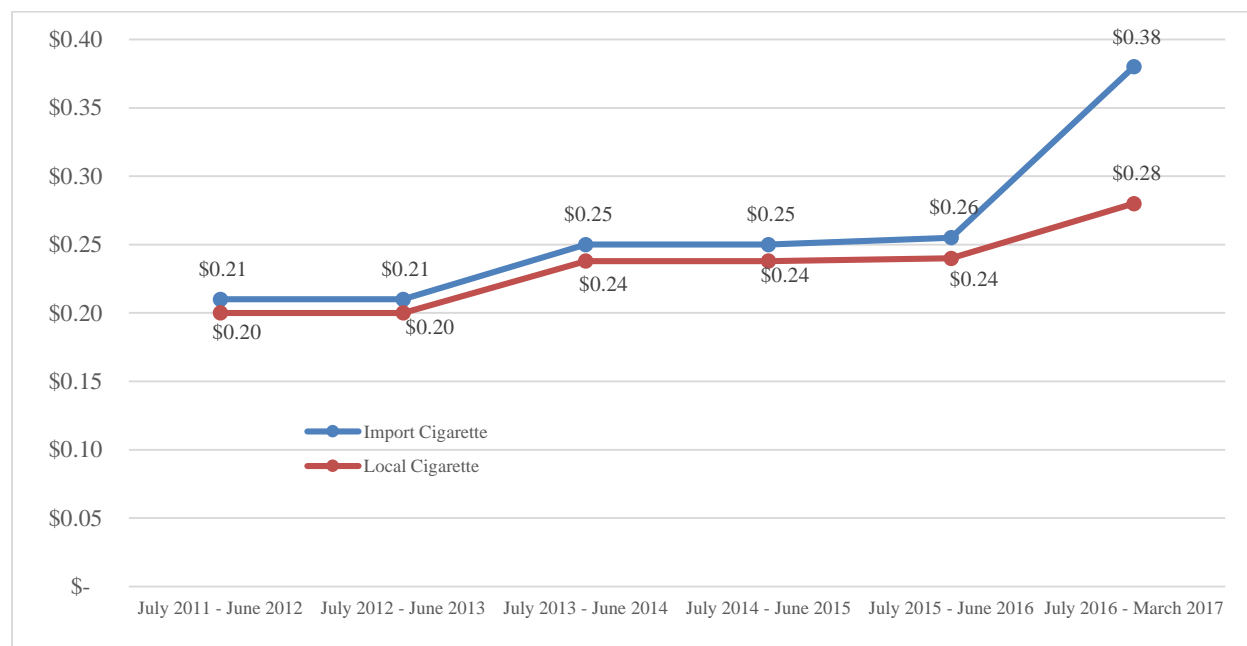
The Health Promotion Unit introduced the Quitline services, alongside a mass public campaign. It offered free advice to current smokers, using international best practice. The HPU Staff participated in capacity building at Quit Victoria, Australia, as well as taking part in Hong Kong tobacco cessation counselling.

By the end of the first 6 months of this service, there were 174 calls for advice and 145 registrations for quitting support. Out of 145 registered for quitting support, 6% were from 'Eua, 5% from Vava'u, 2% from Ha'apai, and 77% from Tongatapu. No calls were received from the two Niuas.

**Figure 3: Distribution of 145 Registered for Quit Support, Jul-Dec 2016**



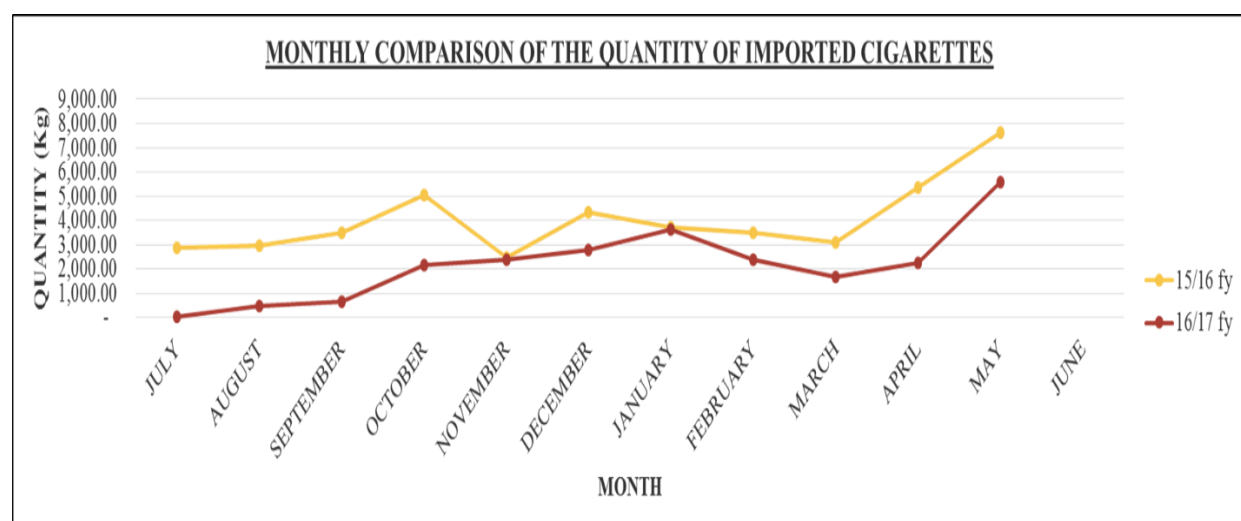
The excise tax on local and imported cigarettes has continued to increase since 2011-2012. The last increase in the rate of excise tax from 2016-2017 has had a positive impact on the import quantity of cigarettes compared to 2015-2016 statistics.

**Figure 4: Excise Rate of Imported and Local Cigarettes, 2011-2017 (MIRC, 2017)**


**Source:** Ministry of Inland Revenue and Custom (MIRC, 2017)

This is the first evidence of a favourable result from the productive partnership between the Ministry of Health and the Ministry of Inland Revenue and Customs, which started in 2012.

Countries within the Pacific region are known in world rankings in terms of NCD risk factors. In relation to Tobacco consumption specifically, in 2012, adult males in Kiribati and PNG had the 3rd and 5th highest rates of smoking in the world, with prevalence rates of 67 percent and 55 percent respectively (Ng et al., 2014). Tobacco consumption rates among males in Tonga, Solomon Islands, and Vanuatu are also relatively high, at 43 percent, 45 percent, and 43 percent respectively.

**Figure 5: Import quantity of cigarettes**


**Source:** Ministry of Inland Revenue and Custom (MIRC, 2017)

#### 5.1.4 Corporate Reform

The Hon. Minister of Health and other stakeholders raised concerns regarding the effectiveness of corporate services (currently referred to as the Administration Division and the Health Planning and Information Division). A recent review undertaken by Advisers from WHO, SPC and DFAT concluded that under the leadership of a Director of Corporate services, a team of high level capable and competent staff with the authority to make ‘real time decisions’ was recommended. IT was also recommended that current best practice principles be embedded in each of these key areas.

The MoH executive recognised the need to prioritise both Clinical and Corporate Governance. Despite being one of the largest and most complex Ministries, the MOH has very few senior corporate roles (often referred to as Deputy CEO, Directors, Deputy Directors, Deputy Secretaries in other ministries) The MOH has only the CEO and 3 others. A review of the latest RA report highlighted that government wide there are approximately 202 non-medical positions, which have been classified at pay band “I” or higher. Only 4 of these positions are in the MOH.

Staffing distribution is as follows:

- PSC has 32 staff, six of which are paid at band I or above (18.75% of workforce)
- MOF has 125 staff, 21 of which are paid at band I or above (16.8% of workforce )
- MIA has 39 staff, 8 of which are paid at band I or above (20.5% of workforce)
- MOH has 992 (including student nurses) staff, of which only 4 non-medical staff are at band I or above (0.4%). This reveals that there is a serious lack of senior administrators /corporate service staff to run a large and complex Ministry. Even if we include medical staff, only 87 people are paid at band I or above (representing less than 8.7 of MOH staff).

This Health Reform has been presented to the Commission at the PSC, and the proposed restructure has been given full support. It has been acknowledged that the MOH has a skills gap in this area, due to the failure to establish and recruit to these important senior roles. This lack of senior staff impacts negatively on the effectiveness and efficiency of the corporate functioning.

The creation of a flatter structure that recognises the range of professional skills required to manage a complex organisation is intended to result in the early detection and prevention of bottleneck(s) occurring, address system failures, and meet the expectations of our stakeholders.

#### 5.1.5 Health Research

The Ministry’s Health Research Section has demonstrated tremendous improvement since 2014 in terms of governance, services delivery, and facilitating a culture that foster health research in the Ministry of Health. For the period of 2014 up to 2016, there were 44 Health Research proposals submitted to the National Health Ethics and Research Committee (NHERC). There were 14 Research Studies in progress, 4 Research Studies awaiting final reports, 1 research study was rejected, 4 research studies were terminated. Since 2014, 18 Final Reports of Research Studies had been submitted to the National Health Ethics and Research Committee. These included 10 undergraduate proposals and 3 PhD research proposals.

In 2016, the NHERC reviewed 17 new proposals (1 from the previous year). These included 2 Master's Thesis, 1 PhD Thesis, 3 undergraduate proposals, and 11 organizational/individual research projects.

The Research Section also provided access of HINARI for decision-making. The HINARI Access was circulated to all Clinical Medical Staff as well as Nurses in February 2016. In addition, the first 1000 Survey data collection was conducted in September 2016, followed by the data analysis and completion of the final report.

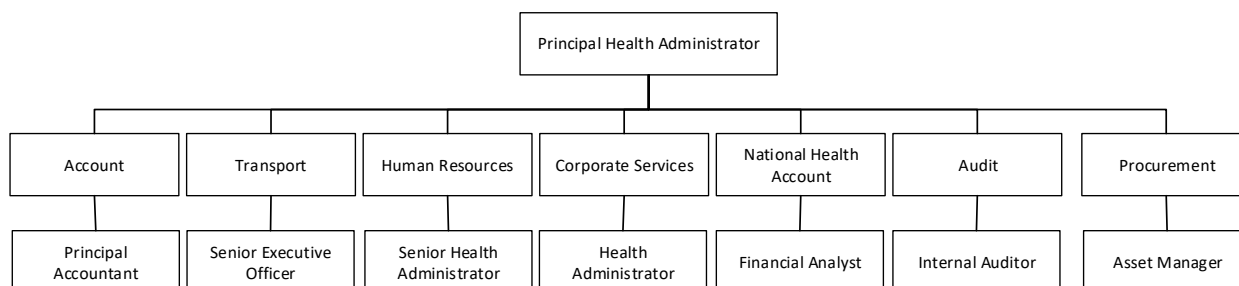
**Table 6: Final Reports Submitted to the Research Section between 2014 to the end of 2016.**

#	Title	Investigator(s)
1	Physical Activity among adolescents in the Vava'u Island: Tonga.	Mr. Simon Larrison (Medical Student) <b>Dr. Reynold 'Ofanoa</b>
2	What are the Normative, Perceived, and Expressed Needs for Orthodontic Treatment amongst Tongan children aged 12 – 15 years old.	Nirmal Shal (Dental Student) <b>Dr. Susitina Piukala</b>
3	The Impact of Australian Sports Outreach Program in Tonga.	<b>Mr. Siosaia Langitoto</b> <b>Mr. Sione Hufanga</b>
4	The Impact of Cataract on Poverty.	Dr. Judith McCool Ms. Julianne Faletau (Masters Candidate) <b>Mrs. Mele Vuki</b>
5	Assessing Tongan smokers' responses to Television advertisements about the serious harms of tobacco use.	<b>Dr. 'Ofa Tukia</b>
6	Post-Mass Drug Administration Lymphatic Filariasis Transmission Assessment Survey.	<b>Dr. Reynold 'Ofanoa</b>
7	Formative Research into barriers to participation in physical activity in the Pacific.	Dr. Tom Carroll <b>Dr. 'Ofa Tukia</b> <b>Mr. 'Eva Mafi</b>
8	Giving Birth: The Voices of Tongan Women in Tonga and the United States.	Mrs. Shelly J. Reed <b>Sr. 'Ana Kavaefiafi</b> <b>Mrs. Meliame Tupou</b>
9	Dentition status and treatment needs of Down's Syndrome individuals attending 'Ofa Tu'i moe 'Amanaki and 'Alonga Residential Center's specialized institutions in Nuku'alofa Tongatapu.	<b>Ms. Mele Likivai Foliaki (BDS 4<sup>th</sup> Dental student).</b> <b>Dr. 'Amanaki Fakakovikaetau</b>
10	Periodontal status and treatment needs of Down's	<b>Mr. James Heimuli (BDS 4<sup>th</sup> Dental student).</b>

#	Title	Investigator(s)
	Syndrome individuals attending two specialized institutions in Nuku'alofa Tongatapu.	<b>Dr. 'Amanaki Fakakovikaetau</b>
<b>11</b>	Prevalence and Factors contributing to Obesity among Tongan High School senior students in 2015.	<b>Ms. Litia 'Ahoafi</b> Mr. Napolioni Vulakouvaki (Supervisor)
<b>12</b>	The Prevalence of Chlamydia among pregnant women in Tonga.	<b>Dr. Louise Fonua</b> <b>Dr. Veisia Matoto</b>
<b>13</b>	A Qualitative study exploring Tongan nurses' perspectives of the 'Advanced Nursing Diploma in the Prevention, Detection and Management of NCD'.	Ms. Kieh Christopherson Dunn <b>Sr. 'Ana Kavaefiafi</b>
<b>14</b>	The extent to which changes in culture and lifestyle in particular health, exercise, diet, have had an impact on Tongan society.	Ms. Jacinta Forde <b>Mr. Fa'au Taumalolo</b> <b>Ma'ukakala</b>
<b>15</b>	Non-communicable disease-related disability research in the Pacific Islands: Tonga component.	Dr. Wendy Snowden <b>Mr. Sione Pouliwa'ati</b>

## 5.2 Leadership and Policy Advice

### 5.2.1 Organizational structure (Head of Division, Section and Head of Sections)



Sections	Head of Section	Post Title	Number of supporting staff
Head of Division	Mrs. Patinia Patelesio	A/Principal Health Administrator	45
Accounts	Mrs. 'Amelia Tu'ipulotu	Principal Accountant	12
Human Resources	Mrs. Salote Puloka	Senior Health Administrator	5

## 5.2.2 Financial and Human Resources

Category	Past spending performance				Corporate Plan & Budget		
	FY 2014/15		FY 2015/16		FY 2016/17	FY 2017/18	FY 2018/19
	Original Budget	Provisional Outcome	Original Budget	Provisional Outcome	Budget	Projection	Projection
Executive Staff (levels 0 to 2)	2	2	2	2	2	2	2
Professional Staff (Levels 3 to 9)	8	8	21	21	22	23	23
Other Staff (Levels 9A to 14A)	48	48	57	57	50	50	50
Total Established Staff	58	58	80	80	74	75	75
Unestablished Staff	18	18	6	6	11	11	11
Total Staff (Established & Unestablished)	76	76	86	86	85	86	86
Total Recurrent Ministry Costs (\$ millions)	3.66	4.56	4.31	4.70	4.09	5.34	5.34

## 5.2.3 Key milestones

### 5.2.3.1 Professional Development

The Tonga Study Award and Australia Awards offered these Scholarships for the Ministry of Health in 2016.

**Table 7: Ministry of Health Scholarships**

No.	Areas	Number	Donor
1	Bachelor in Physiotherapy	1	DFAT
2	Bachelor of Laboratory	1	DFAT
3	Bachelor of Midwifery	1	DFAT
4	Bachelor of Nursing	3	NZAID and DFAT
5	Bachelor of Pharmacy	1	DFAT
6	Master in Internal Medicine	1	DFAT
7	Master of Health Informatics	1	NZAID
8	Master of Health Management System and Planning	1	NZAID
9	Postgraduate Diploma in Internal Medicine	1	DFAT

### ► WHO Fellowships 2016/2017

These are all the successful training sessions funded by the World Health Organization.

**Table 8: WHO Fellowship 2016/17**

No.	Name of Program	Placement	Location	Duration	Progress
1	IT training	1	NZ	1 month	Planning
2	Postgrad. Dip Oral Surgery	1	Fiji	1 year	Completed
3	Masters degree (Surgical Sciences)	3	Fiji	1 year	To be completed December 2018
4	Masters degree (Pathology)	1	Fiji	1 year	To completed December 2017
5	Postgrad. Dip (Anaesthesia)	1	Fiji	1 year	Completed

### ► POLHN online courses

The POLHN course was taken by 13 online students, 10 of whom are continuing students, and 3 are new students. This training is all provided by the Fiji National University and is fully funded by the World Health Organization.

**Table 9: POLHN online students**

No.	Designation	Program of Study	New Student or Continuing Student
1	Principal Dental Officer	Postgraduate Diploma in Health Services Management	Continuing Student
2	Senior Public Health Sister	Postgraduate Diploma in Health Services Management	Continuing Student
3	Health Promotion Officer Grade II	Postgraduate Certificate in Public Health	Continuing Student
4	Senior Public Health Nurse	Postgraduate Diploma in Public Health	Continuing Student
5	Principal Dental Officer	Postgraduate Certificate in Health Services Management	Continuing Student
6	Medical Officer	Postgraduate Diploma in Applied Epidemiology	Continuing Student
7	Health Administrator	Postgraduate Certificate in Health Services Management	Continuing Student
8	Staff Nurse Diplomee	Postgraduate Certificate in Public Health	New Student
9		Postgraduate Certificate in Health Services Management	New Student
10	Eye Care Practitioner	Postgraduate Diploma in Public Health	Continuing Student
11	Eye Care Practitioner	Postgraduate Diploma in Public Health	Continuing Student



No.	Designation	Program of Study	New Student or Continuing Student
12	Medical Officer	Postgraduate Diploma in Public Health	New Student
13	Public Health Nurse	Postgraduate Diploma in Public Health	Continuing Student

### ► Twinning Programs with Saint John of God Hospital, Ballarat, Australia

This partnership dated back to 1992, with the intention of improving and supporting health care services in Tonga by providing staff exchanges between Ballarat Hospital and Vaiola Hospital. This training programme was jointly designed by both partners, and was defined in the Tonga Health Systems – Australian Support Framework Design document (August 2009) and the Ministry of Health Corporate Plan 2008/2009 – 2011/2012. Currently it is defined by the Tonga Health Systems Support Program (THSSP 2), which officially commenced in July 2015 and will run until June 2020. The same programme provides two 20ft containers filled with medical equipment and supplies to support health care services delivery at Vaiola and in outer island hospitals almost every year.



The exchanges mostly consisted of 3 to 4 MoH participants (or as determined between the parties depending on need and availability of MoH and SJOG HC staff) visiting the Ballarat Hospital for 4 to 6 week periods. During these exchanges, each MoH Participant will be exposed to one or more clinical areas to help develop their skills and experience.

The following staff participated in the Twinning Programme in 2016:

#### **Saint John of God, May 14th – 27th 2016**

John Macdonald - Team Leader

Carolyn Mornane – Wound Care / Stoma Care Consultant

Rachael Briody – Nurses Unit Manager Emergency Department

Daniela Selvitino – Pharmacist.

Dr Claire Picket – Sexual and Reproductive Health  
Dr Vince Russell – Director of Medicine / Director of Emergency Services.

**Saint John of God (Visited 1/10/16 - 14/10/16)**

John Macdonald - Team Leader  
Troy Tregilles – Manager Perioperative Services.  
Angela Langdon – Nurse Unit Manager Medical Ward  
Eddy Cattapan- Sonographers

**Ministry of Health (2/4/2016 –29/4/2016)**

Fusi Kaho – Nurse Practitioner  
Meleame Tupou – Senior Nursing Sister (Ngu Hospital)  
Mele Latai Faleafa – Nurse Staff Diplomat (Wound Stoma Care)  
Ma’ata Veituna Palu – Assistant Pharmacist Gr 11

**Ministry of Health (Visited 4/11/2016 –3/12/2016)**

Semisi Finau – Engineering  
Talasia Vakauta – Sister in Charge Theatre.  
‘Ana Faiva – Infection Control nurse  
Mele Falemaka - Sister in Charge, Niu’ui Hospital, Ha’apai.  
Ikuna Tohotoa - Radiographer

► Returning Scholars, 2015-2016

The following staff that have successfully completed their training in 2015 and 2016.

**Table 10: Returning Scholars, 2015-2016**

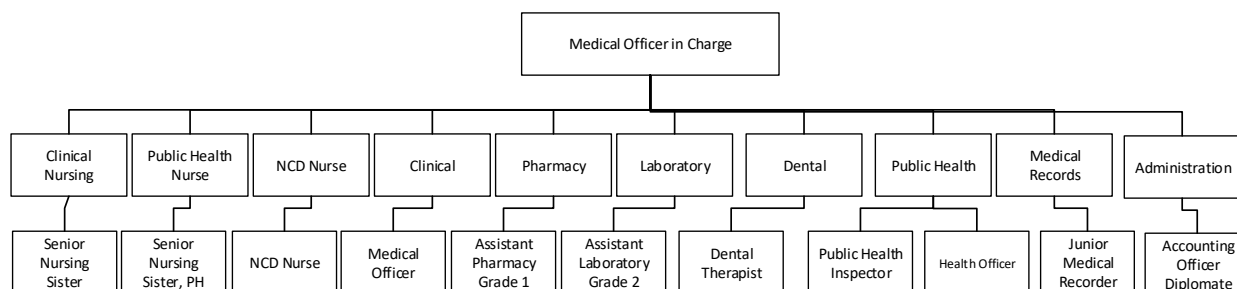
Postgraduate Training	2015	Institution	2016	Institution
Master of Medicine in Obstetrics and Gynecology	1	FNU		
Master in Medical Laboratory Science			1	Syd. Uni.
Master of Science, Nursing			1	Syd. Uni.
Master in Diagnostic Radiology	1	Syd. Uni.		
Master of Public Health				
Master of Community Eye			2	FNU
Post. Grad. Dip. Internal Medicine			1	FNU
Post. Grad. Dip. Anesthesia			1	FNU
Post. Grad. Dip. Surgery	1	FNU		
Post. Grad. Dip. Ophthalmology	1	FNU		
Post. Grad. Dip. Mental Health				

<b>Postgraduate Training</b>	<b>2015</b>	<b>Institution</b>	<b>2016</b>	<b>Institution</b>
Post. Grad. Oral Surgery			1	FNU
Post. Grad. Dip. Midwifery	1	FNU		
Post. Grad. Dip. Eye Care			1	FNU
Post. Grad. Dip. Public Sector Management			1	FNU
Post. Grad. Cert. Public Health			1	FNU
Post. Grad. Cert. Eye Care	1	FNU		
<b>Undergraduate Training</b>				
Bachelor of Medicine and Bachelor of Surgery	3	FNU	8	FNU
Bachelor of Dental Surgery	2	FNU	2	
Bachelor's Degree of Medicine				
Bachelor Medical Laboratory Science			1	FNU
Bachelor of Pharmacy	1	FNU	3	FNU
Bachelor of Medical Imaging Science	2	FNU		
Bachelor of Public Health Nursing	3	FNU		
Bachelor of Science in Nursing	1	FNU	4	
Bachelor of Public Health			1	
Bachelor of Midwifery			1	
Bachelor of Health Services Management			1	FNU
Diploma in Dental Technology			1	FNU
<b>Total</b>	<b>18</b>		<b>32</b>	

► Outer Island Hospitals

► Niu'eiki Hospital ('Eua)

Organizational structure (Head of Division, Section and Head of Sections)



Sections	Head of Sections	Post Titles	Number of Supporting Staff
Doctor in Charge	Dr. Maleta Lolesio	Medical Officer	16
Sister in Charge	Sr. Kaufo'ou Taufa	Senior Nursing Sister	20

**Population Details of 'Eua:**

The total population of 'Eua is estimated at 5,405 with 2,694 males and 2,711 females in 2016 according to the Reproductive Health Nurse Report. However the population was also estimated at 4,950 (2,489 males and 2,461 females) in the 2016 Government Census.

**Table 11: Immunization Services ('Eua), 2016**

The immunization coverage was reported at 100% for all types of immunization services except BCG and MR1.

Vaccination	No. of children to be immunized	No. of children immunized	Percentage coverage (%)
BCG	107	106	99
Polio 1	127	127	100
Polio 2	120	120	100
Polio 3	112	112	100
Hepatitis B	107	107	100
DPT/Hep.B/HIB 1	127	127	100
DPT/Hep.B/HIB 2	120	120	100
DPT/Hep.B/HIB 3	112	112	100
MR 1	127	126	99
MR 2	119	119	100

Vaccination	No. of children to be immunized	No. of children immunized	Percentage coverage (%)
DPT 4	119	119	100

Source: Reproductive Health Services

**Table 12: Hospital Admission and Outpatient Visits ('Eua), 2016**

A total of 349 admissions were recorded at Niu'eiki hospital with a monthly admission range from 20s to 30s. The outpatients served a 10,387 outpatient visits, with monthly visits ranging from the 300s to more than 1000.

Months	Admissions	Outpatient Visits
Jan	30	500
Feb	30	476
Mar	25	1057
Apr	39	1074
May	25	1127
Jun	23	910
Jul	29	1174
Aug	39	1160
Sep	37	808
Oct	28	953
Nov	20	773
Dec	24	375
<b>Total</b>	<b>349</b>	<b>10387</b>

Source: Health Information and Medical Records Services

**Table 13: Dental Services at Niu'eiki Hospital, 2016**

Dental Services	Number
<b>No. of Patients seen</b>	
Adult	913
Expected Mothers	124
Children ( 6yrs-18yrs)	296
<b>Total Attendance</b>	<b>1334</b>
<b>Dental Extractions</b>	<b>0</b>
Caries	290
Perio	192
Exfoliate	51
Other Reasons	111
<b>Conservatives</b>	<b>0</b>
Temporary Filling	141
Simple Amalgam Filling	91
Compound Amalgam Filling	39
Composite Resin	62

Dental Services	Number
GIC	41
Anticlotic Therapy	136
Preventative	0
Scaling	53
Polishing	38
OHI/TBI	263
Fluoride Application	0

**Source:** Dental Services

The following are the environmental health services rendered to the public in 'Eua during 2016.

**Table 14: Environmental Health Services at Niu'eiki Hospital, 2016**

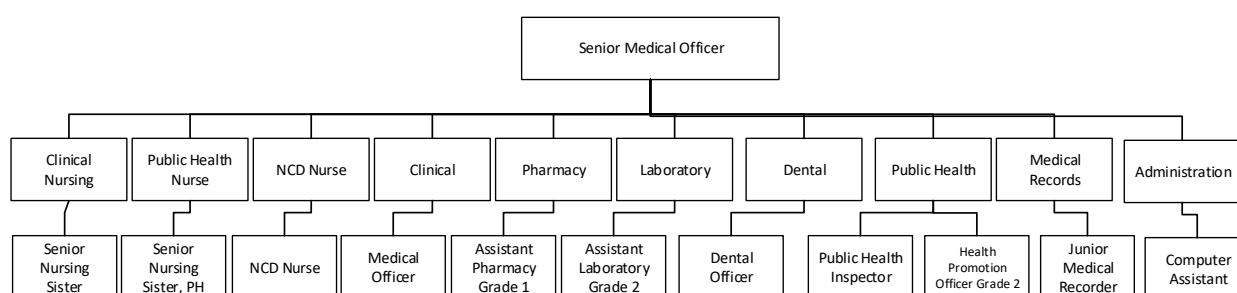
SANITARY INSPECTION	Number
Allotment	
Occupied Allotment	1078
Unoccupied Allotment	231
Tax Allotment	6
Dwelling House	
Public	49
European	1001
Mix	14
Tongan	4
Toilet Facilities	
Septic tank	873
Water seal	184
P/Latrine	21
Water Supply	
House Connection	901
Private Cement Tank	575
Private Well	4
No Water	7
Rural Water Supply	1
FOOD PREMISES INSPECTION	
Wholesale store	3
Retail store	38
Restaurants	2
Bakeries	1
Canteen	2
Food handlers: Tongan	44
: Chinese	12
Meat inspection : Bovine	9

SANITARY INSPECTION	Number
: Pork	5
Vector control (Rodent)	14 households
Spraying insecticides	63 households

Source: Environmental Health Services

### ► Niu'ui Hospital (Ha'apai)

Organizational structure (Doctor in Charge, Section and Head of Sections)



Sections	Head of Sections	Post Titles	Number of Supporting Staff
Doctor in Charge	Dr. Tevita Vakasiuola	Senior Medical Officer	24
Sister in Charge	Sr. Mele Falemaka	Senior Nursing Sister	22

### Population Details of Ha'apai:

The total population of Ha'apai is estimated at 6,430, with 3,231 males and 3,196 females, according to the Reproductive Health Nurse Report in 2016. However the 2016 Government Census estimates the population to be 6,138 (3,127 males and 3,011 females).

**Table 15: Immunization Services (Ha'apai), 2016**

The immunization coverage was reported at 100% for all types of immunization services except Polio 2, DPT/HIB/Hep B2, MR1, MR2 and DPT4 vaccination.

Vaccination	No. of children to be Immunized	No. of children immunized	Percentage coverage (%)
BCG 1	138	138	100
Polio 1	132	132	100
Polio 2	134	133	99.2
Polio 3	122	122	100



Vaccination	No. of children to be Immunized	No. of children immunized	Percentage coverage (%)
HEPATITIS B 1	138	138	100
DPT/HIB/Hep B 1	132	132	100
DPT/HIB/Hep B 2	134	133	99.2
DPT/HIB/Hep B 3	122	122	100
MR 1	149	147	99
MR 2	125	123	98.4
DPT 4	125	123	98.4
IPV	122	122	100

**Source:** Reproductive Health Services

A total of 501 admissions were recorded at Niu'ui hospital, with a monthly admission range from the 10s to the 60s. In addition, 8,760 outpatient visits were recorded, with monthly visits ranging from the 400s to more than 800.

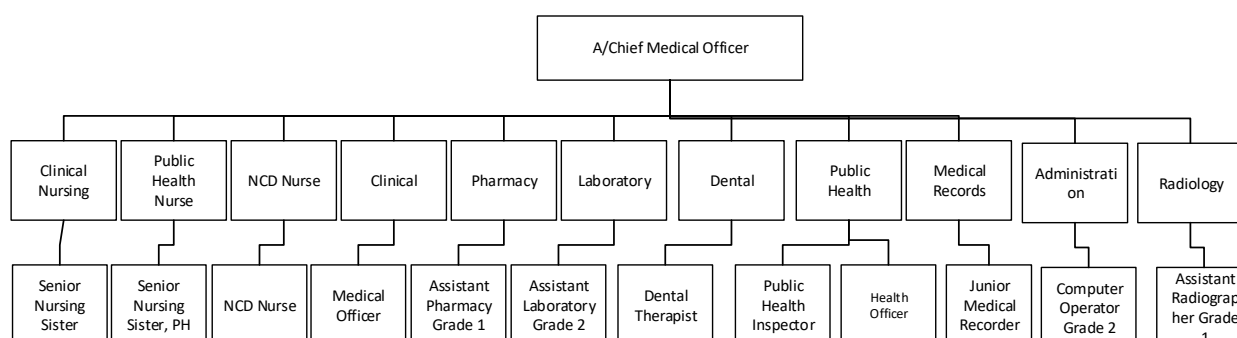
**Table 16: Hospital Admission and Outpatient Visits (Niu'ui Hospital), 2016**

Months	Admissions	Outpatient Visits
Jan	43	697
Feb	50	558
Mar	49	587
Apr	32	445
May	68	857
Jun	45	741
Jul	47	860
Aug	40	877
Sep	33	780
Oct	38	789
Nov	39	815
Dec	17	754
<b>Total</b>	<b>501</b>	<b>8760</b>

**Source:** Health Information and Medical Records Services

► Prince Wellington Ngu Hospital (Vava'u)

Organizational structure (Doctor in Charge, Section and Head of Sections)



Sections	Head of Sections	Post Titles	Number of Supporting Staff
Doctor in Charge	Dr. John Lee Taione	Acting Chief Medical Officer	53
Sister in Charge	Sr. Meliame Tupou	Senior Nursing Sister	30

**Population Details of Vava'u:**

The total population of Vava'u is estimated at 15,364, with 7,796 males and 7,568 females, according to the Reproductive Health Nurse Report in 2016. However the population was estimated at 13,740 (6,872 males and 6,868 females) in the 2016 Government Census.

**Table 17: Immunization Services (Vava'u), 2016**

The immunization coverage was reported at 100% for all types of immunization services except Polio 2, DPT/HIB/Hep B 2 and MR 1 vaccination.

Vaccination	No. of children to be Immunized	No. of children immunized	Percentage (%) coverage
BCG 1	361	361	100
Hep B Birth dose	366	366	100
Polio 1	412	412	100
Polio 2	349	349	99.6
Polio 3	317	317	100
DPT/HIB/Hep B 1	412	412	100
DPT/HIB/Hep B 2	349	349	99.6
DPT/HIB/Hep B 3	317	317	100
MR 1	296	296	99.7
MR 2	319	319	100
DPT 4	319	319	100

**Table 18: Hospital Admission and Outpatients Visits (Prince Wellington Ngu), 2016**

A total of 1,147 admissions were recorded at Prince Wellington Ngu hospital, with a monthly admissions total ranging from the 60s to the 100s. In addition, there were 34,178 outpatient visits with monthly visits ranging from the 1900s to more than 4000.

Months	Admissions	Outpatient Visits
Jan	85	1917
Feb	91	2568
Mar	100	2701
Apr	107	2691
May	121	2704
Jun	74	1619
Jul	99	2955
Aug	117	3099
Sep	64	3201
Oct	105	3050
Nov	92	3295
Dec	92	4378
Total	1147	34178

**Source:** Health Information and Medical Records Services

The following environmental health services were rendered to the public at Vava'u in 2016.

**Table 19: Environmental Health Services, 2016**

Item	Number	Item	Number
<b>A. SANTITATION INSPECTION</b>		<b>B. FOOD ESTABLISHMENTS</b>	0
<b>1. ALLOTMENTS</b>		a. Wholesale stores	32
a. Tax allotments	0	b. Retail stores	142
b. Town allotments	4537	c. Restaurants	23
c. Unoccupied block	240	d. Bakeries	20
<b>2. BUILDING</b>	0	e. Hawkeries	37
a. Public Building	285	f. Fish Selling	14
b. European Dwelling	3716	g. Café	15
c. Mixed Dwelling	379	h. Liquor/Bar	25
d. Tongan Dwelling	0	i. Charter Vessel	8
<b>3. BATH FACILITIES</b>	0	j. Beach Resort/Accom	18
a. European Bath	1944	k. Takeaway	20
b. Mixed Bath	1658	l. Restaurant/Bar	25
c. Tongan Bath	303	<b>C. MEAT INSPECTION</b>	0
d. No Bath	10	a. Bovine	1
<b>4. KITCHEN</b>	0	b. Pork	1
a. European	1965	<b>D. ISSUANCE OF WRITTEN NOTICE</b>	0
b. Mixed	1588	a. Cases taken to court	0
c. Tongan	350	b. Cases dropped	0
d. Nil	10	c. Conviction obtained	0
<b>4. TOILET FACILITIES</b>	0	<b>E. VECTOR CONTROL</b>	0

Item	Number	Item	Number
a. Septic Tank	2364	a. Insect control	53
b. Water Seal	459	<b>F. HEALTH EDUCATION</b>	0
c. Pit laterine	1122	a. Meetings	39
d. VIP	4	b. Radio Talks	3
e. Nil	11	<b>G. QUARANTINE SERVICES</b>	0
<b>6. WATER SUPPLY</b>	0	a. Pratique Issued	263
a. House connection	3950	b. Suspected Passengers	0
b. Private Cement Tank	3284	c. No. of landing passengers	5023
c. Private Well	1	d. No. of Yachts	239
<b>7. GARBAGE</b>	0	e. No. of Ships	19
a. Garbage Removal Service	2066	<b>PUBLIC HEALTH NUISANCE</b>	0
b. Burry	116	a. No. of Complaints	55
c. Burn	2467	b. Complaints Closed	55
<b>8. OCCUPANTS</b>	0		
a. Male	8011		
b. Female	9328		
c. other	0		

Sources: Environmental Health, 2016

**Table 20: Dental Health Services, Vava'u 2016**

Items	Number	Items	Number
<b>1. NUMBER OF PATIENT SEEN</b>		<b>7. MINOR ORAL SURGERY</b>	67
a) Adult	3899	a) Impaction	11
b) Children	2216	b) Tumour / Cyst	7
After Hours	588	c) Close Reduction	0
> 6yrs old	682	d) Trauma : Assault	11
7 - 12 yrs	902	e) Primary Teeth	5
13 – 18 yrs	632	f) Sutures	51
c) Expected Mothers	673	g) Post - op Bleeding	5
<b>d) Total Attendance</b>	6664	h) Dry Socket	4
<b>2. DENTAL EXTRACTIONS</b>		i) GA / Ketamine	70
a) Caries	1911	<b>8. X - RAYS</b>	20
b) Perio	1028	a) Periapical	86
c) Other Reasons	100	b) Bitewings	126
d) Exfoliate	126	P.A. Mandible	4
<b>3. CONSERVATIVES</b>		Lateral Oblique	10
a) Simple Amalgams	699	<b>9. PROSTHETIC</b>	6
b) Compound Amalgams	82	a) Full Upper	0
c) Temporary fillings	509	b) Full Lower	30
d) G.I.C	640	c) Partial Upper	0
e) Composite Resins	751	d) Partial Lower	0
f) Post n Core	7	e) Repair	0
g) Stabilok pins	24	f) Reline	0

<b>4.ENDO THERAPY</b>	0	g) Rebase	0
a) Canal Preparation	273	h) Consultation	21
b) Extirbation	401	i) Easing	27
c) Re-instrumentation	147		
d) Obturation	121		
<b>5. ANTIBIOTIC THERAPY</b>	323		
<b>6. PREVENTIVE</b>	316		
a) Scaling	68		
b) Polishing	99		
c) OHI	477		
d) Obturation	606		

**Sources:** Dental Health Services

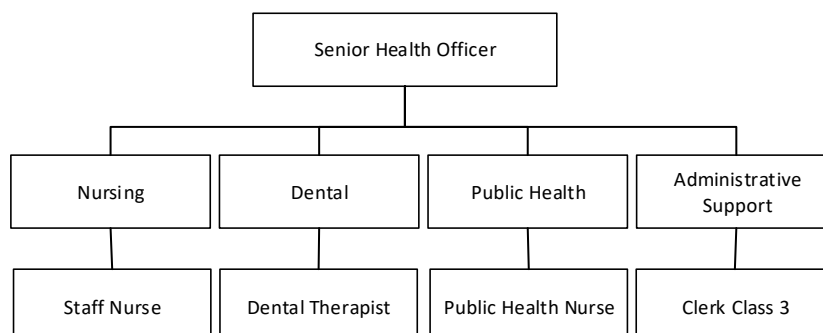
### Vava'u Hospital asbestos removal and renovation

The Vava'u hospital project was identified in 2015. The administrative, technical inspections with estimates and sourcing of funding were all successfully completed in 2016, although the actual site work of removal of the asbestos roofing and renovation were carried out and completed in 2017.



► Tu'akifalelei Health Centre (Niuafu'ou)

Organizational structure (Health Officer in Charge, Section and Head of Sections)



Section	Head of Section	Post Title	Number of Supporting Staff
Health Officer in Charge	Mr. Viliami Falevai	Senior Health Officer	3

**Population Details of Niuafu'ou:**

The total population of Niuafu'ou is estimated at 542, with 275 males and 267 females, according to the Reproductive Health Report in 2015. However the population was estimated at 493 (264 male and 229 female) in the 2016 Government Census.

**Table 21: Immunization Services (Niuafu'ou), 2016**

The immunization coverage was reported at 100% for all types of immunization services.

Vaccination	No. of children to be Immunized	No. of children immunized	Percentage coverage (%)
BCG 1	8	8	100
Hep B Birth dose	8	8	100
Polio 1	8	8	100
Polio 2	8	8	100
Polio 3	8	8	100
DPT/HIB/Hep B 1	8	8	100
DPT/HIB/Hep B 2	8	8	100
DPT/HIB/Hep B 3	8	8	100
MR 1	25	25	100
MR 2	15	15	0
DPT 4	11	11	0

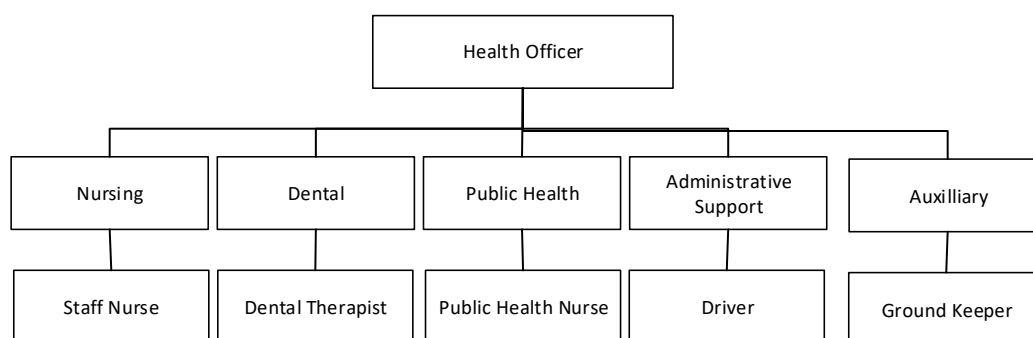
These are key services provided at Tu‘akifalelei Health Centre in 2016.

**Table 22: Summary Statistics of services at Tu‘akifalelei Health Centre, 2016**

Statistics	Number
Consultation	3065
Viral Influenza	2013
Broncho-Pneumonia	21
Bronchiolitis	18
Broncho Asthma	4
Infant Diarrhoea	2
Gastro-enteritis	7
Minor Surgery	28
Suture	45
Hypertension	17
Diabetic	9
Heart Disease	2
Diabetes and Hypertension	15
Admission	10
Referral to Vaiola	1
Pregnancy	4
Death	5

## ► Likamonu Hospital (Niuatoputapu)

Organizational structure (Health Officer in Charge, Section and Head of Sections)



Section	Head of Section	Post Title	Number of Supporting Staff
Health Officer in Charge	Mr. Sonasi Hu‘ahulu	Health Officer	8



### Population Details of Niatoputapu:

The total population of Niatoputapu is estimated at 904, with 416 males and 488 females according to the Reproductive Health Report in 2016. However the population was also estimated at 739 (386 males and 353 females) in the 2016 Government Census.

**Table 23: Immunization Services (Niatoputapu), 2016**

The immunization coverage was reported at 100% for all types of immunization services except MR 2 and DPT 4.

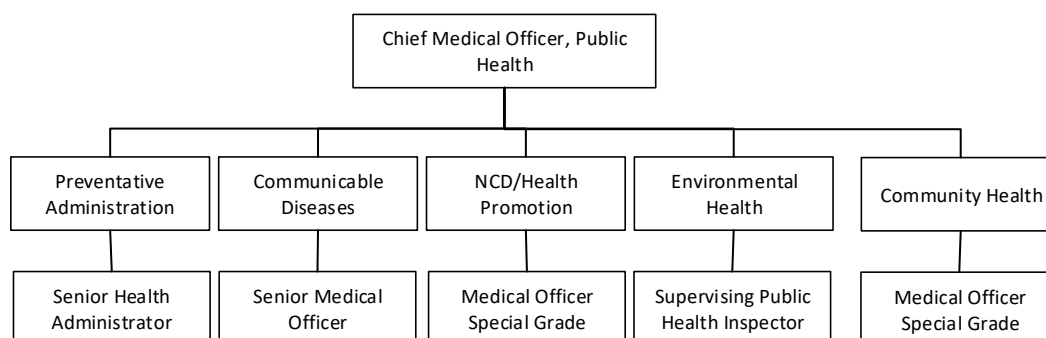
Vaccination	No. of children to be Immunized	No. of children immunized	Percentage coverage (%)
BCG 1	18	18	100
Hep B Birth dose	18	18	100
Polio 1	17	17	100
Polio 2	18	18	100
Polio 3	20	20	100
DPT/HIB/Hep B 1	17	17	100
DPT/HIB/Hep B 2	18	18	100
DPT/HIB/Hep B 3	20	20	100
MR 1	21	21	100
MR 2	19	18	95
DPT 4	19	18	95

**Table 24: Summary Statistics of services at Likamonu Health Centre, 2016**

Statistics	Number
Consultation	3669
Hypertension	60
Diabetic	16
Heart Disease	
Diabetes and Hypertension	15
Admission	19
Referral to Vaiola	2
Pregnancy	
Death	1

## 5.3 Preventative Health Care

### 5.3.1 Organizational structure (Head of Division, Section and Head of Sections)



Section	Head of Section	Post Title	Number of Supporting Staff
Head of Division	Dr. Reynold 'Ofanoa	Chief Medical Officer, Public Health	45

### 5.3.2 Financial and Human Resources

Category	Past spending performance				Corporate Plan & Budget		
	FY 2014/15		FY 2015/16		FY 2016/17	FY 2017/18	FY 2018/19
	Original Budget	Provisional Outcome	Original Budget	Provisional Outcome	Budget	Projection	Projection
Executive Staff (levels 0 to 2)	0	0	0	0	0	0	0
Professional Staff (Levels 3 to 9)	16	16	21	21	23	23	23
Other Staff (Levels 9A to 14A)	86	86	57	57	76	76	76
<b>Total Established Staff</b>	<b>102</b>	<b>102</b>	<b>78</b>	<b>78</b>	<b>99</b>	<b>99</b>	<b>99</b>
Unestablished Staff	4	4	2	2	3	3	3
Total Staff (Established & Unestablished)	106	106	80	80	102	102	102
Total Recurrent Ministry Costs (\$ millions)	2.53	2.54	2.50	2.64	2.56	2.74	2.73

### 5.3.3 Key milestones

#### 5.3.3.1 Health Promotion

##### ► Strengthen Healthy Settings programs

The Health Promotion (HPU) and NCDs Unit executed the following activities in support of the Healthy setting Program, particularly for churches, schools and workplaces.

##### ***Increased supply of local low cost healthy activities to community through churches:***

Establishment of Church Health Coordinator (CHC) posts in all member-churches in the National Church Leaders Forum (NCLF) as focal point for the Haofaki Mo'ui Program (a partnership between NCLF and the Ministry of Health through HPU to address the NCD crisis through a healthy churches approach).

HPU successfully conducted Monitoring and Evaluation (M&E) training workshop for Church Health Coordinators (CHCs) on 25 – 27 October 2016. This was part of the national NCD Strategy in addressing NCDs through health-promoting church programs. There were 38 representatives from 12 churches who attended the workshop. The workshop was aimed at developing the capacity of CHCs and empowering them with the necessary resources to be able to coordinate health promotion programs/activities and implement them within their respective denominations. Representatives were able to share and learn from each other's past year's achievements and successes.

As an outcome of the above M&E training, 7 churches were successful with their application for a small grant of \$21,000 provided by THSSP for the implementation of their approved self-developed work plans.

**Table 25: List of Successful Applications**

Church name	Amount offered	Activities
Free Wesleyan Church	4000	Healthy Eating; Physical Activity
Church of Tonga	3500	Health Check & sport equips
Tonga Constitution	3000	Healthy Eating; Health Profile
Free Church of Tonga	3000	NCD outreach; Health profile
Seventh Day Adventist	4000	Physical Activity & Healthy Eating
Tonga Covenant	2500	Healthy Eating; Physical Activity; Health Profile
Tokaikolo	1000	Await work plan

##### ***Improved healthy eating habits of school children:***

The Healthy Eating team of the Section managed to conduct consultation workshops with school authorities and their school canteen keepers as part of their "Healthy Canteen" program, and examined the need to review the current School Food Policy.

The Section strengthened the partnership with the Pacific Science Health Literacy Program (PHSLP) in collaboration with the Ministry of Education and Training.

HPU, through their Healthy Eating Advisory Committee, provided technical support for the ongoing “Mai-e-nima” project – promoting at least 5 servings a day of fruits and vegetable to young children at primary school level.

The team also received sets of mascot uniforms relating to healthy foods (veggie/fruits) and unhealthy foods (sausage/soda drink) in preparation for promoting healthy eating through drama and skits to young people through mobile services. Funding for these mascot costumes was provided by WHO.

***To increase number of health promoting workplaces:***

**“Ma’alahi” MoH 8-weeks challenge:** The HPU successfully launched the 2<sup>nd</sup> and the 3<sup>rd</sup> rounds of the “Ma’alahi”, MoH’s 8-weeks challenge program for the staff of the Ministry, in its effort to support the staff in making healthy choices to improve their health status and be healthy role models. This program was developed as a compliment to Fiefia Sport – an annual event which usually takes place between the end of September to November. The 2<sup>nd</sup> round of the 8-week challenge was launched in March 2016, and the 3<sup>rd</sup> round in September 2016. There were more than 100 staff registered and each set their own goals to achieve through the 8 week challenge. There were varieties of physical activities such as boot camps, learning to run, aerobics/Zumba, and swimming, from Monday to Thursday. The team would then join the Fiefia Sports on Friday. Healthy eating education/counselling and tobacco cessation services were also provided for at-risk staff based on their health screening results and set goals.

The 8-week challenge was rolled out to 3 other organizations including Revenue & Customs; MEIDECC; and the NZ High Commission Office. The HPU led the implementation of the programs for Revenue and MEIDECC throughout the 8 weeks, while the New Zealand High Commission Office took over the running of their program from HPU on the 2<sup>nd</sup> week of the program, as was intended for the roll-out of the program.

**Fiefia Tonga Sport:** The HPU conducted the second round of health screening in workplaces involved in the Fiefia Sports in July to August 2016, before the launch of the Fiefia Sports in September.

**Table 26: Health screening of all workplaces involved Fiefia Sports, 25 July – 17 Aug 2016**

Items	Results
Total workplaces/organizations participated	31 workplaces and 29 organizations
Total workers participated in the screening	<b>1309</b> (55%M;45%F)
Overweight (BMI 25-30)	<b>16%</b> (19%M; 13%F)
Obese (BMI >30)	<b>79%</b> (76%M; 81%F)
Waist circumference (M>100cm) (F>110cm)	<b>72%</b> M <b>36%</b> F
% Body Fat (>30%)	<b>63%</b> (40%M;91%F)
High blood sugar (>7mmol/L)	<b>19%</b> (18%M;20%F)
High BP (140-160/90-110mmHg) (>160/110mmHg)	<b>15%</b> (17%M;12%F) <b>7%</b> (8%M; 6%F)
Tobacco smoking	<b>32%</b> (45%M;16%F)
Alcohol drinking	<b>42%</b> (55%F;25%F)

Fiefia Sport, launched in September annually, aims to promote physical activity to the Tongatapu workforce as part of the collective effort to reduce obesity and NCDs in Tonga. The organization of the program was led by MIA through its Sports Department, in collaboration with the Ministry of Health through the HPU. The 8 week program involved activities every Friday afternoon to compliment the Fiefia Sport program and assist in achieving the WHO recommended level of physical activity for adult: **at least 30 minutes x 5 days per week.**

The Fiefia Sport program was rolled out to Ha'apai where the Governor's Office led the organizing and implementation of the program in collaboration with the Health Team from Niu'ui Hospital.

### **Quality Media Programs:**

The HPU contracted a Media Creative Technical Advisor through the THSSP to assist the Media Unit in preparation for the launch of the first national anti-tobacco campaign in May 31<sup>st</sup> 2016 – to mark the commemoration of the World No Tobacco Day in Tonga.

The TA provided the media team with the capacity for better quality media production through a robust content development process, including pre-testing.

The HPU received \$20,000 from THSSP for the purchase of a heavy duty colour printer for the Media Unit – essential equipment for the printing of quality IEC materials.

The Media team began using social media (Facebook) and microsites for promotional purposes and to increase the popularity and awareness of health promotion activities provided by the Unit. "Ma'alahi" MoH facebook page; 1<sup>st</sup> 1000 Days Facebook page; Tuku Ifi Leva Facebook page and website: [www.tapuifitonga.com](http://www.tapuifitonga.com).

A Graphic Designer produced IEC packages (brochure, poster, animation) on health topics including Diabetic Foot Care; Dengue and Chikungunya; Typhoid; Tuku Ifi Leva; and 1<sup>st</sup> 1000 Days, with the assistance of a JICA volunteer.

### **Anti-Tobacco Campaign:**

The new Tobacco Control (Amendment) Act 2014 put into force on 29 Feb 2016 made a range of public places fully smoke-free environments, to protect the public from the health impacts of second-hand smoke. The HPU successfully launched and implemented the first national hard-hitting mass media anti-tobacco campaign "*Tuku Ifi Leva*" in Tonga to mark the World No Tobacco Day on 31 May 2016, with the Hon Prime Minister as the Guest of Honour. *Tuku Ifi Leva* (Quit Smoking Now) used a variety of media delivered throughout Tonga over a 6-week period. It was adapted specifically for Tonga, and graphically showed the risks of tobacco use and the impact of deadly second-hand smoke on children.

Tonga implemented this mass media anti-tobacco campaign alongside with Quitline and targeted enforcement actions, supported by a nationally representative pre-post campaign evaluation. The following evaluation results were observed.

- Post campaign:
  - 96.3% of survey respondents agreed with statements about the harmful effects of second hand smoke, compared to 25% prior to the campaign.
  - 91.5% of respondents agreed pregnant women exposed to second hand smoke were more likely to experience harmful pregnancy outcomes compared to 22.6% prior to the campaign.
- Smokers were more likely to support taxation measures as a result of the campaign
- As a result of the campaign, 145 people enrolled in the Quitline cessation program, with 39 successfully quitting after 6 months follow-up.

These lessons from the field indicate that mass-media campaigns can positively impact the tobacco related knowledge and attitudes of the public, and Quitline can be an effective component of cessation services.



### Campaign promotional materials and the launch

The HPU received funds from THSSP for the purchase of a new car for enforcement activities throughout Tongatapu. The enforcement officer, Le'omolotu Havea, worked tirelessly throughout the year enforcing the “smoke free places” component of the Act, and won several cases in the Court of Law relating to violation of the Act.

### *Outcome of enforcement activities to outer islands, by location:*

- **Vava'u:** There has not been any significant change in the level of compliance with the Act in Vava'u compared to the past findings in 2015. Out of the 54 shops inspected, 43 (80%) still did not comply with the Act, mostly relating to selling to minors; having tobacco on display; and not displaying ‘smoking kills’ signs.
- **Ha'apai:** 67% of the shops in Ha'apai were not fully complying with the Act, mostly by displaying their tobacco product (42%), misplacing or losing the ‘smoking kills’ sign given in the first inspection (32%), selling to minors (19%), and minimal selling loose cigarettes (7%).
- **'Eua:** 'Eua has a promising past with their compliance level. Out of 21 shops inspected, 95% fully complied with the Act; 74% of 19 Church halls; 80% of 5 Kavatonga Clubs; 100% of 7 community halls; and 100% of 8 schools complied.

Ongoing inspection of tobacco outlets in Tongatapu was conducted by the HPU enforcement officer and one police officer designated to work full-time for tobacco enforcement. Data are not available yet to include in this report.

### *Partnership*

The HPU worked closely with Tonga Health in the development of the new NCD Control Strategy (Halafononga) 2015-2020 which was launched in March 24, 2016 by the Hon. Prime Minister. In addition, partnership with Pacific Science Health Literacy Program (PSHLP) – which is a curriculum based initiative introducing NCD related topics in the school curriculum – is still in pilot phase in 3 schools (Tonga High School; Tonga College; Tonga Side School) and has been strengthened. The HPU

is tasked with the communication and media component of the project, and to conduct student health profiling scheduled for April-May 2017.

### 5.3.3.2 Community Health

#### ► Leadership and Governance

##### **Package of Essential Health Services for Community Health**

This piece of work was introduced as part of the THSSP 2 project. The objective of the Package of Essential Services for Community Health was to try to identify effective and accessible services that are routinely available to serve the principle of Universal Health Coverage. This work was conducted in partnership with Medical Superintendent and relevant technical staff to identify areas necessary for inclusion in the Package of Essential Services for Community Health.

##### **Disability inclusion**

The Ministry, in partnership with the Government of Australia, continues to strengthen Primary Health Care through different programs such as new financial assistance worth AUD\$3.27 million to support the Disability programme and Rehabilitative Services for the community. This contribution was announced by Senator Hon Concetta Fierravanti-Wells, Minister for International Development and the Pacific, during her official visit to Tonga on the 20-23 September 2016.



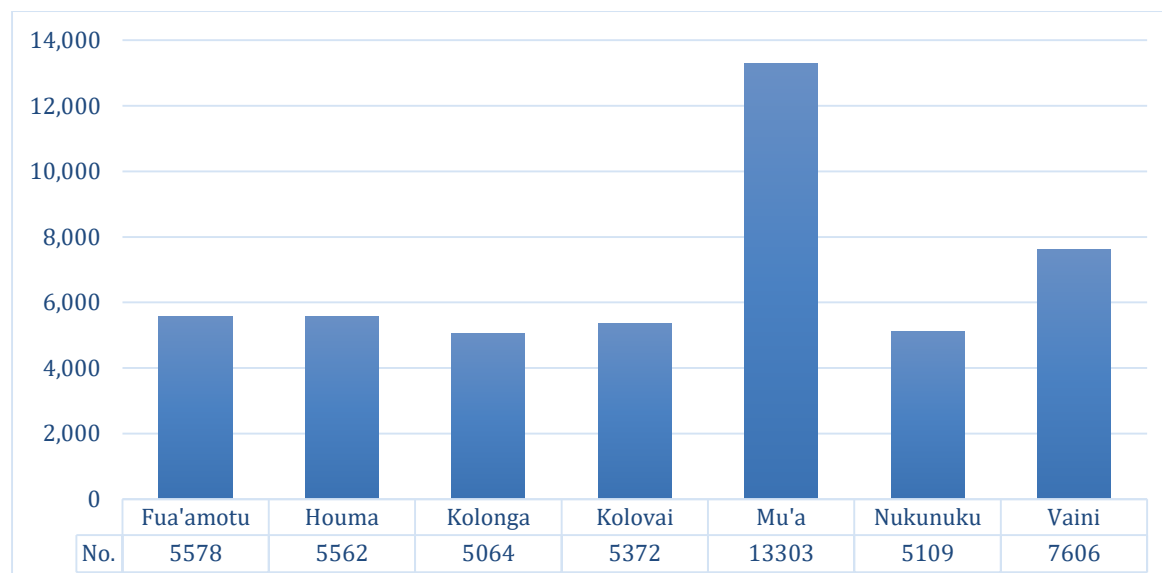
##### **Community Health Information Management**

An Australian Volunteer in partnership with Health Information Staff introduced an improved health information data collection system that will improve the efficiency of data collection and reporting to all users. This initiative included the provision of computer hardware, the development of simple excel data collection and reporting tools, the training of staff, and the sharing of results more routinely with relevant users.



The consultation data captured the episodes of health care that are provided by the Community Health Team (Health Officers and Nurse Practitioners). The Community Health Centres also provided a range of services including NCD Nursing, NCD Clinics, Reproductive Health Nursing, Dental, ENT, and Community Health Outreach programmes.

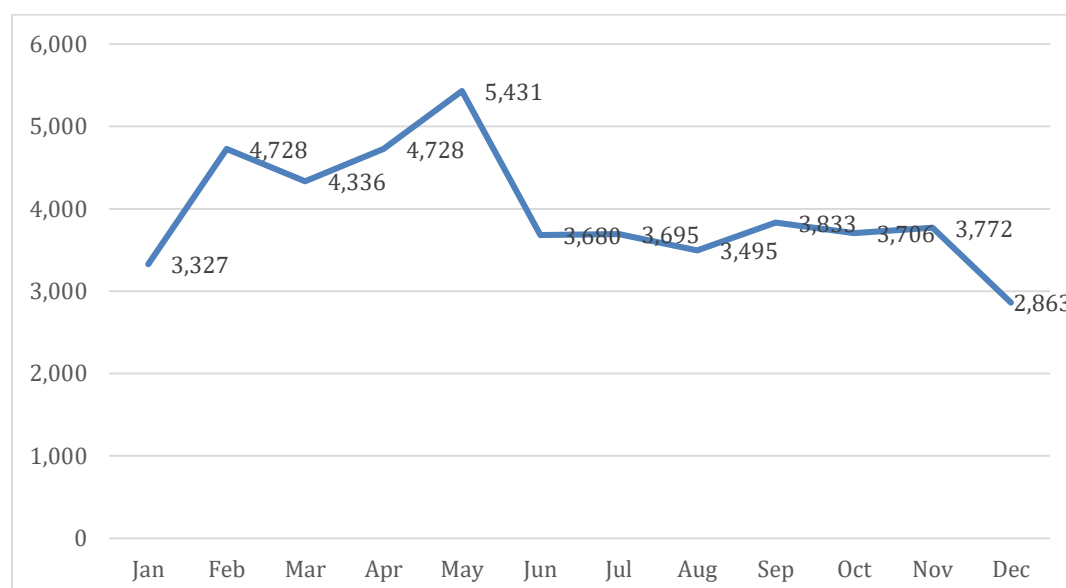
**Figure 6: Total Consultation at the 7 Health Centres, Tongatapu, 2017**



Source: Community Health Information Services

The total number of consultations was considerably higher in the first two quarters of 2016, with relative stability between July to November, before a decrease to less than 3000 consultations per month, which was the lowest throughout the year. The five leading causes of these consultations are Dermatology/Skin (22%), followed by Acute/Injury (21%), NCDs (19%), Respiratory (15%), and Pain (7%).

**Figure 7: Total Monthly Consultations at the 7 Health Centres at Tongatapu, 2016**



Source: Community Health Information Services

The Phase 2 Rheumatic Heart Disease Screening for 2016 was successfully completed with the RHD team including Dr Toakase Fakakovikaetau, Mr Stuart Cox, Ms Christine Hammond and Ms Sera Rayasidamu. Dr Fakakovikaetau travelled from Vanuatu, Mr Cox and Ms Hammond travelled from Australia and Ms Rayasidamu travelled from Fiji. The team was also able to carry out RHD screening in Class 4 of primary schools in central Tongatapu, as well as Primary schools in the Ha'apai Islands of Nomuka and Ha'afeva. The initial target of the RHD Screening for this phase was all of 21 Islands in the Ha'apai group. However, the police boat engine broke down on the second day after the visits to Ha'ano and 'Uiha. As such, the team used the Ha'afeva LDS vessel to travel to the rest of the 11 Islands. Thus, the team was able to carry out the RHD Screening in Ha'apai and 13 of the Outer Islands of the Ha'apai group.

### 5.3.3.3 Communicable Diseases

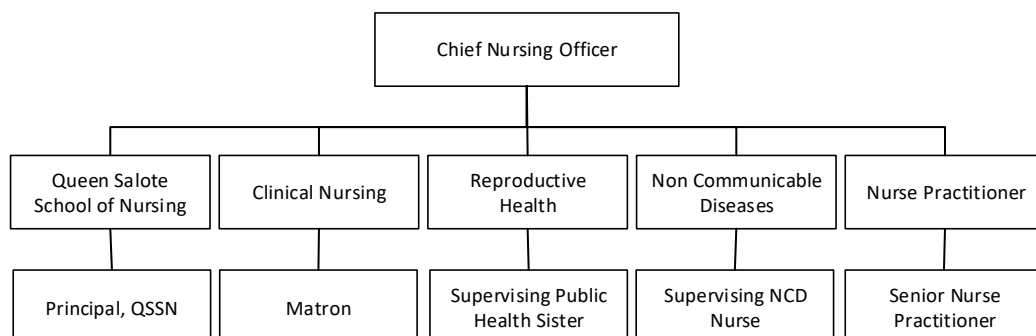
The Government of Australia committed \$500,000, through the WHO, to assist Pacific Islands including Tonga to combat Zika. In addition, they also provided over \$250,000 through their bilateral programme with the Ministry of Health, to further support Tonga's National Zika Response Plan. This financial assistance focused on preventing the spread of the virus through vector control measures and providing much needed equipment and supplies. It was also included in the strengthening of hospital services to manage the immediate and potential long-term associated complications of the Zika virus in Tonga.

As part of these donations, a new vehicle was donated by DFAT to assist with providing vector control measures to the communities that were at high risk, and to coordinate village cleaning campaigns on Tongatapu.



## 5.4 Nursing

### 5.4.1 Organizational structure (Head of Division, Section and Head of Sections)



Section	Head of Section	Post Title	Number of Supporting Staff
Head of Division	Dr. 'Amelia Afuha'amango Tu'ipulotu	Chief Nursing Officer	317

### 5.4.2 Financial and Human Resources

Category	Past spending performance				Corporate Plan & Budget		
	FY 2014/15		FY 2015/16		FY 2016/17	FY 2017/18	FY 2018/19
	Original Budget	Provisional Outcome	Original Budget	Provisional Outcome	Budget	Projection	Projection
Executive Staff (levels 0 to 2)	0	0	0	0	0	0	0
Professional Staff (Levels 3 to 9)	31	31	36	36	35	35	35
Other Staff (Levels 9A to 14A)	398	388	436	436	459	460	460
<b>Total Established Staff</b>	<b>429</b>	<b>419</b>	<b>472</b>	<b>472</b>	<b>494</b>	<b>495</b>	<b>495</b>
Unestablished Staff	0	0	1	1	1	0	0
<b>Total Staff (Established &amp; Unestablished)</b>	<b>429</b>	<b>419</b>	<b>473</b>	<b>473</b>	<b>495</b>	<b>495</b>	<b>495</b>
<b>Total Recurrent Ministry Costs (\$ millions)</b>	<b>8.43</b>	<b>8.43</b>	<b>9.69</b>	<b>9.24</b>	<b>10.75</b>	<b>10.40</b>	<b>10.83</b>

### 5.4.3 Key milestones

## ► Nurses, Nurse Practitioners, and Midwives Board

The Ministry of Health recruited two specialists, Professor Jill White (AM, RN. RM. MEd, PhD) and Professor Mary Chiarella (RN, RM, LLB(Hons), PhD) from the Faculty of Nursing and Midwifery, University of Sydney, to conduct the review of the Nurses Act 2001 (and amendments 2004 and 2014) . This review was conducted in response to the Policy directions granted by His Majesty's Cabinet on Cabinet Decision number 229 of 24<sup>th</sup> April 2014 *"...for the Ministry of Health to work with the Attorney General's Office on an in depth and comprehensive review of the Nurses Act 2001 with the view to amend and to develop relevant regulation for the effective enforcement of the act."*



This review placed particular emphasis on the following areas:

- Governance of the Tongan Nurses, Nurse Practitioners and Midwives Board, its composition and functions
- An expansion of the number of sub-divisions on the register to include pre-registration nursing students and non-practising nurses and midwives
- The introduction of a process of renewal and continuing competence
- A comprehensive redesign of the system of management of risk to the safety of the public, with a suggested system having distinct performance, health, and conduct related paths
- Accreditation.

It should be noted that clinical governance, a career structure, and performance management are all part of standard strong workplace quality programme regulation practices. Both quality and safety are considered as attributes of an effective and efficient health system according to the WHO Concept of Health System Strengthening. The protection of the nurses and development of the profession are shared responsibilities between the Ministry of Health and the professional/industrial organisations.

This review was conducted using the following six phases:

- 1) Review and analysis of existing legislation, regulation and policies from Tonga and other relevant jurisdictions and mapping of linkages, omissions, and areas for improvement and updating.

- 2) A review of the relevant literature on health professional regulation and its applicability to the context and aspirations of Tonga, and the development of a contemporary model of regulation.
- 3) Consultation with key stakeholders to ascertain their assessment of the current Act, any perceived gaps, and areas for improvement.
- 4) Presentations to the Board and the Heads of Divisions.
- 5) Preparation of a draft report for presentation to the Board.
- 6) Preparation of the final report upon receipt of feedback from the Board on the draft report.



A series of workshops were conducted amongst the Board members to review the Acts in collaboration with a Technical Legal Adviser from the Crown Law Department. These workshops were successful, as the Board was able to draft their first ever Regulations. Members were also able to become familiarized with the content of both the Act and the Regulations, and will be able to help to clarify any issues that may arise in the future. The Nurses Act and Regulations will soon be finalized in a meeting of the Board before they are submitted through the proper channels for approval.

### ► Professional development

The Nursing Profession continues to strengthen the Continuous Professional Development (CPD) for all nurses, which are a core component at the leadership and governance level, transcending the sections and affecting the reality of practice.

Also an important component of the performance management system is the highlighting of areas of weakness of staff, such as critical thinking, cultural competencies, and so forth, for future capacity building. The Nurse's profession places strong emphasis on capacity building for supervisors around leadership and management to improve the quality of supervision of nurses at the front line. Additionally, there was also a remote nurse's attachment to Vaiola Hospital to strengthen their capacities, knowledge, and skills, particularly in the areas of emergency, obstetrics, NCDs, public health, and also the school of nursing.



The Nursing Division also executed a series of meetings and workshops to update policies and procedures manuals, protocols, and the Performance Management System which is anticipated to be complete in 2017. This is considered to be the foundation of nursing as well as the Ministry's governance arrangements to enable better preparedness for response to new threats and agenda such as infection control and domestic violence. At the same time, it is anticipated that they will build stronger competency around specialty areas such as Midwifery, Intensive Care, and Infection Control.

#### 5.4.3.1 Reproductive Health Nursing

##### ► Annual Reproductive Health Review

Quality data and accurate information are essential to decision making, and the health information professional's diligence in assuring this is critical to the healthcare provider's future. This review and planning program are vital to the impact and enhancement of our professional responsibility and accountability in delivering towards our Mission "To provide Safe and Quality care to all population and delivered by a highly motivated, professional and ethical nursing and midwifery workforce".

The Reproductive Health Section of the Ministry of Health (MOH) successfully conducted its Annual Review and Planning Workshop in Reproductive Health and Immunization Services on July 25<sup>th</sup> – 29<sup>th</sup> 2016 at the Fa'onehua Convention Centre, with the financial support of the UNFPA Regional Reproductive Health and World Health Organization (WHO). This workshop is part of an ongoing program for analysing and critiquing data to evaluate trends and develop systems of care that are effective and efficient as well as affordable for both the patient and provider.



**The workshop contributed to the following outcomes:**

- 1) Increase participants' knowledge and understanding of relevant international conventions, i.e ICPD + 10 and MDGs, and how these conventions are related to and/or influence each participant's performance in his/her own workplace.
- 2) Critically review the current status of reproductive health care in Tonga relating to the following key focus areas:
  - Level of antenatal and postnatal care
  - Level of family planning practice
  - Pregnancy outcomes
  - STIs/HIV/AIDS
  - Immunization
- 3) Increase participants' knowledge of the current status of Adolescent Sexual Reproductive Health in Tonga, and how to strengthen active involvement in RH service provision for adolescents.
- 4) Better understand the health outcomes of health services for mothers and children through:
  - Reviewing morbidity and mortality indicators
  - Unpacking the Services provision statistics
  - Reproductive Health Commodity Security.
- 5) Create a work plan based on the findings of the workshop to strengthen the Reproductive Health Program and Immunization services in Tonga.

#### 5.4.3.2 School of Nursing

► **Queen Salote Institute of Nursing and Allied Health Strategic Plan 2016-2020**

The Strategic Plan 2016 – 2020 for the Queen Salote Institute of Nursing and Allied Health was developed by the Queen Salote Institute of Nursing and Allied Health staff, in conjunction with their stakeholders. It sets the direction for the future development and expansion of the institute with its core function of providing quality nursing/allied health education and training.

Given the increasingly complex health care challenges and environment in Tonga, such as complex political arrangements, economic situations and social issues, the Strategic Plan was designed to guide a comprehensive navigation towards a quality and skilled health workforce, and to ensure responsiveness to the population's future needs and commitment to population safety.





This Strategic Plan document provides the vision, mission, and the core values of the Institution and the nine key priority areas from 2016 to 2020. It supports and contributes to the National Strategic Development Framework (TSDf 2015-2025) which anticipates a national impact on TSDf11 in its statement: ***'A progressive Tonga supporting a higher quality of life for all the people'***.

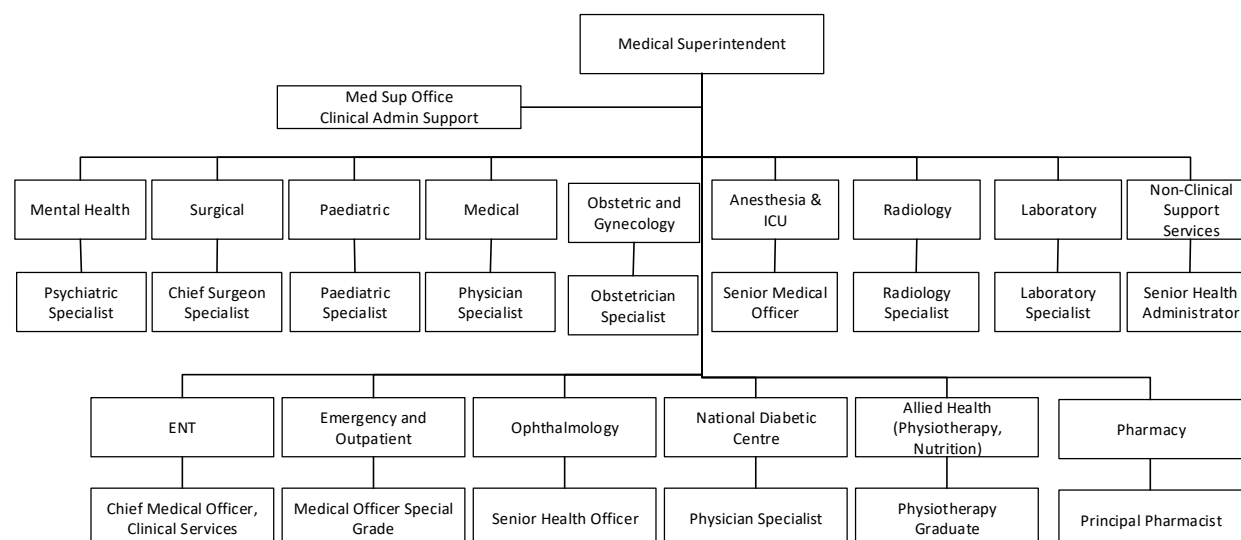
Quality training of the health care workforce will ensure a return on investments and the provision of high quality health care services to the population, from highly competent qualified health care workers.

**Table 27: The school has enrolled these following students:**

Programme	Students	Beginning of Year 2016	Graduated - 3rd June 2016	New Intake - 5th July 2016	Left the Programme	Return to Repeat	End of Year 2016
Diploma of Student Nurses	Student Nurses	112	34	45	7	2	118
Diploma of Pharmacy	Trainees	11	11				0
Diploma in Medical Laboratory Technology	Trainees	10					10
Advanced Diploma of Diagnostic Radiology	Trainees	7					7
Certificate in Environmental Health	Trainees	6	6				0
<b>TOTAL</b>		<b>146</b>	<b>51</b>	<b>45</b>	<b>7</b>	<b>2</b>	<b>135</b>

## 5.5 Curative Health Care

### 5.5.1 Organizational structure (Head of Division, Section and Head of Sections)



Section	Head of Section	Post Title	Number of Supporting Staff
Head of Division	Dr. Lisiata 'Ulufonua	Medical Superintendent	126

### 5.5.2 Financial and Human Resources

Category	Past spending performance				Corporate Plan & Budget		
	FY 2014/15		FY 2015/16		FY 2016/17	FY 2017/18	FY 2018/19
	Original Budget	Provisional Outcome	Original Budget	Provisional Outcome	Budget	Projection	Projection
Executive Staff (levels 0 to 2)	0	0	0	0	0	0	0
Professional Staff (Levels 3 to 9)	77	77	100	100	111	117	118
Other Staff (Levels 9A to 14A)	152	152	191	191	178	184	185
<b>Total Established Staff</b>	<b>229</b>	<b>229</b>	<b>291</b>	<b>291</b>	<b>289</b>	<b>295</b>	<b>296</b>
Unestablished Staff	40	40	32	32	32	38	39
<b>Total Staff (Established &amp; Unestablished)</b>	<b>269</b>	<b>269</b>	<b>323</b>	<b>323</b>	<b>321</b>	<b>327</b>	<b>328</b>
<b>Total Recurrent Ministry Costs (\$ millions)</b>	<b>9.84</b>	<b>10.80</b>	<b>11.71</b>	<b>12.34</b>	<b>12.96</b>	<b>14.24</b>	<b>14.16</b>

### 5.5.3 Key milestones

### 5.5.3.1 Clinical Services

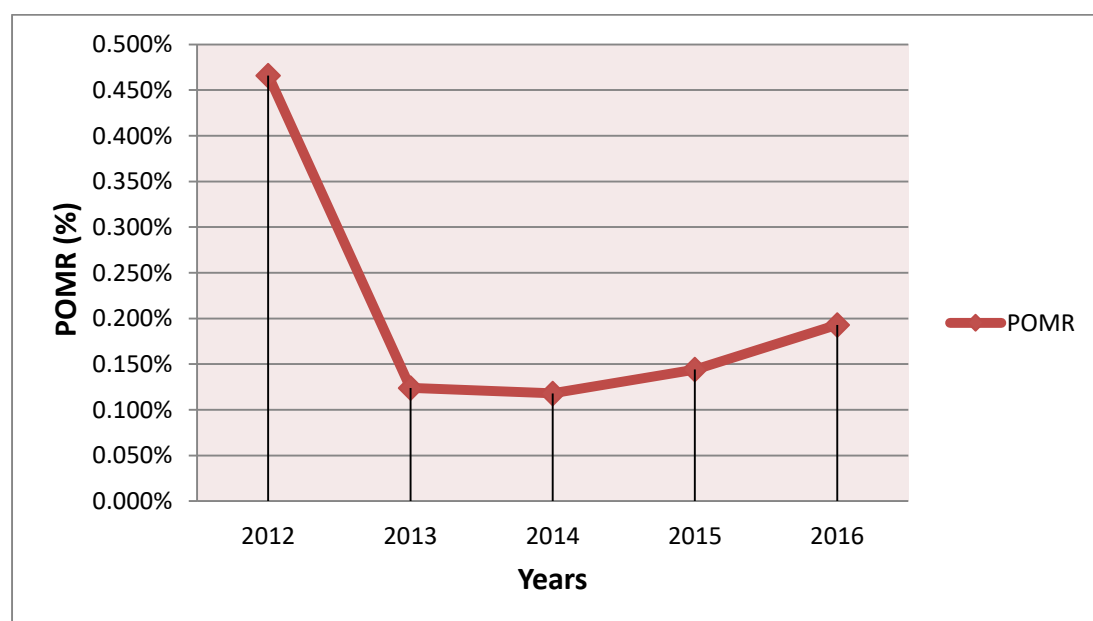
#### ► Surgical Ward

Section	Head of Sections	Post Title
Head of Ward	Dr. Viliami Tau Tangi	Chief Surgeon Specialist
	Dr. Kolini Vaea	Senior Medical Officer

The Surgical Ward is responsible for providing quality health services to all patients presenting with surgical problems.

According to the indicators and metrics outlined in the 2015 Bangkok Global Surgery Declaration, Tonga is one of few countries in the Pacific that has attained these indicators. This is in terms of “capability and timeliness”, “workforce”, “capacity”, “safety” and “affordability” (McQueen, K.A., Coonan, T., Derbew, M. et al. World J Surg (2017) 41:7. Doi:10.1007/s00268-016-3697-5).

**Figure 8: Trend of Post-Operative Mortality Rates in Tonga, 2012-2016**



Currently, 83% of Tonga’s total population has access to a health facility that is able to perform definite surgical procedures such as *caesarean section*, *emergency laparotomy* and appropriate management of a *long bone open fracture*. With a total of 14 trained surgeons, anaesthetists and obstetricians practicing in Vaiola Hospital, 3,200-5,000 surgical procedures per 100,000 population per year have been adequately performed. Furthermore, it can be concluded that the overall Perioperative Mortality Rate (POMR) has decreased over the years and has been maintained since. In terms of affordability, direct out of pocket payments for surgical and anaesthesia care in Tonga are manageable since the majority of the procedures are free and accessible to its citizens.

The Surgical ward at Vaiola hospital is a busy 40 bed ward, which has an occupancy rate of 80%. This Ward undertakes emergency surgery (i.e. surgery performed to save a life or a limb or to prevent severe disability/complications) in conjunction with the Anaesthesia and Intensive Care Unit (ICU) Section as well as other non-elective surgery. In 2016 there were 1375 admissions to the surgical ward.

The impact of the growing rates of Non Communicable Diseases in the community is evident in the table below, which indicates that the primary cause for admission and the longest stays are for patients admitted who have type 2 diabetes and Appendicitis.

**Table 28: 10 Leading Causes of Admission to Surgical Ward**

Surgical Ward	Disc	Avg LOS	Beddays	BOR
TYPE 2 DM W FOOT ULCER DT MULT CAUSES	134	20.5	2746	18.8
OTHER AND UNSPECIFIED ABDOMINAL PAIN	44	2.6	116	0.8
UNSPECIFIED APPENDICITIS	33	34.8	1147	7.9
CELLULITIS OF LOWER LIMB	30	7.8	233	1.6
UNSPECIFIED INJURY OF HEAD	28	6.1	170	1.2
ACUTE APPENDICITIS W GENL PERITONITIS	25	8.2	206	1.4
CUTAN ABSCESS FURUNCLE & CARBUNCLE LIMB	20	6.0	120	0.8
IRREGULAR MENSTRUATION UNSPECIFIED	18	2.5	45	0.3
OTH & UNSP INTESTINAL OBSTRUCTION	16	5.1	81	0.6
ACUTE TONSILLITIS UNSPECIFIED	15	1.5	23	0.2
Others	1,012	6.7	6795	46.5
<b>Total</b>	<b>1,375</b>	<b>8.5</b>	<b>11682</b>	<b>80.0</b>

## ► Paediatric and Special Care Nursery Ward

Section	Head of Section	Post Title
Head of Ward	Dr. Siaosi 'Aho	Pediatric Specialist

The Paediatric team accomplished these following milestones in 2016.

- Providing Chemotherapy for selected paediatric cancers continuously since 2009 with one new Acute Lymphoblastic leukaemia, diagnosed early 2016, being the latest addition. Three months of the treatment were initiated in Starship Oncology and the next 92 weeks of their chemotherapy are provided in Tonga. Over the same period, all have completed their treatment and are enjoying good health.
- Oncology nurses and 2 doctors attended a regional oncology workshop in Fiji where Tonga's oncology data was presented. The Starship Oncology team, in particular Oncologist Dr Jane Skeen, continue to support us very closely and visits regularly, conducting on-site training of the team at Vaiola hospital.
- Dr Flora Lutui graduated with her Masters in Paediatrics, from the University of Sydney. This is the first Masters level qualification in Paediatrics at the MOH. It was completed locally,

under the guidance of the University of Sydney and local Paediatric Specialist, Dr. George 'Aho.

- 2 of our registrars, Drs Mele Pomale and Davina 'Akau'ola successfully completed their IPPC/DCH course with University of Sydney without disrupting our service.
- A research paper on the "Invasive Pneumococcal Disease Burden in Tonga" by Dr Flora Lutui et al., was published in the Journal of Paediatric Infectious Disease. This is an accomplishment towards having the pneumococcal vaccine included as part of our routine immunisation schedule. This inclusion has been a goal for some time, with the aim of protecting Tonga's children from invasive pneumococcal disease and its complications. Most developed countries and some Pacific nations already have this vaccine in their immunisation schedule.
- Staff nurse Sione Vaha'i completed a short course on audiological assessment in children in Tonga.
- Clear increases occurred in keeping ward case fatality to a bare minimum, and improving the quality of survival in 2016 compared to 2015.
- Completion of the murals on the walls surrounding the children's ward with the last one being the walkway from the staff car park.



Our Paediatric ward is a 31 bed ward for infants, children, and adolescents with a variety of medical and surgical conditions. This ward has an occupancy rate of approximately 20.9% with the major cause for admission being Pneumonia, followed by Gastroenteritis infections, and acute Bronchiolitis.

**Table 29: 10 Leading Causes of Admission to Paediatric Ward, 2016**

Paediatrics Ward	Disc	Avg. LOS	Beddays	BOR
PNEUMONIA UNSPECIFIED	252	3.8	948	8.4
DIARRH & GASTROENTERITIS PRES INFECTIOUS	134	2.4	328	2.9
ACUTE BRONCHIOLITIS UNSPECIFIED	86	2.8	238	2.1
VIRAL INFECTION UNSPECIFIED	84	2.3	195	1.7
FEBRILE CONVULSIONS	66	1.8	122	1.1
ASTHMA UNSPECIFIED	49	2.5	121	1.1
CUTAN ABSCESS FURUNCLE & CARBUNCLE LIMB	32	7.0	225	2.0
INFLUENZA W PNEUM VIRUS NOT IDENTIFIED	25	4.6	114	1.0
NOXIOUS SUBSTANCE EATEN AS FOOD UNSP	24	1.3	30	0.3
STATUS ASTHMATICUS	22	1.9	41	0.4
<b>Total</b>	<b>774</b>	<b>30.3</b>	<b>2362</b>	<b>20.9</b>

Our Special Care Nursery (SCN) is a 10 bed facility that provides care for babies who are too unwell, premature, and/or small to be managed in the main ward. The ten leading causes of admission to Special Care Nursery are illustrated in the table below.

**Table 30: 10 Leading Causes of Admission to Special Care Nursery, 2016**

Special Care Nursery Unit	Disc	Avg. LOS	Beddays	BOR
NEONATAL JAUNDICE UNSPECIFIED	33	4.5	149.0	4.1
OTHER LOW BIRTH WEIGHT 1500 - 2499G	26	7.8	202.0	5.5
OTH PRET INFNT >=32 BUT <37 COMPL WK	24	17.3	416.0	11.4
ABO ISOIMMUNISATION OF FETUS AND NEWBORN	16	4.4	71.0	1.9
NEONATAL ASPIRATION OF MECONIUM	16	5.0	80.0	2.2
TRANSIENT TACHYPNOEA OF NEWBORN	13	4.8	63.0	1.7
SINGLETON BORN IN HOSPITAL	7	2.6	18.0	0.5
BACTERIAL SEPSIS OF NEWBORN UNSPECIFIED	5	4.2	21.0	0.6
OTH PRET INFNT >=28 BUT <32 COMPL WK	5	48.8	244.0	6.7
DISTURB NEWBORN TEMP RG UNSP	3	3.7	11.0	0.3
Others	36	8.5	307.0	8.4
<b>Total</b>	<b>184</b>	<b>8.6</b>	<b>1,582.0</b>	<b>43.3</b>

► Mental health services

Section	Head of Section	Post Title
Head of Ward	Dr. Mapa Ha'ano Puloka	Psychiatric Specialist

**Table 31: Psychiatric Ward total admission by DIAGNOSES for the year 2016:**

CASES	NUMBER
1. Schizophrenia	76 (39.8%)
2. Schizoaffective Disorder	20 (10.5%)
3. Bipolar Affective Disorder	34 (17.8%)
4. Acute and transient psychotic disorder	1
5. Other Non-Organic Psychotic Disorder	9 (4.7%)
6. Delusional Disorder	1
7. Dementia of Alzheimer's disease	2
8. Other Mental Disorder due to brain damage and dysfunction and physical disease	1
9. Mental Retardation	4
10. Mental and behavioural disorder due to use of alcohol	3
11. Mental and behavioural disorder due to use of cannabinoids	4
12. Conduct disorder	1
13. Mental and behavioural disorder due to Psychoactive substance use	3
14. Adjustment disorder with parasuicidal act	1
15. Adjustment disorder	14 (7.3%)

CASES	NUMBER
16. Recurrent depressive disorder	2
17. Manic Episode	2
18. Mental Retardation and Bipolar affective disorder (comorbidity)	4
19. Other Non-organic Psychotic Disorder and Dissocial Personality Disorder	2
20. Other disorders of adults personality and behaviour	1
21. Mental Disorder Not Otherwise Specified (NOS)	5
22. Unspecified Mood Disorder	1
23. Problem in relationship with parents	1
<b>TOTAL ADMISSION</b>	<b>192</b>
Number of New cases	39
Number of Re-admission	126
Number of incidents of Extrapyrimal Side Effects (EPS) due to psychotropic medications	72
Number of Epileptic cases associated with psychiatric disorders	6
Number of cases of Persons with Physical Disabilities	2
Number of cases of Persons with Psychosocial Disabilities	65
A total cases of Persons with Disabilities	62
Number of admissions with significant Substance Related Disorder (not including smoking)	38 + 10 = 48 (25.1%)
Number of patients who are residing in the psychiatric unit indefinitely	17
Male to Female ratio of admission	3:1

#### Mental Health Achievements in 2016:

- Mental Health (MHPSS – Mental Health Psychosocial Support and PFA – Psychological First Aid) now included in the taskforce for disaster management
- Legislative Assembly has approved :
  - the building of a Mental Health Facility in Hu‘atolitoli Prison
  - the building of a lockable room in the Ngu Hospital for aggressive Psychiatric patients.
- WHO Workshop for a National Mental Health Policy was conducted by WHO Consultant, Dr. Yuta Setoya
- Commemoration of the Mental Health Week in October 2016 was conducted
- DFAT approved the building of a special accommodation for Psychogeriatric patients within the Psychiatric Unit
- Declaration of Vaiola Hospital Psychiatric Unit as a Mental Health Facility (in accordance with the MHAC #8, 2001, section 117, subsection 2)
- Psychiatric patients Tapa printing workshop (arranged by the Clinical Psychologist) funded by TBEC and True Tonga Inc
- Official approval of Dr. Pita Pepa as the Medical Officer for Hu‘atolitoli Prison and Hospital
- First draft of the Mental Health Act #8, 2001 Amendment – incorporating 3 provisions from the repealed 1948 Lunatic Act (1. A provision to prevent others from helping inpatients escape from the Mental Health Unit; 2. A provision to prevent mental health officers from ill-treating psychiatric patients; 3. A provision for a penalty of wilful misstatement)
- Ministerial official appointment of a community member and a district officer to become members of the Mental Health Advisory Committee (in accordance with the MHA #8, 2001)
- Formally established a professional relationship with the Harmony Trust, New Zealand



- Further strengthening of the network with the NGO's such as the Tonga Mental Health and Disability Association (TMHDA), Salvation Army (SA) and Tonga National Centre for Women and Children (TNCWC).

### ► Obstetrics and Gynaecology Ward

Section	Head of Section	Post Title
Head of Ward	Dr. Ma'ake Fakaola Tupou	Specialist in Obstetrics and Gynaecology

**Table 32: 10 Leading Causes of Admission to Obstetrics and Gynaecology Ward**

Obstetrics Ward	Disc	Avg. LOS	Beddays	BOR
SINGLETON BORN IN HOSPITAL	1,895	1.2	2362	10.8
SINGLE SPONTANEOUS DELIVERY	1,867	2.1	3861	17.6
SINGLE DELIVERY BY CAESAREAN SECTION	226	5.6	1260	5.8
UNSP INFECTN URINARY TRACT IN PREGNANCY	65	2.2	145	0.7
PRETERM DELIVERY	37	9.3	345	1.6
SPONT ABORTION INCOMP OTH/UNSP COMP	36	1.7	60	0.3
TWIN BORN IN HOSPITAL	33	2.0	66	0.3
SPONT ABORTN COMPL UNSP W UNSP COMP	32	1.8	57	0.3
DM ARIS AT / AFT 24 WK GEST NONINSLN TRT	31	2.1	65	0.3
POSTPRT CARE UNPLANNED OUT OF HOSP DELV	26	2.4	62	0.3
Others	429	3.3	1422	6.5
<b>Total</b>	<b>4,677</b>	<b>2.1</b>	<b>9705</b>	<b>44.3</b>

The Obstetrics & Gynaecology team (2 doctors and 1 senior midwife) conducted a clinical outreach visit and program to Niu'ui Hospital, Ha'apai and Prince Ngu Hospital, Vava'u. The main purpose of the visit was to conduct training on the Formal GDM Screening Protocol & Guidelines, establish a gynaecology clinic in both hospitals and reviewed the current labour and delivery protocols. It was a successful visit as it enabled the establishment of the gynaecology clinic with patients identified for follow up visits. The training of the midwives and medical officers in the respective hospitals improved their skills.

### ► Medical Ward

Section	Head of Section	Post Title
Head of Ward	Dr. Sione Latu	Physician Specialist

The Medical Ward team accomplished these milestones in 2016.

- Internal medicine boosted by the return of Dr. Veisia Vaha'i, Physician Specialist, from secondment in Vanuatu. She returns to her directorship role with our National Centre for Diabetes and Cardiovascular Diseases.
- Locum consultant physician, Dr. Sukafa Matanicake, from Fiji covered in the absence of Sione Latu, Head of General Medicine, as he travelled to the RIO Olympics as Team Doctor with the Tonga Olympics Team in August.
- World Heart Day, 29 September, saw effective profiling of cardiac problems here in Tonga, through various media platforms coordinated by the Tonga Health Foundation.



**TongaHealth updated their cover photo.**

14 September 2016 · 🌐

**"Power Your Life" is the theme for World Heart Day this year (29th Sep.'16)**  
**Seated L-R: our partner Veteran heart specialist from Vaiola Hospital, Tonga Doctor Sione Latu and Monica Tu'ipulotu, Programs, TongaHealth.**  
**Standing L-R: Tukuafu Teumo... [See more](#)**



- The first Pacemaker Clinic was held in Tonga on 14<sup>th</sup> & 15<sup>th</sup> November, where 22 patients had their permanent pacemakers checked by Ms Fiona Riddell, Charge Cardiac Physiologist at Auckland City Hospital. Three were identified to have critical battery longevity issues. Referrals to Auckland for generator replacements are being organised. There is optimism that the visiting Open Heart International team in September 2017 will implant more pacemakers. The first permanent pacemaker was implanted locally in 2015 during a visit by OHI and the recipient is healthy.
- Overseas referrals. We had about 7 referrals in total to New Zealand (6) and Australia (1) for diseases ranging from lymphoma (1), and brain tumour (2), to coronary artery disease requiring CABG (2). There were several other referrals from the House of Parliament which utilised their own medical referral scheme where the clinical indications are less stringent.
- Dr. Sisi Longoa'a Mataka, medical officer, re-joined the unit in December, having successfully completed her Postgraduate Diploma in Internal Medicine from Fiji National University, College of Medicine, Nursing & Health Sciences.

The Medical Ward is responsible for providing internal medicine and primary care for the nation, including consultation medicine (inter-departmental, inter-island and overseas referrals). In 2016

there were 1358 admissions to the Medical ward and the 10 leading causes for admission to the 40 bed medical ward are provided in the table below.

**Table 33: 10 Leading Causes of Admission to Medical Ward, 2016**

Medical Ward	Disc	Avg. LOS	Beddays	BOR
PNEUMONIA UNSPECIFIED	80	4.9	388	2.7
NONINFECT GASTROENTERITIS & COLITIS UNSP	57	3.7	210	1.4
CONGESTIVE HEART FAILURE	48	4.3	208	1.4
COPD WITH ACUTE EXACERBATION UNSPECIFIED	47	4.3	200	1.4
COPD WITH ACUTE LOWER RESP INFECTION	41	5.2	213	1.5
CELLULITIS OF LOWER LIMB	36	6.3	228	1.6
SEPSIS, UNSPECIFIED	36	5.2	187	1.3
URINARY TRACT INFECTION SITE NOT SPEC	34	5.1	175	1.2
CEREB INFARCTION DT THROMBOSIS CEREB ART	33	4.9	162	1.1
GASTROINTESTINAL HAEMORRHAGE UNSP	32	4.6	148	1.0
Others	914	5.3	4817	33.0
<b>Total</b>	<b>1,358</b>	<b>5.1</b>	<b>6936</b>	<b>47.5</b>

### ► Laboratory services

Sections	Head of Sections	Post Title	Number of supporting staff
Laboratory Specialist	Dr. Eka Buadromo	Pathology Specialist	
Pathology in Charge of Laboratory Services	Dr. Seventeen Toumo'ua	Pathologist	36

The Laboratory section accomplished the following milestones in 2016:

- Continuous provision of core laboratory testing functions with minimal trepidation in the year
- Continuous improvement, 4 star rating in SLIPTA/ ISO External laboratory quality standard audit
- Maintained turn-around time of most tests as dictated in the laboratory handbook and recording minimal shortage of reagents in the financial year
- Provision of new electrolyte analyser to Niu'ui hospital, consumables and reagents, and appropriate manpower for provision of core activities in all outer island labs
- Annual Outer island lab strengthening visits and external audits in 2016
- Completion of training of 10 locally trained lab technicians and continued negotiation with TNQAB for local training accreditation
- Annual National laboratory quality management training offered in 2017.

### ► Radiology Services

Section	Head of Section	Post Title	Number of supporting staff
Head of Radiology	Dr. 'Ana 'Akau'ola	Radiology Specialist	16

The radiology section continues to serve the country with the best it can offer with the modality available. In addition to the radiography services, ultrasound, and CT, mammography was added to the available services in October 2015. The mammography services are however, currently underutilised, and this is concerning, given that breast cancer continues to be the leading cancer affecting women in Tonga. There is a hope that, with time, women will be empowered enough to use this service and not wait until there is a breast lump before seeking medical help.

In 2016, through aid from DFAT via THSSP, a new PACS (Picture Archiving Communications System) for the Radiology Department as well as a Radiology Information System were procured and installed. This has further revolutionised the work in Radiology, where all reports are now dictated and typed and available for clinicians to see. Work is underway to allow unlimited access by all clinicians to the images and reports for patients, which will improve efficiency. Tonga is one of the few countries in the Pacific to use PACS in the public system, and this had been a very significant milestone for radiology in Tonga, and is able to better serve the country due to the continuing support of the government and all development partners and donors.

Mr. Lei'aloha Makaafi commenced work at the beginning of 2016 after returning from studies at the University of Sydney where he achieved a Master in Diagnostic Radiography. Mr. Makaafi is the first Tongan to achieve this qualification and return to work for the country. He has also been involved in capacity building with new trainees since his return.

### ► Pharmacy Services

Section	Head of Section	Post Title	Number of supporting staff
Head of Pharmacy	Melenaite Mahe	Principal Pharmacist	28

The Pharmacy Section accomplished the following milestones in 2016:

- Conducted a 1-week awareness week on Antimicrobial Resistance during November, 2016. This was a mass campaign delivered to the public and staff on antimicrobial resistance and how to combat it.
- A new Pharmacist Graduate joined the team, bringing the total to 4 certified Pharmacists in the public sector.
- Trained 10 Assistant Pharmacist Diplomats (accredited by the TNQAB) in June, 2016.

The Pharmacy is responsible for providing pharmaceutical services for Vaiola Hospital and the entire nation. This table shows the number of prescriptions and items that have been dispensed by this section at Vaiola Hospital, during AM and PM shifts, as well as in the Outpatient and Inpatient Pharmacy.

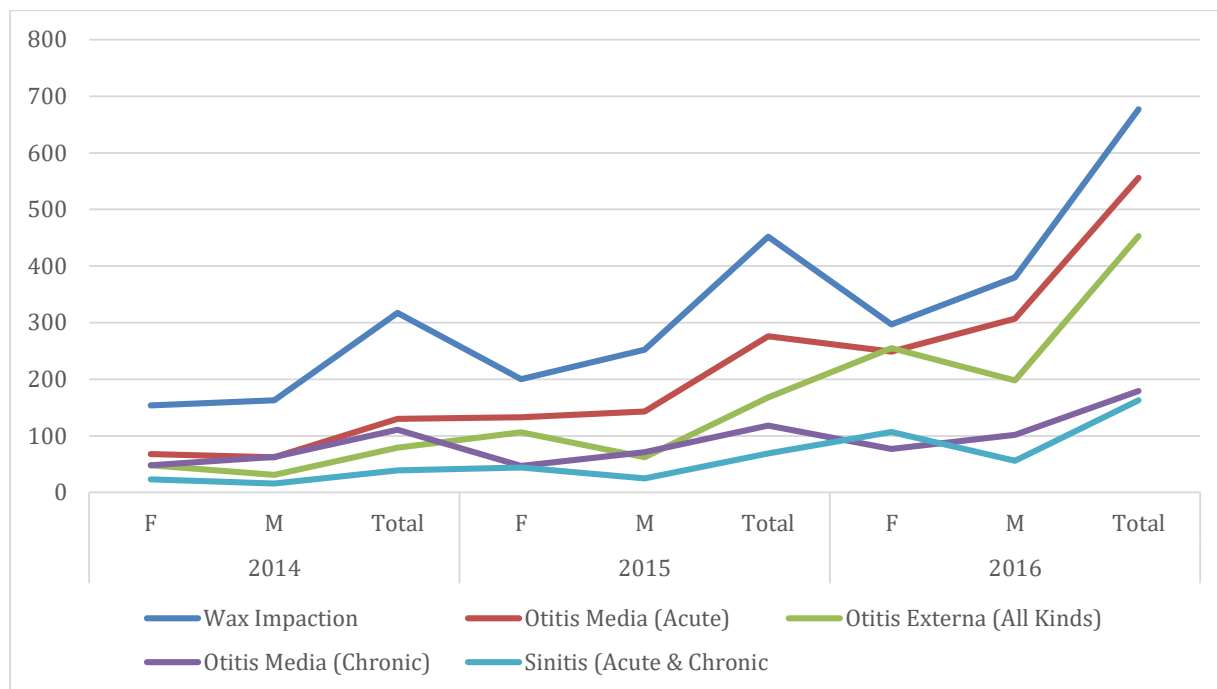
**Table 34: Number of prescriptions and items dispensed from each Pharmacy (Vaiola Hospital), 2016**

Month	General Outpatient Pharmacy				Clinic Pharmacy		Inpatient Pharmacy	
	AM SHIFT		PM Shift		No. Pres	No. Items	No. Pres	No. Items
	No. Pres	No. Items	No. Pres	No. Items				
Jan	5,711	10,157	4,187	7,196	3,039	9,653	204	599
Feb	10,303	17,071	4,334	6,996	3,153	10,259	229	537
Mar	5,991	10,255	4,156	6,866	3,581	11,196	328	762
Apr	5,955	10,913	4,243	7,171	3,476	10,944	315	796
May	7,151	12,896	5,626	9,517	3,814	12,154	337	939
Jun	6,861	12,622	4,530	8,183	3,465	10,536	279	860
Jul	6,138	11,481	4,879	8,712	3,130	9,243	300	784
Aug	7,405	13,823	4,493	8,473	3,400	10,553	374	933
Sep	10,036	18,292	4,310	7,779	3,441	10,777	298	865
Oct	5,757	10,551	4,168	7,748	3,558	11,486	240	665
Nov	5,154	9,346	3,296	6,134	3,599	11,902	221	575
Dec	5,002	8,944	3,352	7,679	3,287	8,983	245	628
Total	81,464	146,351	51,574	92,454	40,943	127,686	3,370	8,943

► ENT Services

Section	Head of Section	Post Title	Number of supporting staff
Head of ENT	Dr. Lei Saafi	Chief Medical Officer, Clinical Services	2

**Figure 9: These are five leading services provided by ENT, 2014-2016**



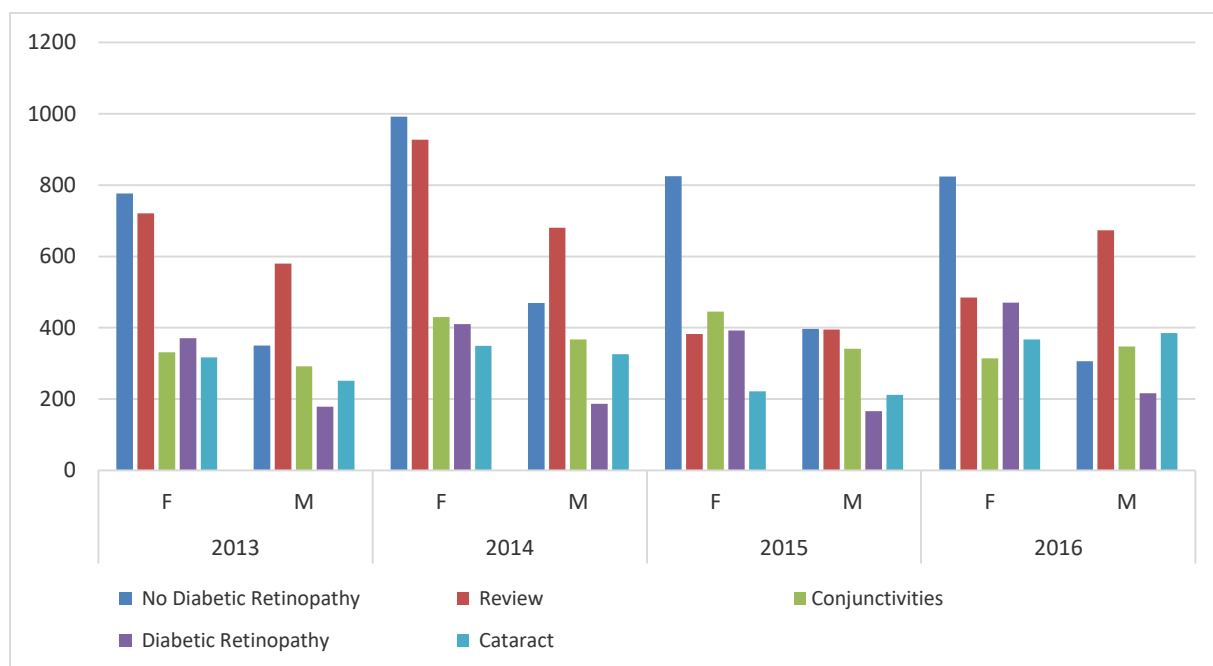
Source: Tonga Hospital Information System

► Ophthalmology Services

Section	Head of Section	Post Title	Number of supporting staff
Head of Ophthalmology	Mrs. Savelina Veamatahau	Senior Health Officer	6

These are five leading services provided by Ophthalmology Services, 2013-2016

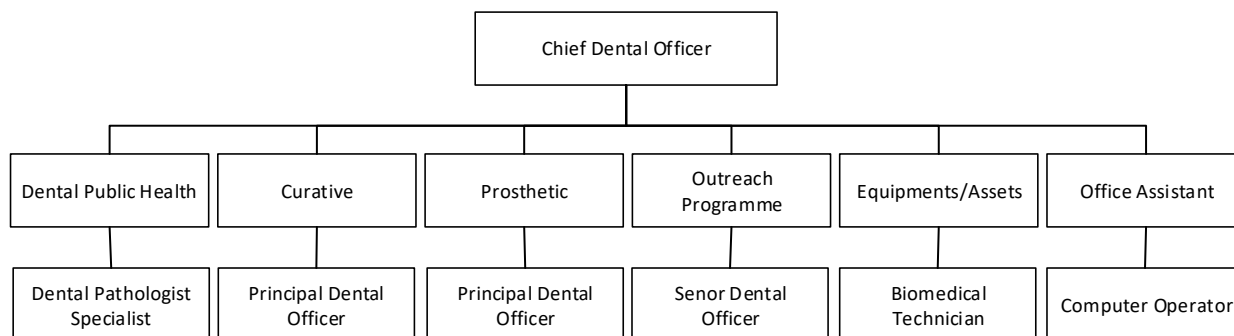
**Figure 10: Five leading services provided by Ophthalmology, 2013-2016**



Source: Tonga Hospital Information System

## 5.6 Dental Services

### 5.6.1 Organizational structure (Head of Division, Section and Head of Sections)



Sections	Head of Section	Post Title	Number of Supporting Staff
Head of Division	Dr. 'Amanaki Fakakovikaetau	Chief Dental Officer	31

### 5.6.2 Financial and Human Resources

Category	Past spending performance				Corporate Plan & Budget		
	FY 2014/15		FY 2015/16		FY 2016/17	FY 2017/18	FY 2018/19
	Original Budget	Provisional Outcome	Original Budget	Provisional Outcome	Budget	Projection	Projection
Executive Staff (levels 0 to 2)	0	0	0	0	0	0	0
Professional Staff (Levels 3 to 9)	14	9	15	15	16	16	16
Other Staff (Levels 9A to 14A)	29	30	31	31	28	28	28
<b>Total Established Staff</b>	<b>43</b>	<b>39</b>	<b>46</b>	<b>46</b>	<b>44</b>	<b>44</b>	<b>44</b>
Unestablished Staff	4	4	2	2	2	2	2
<b>Total Staff (Established &amp; Unestablished)</b>	<b>47</b>	<b>47</b>	<b>48</b>	<b>48</b>	<b>46</b>	<b>46</b>	<b>46</b>
<b>Total Recurrent Ministry Costs (\$ millions)</b>	<b>1.27</b>	<b>1.27</b>	<b>1.46</b>	<b>1.36</b>	<b>1.51</b>	<b>1.58</b>	<b>1.58</b>



### 5.6.3 Key Milestones

#### 5.6.3.1 Oral Health Awareness Week, Sun 21<sup>st</sup> – Sat 27<sup>th</sup> August, 2016.

##### ► Oral Health Awareness Programmes

The Oral Health Division of the Ministry introduced the Oral Health Week during the last week of August 2016 for the purpose of creating public awareness and making basic educational messages to improve dental health care to the public and to schools (kindergarten, primary, and secondary schools). This program was conducted in Tongatapu, `Eua, Ha`apai and Vava`u by the oral health staff stationed there.

The staff and the public participated in various programmes, including Sunday morning Services at various churches, oral health talks to schools (photo below), Disability centres, and the Prisons. Toothbrushes and toothpastes from Colgate-Palmolive-Fiji were also distributed. Also included in the events was an Open Day (below photo) where dental staff delivered dental check-ups for eleven secondary school students and onsite interventions where possible, and then showcased the key dental services that are available to the public. These activities were intended to inspire the younger generations and generate interest in pursuing a career in dental related fields. The programme concluded with a walk for health, which was well supported and participated in by the public.



#### 5.6.3.2 Strengthening services and Outreach programme

Tertiary oral health care (dental prosthetics works) is only available at our Division at Vaiola hospital. With the financial support and supplies offered by WHO and other developing partners, a visiting dental prosthetic team was able to visit Vava`u Island. The demand for this service has increased in recent years, and the Division has also put more effort into strengthening the capacity to serve the public in these outer islands.

The outreach oral health team of 3 visited Mu'omu'a and Lulunga group of Islands, Ha'apai. The team were able to provide preventative oral health services to schools and communities, provided curatives oral care to school and communities, assessed and provided treatments to the NCD patients also people with special needs (GESI), assessed oral status and treatment of these islands Rheumatic Heart Disease (RHD) patients, and checked/reviewed the oral/dental clinic proposed at Nomuka Health centre.

The table below summarises key services that were delivered in 2016.

**Table 35: Prosthetics Services:**

No.	Services	Number
1	Patients with Complete dentures	64
2	Patients with Full Upper Only	17
3	Patients with Full Upper & Partial Lower	10
4	Patients with Full Lower Only	13
5	Patients with Full Lower & Partial Upper	5
6	Patients with Partial Partial Dentures	18
7	Patients with Partial Upper Only	55
8	Patients with Partial Lower Only	11
9	Patients with Fractured and Repaired Dentures	20
10	Patients with Relined Dentures	5
11	Patients for Tooth Addition to existing dentures	7
12	Patients that have been adjusted to alleviate pain	52
13	Patients for Removable Orthodontic Appliances	16
14	Patients for TMJ splint & Mouth Guards	16



The dental prosthetic team.

### 5.6.3.3 School Preventive Dental Programme

#### ► Malimali programme

This school preventive program (Malimali 1) has been in operation for a number of years now, under the support of stakeholders including the WHO/SPMT/JICA/ Government and Churches, Ministry of Education/Ministry of Health. It has focussed on all the kindergartens and primary schools throughout the Kingdom. The program is now extended to include all the Secondary Schools and special care for Diabetic patients (Malimali 2 Program). It is anticipated that this early educational programme will improve the dental health of young children during their adolescent years and into adulthood, as childhood dental care (tooth decay) share a number of the same risks factors as Non Communicable Disease (NCD).

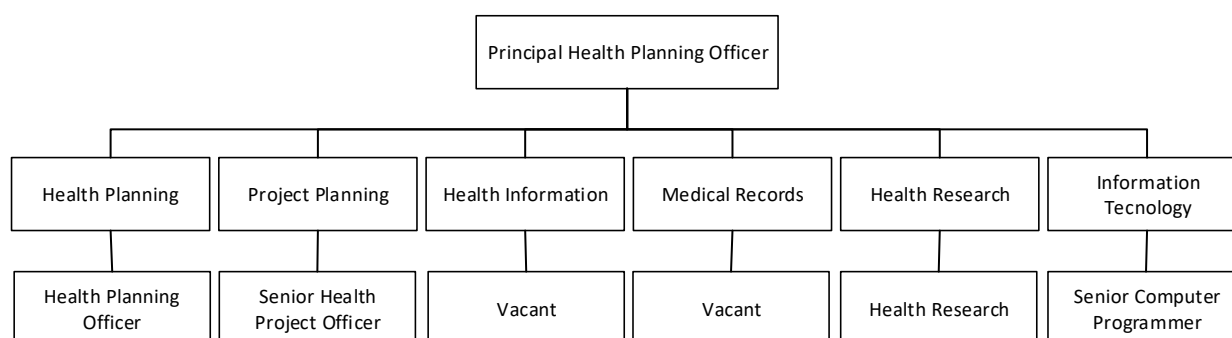
The Malimali 1 Program involves: an oral health talk, tooth brushing, fluoride mouth rinsing, radio Taiso (body movements), and hand-washing. Below are some photos of these activities.





## 5.7 Health Planning and Information Services

### 5.7.1 Organizational structure (Head of Division, Section and Head of Sections)



Sections	Head of Section	Post Title	Number of supporting staff
Head of Division	Mr. Sione Hufanga	Principal Health Planning Officer	28

### 5.7.2 Financial and Human Resources

Category	Past spending performance				Corporate Plan & Budget		
	FY 2014/15		FY 2015/16		FY 2016/17	FY 2017/18	FY 2018/19
	Original Budget	Provisional Outcome	Original Budget	Provisional Outcome	Budget	Projection	Projection
Executive Staff (levels 0 to 2)	0	0	0	0	0	0	0
Professional Staff (Levels 3 to 9)	7	7	10	10	14	14	14
Other Staff (Levels 9A to 14A)	23	23	23	23	20	20	20
<b>Total Established Staff</b>	<b>30</b>	<b>30</b>	<b>33</b>	<b>33</b>	<b>34</b>	<b>34</b>	<b>34</b>
Unestablished Staff	6	6	5	5	5	5	5
<b>Total Staff (Established &amp; Unestablished)</b>	<b>36</b>	<b>36</b>	<b>38</b>	<b>38</b>	<b>39</b>	<b>39</b>	<b>39</b>
<b>Total Recurrent Ministry Costs (\$ millions)</b>	<b>0.47</b>	<b>0.47</b>	<b>0.54</b>	<b>0.52</b>	<b>0.73</b>	<b>0.65</b>	<b>0.65</b>

### 5.7.3 Key milestones

#### 5.7.3.1 Health Project and Health Planning

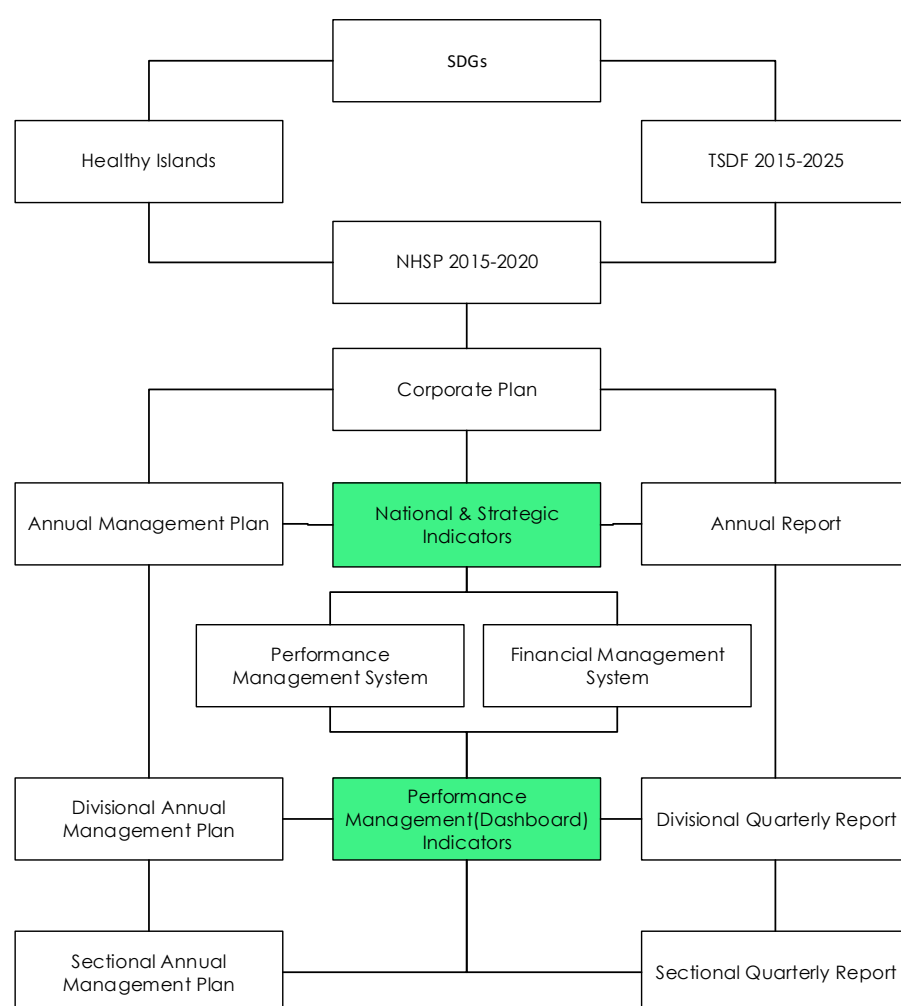
##### ► National Health Strategic Plan 2015–2020

The financial assistance from WHO to support Consultation and Training on the NHSP 2015-2020 Monitoring and Evaluation Framework helped to fund a series of activities from an awareness

programme, technical training, and building dashboard statistics, to producing fact sheets and reports. This is the first time that the Ministry embarked on developing an M&E Framework to replace the concept of the Balanced Scorecard system introduced in 2004. This is one of the initiatives of the Health Planning and Information Division which has produced real and immediate results, such as Dashboard Indicators, Factsheets, and a Revised Format of the Annual Report. These have improved health information services significantly within a short period of time.

The Monitoring and Evaluation approach was developed to support the implementation of the NHSP 2015-2020, which in turn contributes toward the Tonga Strategic Development Framework as well as Sustainable Development Goals.

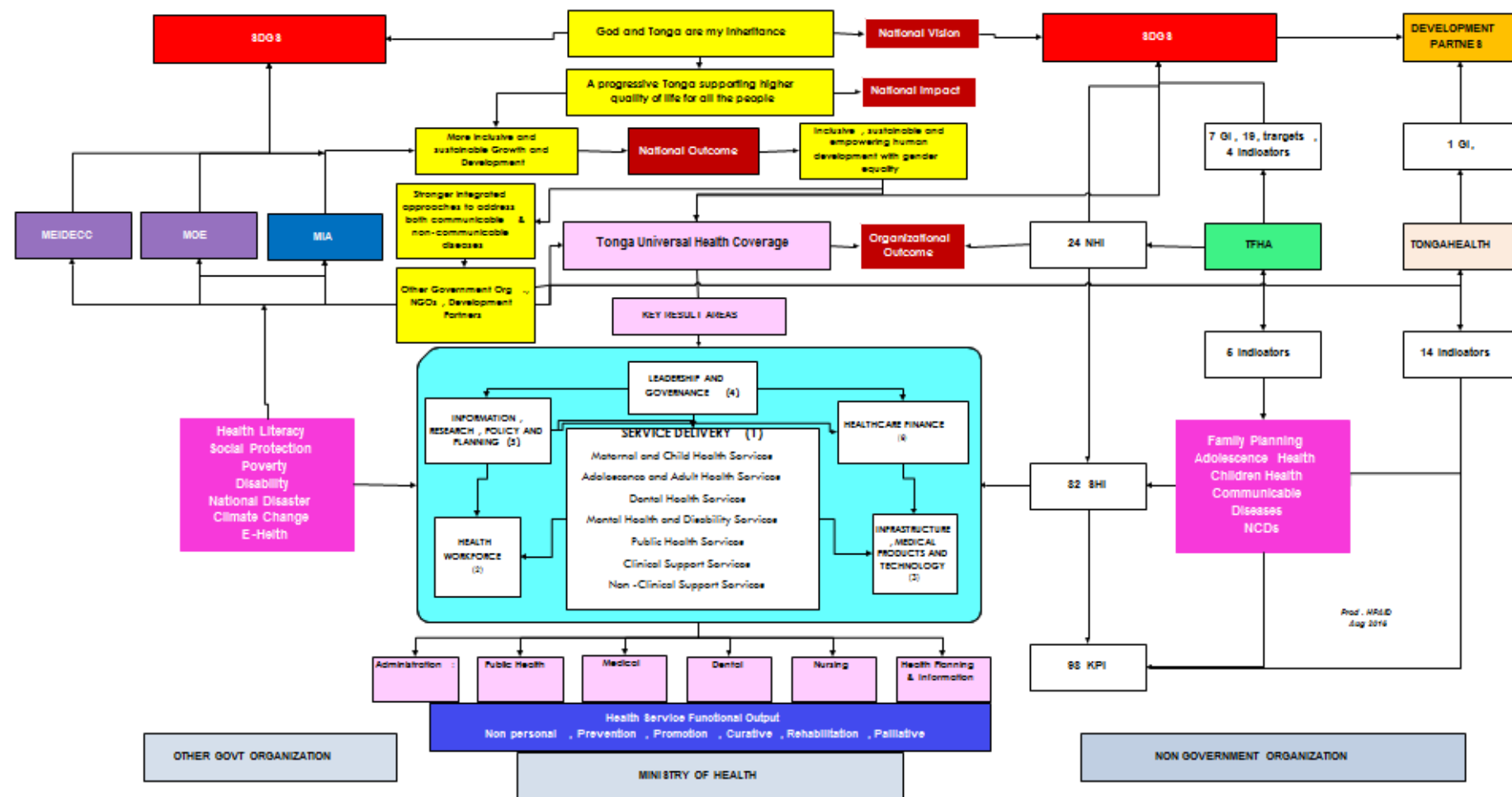
**Figure 11: Roles of Indicators on the Health System and their relationship to National, Regional, and Global Development Plans**



The Ministry of Health adopted a life-course M&E approach, as recommended by WHO, since it encompasses the individual needs over the life-course and the population based interventions (WHO, Regional SDG and UHC Monitoring Framework and Indicators, 2016).

It is the mandate of the Health Planning and Information division of the Ministry, in consultation with relevant authority of the Ministry, Government, Non-government organization, development partners, and stakeholders, to develop and implement the National Health Strategic Plan as well as a Monitoring and Evaluation System. The Ministry has 24 national health indicators and it is supported by 84 Strategic Indicators which cover the indicator's requirements for the concept of Universal Health Coverage, Sustainable Development Goals, and Healthy Islands. There are also Performance Management Indicators known as Dashboard Indicators at the operational/divisional/sectional level, as shown in the picture below.

Figure 12: Results Map with Health Indicators



A workshop was conducted with the Ministry's key stakeholders from Government and Non-Government Organizations, which included the Ministry of Finance and National Planning, Government Statistics Department, and the Tonga Family Health Association, to agree on the Results Map and how the M&E framework was to be embedded within this working relationship.

It shows three different levels of health indicators (24 National Health Indicators (NHI), 84 Strategic Health Indicators (SHI), and 90 Key Performance Indicators (KPI)). Those indicators are linked to the other indicators that are jointly delivered with NGOs such as Tonga Family Health Association and the Tonga Health Foundation. The relationship of these indicators, and mapping of how they relate to each development agenda, was a direct result of this meeting. In addition, the participants fully appreciate the importance of Universal Health Coverage which links to our health system priorities, structure, and functional outputs.

The results map shows our development agenda (left hand side) with other Government Organizations in the lifetime of our National Health Strategic Plan 2015-2020, which includes Tonga Family Life Education, Social Protection, Poverty, Disability, Natural Disaster, Climate Change, and e-Health.

Some other outputs, such as the Health Data Book, contains all the technical statistical data which does not make it to the Factsheet and Annual Report, as well as the detailed Data Collection Plan as summarized below.

**Figure 13: Population based Data Collection Plan for 2015-2030**

Mon/Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010												
2011												
2012												
2013												
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												
2026												
2027												
2028												
2029												
2030												
2031												

The 2016 report is the first National Health Report to provide the latest statistics on the National Health and Strategic Indicators, but is restricted to those where data sources are available.



## 5.7.3.2 Information and Research

### 5.7.3.2.1 Research Services

Health Research accomplished a series of milestones in 2016. Amongst the core functions of the Research Section are the management and monitoring of all health research proposals/applications submitted to the Ministry, the identification of health research needs, the strengthening of the research capacity of the Ministry, and the Management and Development of the Cancer Registry within the Ministry of Health.

This section provides the advisory and technical support in delivering a third year course, namely “Evidence based Practise”, for the Queen Salote School of Nursing. Students successfully completed this course as part of the key requirements for their graduation, held on the 3<sup>rd</sup> June 2016.

The recognition of the Ministry of Health Cancer Registry has been shared internationally through the World Cancer Declaration Report 2016 published and launched on the 4<sup>th</sup> November 2016. The contribution from Tonga toward this Global Cancer Report was facilitated and produced by the Health Research Officer, Mr. Sioape Kupu. The Health Research Officer and the Computer Operator Grade 3 participated in the one day Cancer Registration Symposium at Queensland, Australia, in April 2017 as part of our national contribution towards the Cancer Registry Hub.

This Cancer Registry Database collates suspected and confirmed case information from the Surgical, Medical, Obstetric/Gynaecology, Paediatrics, ENT, Dental, Laboratory and Radiology programs of the main hospitals, and there are also processes for obtaining cases from the other 3 outer island hospitals.

The system now has the capacity to collect data and to provide reports on incidence in graphs by sex, age, topography, morphology, basis of diagnosis, address/location (villages), date of death and primary cause of death (for cancer related deaths).

**Table 36: The most common (top 10) cancer types for females and males, 2016**

No.	Female	Male
1.	Breast	Trachea, Bronchus and Lung
2.	Corpus uteri	Other Skin
3.	Thyroid	Connective and Soft Tissue
4.	Cervix uteri	Rectum
5.	Uterus unspecified	Prostate
6.	Ovary	Colon
7.	Melanoma of skin	Bladder
8.	Stomach	Stomach
9.	Rectum	Lymphoid leukaemia
10.	Trachea	Bone

The Health Research Section supported the “First 1000 days” initiative by providing the baseline survey which was co-funded by the Tonga Health Foundation and the World Health Organization. It involved the training of 30 Reproductive Health Nurses in collaboration with Health Promotion Unit, data collection (July-September 2016 from 400 pregnant women), data cleaning, and production of the final report.

## ► Operational Research

The Ministry of Health participated as co-investigator in the regional study that re-analysed the STEPS Survey 2004 and 2012 for Tonga (Taylor, et al., 2016). This research examined the collected information on the blood specimens, glucose meter, blood glucose concentration and Type 2 Diabetes definition used. The STEPS Survey in Tonga used Accu-Chek Advantage, Roche and Accu-Chek Performa, Roche for 2004, and the 2012 STEPS Survey respectively. These devices measured blood glucose using Point of Care (POC) glucose meters that require a whole blood specimen but report glucose concentrations as equivalent to those in plasma.

For many decades nearly all point-of-care (POC) glucometers produced glucose readings in whole blood concentrations, from capillary blood samples (usually by finger stick). The glucose reading cut point that defines Type 2 Diabetes Mellitus (T2DM) in fasting patients from whole blood is 6.1 mmol/litre. However, when individuals have their blood glucose tested by their physician, pathology laboratories almost always measure blood glucose in plasma and report blood glucose results to the physician in plasma concentrations. The diabetes cut point for plasma glucose levels is 7.0 mmol/liter in those in a fasting state.

Up to around 2006-9 glucose concentrations measured by laboratories and POC glucose meters thus produced different readings based on different media. To prevent this situation, POC glucometer manufacturers redesigned their glucose meters to produce 'plasma-equivalent' readings corresponding to laboratory readings, as recommended by the International Federation of Clinical Chemistry and Laboratory Medicine in 2001 and 2005. Manufacturers report that since 2009 all new glucose POC devices are internally calibrated to produce plasma-equivalent readings. Consumers still using older glucometers are provided with plasma-calibrated test strips.

From the 2012 STEPS survey for Tonga, the prevalence of T2DM was reported to be 34.4%. When the 2012 Tonga STEPS data were analysed using the cut point of 6.1 mmol/litre (and/or those on diabetes medications) by the UNSW research group, this prevalence estimate was replicated. When the correct cut point of 7 mmol/litre is applied to those in a fasting state, and/or those on diabetes medications, the estimated prevalence of T2DM for Tonga in 2012 becomes 19.0%.

The incorrect fasting glucose cut point for T2DM was also used for the 2013 Samoa, and the 2011 Fiji STEPS surveys, and this issue possibly affects other recent (post 2009) STEPS surveys conducted in other Pacific countries.

Type 2 diabetes mellitus prevalence in adults aged 25–64 years in selected Pacific Island countries using whole blood and plasma glucose cut-off points from STEPwise approach to Surveillance (STEPS) (Taylor, et al., 2016)

**Figure 14: Type 2 diabetes mellitus prevalence in adults aged 25–64 years in selected Pacific Island countries**

STEPS report	Glucose meter used	Blood sample	Glucose meter output	Reported from STEPS	T2DM prevalence (%)	
					Re-analysis	
					≥6.1 mmol/L And/or T2DM medication	≥7.0 mmol/L
Fiji						
2002 <sup>1</sup>	Accu-Chek Advantage (Roche)	Venous	Whole blood	16.0 (12.9–19.1)	<b>16.5 (15.9–17.1)</b>	11.8 (10.4–13.1)
2011 <sup>2</sup>	Omnitest Plus (Braun)	Inferred capillary	Plasma	29.6 (26.5–32.6)	30.4 (28.5–32.3)	<b>15.6 (15.1–16.2)</b>
Long-term trend 1980–2011: +1.41 % per 5 years*						
Samoa						
2002 <sup>3</sup>	Accutrend GCT (Roche)	Capillary	Whole blood	21.5 (19.0–24.0)	<b>20.7 (18.8–22.6)</b>	10.8 (9.4–12.3)
2013 <sup>4</sup>	Accutrend Plus (Roche)	Inferred capillary	Inferred plasma	45.8 (41.6–50.1)	49.7 (47.2–52.1)	<b>24.3 (22.2–26.4)</b>
Long-term trend 1978–2013: +2.57 % per 5 years*						
Tonga						
2004 <sup>5</sup>	Accu-Chek Advantage (Roche)	Capillary	Whole blood	16.4 (11.0–21.9)	≥6.1 mmol/L only <sup>†</sup> <b>16.3 (13.0–19.7)</b>	≥7.0 mmol/L only <sup>†</sup> 9.1 (6.5–11.8)
					And/or T2DM medication	
					<b>22.4<sup>‡</sup> (19.3–25.5)</b>	15.2 <sup>‡</sup> (11.9–18.5)
2012 <sup>5</sup>	Accu-Chek Performa (Roche)	Capillary	Plasma	34.4 (31.5–37.3)	35.7 (33.7–37.7)	<b>19.0 (18.4–19.6)</b>
Long-term trend 1973–2012: +1.88 % per 5 years*						

Prevalence data show percentage prevalence with 95 % confidence intervals in parentheses.

Correct type 2 diabetes mellitus (T2DM) estimates are bolded.

Definitions of T2DM from STEPS survey reports were as follows: Fiji 2002, fasting blood glucose (FBG) ≥6.1 mmol/L or on T2DM medication or on a special prescribed diet from health worker<sup>1</sup>; Fiji 2011, FBG ≥6.1 mmol/L<sup>2</sup>; Samoa 2002, FBG ≥6.1 mmol/L and/or on T2DM medication<sup>3</sup>; Samoa 2013, FBG ≥6.1 mmol/L or on T2DM medication<sup>4</sup>; Tonga 2004, FBG ≥6.1 mmol/L only<sup>5</sup>; Tonga 2012, FBG ≥6.1 mmol/L or told they had T2DM by health worker or currently receiving T2DM medication.<sup>6</sup>

\*Corrected T2DM prevalence for Fiji,<sup>17</sup> Samoa,<sup>18</sup> and Tonga.<sup>19</sup>

<sup>†</sup>The reported 2004 Tonga STEPS survey did not include participants taking T2DM medication.

<sup>‡</sup>Estimated for 2004 Tonga STEPS survey by logistic regression derived from 2012 Tonga STEPS where T2DM (FPG ≥7.0 mmol/L and/or on T2DM medication) was modeled with fasting plasma glucose, age, and body mass index for each gender.

The Health Planning and Information Division also participated in other research projects:

1. Mrs. Fiona Langridge, PhD Candidate, Auckland University is studying Child morbidity as described by hospital admissions for primary school aged children in Tonga 2009–2013 (Draft in progress).
2. Dr. Colin Bell, Associate Professor, C-POND, Deakin University, is studying The Policy development process in relation to food-related policies in Tonga: A case study of the School Food Policy.
3. Prof. Richard Taylor, Associate Prof. Virginia Wisemen, University of New South Wales, London School of Hygiene and Tropical Medicine are studying the Comparative effectiveness and Cost effectiveness of interventions to control NCDs in Tonga.

### 5.7.3.3 Information and Communication Technology

#### ► Digital Health Project

The Asian Development Bank (ADB) deployed a Mission (the Mission) on the 22 August - 2 September 2016 to launch the SMS campaign under the mobile health (mhealth) demonstration project, review the

implementation of other project components, and finalise preparatory arrangements for the *Digital Health and e-Governance Project*.

The SMS Health Promotion Campaign was successfully launched in August 2016 with strong representation from Government and Non-Government Organizations including the Tonga Communication Corporation and Tonga Cable Limited.

These messages were designed to promote healthy nutrition and provide other health education for women, newborns, and young children, and it will support the Tonga NCD Health Strategy 2015-2020 through health promotion and by using mobile phones for behavioural change communication.

#### **Digital Health Component:**

The Mission met with several departments such as medical records, radiology, Pharmacy, and public health, as part of the consultation to understand how information on patients is collected and used. The need for an integration of the patient administration information with laboratory, radiology, msupply, and inventory management was well noted.

#### **Civil registration and vital statistics**

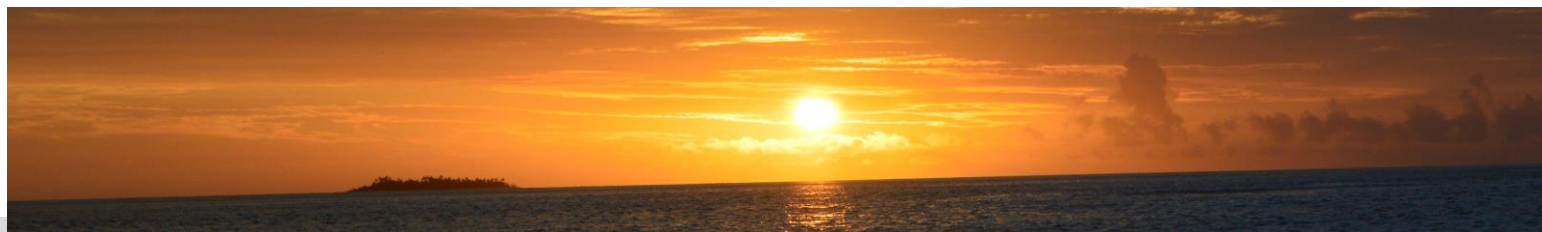
The Mission met with the Civil Registration and Vital Statistics Committee and representatives from the Secretariat for the Pacific Community to discuss the processes between birth and death notification and certification, and how they can be streamlined using ICT to support e-government.

It was found that there would be significant opportunity for better quality data by improving linkages between the occurrence of an event and formal documentation.

#### **Tentative components of the Digital Health Project**

At completion of the consultation and the discussion with key stakeholders, there were three main areas that were proposed for the Digital Health Project, namely e-governance architecture, digital health information systems, and e-population solutions.

- 1) e-governance architecture will support the business process in health and related sectors that could be enhanced by ICT. It will also determine the legislative and policy reforms required to enable an environment for a broader digital drive for public service delivery
- 2) The digital health information system will support a more effective hospital information system which is patient centric and will replace, where necessary, the current Hospital Information System
- 3) e-population systems will facilitate integrating information across ministries which will enable nurses to input birth and death notifications online, which will automatically trigger a birth and death certificate to be authorized by the Ministry of Justice.



## 6. CHALLENGES

### ► Barriers to the strengthening of Primary Health Care

Community Health Services have been identified as the key to aligning ourselves with the key requirements of Tonga Universal Health Coverage (Organizational Outcomes, NHSP, TSDF), Healthy Islands (Yanuca Declaration) as well as the Sustainable Development Goals.

Unfortunately, the issue of the under-utilization of Primary Health Care, which is mostly provided at the Community Health centres, is very common in many settings around the region. This is commonly driven by a combination of reasons, including the fact that the public prefer hospital care, people were underserved, and the centres had limited manpower, to name a few. WHO and member countries advocate for a decentralized model of care which can support primary health care and address equity issues. Tonga followed this concept by establishing 14 health centres in the rural areas of Tongatapu and remote islands as early as the 1980s.

Recently, the Ministry developed a Package of Essential Services to define the minimum services that will be available at each health facility. In addition, there is a special emphasis on providing appropriate health care services for the disabled and the aging. However, the successful implementation of this initiative will largely depend on the public receptiveness to making the best use of these services.

Defining the minimum essential health care services involves a more challenging journey of building the capacity and incentivise skilled Primary Health Staff, enforcing and maintaining the scope and quality of services consistently to the public.

Nevertheless, the Ministry has continued to extend our specialized services to the outer islands on a regular basis. In 2016, the Ministry wish to provide at least one specialized visit from each team to the outer islands. The resources available to hand as well as the availability of key staff and equipment allowed the followings visits to occur:

**Table 37: Specialized Visits to the outer islands**

No.	Specialized Team Name	No. of visit
1.	Dental (Prosthetic)	1
2.	Rheumatic Heart Disease Screening	1
3.	Mental Health	1

No.	Specialized Team Name	No. of visit
4.	Obstetrics & Gynaecology	1
5.	Nursing (Supervisory/Capacity Building)	1
6.	Biomedical Engineer/Maintenance	1
7.	Health Planning and Information	1
8.	Infection Control	1
9.	Emergency	1
10.	Laboratory Services	1
11.	Sustainable Development Goals	1
12.	Finance and Human Resource	1

The internal referral system also facilitated the medical evacuation of chronic patients from the outer islands and health centres who needed specialized care at Vaiola Hospital.

**Table 38: Internal Medical Referral, 2016**

No.	Referring Health Care Facility	Number of Referral
1	Prince Wellington Ngu Hospital	40
2	Niu'ui Hospital	3
3	Niu'eiki Hospital	1
4	Tu'akifalelei Health Centre	1
5	Likamonu Health Centre	
6	<b>TOTAL</b>	<b>45</b>

Source: Account Section

There are also other visits from and to the outer islands for many reasons including capacity building, maintenance, workshops and meetings during 2016.

**Table 39: Staff Visits from and to the Outer Islands**

Source of Funds	Gov't		UNFPA		WHO		DFAT		Total	
Island Group	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu
Vava'u	2	4	6	10	16	5	13	2	37	21
Ha'apai	1	4	6	8	7	5	20	2	34	19

Source of Funds	Gov't		UNFPA		WHO		DFAT		Total	
Island Group	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu	Visit from Tongata pu	Visit to Tongata pu
Eua		2	3	5	7	6	10	1	20	14
Niuas			2	2			0	1	2	3
<b>Total</b>	<b>3</b>	<b>10</b>	<b>17</b>	<b>25</b>	<b>30</b>	<b>16</b>	<b>43</b>	<b>6</b>	<b>93</b>	<b>57</b>

Source: Health Planning Section

In addition, there are cases that also need specialized care abroad. These are the details of overseas referrals for 2016:

**Table 40: Overseas Medical Referral, 2016**

No.	Name of Overseas Hospital	Number of Referral
1	Starship Hospital (NZ)	1
2	Mercy Ascot Hospital (NZ)	7
3	Shriners Hospital	9
4	Auckland Health District Board	8
5	Dr.Simi Lolohea	5
6	Capital & Coast DHB Wellington Hospital	1
7	Prince of Wales Hospital	2
8	Auckland Radiation Oncology	2
9	Pacific Eye Institute	2
	<b>Total</b>	<b>37</b>

Source: Account Section



## 7. CONCLUSION

The Ministry underwent a Health Reform guided by the Corporate Review conducted by a team of experts from the World Health Organization, Secretariat of the Pacific Community, and DFAT. Generally, this is part of comprehensive maintenance that will strengthen the Health System so it will become more dynamic and able to respond to the health challenges and development agenda in serving the health needs. It is also intended to be more inclusive in influencing the social determinants outside of the Health System.

One of the major shifts that started in 2016 is the aligning of the Ministry's organizational structure with the functional outputs as reflected in the Ministry's Corporate Plan 2017/18. Although, there are steps remaining before it will completely align and conform with key relevant expectations of the Health System Building Blocks and Universal Health Coverage, both the necessary strategic shift and sufficient political will is now in place.

This reform is re-enforced by the introduction of the Performance Management System for all the Government Ministries. It will clearly solidify the relationship and contribution of individual performance into sections, divisions and organizational common goals, mission and vision statements. The Ministry has woven this concept into the Health System Framework and linked it also to National (TSDF), Regional (Healthy Islands), and Global (SDGs) development frameworks. It may take some time for the full adoption of PMS requirements, however thus far it appears to be a good management tool for now and into the future.

In addition, the Nursing, Medical and Dental Practice Board undertook a policy review to strengthen its legislation and policy, and uplift the professional standards to a level that is comparable with the health needs and the international requirements. This task was conducted and led by the Ministry's staff in partnership with the office of the Attorney General and relevant professions from overseas institutions, such as Registrar of the New Zealand Medical Council, the University of Sydney, and so forth.

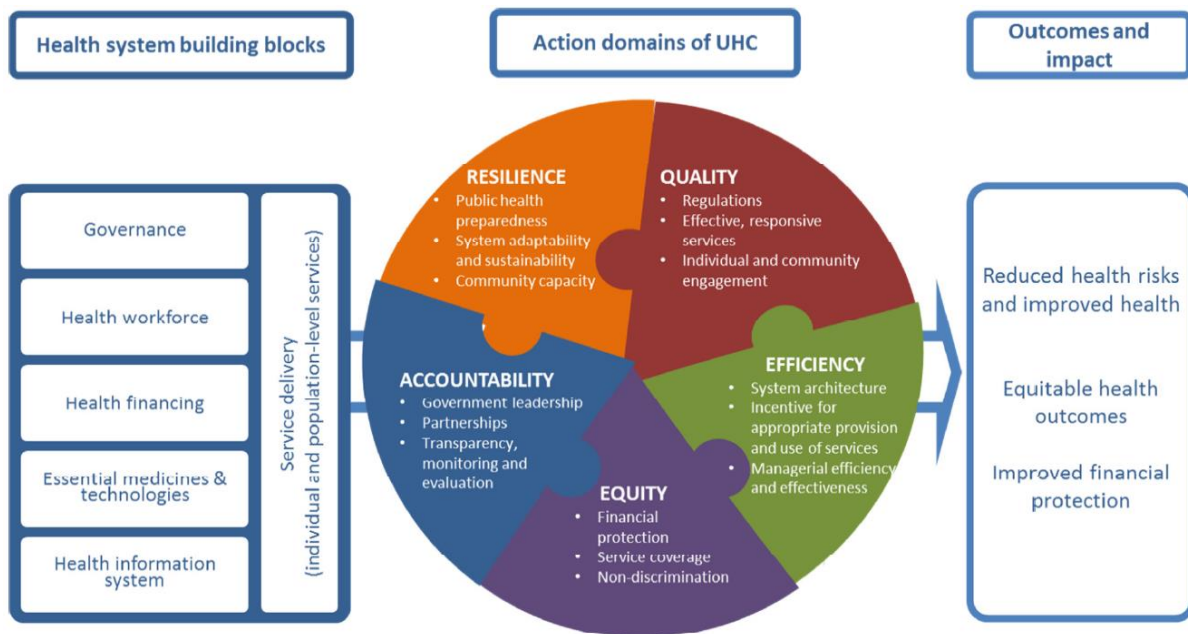
A detailed costing of the Health System is always difficult due to the complexities and the capacity of the Ministry. Its complexity lies in the interaction of many to many (instead of one to one) relationships that are difficult to isolate into single individual activities and costs per annum. This is part of the reason that health expenditure often exceeds the budget estimates and at times must request assistance from Contingency Funds. The Ministry is supported by the World Bank to conduct a comprehensive costing of key services that will assist the Ministry's budget preparation and to also provide key financial information that is needed for sound management and political decision making.

Despite all the challenges that faced in 2016, the execution of these initiatives will contribute to improving the quality of health care services rendered to the public, and will also increase Resilience, Accountability, Equity and Efficiency, which are key attributes of Universal Health Coverage. By doing that, we will eventually expect a reduction in health risks, improved health, and equitable health



outcomes regardless of where people reside. We also expect improved financial protection for vulnerable population groups.

**Figure 15: Health System Building Blocks and Action Domain of UHC**

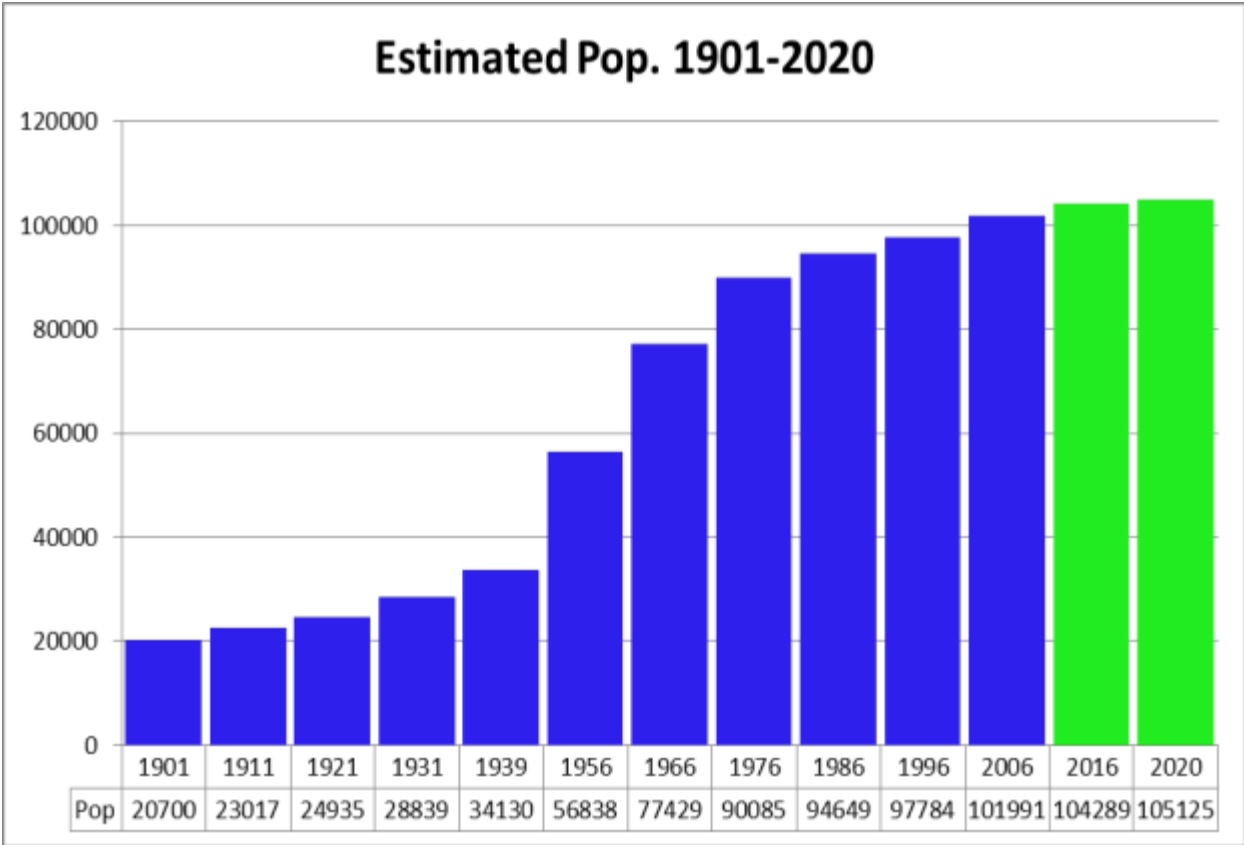




# 8. APPENDIX

## 8.1 Population

### 8.1.1 Population Estimates and Projection



Source: DHS 2012 and Health Planning Projection, 2016

### 8.1.2 Population by Sex, 2007 – 2016

YEARS	BOTH	MALE	FEMALE
2016	100,745	50,312	50,433
2015	103,283	52,220	51,062
2014	103,321	52,191	51,130
2013	103,302	52,132	51,169
2012	103,219	52,042	51,177
2011	103252	51,979	51,273
2010	103641	52,575	51,067
2009	103185	52351	50834
2008	102730	52127	50603
2007	102259	51898	50361

Source: **Tonga Population Census 2016 Demographic Analysis (Provisional)**

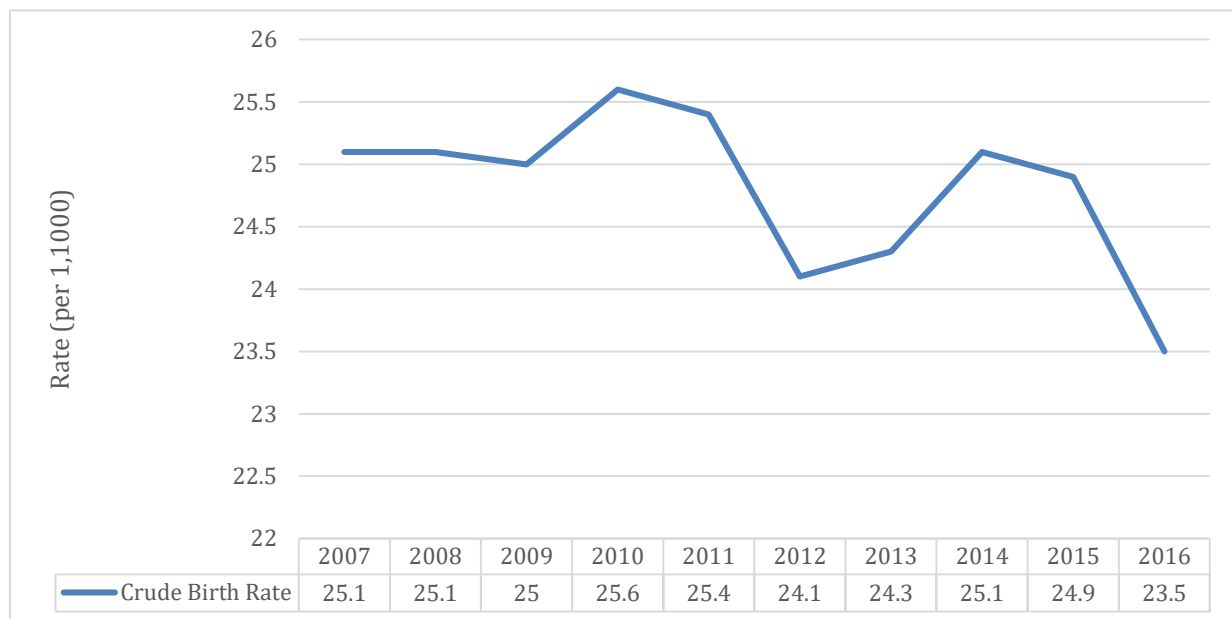
### 8.1.3 Population Breakdown by Sex and Age Group, 2016

AGE GROUPS	TOTAL	ACCUMULATE %	MALE	FEMALE
ALL AGES	100,651	100%	50,255	50,396
0 - 4	12,499	12%	6,440	6,059
5-9	12,153	12%	6,417	5,736
10-14	11,882	12%	6,139	5,743
15 - 19	10,502	10%	5,449	5,053
20 - 24	8,234	8%	4,106	4,128
25 - 29	6,629	7%	3,162	3,467
30 - 34	6,521	6%	2,994	3,527
35 - 39	5,645	6%	2,704	2,941
40 - 44	5,189	5%	2,473	2,716
45 - 49	5,181	5%	2,600	2,581
50 - 54	4,150	4%	2,129	2,021
55 - 59	3,254	3%	1,571	1,683
60 - 64	2,696	3%	1,297	1,399
65 - 69	2,030	2%	968	1,062
70 - 74	1,601	2%	735	866
75-79	2,444	2%	1,048	1,396
80+	41	0%	23	18

Source: **Tonga Population Census 2016 Demographic Analysis (Provisional)**

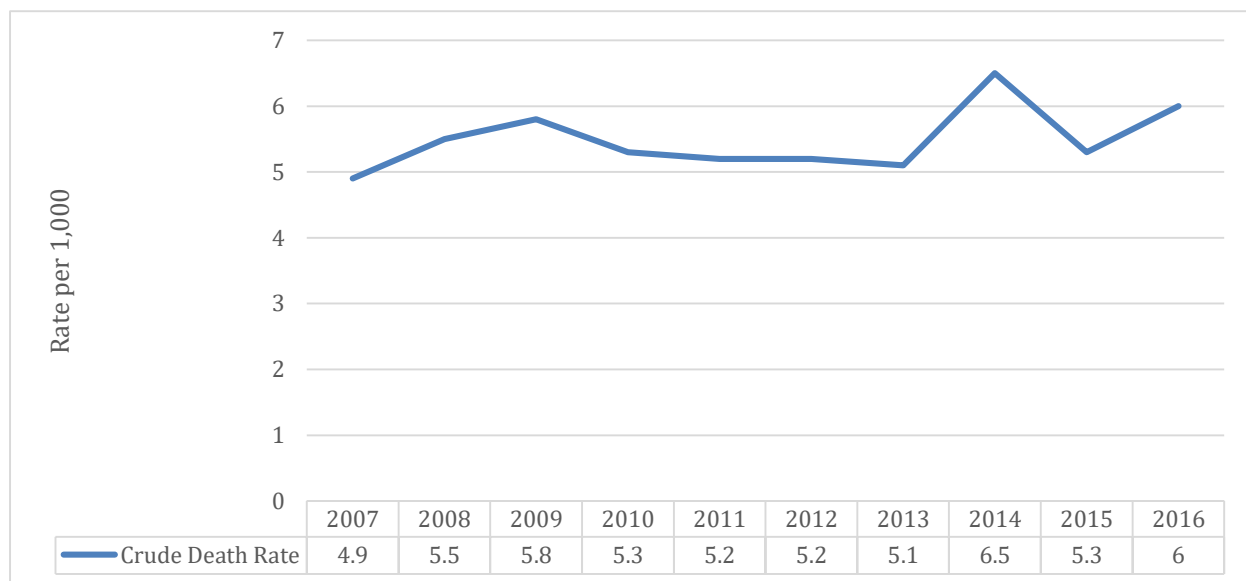
## 8.2 Vital Statistics

### 8.2.1 Crude Birth Rate (per 1,000), 2007-2016



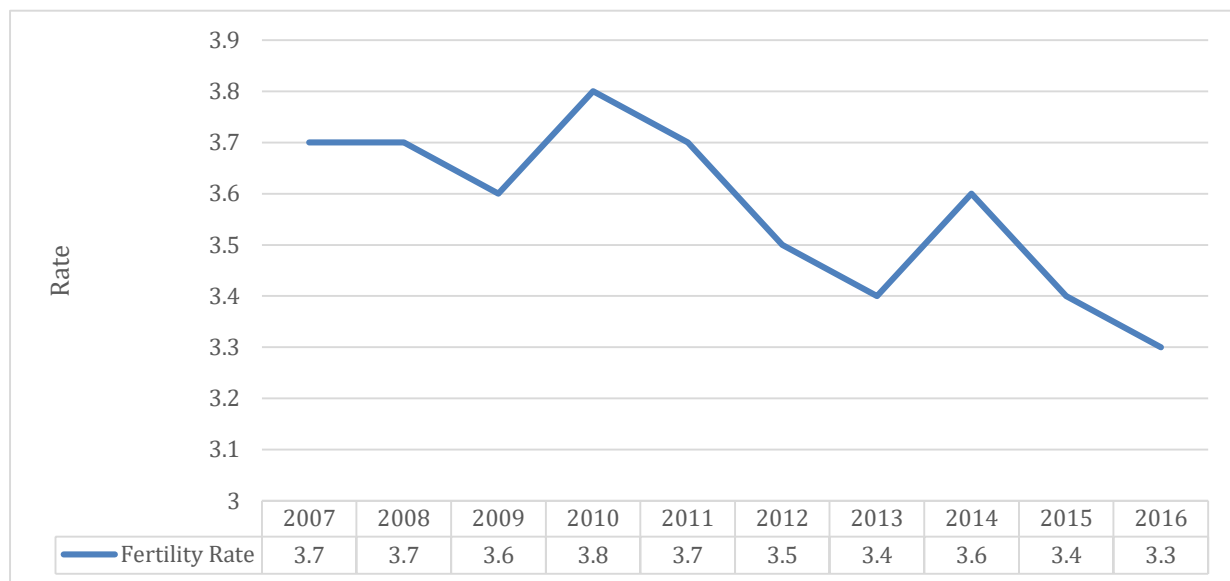
Source: Reproductive Health Services

### 8.2.2 Crude Death Rate (per 1,000), 2007-2016



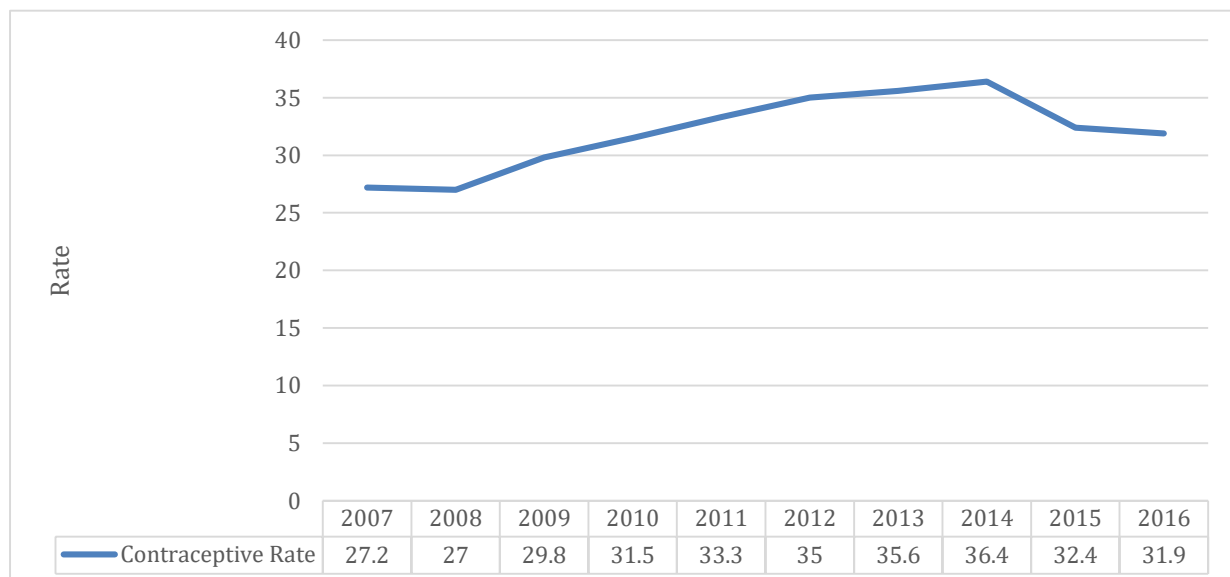
Source: Reproductive Health Services

### 8.2.3 Fertility Rate, 2006-2015



Source: Reproductive Health Services

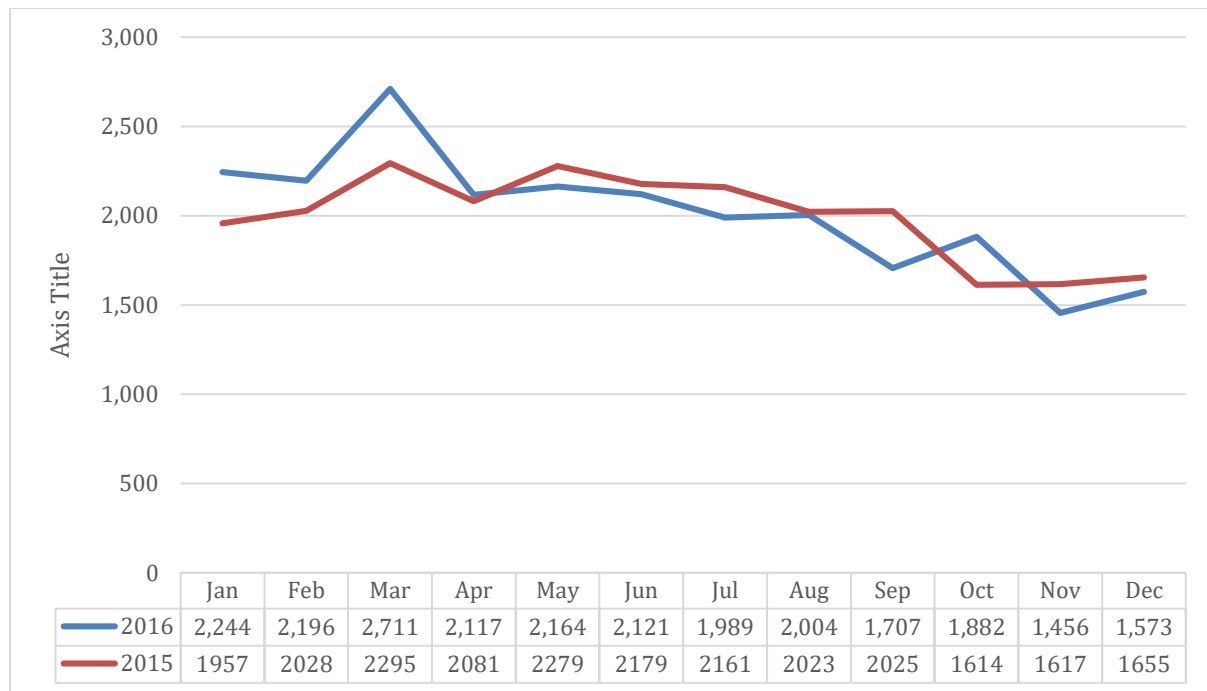
### 8.2.4 Contraceptive Rate, 2007-2016



Source: Reproductive Health Services

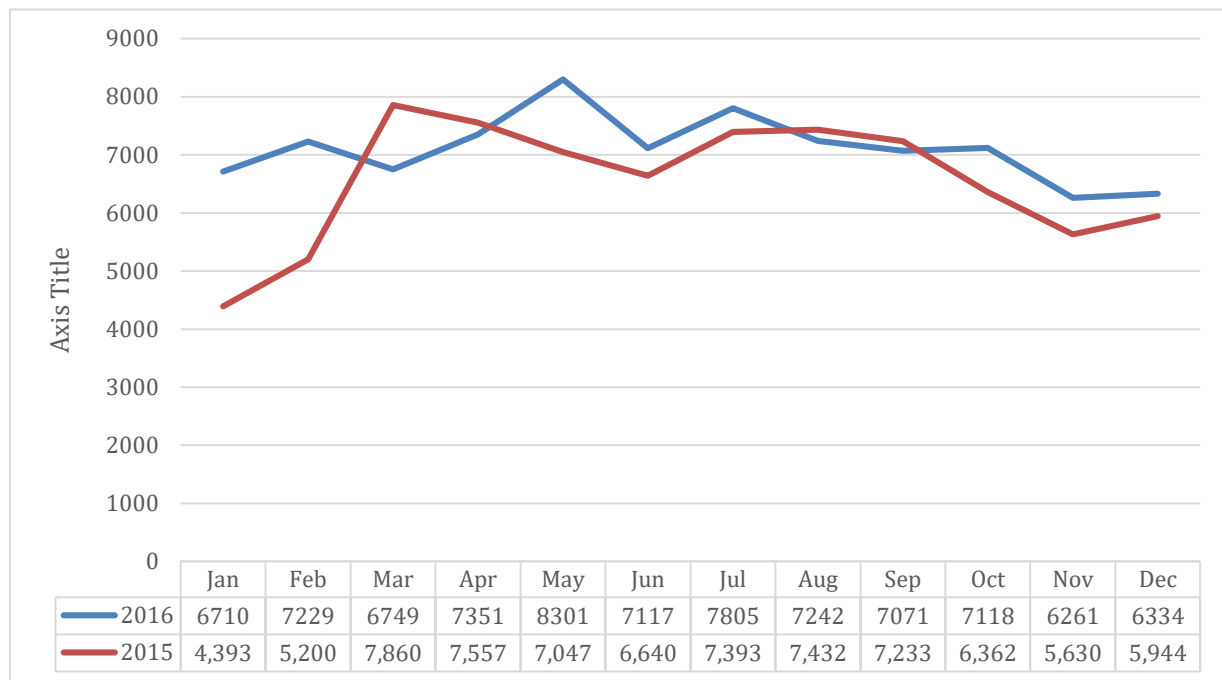
## 8.3 Service Delivery

### 8.3.1 Vaiola Hospital Admissions, 2015-2016



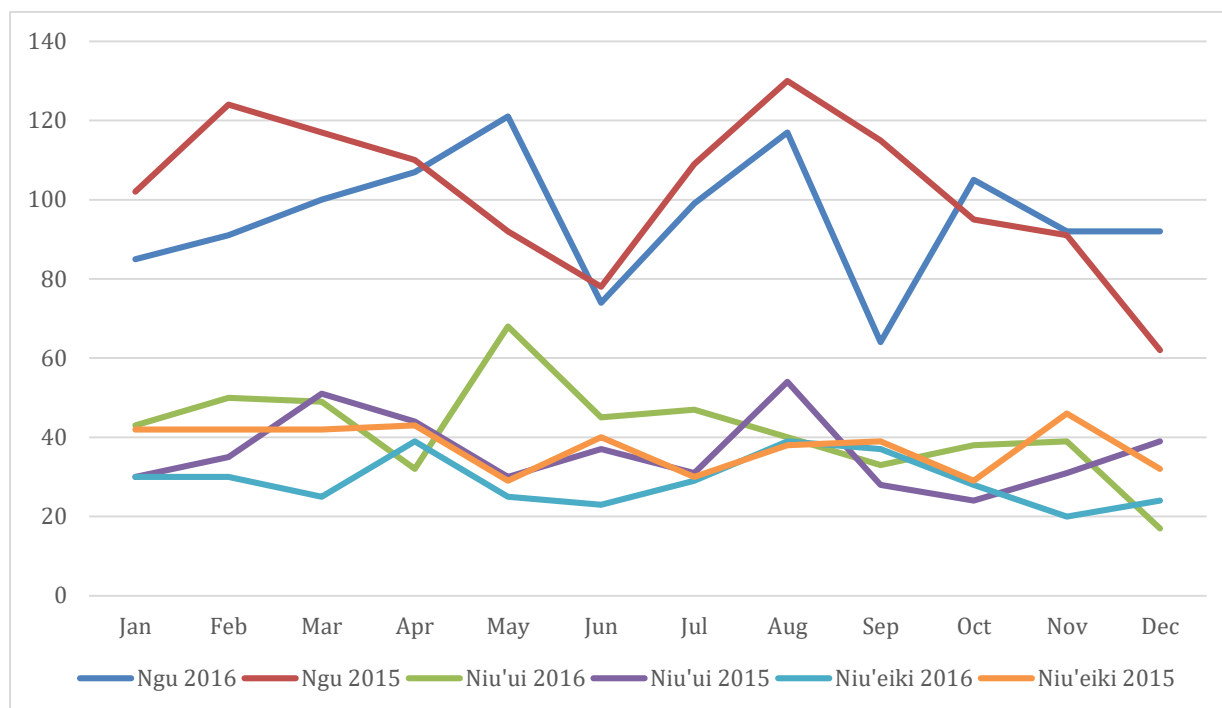
Source: Health Information and Medical Records Services

### 8.3.2 Vaiola Hospital Outpatients Visits, 2015-2016



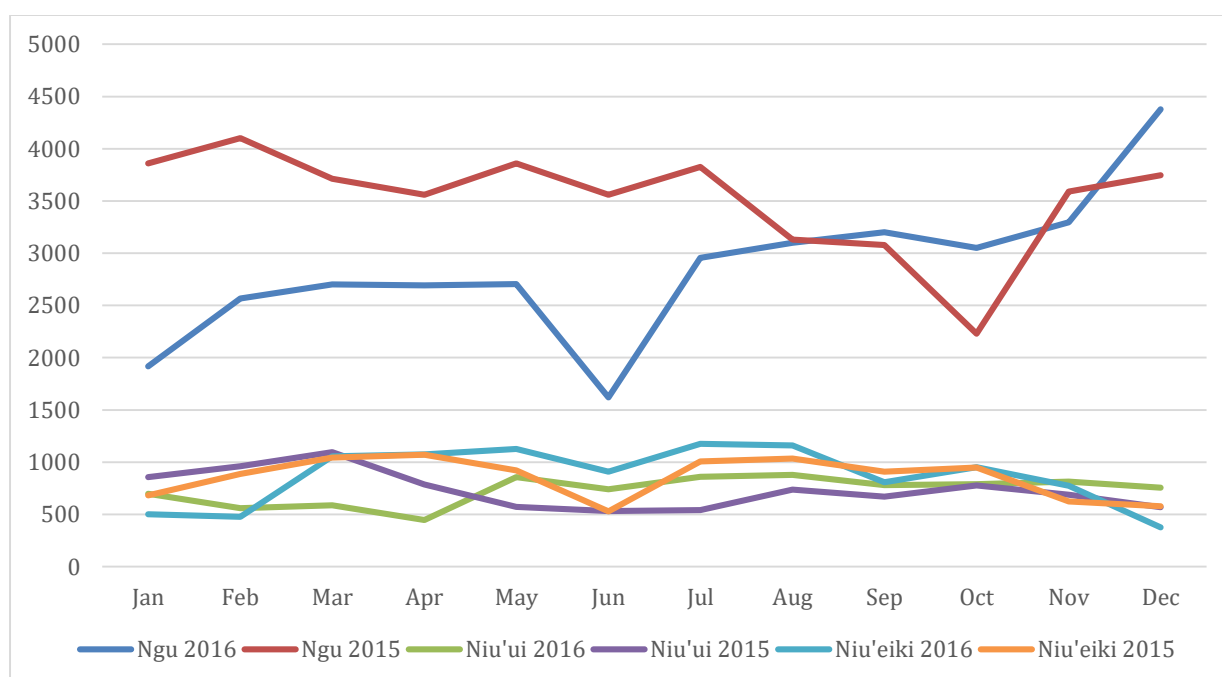
**Source:** Health Information and Medical Records Services

### 8.3.3 Hospital Admissions and Outpatient Visits (Outer Islands), 2015-2016



Source: Health Information and Medical Records Services

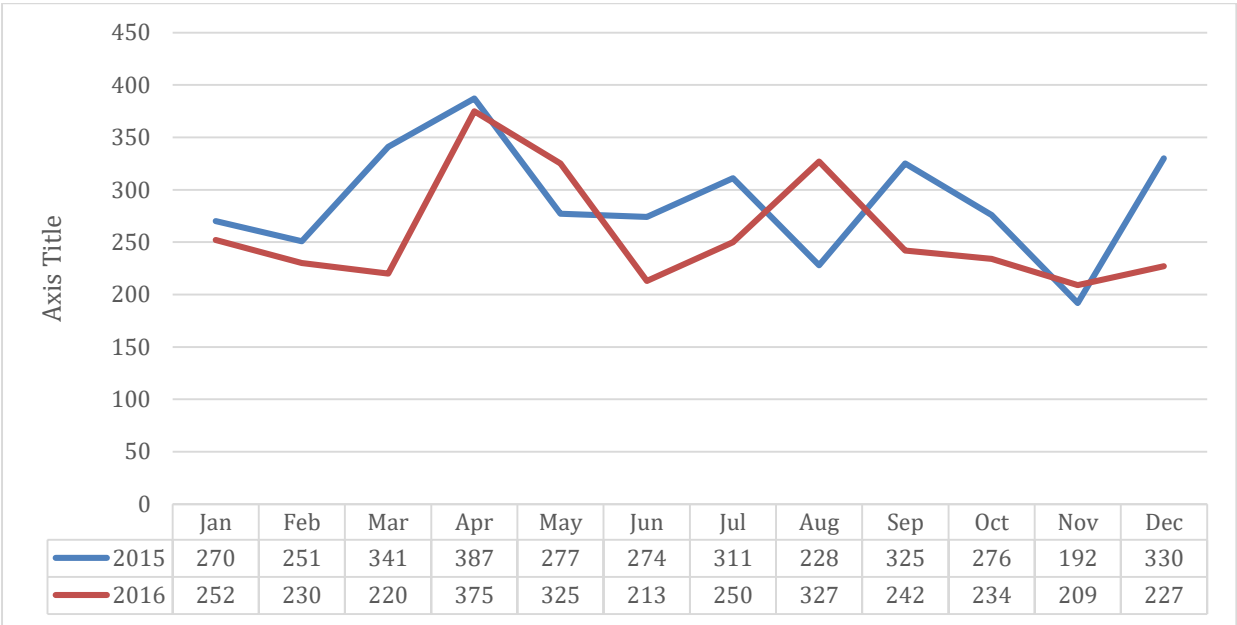
### 8.3.4 Outer Island Outpatients Visits, 2015-2016



Source: Health Information and Medical Records Services



8.3.5 Number of Surgical Operations, 2015-20116



Source: Health Information and Medical Records Services

## 8.3.6 Outpatient Special Clinic Attendance at Vaiola, 2016

Months	Attendance	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
Jan	Attended	130	170	208	127	171	0	806
	No Attendance	5	0	11	3	22	0	41
	<b>Total</b>	<b>135</b>	<b>170</b>	<b>219</b>	<b>130</b>	<b>193</b>	<b>0</b>	<b>847</b>
Feb	Attended	318	358	447	295	351	0	1,769
	No Attendance	20	0	17	0	26	0	63
	<b>Total</b>	<b>338</b>	<b>358</b>	<b>464</b>	<b>295</b>	<b>377</b>	<b>0</b>	<b>1,832</b>
Mar	Attended	328	391	568	393	362	0	2,042
	No Attendance	3	0	7	0	16	0	26
	<b>Total</b>	<b>331</b>	<b>391</b>	<b>575</b>	<b>393</b>	<b>378</b>	<b>0</b>	<b>2,068</b>
Apr	Attended	317	303	482	278	444	5	1,829
	No Attendance	0	0	0	0	0	0	0
	<b>Total</b>	<b>317</b>	<b>303</b>	<b>482</b>	<b>278</b>	<b>444</b>	<b>5</b>	<b>1,829</b>
May	Attended	233	352	370	272	306	0	1,533
	No Attendance	5	2	5	15	12	0	39
	<b>Total</b>	<b>238</b>	<b>354</b>	<b>375</b>	<b>287</b>	<b>318</b>	<b>0</b>	<b>1,572</b>
Jun	Attended	245	306	483	364	340	0	1,738
	No Attendance	0	0	0	0	0	0	0
	<b>Total</b>	<b>245</b>	<b>306</b>	<b>483</b>	<b>364</b>	<b>340</b>	<b>0</b>	<b>1,738</b>
Jul	Attended	663	798	842	732	782	0	3,817
	No Attendance	19	21	26	0	27	0	93
	<b>Total</b>	<b>682</b>	<b>819</b>	<b>868</b>	<b>732</b>	<b>809</b>	<b>0</b>	<b>3,910</b>
Aug	Attended	494	374	689	285	586	0	2,428
	No Attendance	1	4	0	0	0	0	5
	<b>Total</b>	<b>495</b>	<b>378</b>	<b>689</b>	<b>285</b>	<b>586</b>	<b>0</b>	<b>2,433</b>
Sep	Attended	339	297	468	313	468	0	1,885
	No Attendance	0	0	0	0	0	0	0
	<b>Total</b>	<b>339</b>	<b>297</b>	<b>468</b>	<b>313</b>	<b>468</b>	<b>0</b>	<b>1,885</b>
Oct	Attended	447	272	598	285	555	0	2,157
	No Attendance	0	0	0	0	0	0	0
	<b>Total</b>	<b>447</b>	<b>272</b>	<b>598</b>	<b>285</b>	<b>555</b>	<b>0</b>	<b>2,157</b>
Nov	Attended	433	367	630	281	510	0	2,221
	No Attendance	0	0	2	0	3	0	5
	<b>Total</b>	<b>433</b>	<b>367</b>	<b>632</b>	<b>281</b>	<b>513</b>	<b>0</b>	<b>2,226</b>
Dec	Attended	224	134	286	191	297	0	1,132
	No Attendance	0	2	0	0	0	0	2
	<b>Total</b>	<b>224</b>	<b>136</b>	<b>286</b>	<b>191</b>	<b>297</b>	<b>0</b>	<b>1,134</b>
Total		<b>4,224</b>	<b>4,151</b>	<b>6,139</b>	<b>3,834</b>	<b>5,278</b>	<b>5</b>	<b>23,631</b>

## 8.3.7 Hospital Admissions, 2016

Surgical Ward	Disc	Avg. LOS LOS	Beddays	BOR
TYPE 2 DM W FOOT ULCER DT MULT CAUSES	134	20.5	2746	18.8
OTHER AND UNSPECIFIED ABDOMINAL PAIN	44	2.6	116	0.8
UNSPECIFIED APPENDICITIS	33	34.8	1147	7.9
CELLULITIS OF LOWER LIMB	30	7.8	233	1.6
UNSPECIFIED INJURY OF HEAD	28	6.1	170	1.2
ACUTE APPENDICITIS W GENL PERITONITIS	25	8.2	206	1.4
CUTAN ABSCESS FURUNCLE & CARBUNCLE LIMB	20	6.0	120	0.8
IRREGULAR MENSTRUATION UNSPECIFIED	18	2.5	45	0.3
OTH & UNSP INTESTINAL OBSTRUCTION	16	5.1	81	0.6
ACUTE TONSILLITIS UNSPECIFIED	15	1.5	23	0.2
Others	1,012	6.7	6795	46.5
<b>Total</b>	<b>1,375</b>	<b>8.5</b>	<b>11682</b>	<b>80.0</b>

Paediatrics Ward	Disc	Avg. LOS	Beddays	BOR
PNEUMONIA UNSPECIFIED	252	3.8	948	8.4
DIARRH & GASTROENTERITIS PRES INFECTIOUS	134	2.4	328	2.9
ACUTE BRONCHIOLITIS UNSPECIFIED	86	2.8	238	2.1
VIRAL INFECTION UNSPECIFIED	84	2.3	195	1.7
FEBRILE CONVULSIONS	66	1.8	122	1.1
ASTHMA UNSPECIFIED	49	2.5	121	1.1
CUTAN ABSCESS FURUNCLE & CARBUNCLE LIMB	32	7.0	225	2.0
INFLUENZA W PNEUM VIRUS NOT IDENTIFIED	25	4.6	114	1.0
NOXIOUS SUBSTANCE EATEN AS FOOD UNSP	24	1.3	30	0.3
STATUS ASTHMATICUS	22	1.9	41	0.4
<b>Total</b>	<b>774</b>	<b>30.3</b>	<b>2362</b>	<b>20.9</b>

<b>Obstetrics Ward</b>	<b>Disc</b>	<b>Avg. LOS</b>	<b>Beddays</b>	<b>BOR</b>
SINGLETON BORN IN HOSPITAL	1,895	1.2	2362	10.8
SINGLE SPONTANEOUS DELIVERY	1,867	2.1	3861	17.6
SINGLE DELIVERY BY CAESAREAN SECTION	226	5.6	1260	5.8
UNSP INFECTN URINARY TRACT IN PREGNANCY	65	2.2	145	0.7
PRETERM DELIVERY	37	9.3	345	1.6
SPONT ABORTION INCOMP OTH/UNSP COMP	36	1.7	60	0.3
TWIN BORN IN HOSPITAL	33	2.0	66	0.3
SPONT ABORTN COMPL UNSP W UNSP COMP	32	1.8	57	0.3
DM ARIS AT / AFT 24 WK GEST NONINSLN TRT	31	2.1	65	0.3
POSTPRT CARE UNPLANNED OUT OF HOSP DELV	26	2.4	62	0.3
Others	429	3.3	1422	6.5
<b>Total</b>	<b>4,677</b>	<b>2.1</b>	<b>9705</b>	<b>44.3</b>

<b>Medical Ward</b>	<b>Disc</b>	<b>Avg. LOS</b>	<b>Beddays</b>	<b>BOR</b>
PNEUMONIA UNSPECIFIED	80	4.9	388	2.7
NONINFECT GASTROENTERITIS & COLITIS UNSP	57	3.7	210	1.4
CONGESTIVE HEART FAILURE	48	4.3	208	1.4
COPD WITH ACUTE EXACERBATION UNSPECIFIED	47	4.3	200	1.4
COPD WITH ACUTE LOWER RESP INFECTION	41	5.2	213	1.5
CELLULITIS OF LOWER LIMB	36	6.3	228	1.6
SEPSIS, UNSPECIFIED	36	5.2	187	1.3
URINARY TRACT INFECTION SITE NOT SPEC	34	5.1	175	1.2
CEREB INFARCTION DT THROMBOSIS CEREB ART	33	4.9	162	1.1
GASTROINTESTINAL HAEMORRHAGE UNSP	32	4.6	148	1.0
Others	914	5.3	4817	33.0
<b>Total</b>	<b>1,358</b>	<b>5.1</b>	<b>6936</b>	<b>47.5</b>

Special Care Nursery Unit	Disc	Avg. LOS	Beddays	BOR
NEONATAL JAUNDICE UNSPECIFIED	33	4.5	149.0	4.1
OTHER LOW BIRTH WEIGHT 1500 - 2499G	26	7.8	202.0	5.5
OTH PRET INFNT >=32 BUT <37 COMPL WK	24	17.3	416.0	11.4
ABO ISOIMMUNISATION OF FETUS AND NEWBORN	16	4.4	71.0	1.9
NEONATAL ASPIRATION OF MECONIUM	16	5.0	80.0	2.2
TRANSIENT TACHYPNOEA OF NEWBORN	13	4.8	63.0	1.7
SINGLETON BORN IN HOSPITAL	7	2.6	18.0	0.5
BACTERIAL SEPSIS OF NEWBORN UNSPECIFIED	5	4.2	21.0	0.6
OTH PRET INFNT >=28 BUT <32 COMPL WK	5	48.8	244.0	6.7
DISTURB NEWBORN TEMP RG UNSP	3	3.7	11.0	0.3
Others	36	8.5	307.0	8.4
<b>Total</b>	<b>184</b>	<b>8.6</b>	<b>1,582.0</b>	<b>43.3</b>

### 8.3.8 Psychiatric Ward total admission by DIAGNOSES for the year 2016:

CASES	NUMBER
Schizophrenia	76 (39.8%)
Schizoaffective Disorder	20 (10.5%)
Bipolar Affective Disorder	34 (17.8%)
Acute and transient psychotic disorder	1
Other Non-Organic Psychotic Disorder	9 (4.7%)
Delusional Disorder	1
Dementia of Alzheimer's disease	2
Other Mental Disorder due to brain damage and dysfunction and physical disease	1
Mental Retardation	4
Mental and behavioural disorder due to use of alcohol	3
Mental and behavioural disorder due to use of cannabinoids	4
Conduct disorder	1
Mental and behavioural disorder due to Psychoactive substance use	3
Adjustment disorder with parasuicidal act	1
Adjustment disorder	14 (7.3%)

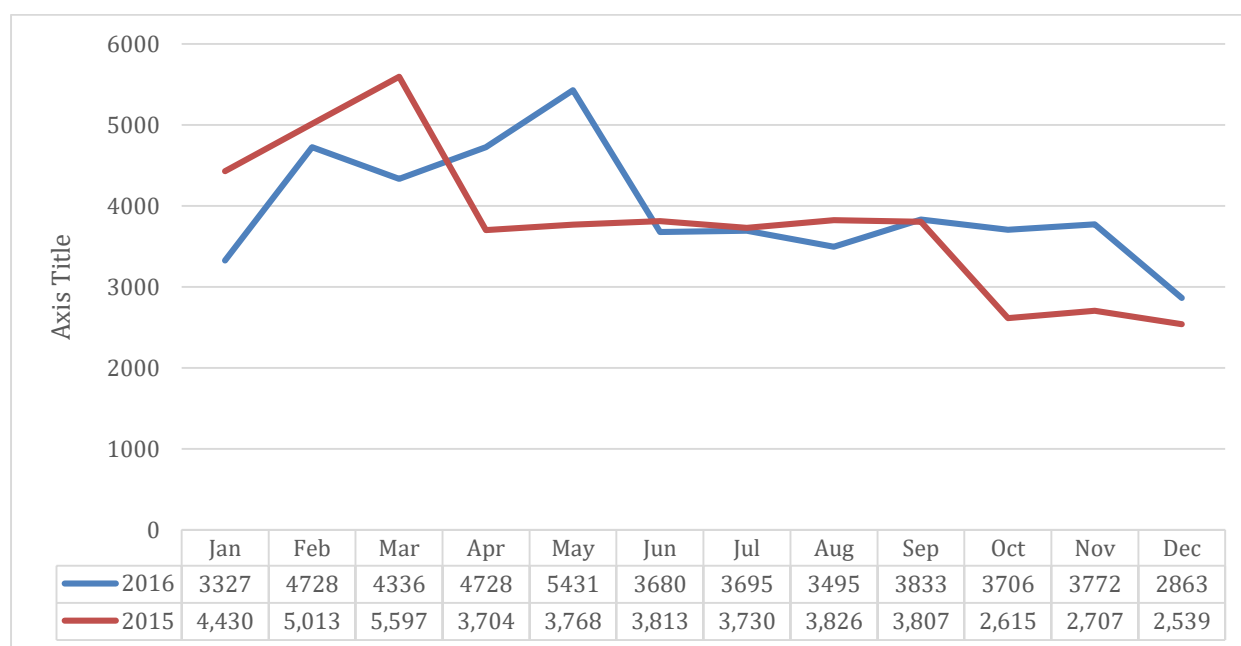
CASES	NUMBER
Recurrent depressive disorder	2
Manic Episode	2
Mental Retardation and Bipolar affective disorder (comorbidity)	4
Other Non-organic Psychotic Disorder and Dissocial Personality Disorder	2
Other disorders of adults personality and behavior	1
Mental Disorder Not Otherwise Specified (NOS)	5
Unspecified Mood Disorder	1
Problem in relationship with parents	1
<b>TOTAL ADMISSION</b>	<b>192</b>
Number of New cases	39
Number of Re-admission	126
Number of incidents of Extrapyrimal Side Effects (EPS) due to psychotropic medications	72
Number of Epileptic cases associated with psychiatric disorders	6
Number of cases of Persons with Physical Disabilities	2
Number of cases of Persons with Psychosocial Disabilities	65
A total cases of Persons with Disabilities	62
Number of admissions with significant Substance Related Disorder (not including smoking)	38 + 10 = 48 (25.1%)
Number of patients who are residing in the psychiatric unit indefinitely	17
Male to Female ratio of admission	3:1

### 8.3.9 Community Health Centres, Tongatapu (2015, 2016)

Health Centre Name	Total Consultation		% increased	Average per day	
	2015	2016		2015	2016
Vaini	6719	7606	13%	24	27
Mu'a	10339	13303	29%	37	47
Kolonga	5596	5064	-10%	20	18
Fua'amotu	5737	5578	-3%	20	20
Houma	4635	5562	20%	16	20
Nukunuku	6254	5109	-18%	22	18
Kolovai	6269	5372	-14%	22	19
Total	45549	47594	4%	162	169

Source: Community Health Services

### 8.3.9.1 Monthly Consultation at the Community Health Centres, Tongatapu (2015, 2016)



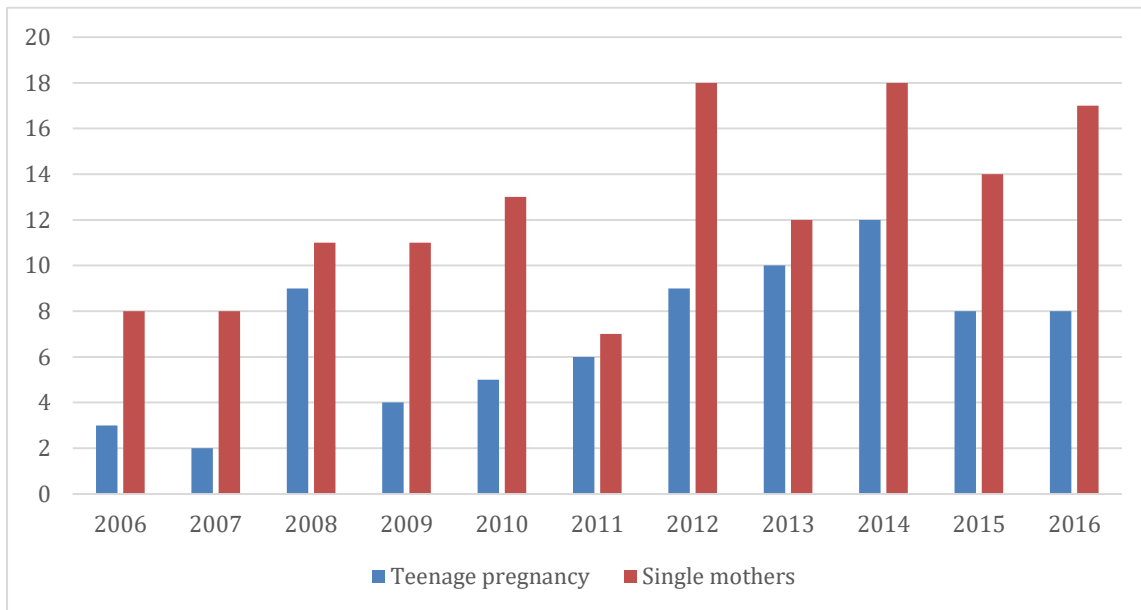
Source: Community Health Services

### 8.3.9.2 Antenatal Clinic Attendance (New) by Trimester and District, 2016

TRIMESTER	TONGA		TT		VV		HP		'EUA		NIUA'S	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Early (12 weeks)	138	5.6	64	3.4	24	7.2	23	19	13	10	12	63.1
I (13-20 weeks)	562	23	394	20.8	86	25.9	40	34	46	35.1	4	21
II (21-32 weeks)	1197	49	947	50.2	154	52.4	40	34	63	48.1	2	10.5
III (33+)	520	21.2	453	24	46	13.9	13	11	9	7	1	5.3
<b>No Booking</b>	33	1.3	<b>29</b>	1.5	2	0.6	2	2	-			
<b>TOTAL</b>	<b>2450</b>		<b>1887</b>		<b>312</b>		<b>118</b>		<b>131</b>		<b>19</b>	

Source: Reproductive Health Services

### 8.3.9.3 Teenage pregnancy and Single Mothers, 2016



Source: Reproductive Health Services



## 8.3.9.4 Immunization Programme Coverage, 2016

Vaccination	Whole Kingdom		Imm%	Tongatapu		Vava'u		Ha'apai		Eua		Niuas	
	Tot.	Imm.		Tot.	Imm.	Tot.	Imm.	Tot.	Imm.	Tot.	Imm.	Tot.	Imm.
BCG 1	2554	2552	99.9%	1973	1972	320	320	130	130	107	106	24	24
Polio 1	2575	2575	100.0%	1973	1973	320	320	132	132	127	127	23	23
Polio 2	2443	2438	99.8%	1868	1866	297	295	134	133	120	120	24	24
Polio 3	2265	2261	99.8%	1725	1721	280	280	122	122	112	112	26	26
HEP B	2306	2302	99.8%	1654	1646	320	320	130	130	107	107	24	24
DPT/HIB/Hep B 1	2256	2248	99.6%	1868	1866	320	320	132	132	127	127	23	23
DPT/HIB/Hep B 2	2443	2438	99.8%	1725	1721	297	295	134	133	120	120	24	24
DPT/HIB/Hep B 3	2265	2261	99.8%	1654	1646	280	280	122	122	112	112	26	26
MR 1	2347	2334	99.4%	1743	1730	372	371	149	147	127	126	45	44
MR 2	2355	2337	99.2%	1740	1729	335	333	125	123	119	119	33	32
DPT 4	2348	2332	99.3%	1740	1729	335	333	125	123	119	119	29	28
IPV	2254	2243	99.5%	1654	1646	280	280	122	122	112	112		
<b>Total</b>	<b>28411</b>	<b>28321</b>	<b>99.7%</b>	<b>21317</b>	<b>21245</b>	<b>3756</b>	<b>3747</b>	<b>1557</b>	<b>1549</b>	<b>1409</b>	<b>1407</b>	<b>301</b>	<b>298</b>

Source: Reproductive Health Section

## 8.3.9.5 Contraceptive, 2016

AGE GROUP	IUD	PILLS		Depo	Condom		TL	Vas	Jadelle	Natural Method	TOTAL	
		C	M		M	F					No.	%
Below 20	3	5	4	43	11		1		64	4	135	2%
20 – 24	52	46	68	367	94	3	23		200	41	894	11%
25 – 29	144	88	112	552	196	2	97		209	96	1496	18%
30 – 34	215	117	97	670	206		282	2	213	148	1950	23%
35 - 39	198	95	59	418	147	1	471	2	122	150	1663	20%
40 - 44	155	50	22	239	89		543		47	102	1247	15%
45 +	136	30	11	131	138		504	1	8	74	1033	12%
<b>TOTAL</b>	903	431	373	2420	881	6	1921	5	863	615	8418	100%
<b>%</b>	<b>11%</b>	<b>5%</b>	<b>4%</b>	<b>29%</b>	<b>10%</b>	<b>0%</b>	<b>23%</b>	<b>0%</b>	<b>10%</b>	<b>7%</b>	<b>100%</b>	

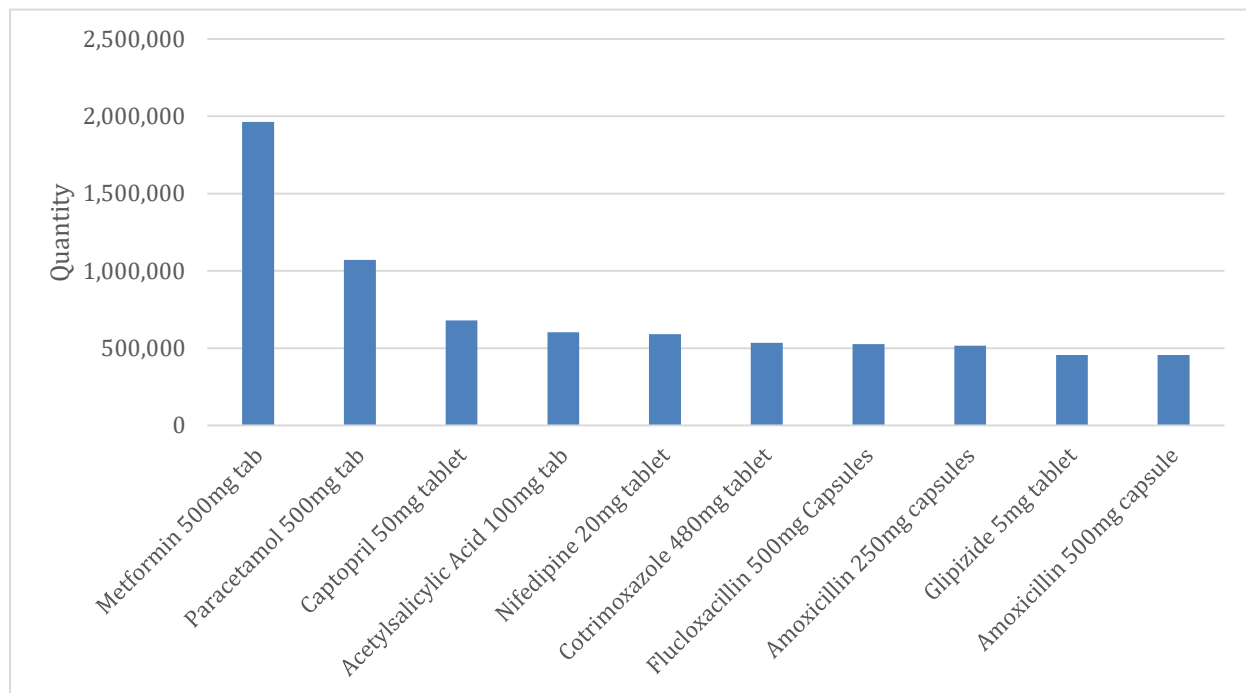
Source: Reproductive Health Section

### 8.3.10 Pharmacy Services

#### 8.3.10.1 Number of prescriptions and items dispensed from each pharmacy (Vaiola Hospital), 2016

Month	General Outpatient Pharmacy			Clinic Pharmacy			Inpatient Pharmacy		
	No. Pres	Quantity	Value	No. Pres	Quantity	Value	No. Pres	Quantity	Value
Jan	9,898	323,898	\$ 35,989.32	3,039	560,785	\$ 41,268.62	204	22,524	\$ 2,115.58
Feb	14,637	278,748	\$ 41,275.36	3,153	478,814	\$ 42,146.47	229	15,732	\$ 1,432.18
Mar	10,147	293,134	\$ 64,142.64	3,581	523,667	\$ 37,043.33	328	27,212	\$ 3,345.97
Apr	10,198	274,433	\$ 35,904.52	3,476	508,409	\$ 54,323.19	315	28,548	\$ 3,236.33
May	12,777	369,145	\$ 49,709.42	3,814	556,728	\$ 71,850.72	337	32,534	\$ 5,193.85
Jun	11,391	340,651	\$ 33,971.17	3,465	600,519	\$ 67,027.36	279	30,744	\$ 2,826.49
Jul	11,017	341,102	\$ 66,911.31	3,130	562,057	\$ 50,830.95	300	27,105	\$ 3,556.04
Aug	11,898	404,466	\$ 69,057.31	3,400	604,568	\$ 63,838.60	374	30,196	\$ 3,571.83
Sep	14,346	311,419	\$ 33,951.90	3,441	626,120	\$ 69,588.37	298	31,867	\$ 4,446.05
Oct	9,925	462,768	\$ 45,577.75	3,558	639,607	\$ 40,705.97	240	25,926	\$ 2,382.39
Nov	8,450	538,125	\$ 46,828.32	3,599	655,405	\$ 40,007.27	221	21,145	\$ 1,793.64
Dec	8,354	559,262	\$ 48,425.96	3,287	529,044	\$ 34,689.89	245	27,370	\$ 2,945.85
<b>Total</b>	<b>133,038</b>	<b>4,497,151</b>	<b>\$571,744.98</b>	<b>40,943</b>	<b>6,845,723</b>	<b>\$613,320.74</b>	<b>3,370</b>	<b>320,903</b>	<b>\$36,846.20</b>

### 8.3.10.2 Leading (10) drugs consumption at Vaiola, 2016



## 8.3.11 Ophthalmology Services

Services	2013			2014			2015			2016		
	F	M	Total	F	M	Total	F	M	Total	F	M	Total
No Diabetic Retinopathy	776	350	1,126	992	469	1,461	825	397	1,222	824	306	1130
Review	721	580	1,301	927	680	1,607	382	395	777	485	673	1158
Conjunctivitis	331	292	623	430	367	797	445	341	786	314	347	661
Diabetic Retinopathy	371	179	550	410	187	597	392	166	558	470	216	686
Cataract	317	251	568	349	326	675	222	212	434	367	385	752
Presbyopia	213	172	385	466	310	776	262	164	426	373	248	621
Refraction	321	221	542	264	178	442	368	188	556	598	355	953
Pterygium	84	74	158	106	79	185	116	89	205	112	56	168
Routine Test	104	78	182	70	50	120	40	28	68	128	191	319
Contusions Eye Injury	39	157	196	12	26	38	4	8	12	2	32	34
Argon Laser for Retinopathy	76	34	110	78	28	106	50	42	92	41	28	69
Corneal Ulcer	28	53	81	38	97	135	46	109	155	35	108	143
Traumatic Eye Injury	9	28	37	25	94	119	22	95	117	24	19	43
Cataract Operation	4	6	10	73	69	142	11	14	25	16	30	46
Minor Surgery	37	34	71	33	18	51	12	9	21	4	1	5
Lucentis Injection	10	4	14	10	17	27	31	30	61	51	65	116
Uveitis	16	20	36	2	8	10	2	2	4	2	8	10
Other Injury		2	2	10	58	68	13	24	37	10	10	20
Glaucoma	12	6	18	4	20	24	24	12	36	4	2	6
Major Surgery	13	2	15	3	8	11		2	2	2	0	2
Yag for Capsulotomy		2	2	8	6	14	2		2	2		2
ExcChalazion				8	4	12	2	2	4	2	8	10
Exc Pterygium				8	3	11	4		4	2	0	2
Repair Perforation Eye							2		2	0	4	4
Others	259	219	478	1,060	843	1,903	1,019	807	1,826	852	699	1551
<b>Grand Total</b>	<b>3,741</b>	<b>2,764</b>	<b>6,505</b>	<b>5,386</b>	<b>3,945</b>	<b>9,331</b>	<b>4,296</b>	<b>3,136</b>	<b>7,432</b>	<b>4720</b>	<b>3791</b>	<b>8511</b>

## 8.3.12Dental Services

Dental Services	2009	2010	2011	2012	2013	2014	2015	2016
Caries - Extraction	5,440	6,360	6,457	5,339	5,371	5,452	3,939	5,989
Temporary Filling	2,933	3,229	3,068	2,185	3,409	3,241	2,351	2,961
Oral Hygiene Instruction	1,689	1,661	1,797	1,711	2,064	3,109	1,660	2,567
Perio - Extraction	1,663	1,657	1,601	1,379	1,385	1,272	1,072	1,702
Composite Amalgam	975	1,694	1,493	843	1,546	1,137	637	386
Antibiotic Therapy	1,078	1,198	1,220	1,006	1,225	1,037	781	1,153
GIC	372	1,025	1,091	564	611	953	470	994
Secondary Endo Treat - Re-instrumentation	359	756	732	588	783	647	436	563
Secondary Endo Treat - Pulp Ext & Canal	343	571	579	386	723	724	575	839
Simple Amalgam	571	594	680	494	620	482	335	549
Compound Amalgam	626	396	440	342	551	464	333	386
Scaling	223	299	287	277	540	810	585	756
Secondary Endo Treat - Obturation	286	379	437	337	600	470	346	436
X-Rays	600	332	560	318	132	579	195	146
Polishing	33	48	5	101	344	669	538	523
Endodontic Treatment	63	127	115	185	122	71	64	
Other Extraction	46	101	32	75	64	73	122	148
Minor Oral Surgery	88	98	69	50	46	34	13	36
Suture Removal	84	53	34	38	64	48	35	51
Dry Socket	59	32	34	55	47	31	32	20
Primary Endo Treat - Open Drainage	83	8	-	26	41	15	10	
Primary Endo Treat - Pulpectomy	3	2	-	111	50	5	3	
Primary Endo Treat - Pulpectomy	-	3	-	17	3	12	71	136
Post & Crown Build Up	-	21	8	7	34	23	8	9
Partial Upper Prosthetic	-	-	-	-	63	13	4	124
X-Rays Facial	4	24	9	13	14	22	6	11
Orthodontic	8	8	1	3	7	22	28	20
Repair Prosthetic	-	-	-	-	39	12	3	46

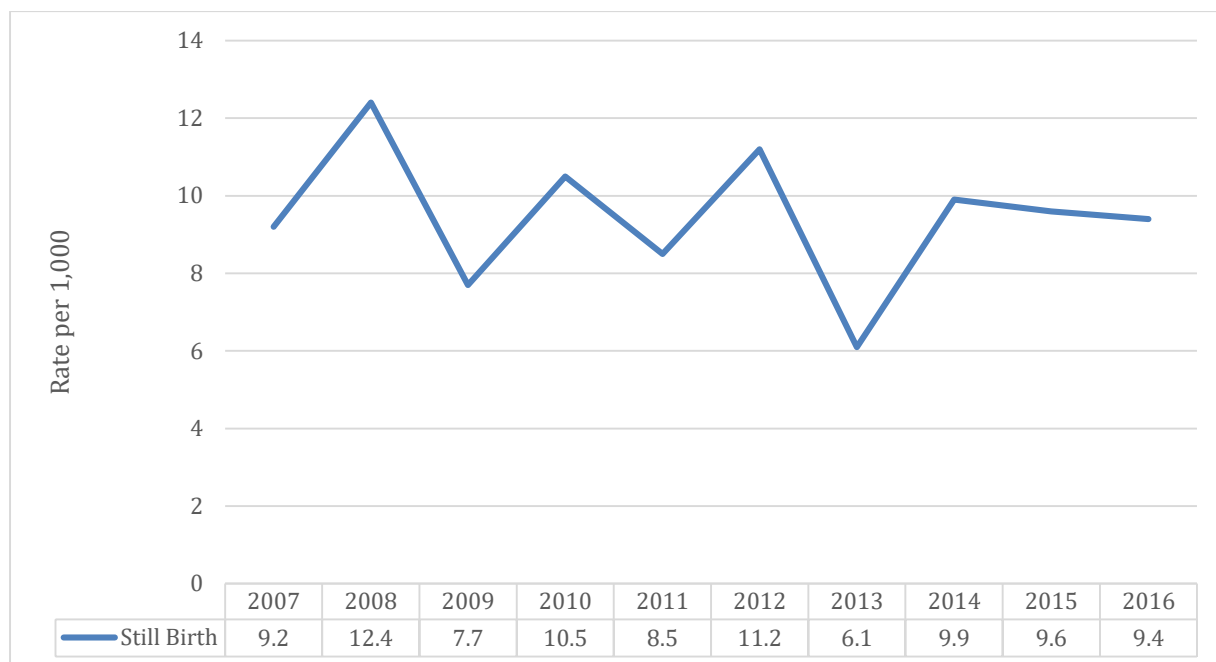
## Annual Report (2016)

Dental Services	2009	2010	2011	2012	2013	2014	2015	2016
Full Upper & Lower Prosthetic	-	-	-	-	38	6	3	
Fissure Sealants	6	6	-	5	21	9	3	7
Major Oral Surgery	3	4	1	7	3	8	14	17
Crown Cementation	-	3	2	8	4	6	7	7
OMF Surgical	15	7	3	1	-	1	5	2
Partial Lower Prosthetic	-	-	-	-	11	7	2	49
OMF Suture Removal	2	7	-	4	2	2	2	1
OMF Suture Placement	3	-	-	3	4	8	2	10
X-Ray Occlusal View	2	13	3	2	-	-	-	
Full Upper Prosthetic	-	-	-	-	8	3	2	22
Prosthetic Easing	2	-	-	-	3	3	4	
Full Lower Prosthetic	-	-	-	-	8	2	-	16
Topical Fluoride Application	-	-	-	-	-	-	-	13
<b>Total</b>	<b>17,662</b>	<b>20,716</b>	<b>20,758</b>	<b>16,480</b>	<b>20,600</b>	<b>21,482</b>	<b>14,696</b>	<b>21,923</b>



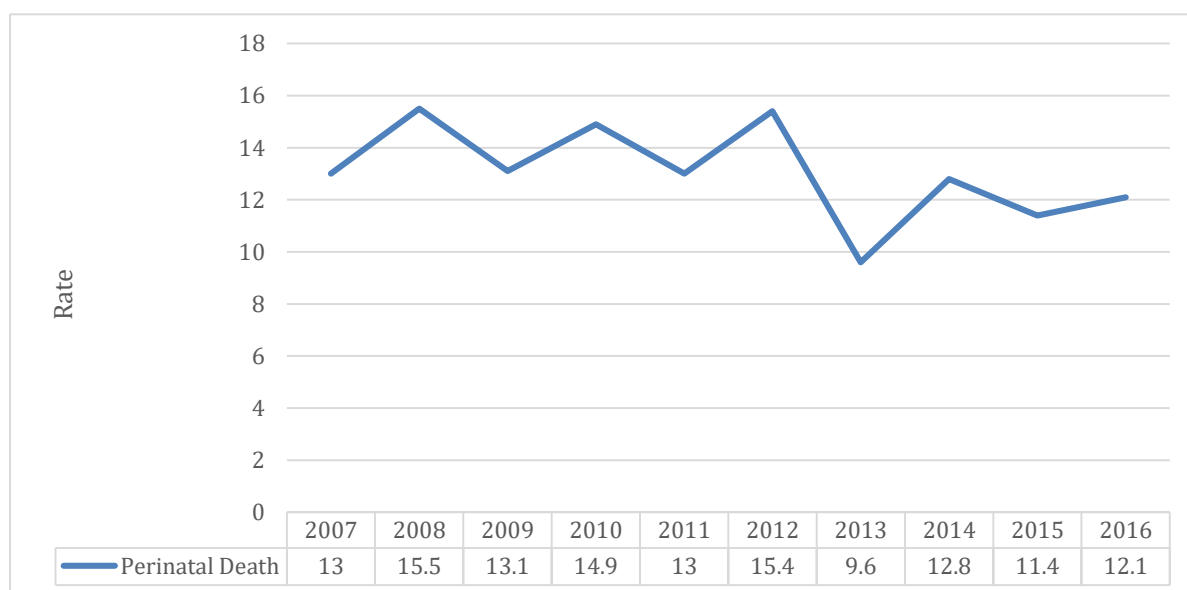
## 8.4 Health Outcomes

### 8.4.1 Stillbirth (per 1,000), 2007 – 2016



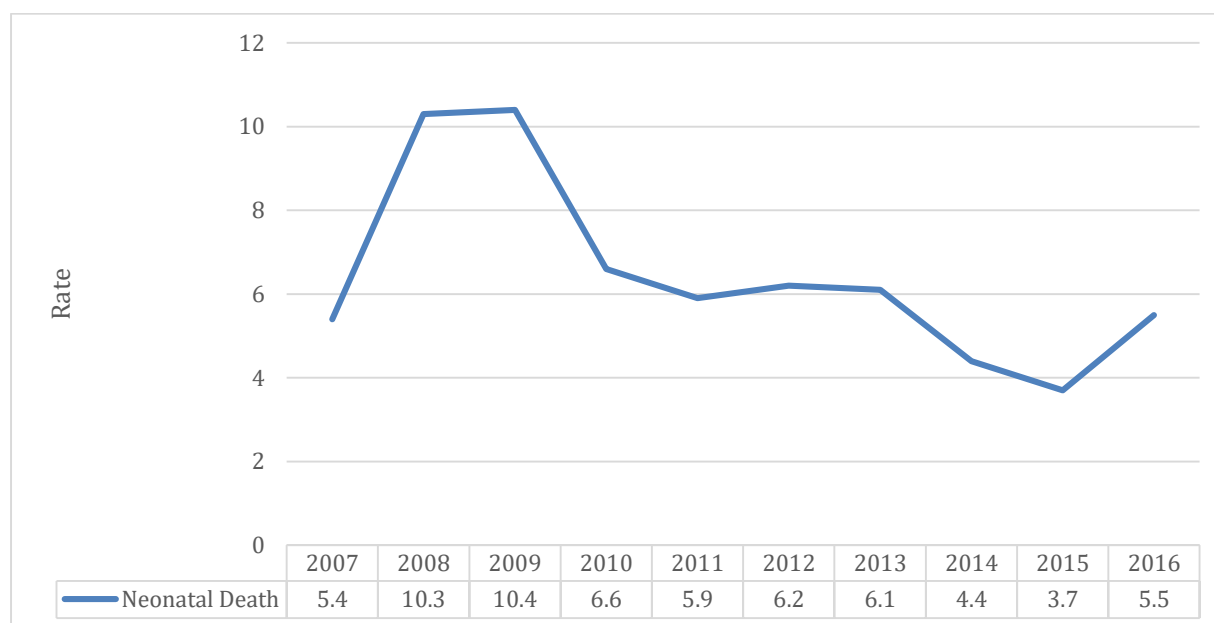
Source: Reproductive Health Services

### 8.4.2 Perinatal death rate – 2007 – 2016



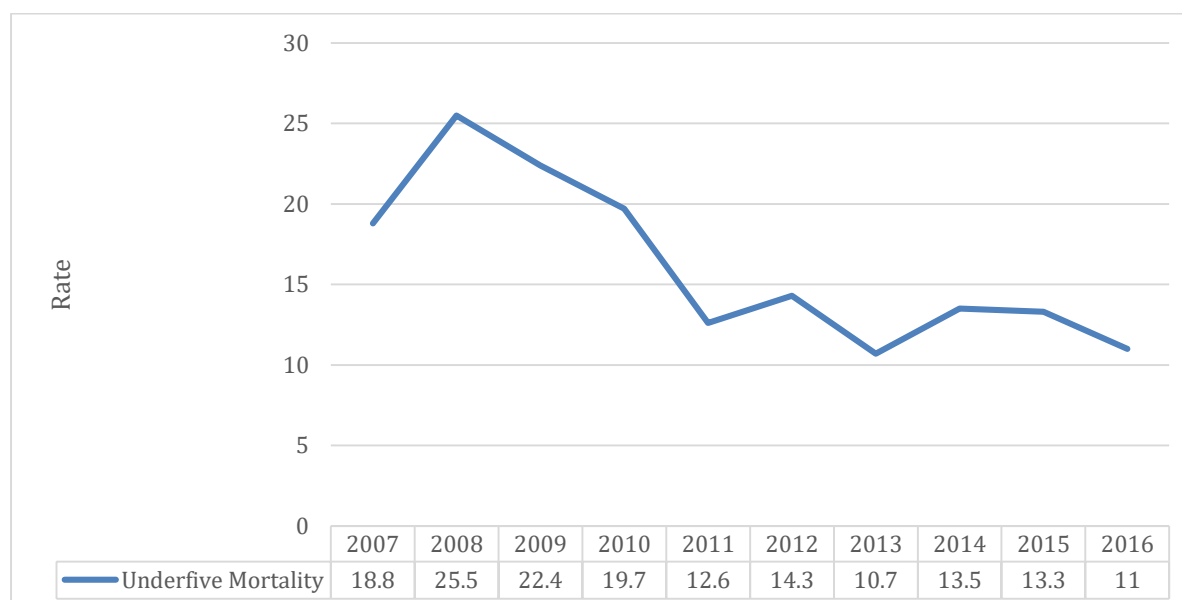
Source: Reproductive Health Services

### 8.4.3 Neonatal death rate – 2007 - 2016



Source: Reproductive Health Services

### 8.4.4 Death under 5 years old – 2007 – 2016



Source: Reproductive Health Services

## 8.5 Sustainable Development Goals Health Indicators and Healthy Islands

HI Ind No.	HI Indicator Name	Value	Year
<a href="#">1.1</a>	Health worker density	46.1	2016
<a href="#">1.2</a>	Health expenditure per capita	219	2014
<a href="#">1.3</a>	Evidence of annual health review, plan and budget	3	2016
<a href="#">2.1</a>	Smoking prevalence	29.9	2014
<a href="#">2.2</a>	Heavy episodic drinking	51% M 24.2% F	2014
<a href="#">2.3</a>	Insufficiently physically active adults	20.1	2014
<a href="#">2.5</a>	Tobacco excise taxes	58.8	2014
<a href="#">2.6</a>	Excise taxes in the retail price of alcoholic drinks	4	2017
<a href="#">2.7</a>	Excise taxes in the retail price of sweetened-sugary beverages (SSBs)	1	2017
<a href="#">2.12</a>	Contraceptive prevalence	31.9	2016
<a href="#">2.14</a>	Tuberculosis (TB) incidence	8	2016
<a href="#">2.16a</a>	Maternal deaths	0	2016
<a href="#">2.16b</a>	Maternal mortality ratio	0	2016
<a href="#">3.1</a>	Exclusive breastfeeding rate	65.4	2016
<a href="#">3.8</a>	Births attended by skilled health personnel	98.2	2016
<a href="#">3.9</a>	Immunisation coverage for DTP3	99.6	2016
<a href="#">3.10</a>	Immunisation coverage for measles	99.3	2016
<a href="#">3.13</a>	Adolescent birth rate	31.4	2016
<a href="#">3.14</a>	Low birth weight among newborns	2.6	2016
<a href="#">3.15</a>	Neonatal mortality rate	5.5	2016
<a href="#">3.17</a>	Under-five mortality rate	11.1	2016
<a href="#">4.3</a>	Population using improved drinking-water sources	99.9	2016
<a href="#">4.4</a>	Population using improved sanitation facilities	99.6	2016

Indicator Index	Definitions
1.3	<p><b>Rating:</b></p> <p>0 No evidence of annual health plan or annual budget;</p> <p>1 There is evidence that an annual health plan is in development, or no reports or reviews are available;</p> <p>2 Annual health plan with budget is developed, communicated and resourced;</p> <p>3 Annual review and report are available.</p>
2.6	<p><b>Rating:</b></p> <p>0 No alcohol excise tax is collected;</p> <p>1 Alcohol excise taxation system is being developed based on beverage type or ethanol content;</p> <p>2 Alcohol excise taxation system is in place and based on beverage type or ethanol content;</p> <p>3 Alcohol excise taxation system is in place and based on beverage type or ethanol content, AND is applied across all beverage types OR if bands are applied, excise tax is based on the ethanol content at the top of each band, AND excise tax is reviewed or adjusted for inflation annually for at least one beverage type;</p> <p>4 Alcohol excise taxation system is in place and based on beverage type or ethanol content, AND is applied across all beverage types OR if bands are applied, excise tax is based on the ethanol content at the top of each band, AND excise tax is reviewed or adjusted for inflation annually for all beverage types;</p> <p>5 Same as for 4, AND excise tax is stated by the Government as an important public health tool to reduce alcohol consumption/harm</p>
2.7	<p><b>Rating:</b></p> <p>0 No SSB excise tax</p> <p>1 SSB tax legislation in development, or SSB excise tax is &lt;70% of retail price;</p> <p>2 SSB excise tax over 70% of retail price</p>



Ministry of Health