

**GOVERNMENT
OF
TONGA**



**REPORT
of the
MINISTER
for
HEALTH
for the year
2017**

TABLE OF CONTENTS

1	FOREWORD FROM THE MINISTER OF HEALTH	7
2	FOREWORD FROM THE CHIEF EXECUTIVE OFFICER FOR HEALTH	8
3	OVERVIEW OF THE NATIONAL HEALTH STRATEGIC PLAN 2015 - 2020	9
3.1.	Introduction	9
4	ORGANISATIONAL OBJECTIVES AND FUNCTIONS.....	10
4.1	Mission and Vision:	10
1.1.1	Our Mission	10
4.1.1	Our Vision	10
4.1.2	Ministry of Health Core Values	10
4.2	Overview of National Health Indicators	10
4.3	Mortality 2017	11
4.3.1	Leading Causes of Mortality, 2017	11
4.3.2	Breakdown of Top 5 Causes of Mortality 2017	12
5	HEALTH ADMINISTRATION AND MANAGEMENT	14
5.1	Ministry of Health Executive	14
5.2	Organizational Structure	15
5.3	District Hospitals	16
5.4	Legislation	16
6	LEADERSHIP, POLICY ADVICE AND PROGRAMME ADMINISTRATION.....	17
6.1	CORPORATE SERVICES DIVISION	17
6.1.1	Mission Statement.....	17
6.1.2	Corporate Services Organizational Structure	17
6.1.3	Sections and Heads of Sections	17
6.1.4	Human Resource & Workforce Development Section	17
6.1.5	Budget & Finances Section.....	18
6.1.6	Information, Communications and Technology Section	20
6.1.7	Health Planning, Research & Reporting Section	22
7	PUBLIC HEALTH SERVICES	29
7.1	Mission Statement:	29
7.2	Head of Sections	29
7.3	Communicable Diseases Section	29
7.3.1	Statistical Information for the Communicable Disease Unit.....	29
7.4	Health Promotion Section	30
7.4.1	Staffing for the Health Promotion Unit as of 31 st December 2017	30
7.4.2	Key Milestones.....	30
7.5	Community Health Section	33
7.5.1	Staffing for Community Health Section as of the 31 st of December 2017	33
7.5.2	Key Milestones.....	34
7.5.3	Statistical Information for the Community Health Section.....	35
7.6	Reproductive Health Section	38
7.6.1	Key Milestones.....	39
7.6.2	Statistical Information for the Reproductive Health Section	39
8	CURATIVE HEALTH SERVICES	43
8.1	CLINICAL SERVICES	43
8.1.1	Organizational Structure	43
8.1.2	Staffing for the Clinical Division as of 31 st December 2017	44
8.1.3	Admissions.....	44
8.2	Paediatric Ward and Special Care Nursery.....	44
8.3	Surgical Ward and Operating Theatre	47
8.4	Isolation Ward.....	50
8.5	Emergency and Outpatients:	51
8.6	Medical Ward.....	53
8.7	Obstetrics and Gynaecology Ward.....	55
8.8	Mental Health.....	58
8.8.1	Milestones	59
8.9	ENT (Ears, Nose, Throat)	61

8.10	Anaesthesia and ICU	63
8.11	National Diabetes Centre.....	64
8.11.1	Core Functions	64
8.11.2	Activities	64
8.11.3	Milestones	65
8.11.4	Statistical Information.....	66
8.12	CLINICAL SUPPORT SERVICES	68
8.12.1	Sections and Head of Sections	68
8.12.2	Nutrition and Dietetic Unit	68
8.12.3	Laboratory	71
8.12.4	Radiology	76
8.12.5	Pharmacy	77
9	DENTAL SERVICES.....	80
9.1	Mission Statement	80
9.2	Staffing and Organization Structure	80
9.2.1	Staffing over the whole Tonga (2017).....	80
9.2.2	Milestones	80
9.2.3	Statistical Information.....	81
10	NURSING LEADERSHIP AND EDUCATION.....	84
10.1	Mission Statement:	84
10.2	Staffing and Organizational Structure.....	84
10.2.1	School of Nursing:.....	84
11	ISLAND HEALTH DISTRICTS.....	86
11.1	'EUA.....	87
11.1.1	Staffing for Niu'eiki Hospital as of the 31 st of December 2017	87
11.1.2	Organizational Structure	88
11.1.3	Financial Allocation 2017/2018	88
11.1.4	Milestones	89
11.1.5	Statistical Information.....	89
11.2	VAVA'U	94
11.2.1	Organizational Structure	94
11.2.2	Staffing for Prince Wellington Ngu Hospital as of 31 st of December 2017	94
11.2.3	Financial Allocation 2017/2018	95
11.2.4	Statistical Information.....	96
11.3	HA'APAI.....	100
11.3.1	Organizational Structure	100
11.3.2	Staffing for Niu'ui Hospital by the 31 st of December 2017	101
11.3.3	Financial Allocation 2017/2018	102
11.3.4	Milestones	102
11.3.5	Statistical Information:.....	102
11.4	NIUAFO'OU	107
11.4.1	Organizational Structure	107
11.4.2	Staffing for Tu'afakileleli Health Center by the 31 st December 2017	107
11.4.3	Financial Allocation 2017/2018	107
11.4.4	Statistical Information:.....	108
11.5	NIUATOPUTAPU.....	109
11.5.1	Organizational Structure	109
11.5.2	Staffing for Likamonu Health Centre by 31 st December 2017	109
11.5.3	Financial Allocation 2017/2018	110
11.5.4	Milestones	110
11.5.5	Statistical Information.....	110
12	ANNEX.....	113
12.1	Annex 1: Leadership, Policy Advice and Administration	113
12.1.1	POLHN Students.....	113
12.2	Annex 2: Preventative Health	116
12.3	Annex 3: Curative / Clinical Services.....	118
12.4	Annex 4: Dental Services	121
12.4.1	Curative Services at Vaiola oral clinic (working hours).....	121

12.4.2	Curative services at Vaiola oral clinic at after hours.	122
12.4.3	Oral surgery cases done at the Operating Theatre.	123
12.4.4	Dental prosthetics (tertiary care) at Vaiola hospital.	124
12.4.5	The total dental prosthetics treatments provided January - December 2017	124
12.4.6	Antenatal mothers assessed and advice treatment needs at TBU and Vaiola oral clinic. 124	
12.5	Sustainable Development Goals	125
12.6	SDG3: Appendix	125

List of Tables

Table 1: Causes of Mortality by Groups and by Sex (2017)	11
Table 2: Mortality by Age-group and Sex (2017)	11
Table 3: Diseases of the Circulatory System by Sex (2017)	12
Table 4: Diseases of the Endocrine, Nutritional and Metabolic Diseases by Sex (2017)	12
Table 5: Neoplasms Deaths by Sex (2017)	13
Table 6: Deaths due to Diseases of the Respiratory System by Sex (2017)	13
Table 7: Deaths due to External Causes of Morbidity and Mortality by Sex (2017)	13
Table 8: Occupation Groups for the Ministry of Health 2013/14 - 2017/18	17
Table 9: Health Donor Indicators	23
Table 10: Health Project Indicators	24
Table 11: Health Research Indicator(s)	25
Table 12: Health Information Indicators	27
Table 13: Medical Records Indicators	27
Table 14: Sexually Transmitted Infections (STI)	29
Table 15: Health Promotion Unit Indicators	33
Table 16: Number of Consultations by Community Health Centre (2017)	35
Table 17: Overall Consultations by Diagnosis at Community Health Centers (2017)	36
Table 18: NCD Cases seen by Health Centers (2017)	36
Table 19: Deliveries by place of delivery and attending personnel	40
Table 20: Obstetrics and Infant Mortality Data	40
Table 21: Childhood Immunization	40
Table 22: Immunization of Women (Tetanus Toxoid)	41
Table 23: Total Number of New Acceptors by Method	41
Table 24: Total Contraceptive Users by Method and Age	41
Table 25: Admissions to Paediatrics Ward by Age-Group (2017)	45
Table 26: Length of Stay (Days) at Paediatrics Ward (2017)	45
Table 27: Top 10 Causes of Admissions to Paediatrics Ward (2017)	45
Table 28: Length of Stay (Days) at Surgical Ward	47
Table 29: Total Number of Operations by Sex (2017)	49
Table 30: Operations by Wards (Referred to Surgical Ward for Operating Theatre) (2017)	49
Table 31: Surgical Operations for Eye Clinic cases by month (2017)	49
Table 32: Surgical Operations on Eye Clinic cases by Sex and Age-Group (2017)	49
Table 33: Isolation Ward Top cases of Admission	50
Table 34: Length of Stay (Days) at the Isolation Ward (2017)	50
Table 35: Number of Cases seen at Emergency Unit from April – December 2017	52
Table 36: Emergency Cases by Sex (2017)	53
Table 37: Emergency Cases seen by Category (2017)	53
Table 38: Length of Stay at the Medical Ward (2017)	54
Table 39: Length of Stay (Days) at the Obstetrics and Gynaecology Ward for Women (2017)	57
Table 40: Length of Stay at the Intensive Care Unit (2017)	64
Table 41: Total NCD cases recorded in the NCD Registry	67
Table 42: Total number of patients referred to the dietician (Jan-Dec 2017)	69
Table 43: Numbers of food plates served for breakfast, lunch, and dinner (Jan-Dec 2017)	70
Table 44: Food cost & food supplied from hospital's kitchen (Jan- Dec 2017)	70
Table 45: Laboratory Specimens and Tests Data	73
Table 46: Total Number of Tests by Outer Island	75
Table 47: Improvement Percentage of each Laboratory Section (Audit 2017)	75

Table 48: Total number of Radiology Tests by Type	76
Table 49: Total costs of Pharmaceuticals ordered by Location (2017)	79
Table 50: School Preventative Program	82
Table 51: Health Facilities by Island Group/District	86
Table 52: Summary of Outer Island Indicators	86
Table 53: Summary of Service Provider Staff at Niu'eiki Hospital (2017)	88
Table 54 Demographic Summary of 'Eua Island for 2017	89
Table 55: Vital Statistics Indicators for 'Eua (2017)	90
Table 56: Clinical Section Indicators for Niu'eiki Hospital (2017)	91
Table 57: Public Health Section Indicators for Niu'eiki Hospital (2017)	92
Table 58: Non-Communicable Disease (NCD) Indicators for Niu'eiki Hospital (2017)	92
Table 59: Prescription Records for Niu'eiki Hospital Pharmacy (2017)	93
Table 60: Summary of Service Provider Staff at Prince Ngu Hospital (2017)	95
Table 61: Vital Statistics Indicators for Vava'u (2017)	97
Table 62: Clinical Section Indicators for Prince Ngu Hospital (2017)	97
Table 63: Public Health Section Indicators for Prince Ngu Hospital (2017)	97
Table 64: Non-Communicable Disease (NCD) Indicators for Prince Ngu Hospital (2017)	98
Table 65: Prescription of Ngu Hospital Pharmacy (2017)	98
Table 66: Summary of Service Provider Staff at Niu'ui Hospital (2017)	101
Table 67 Demographic Summary of Ha'apai Island Group for 2017	102
Table 68: Ha'apai Vital Statistics 2017	103
Table 69: Ha'apai Clinical Data (2017)	104
Table 70 Niu'ui Hospital Public Health Indicators	106
Table 71: Prescription Records for Niu'ui Hospital Pharmacy (2017)	106
Table 72: Total Number of Consultations by month for Likamonu (2017)	111
Table 73 Demographic Summary of Niuatoputapu and Niuafu'ou Island Group for 2017	112

List of Figures

Figure 1: The Ministry of Health Budget for 2015/2016 – 2016/17	19
Figure 2: Ministry of Health Budget Breakdown 2014/2015 – 2017/2018	20
Figure 3: Top 10 Cancer Cases for Women (2017) registered in the Registry	26
Figure 4: Top 10 cancer sites for Males (2017)	27
Figure 5: Total Consultations by Community Health Centres (2017)	37
Figure 6: Total Number of Diabetes consultations by Community Health Centre (2017)	37
Figure 7: Total Number of Hypertension consultations by Community Health Center (2017)	38
Figure 8: Consultations at Community Health Centers by Age-group (2017)	38
Figure 9: Total Number of Admissions by Month (2017)	44
Figure 10: Paediatrics Admissions by month (2017) Source: Admissions Registry	46
Figure 11: Special Care Nursery Admissions by month (2017) Source: Admissions Registry	46
Figure 12: Total Number of Admissions to Surgical Ward by month (2017)	47
Figure 13: Age-groups for the Surgical Admissions (2017)	48
Figure 14: Total Operations (Operating Theatre) by month (2017)	48
Figure 15: Total admissions to Isolation Ward by month (2017)	51
Figure 16: Total Number of Outpatient Consultations by month (2017) Source: Medical Records	51
Figure 17: Emergency Cases by Age-Group (2017)	52
Figure 18: Medical Ward Admissions by month (2017)	53
Figure 19: Medical Admissions by age-group (2017)	54
Figure 20: Obstetrics and Gynaecology Ward Women Admissions by month (2017)	55
Figure 21 Obstetrics and Gynaecology Ward Newborn Admissions by month (2017)	56
Figure 22: Obstetrics and Gynaecology Admissions by Age-Group (Women) 2017	56
Figure 23 Total Surgical Operations by month for Obstetrics and Gynaecology Ward (2017)	57
Figure 24: Total Surgical Operations for Obstetrics and Gynaecology cases by age-group (2017)	58
Figure 25: Age-groups for the ENT Consultations (2017)	62
Figure 26: ENT Consultations by month (2017)	62
Figure 27: Total Surgical Operations for ENT Cases by month (2017)	63
Figure 28: Total Admissions to the ICU ward by months for 2017. Source: Admissions Registry	63
Figure 29: Gender Distribution of NCD cases registered (2017)	66

Figure 30: Age-Distribution of NCD cases registered in the registry (2017).....	67
Figure 31: Total Number of Specimens Registered at Lab Reception by month (2017)	74
Figure 32: Findings of the 2017 Internal Audit	75
Figure 33: Total Number of Patients/Visits at the Vaiola Clinic (working hours) by months (2017)	81
Figure 34: Total Number of mothers assessed in Tongatapu (Vaiola Clinic) by month (2017)	82
Figure 35: The total number of patients seen and received prosthetic treatment by month (2017)	83
Figure 36: Niu'eiki Hospital	87
Figure 37: Bar Graph on the Percent Distribution of the 'Eua Demography by Age-Group (2017).....	90
Figure 38: Line Graph on the Total Consultations at Niu'eiki Hospital by month (2017)	91
Figure 39: Line Graph showing Total Admissions at Niu'eiki Hospital by Month (2017)	92
Figure 40: Bar Graph on the Percent Distribution of the Vava'u Demography by Age-Group (2017)	96
Figure 41: Total Number of Admissions at Niu'ui Hospital (2015 – 2017)	104
Figure 42: Total Consultations by Working Hour and Total by Month at Niu'ui Hospital	105
Figure 43: Total Number of Admissions by month (Likamonu Health Center) 2017.	110
Figure 44: Total Consultations at Likamonu by month (2017)	111
Figure 45: Total cost of different items purchased for kitchen in 2017	119

1 FOREWORD FROM THE 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.

The year 2017 has been filled with both great promise and excitement. Many collaborations and partnerships have come to bear fruit. Japan Aid donated 2 ambulances for the Niu'ui Hospital, the new Likamou Hospital is nearing its completion and is expected to be opened in 2018 and one of the greatest milestones is that Tonga was declared Lymphatic Filariasis free by the World Health Organization. This achievement is a result of tireless years of diligence and hard-work

from the Public Health Division and all stakeholders involved in promoting a healthier and cleaner environment that promotes better health for the people of Tonga.

In addition, as prescribed in the National Health Strategic Plan 2015-2020, the Ministry underwent a Corporate Services Review with the aim of improving the efficiency of the division. It is anticipated that recommendations from this reform will enable Corporate Services to lift standards of performance to a level that will better support the other divisions to deliver health services to the public.

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.

Our 20-year vision, which was set back in 2000, has now only three years to run before we reach the end of the timeframe. The Ministry cannot achieve its target by itself and thus we still urge for your ongoing participation and support throughout this journey. It is my great privilege to acknowledge the support from the public, other-government and non-government organizations, development partners, overseas partners and friends who have contributed to Tonga's Health System over the years. The Ministry understands that the enormous public support is a result of the strong leadership of the Royal Family as well as the Church Leader's Forum.

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. I look forward to prosperous years to come and wish everyone good health and wellbeing. God bless and malo 'aupito.

Associate Professor Hon. 'Amelia Afuha'amango Tu'ipulotu
Minister for Health

2 FOREWORD FROM THE CHIEF EXECUTIVE OFFICER FOR HEALTH



This year we are building on the work that we have done in the past whilst also using new and innovation approaches to Health System Strengthening in order to continue our journey to achieving Universal Health Coverage (UHC) in Tonga.

It is also worth noting that to achieve this goal we must place a strong emphasis on Community Health and the six building blocks (Service Delivery, Human Resource, Infrastructure and Technology, Leadership and Governance, Information and Research and Health Care Finance). By doing so we will be able to improve the health outcomes of those accessing different levels of care, be more responsive to the health needs of individuals, enhance social and financial risk protection and improve efficiency. This approach requires a stronger partnership with the community, government, and non-government organizations, and

development partners (which is the foundation of the concept of the Health in All Policy).

The Ministry has invested on providing specialised care to the outer islands and the remote areas, in improving internal referral and social support for patients and caregivers who are referred to the main hospital at Tongatapu and preparedness for natural disaster and diseases outbreaks. At the same time, the Ministry strives to embed the Governments Performance Management System into our Health System which will help facilitate better planning where the implementation of our plan will have closer links to the resources available while also giving us an enhanced tool with which to evaluate our progress.

The Ministry will embark on a new project that will invest in Digital Health, funded by the ADB. The initial phase of this project, which was launched in September 2016, used text messaging to support pregnant women. It will strengthen our capacity to use Digital Technology and improve the efficiency, effectiveness and quality of health care services to the public at Vaiola, the outer island hospitals and health centers. There are two other systems that have been implemented during the last financial year because of financial assistance from DFAT, namely the PACS system and a DHIS2 pilot program which, serve the Radiology Department and Community Health Services respectively. These technological advancements have proven to be effective in different parts of the world in terms of their contribution of effective diagnostics, patient management and data collection and aggregation, all of which are essential components of an effective health care system.

I am confident that the successful execution of the activities this will contribute strongly towards our NHSP 2015-2020 in such a way that will support the community to achieve and maintain optimal health, reduce premature deaths and disability in children, adolescent and adult population age groups which will eventually contribute to achieving improved quality of life as stipulated in the Tonga Strategic Development Framework II.

A handwritten signature in black ink, which appears to read 'Siale 'Akau'ola'. The signature is fluid and cursive, written over a horizontal line.

Dr. Siale 'Akau'ola
Chief Executive Officer for Health

3 OVERVIEW OF THE NATIONAL HEALTH STRATEGIC PLAN 2015 - 2020

3.1. Introduction

The National Health Strategic Plan 2015 – 2020 (NHSP) is the sixth Health Plan for the Ministry of Health. The strategic approach is rooted in the concept of Universal Health Coverage and focuses on the World Health Organization's (WHO) six key health system building blocks namely 1) service delivery, 2) health workforce, 3) health information systems, 4) access to essential medicines, 5) financing and 6) leadership / governance. Through consultative processes including the Government, NGOs and key Development Partners the NHSP aims at guiding sustainable health development through the invaluable contribution of development partners, highlighting the importance of ICT, data collection, health research and monitoring and evaluation. The NHSP provides a sound platform for all stakeholders including Line Ministries, Non-Government Organizations, Private Businesses and Development Partners to develop health-related plans and policies and the budgeting and resource allocation process.

The NHSP provides a platform for all the stakeholders contributing to the overall health of the people of Tonga to share the same development agenda, to integrate their plans and to synchronize their efforts to produce cost-effective and impactful outcomes. The NHSP currently has 108 strategies overall, a simple summary of the NHSP is summarized below:

NHSP Summary		
No.	Key Result Areas	Strategies
KRA 1:	SERVICE DELIVERY	31
1.1	Maternal and Child Health Services	3
1.2	Adolescence and Adult Health Services	3
1.3	Dental Health Services	4
1.4	Mental Health and Disability Services	4
1.5	Public Health Services	3
1.6	Clinical Support Services	3
1.7	Non-Clinical Support Services	11
KRA 2:	HEALTH WORKFORCE	15
KRA 3:	INFRASTRUCTURE, MEDICAL PRODUCTS AND TECHNOLOGY	22
KRA 4:	LEADERSHIP AND GOVERNANCE	13
KRA 5:	INFORMATION, RESEARCH, POLICY AND PLANNING	16
KRA 6:	HEALTHCARE FINANCE	11
	TOTAL	108

4 ORGANISATIONAL OBJECTIVES AND FUNCTIONS

4.1 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:

1.1.1 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.

4.1.1 Our Vision

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

4.1.2 Ministry of Health Core Values

The Ministry of Health and its staff are committed to achieving our Mission and Vision. To this end, the Ministry adopted a number of core values

These remain true today and can be seen in our policies and procedure 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

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

4.2 Overview of National Health Indicators

#	INDICATOR	2017	2016	2015	2014	2013	2012
1	Estimated population ('000)	106.5	106.5	103.3	103.3	103.3	103.2
2	Crude Birth Rate (per 1,000) ¹	22.6	23.5	24.9	25.1	24.3	24.1
3	Crude Death Rate (per 1,000) ¹	6.0	6.0	5.3	6.5	5.1	5.2
4	Maternal Mortality Rate (per 100,000) ¹	0	0	37	0	76.2	77.5
5	Infant Mortality Rate (per 1,000) ¹	16	7.4	10.3	10.9	9.5	12.0
6	Perinatal Mortality Rate (per 1,000 live births) ¹	15	12.1	11.4	12.8	9.6	15.4
7	Total Health expenditure ('000) Per Capita ²	38.94	32.6 324	30210 292	26210 254	20504 198	19547 189
8	Immunization coverage ¹	99.4	99.7	99.8	99.5	99.8	99.8
9	Total Number of Health Staff ⁴	993	987			809	
9.1	Medical Officers at post ⁴	61					
9.2	Health Officers at post ⁴	11					
9.3	Nursing and Midwifery at post ⁴	427					
10	Percentage of married couples practicing contraception (%) ¹	30	31.9	32.4	36.4	35.6	35
11	Percentage of pregnant women attending antenatal care (%) ¹	98.7	98.7	97.7	98.6	98.5	97.5
12	Percentage of deliveries conducted by trained personnel (%) ¹	99					

13	Total Fertility Rate (births per woman) ¹	2.4*	3.3	3.4	3.6	3.4	3.5
14	Perioperative Mortality Rate ³	0.068	0.193	0.144	0.118	0.124	0.466

*denominator used was from the catchment population captured in the Reproductive Nursing Annual Census, 2017.

Source:

- 1 Reproductive Health Section Annual Report 2017
- 2 Accounts Section Budget Information
- 3 Health Information Perioperative Annual Report 2017
- 4 Human Resources Unit
- 5 Health Information Mortality Database
- 6 Health Information Live-Birth Registration Database

4.3 Mortality 2017

4.3.1 Leading Causes of Mortality, 2017

Table 1: Causes of Mortality by Groups and by Sex (2017)

#	Causes by Groups	F	M	Total	%
1	Diseases of the circulatory system	52	89	141	27%
2	Endocrine, nutritional and metabolic diseases	59	77	136	26%
3	Neoplasms	45	33	78	15%
4	Diseases of the respiratory system	14	24	38	7%
5	External causes of morbidity and mortality	3	21	24	5%
6	Diseases of the digestive system	9	10	19	4%
7	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	10	8	18	3%
8	Diseases of the genitourinary system	9	7	16	3%
9	Certain infectious and parasitic diseases	7	8	15	3%
10	Diseases of the skin and subcutaneous tissue	6	7	13	2%
11	Diseases of the musculoskeletal system and connective tissue	3	5	8	2%
12	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	4	3	7	1%
13	Congenital malformations, deformations and chromosomal abnormalities	4	2	6	1%
14	Disease of the nervous system	1	5	6	1%
15	Mental and behavioural disorders		2	2	0%
16	Certain conditions originating in the perinatal period		1	1	0%
	Total	226	302	528	

Source: Mortality Registry and Medical Records

As illustrated above the leading causes of mortality as registered in Tonga is a disease of the circulatory system which comprises of 27% of the deaths, followed by Endocrine, Nutritional and Metabolic Diseases (26%) and Neoplasms or cancers (15%). The breakdowns of the top 5 leading causes of deaths are illustrated in the Section 4.3.2.

Table 2: Mortality by Age-group and Sex (2017)

Age-Group	Female	Male	Total
<1	3	3	6

1 - 4		1	1
5 - 9		1	1
15 - 19	2	4	6
20 - 24	3	4	7
25 - 29	4	7	11
30 - 34	2	2	4
35 - 39	4	6	10
40 - 44	10	11	21
45 - 49	11	14	25
50 - 54	16	23	39
55 - 59	19	39	58
60 - 64	23	30	53
65 - 69	16	23	39
70 - 74	16	33	49
75 - 79	27	43	70
80+	70	58	128
Total	226	302	528

Source: Mortality Registry and Medical Records

As illustrated above, majority of the deaths captured in the Mortality Registry are over the age of 80 years old, this is followed by individuals aged 75 – 79 years old. However, it should be noted that there is many premature deaths as shown in quite a number of individuals passing away before the age of 70 years old.

4.3.2 Breakdown of Top 5 Causes of Mortality 2017

This section highlights the details of the Top 5 causes of mortality as highlighted in the previous Table 1.

Table 3: Diseases of the Circulatory System by Sex (2017)

Diseases of the Circulatory System	Female	Male	Total
Acute rheumatic fever and chronic rheumatic heart diseases	3	3	6
Cerebrovascular diseases	14	11	25
Hypertensive diseases	10	16	26
Ischaemic heart diseases	17	46	63
Other heart diseases	7	10	17
Remainder of diseases of the circulatory system	1	3	4
Total	52	89	141

Source: Mortality Registry and Medical Records

Shown above, the leading cause of circulatory system deaths is Ischaemic Heart Disease which constitutes 45% of the deaths.

Table 4: Diseases of the Endocrine, Nutritional and Metabolic Diseases by Sex (2017)

Endocrine, nutritional and metabolic diseases	Female	Male	Total
Diabetes mellitus	54	69	123
Remainder of endocrine, nutritional and metabolic diseases	5	8	13
Total	59	77	136

Source: Mortality Registry and Medical Records

For the second leading cause of mortality, the leading cause is Diabetes Mellitus which compromises majority of the deaths.

Table 5: Neoplasms Deaths by Sex (2017)

Neoplasms	Female	Male	Total
Leukaemia	3		3
Malignant neoplasm of breast	12		12
Malignant neoplasm of cervix uteri	3		3
Malignant neoplasm of colon, rectum and anus	1	1	2
Malignant neoplasm of liver and intrahepatic bile ducts		9	9
Malignant neoplasm of meninges, brain and other parts of central nervous system		1	1
Malignant neoplasm of other and unspecified parts of uterus	7		7
Malignant neoplasm of ovary	2		2
Malignant neoplasm of pancreas		1	1
Malignant neoplasm of prostate		5	5
Malignant neoplasm of stomach	2	5	7
Malignant neoplasm of trachea, bronchus and lung	3	2	5
Remainder of malignant neoplasms	7	6	13
Remainder of neoplasms	5	3	8
Total	45	33	78

Source: *Mortality Registry and Medical Records*

For the third leading cause of mortality, which is neoplasm, the highest cause of death is breast cancer, followed by liver cancer. The remainder of malignant neoplasm are cancers with areas that are not too specified.

Table 6: Deaths due to Diseases of the Respiratory System by Sex (2017)

Diseases of the respiratory system	Female	Male	Total
Chronic lower respiratory diseases	4	15	19
Other acute lower respiratory infections	1	1	2
Pneumonia	7	7	14
Remainder of diseases of the respiratory system	2	1	3
Total	14	24	38

Source: *Mortality Registry and Medical Records*

For the fourth leading cause of death, diseases of the respiratory systems, the highest leading cause of death is Chronic Lower Respiratory Diseases followed with Pneumonia.

Table 7: Deaths due to External Causes of Morbidity and Mortality by Sex (2017)

External causes of morbidity and mortality	Female	Male	Total
Accidental drowning and submersion		3	3
Accidental poisoning by and exposure to noxious substances		2	2
All other external causes	3	11	14
Exposure to smoke, fire and flames		1	1
Intentional self-harm		1	1
Transport accidents		3	3
Grand Total	3	21	24

Source: *Mortality Registry and Medical Records*

For the fifth leading cause of death which is the external causes of morbidity and mortality, the leading cause of death is other external causes.

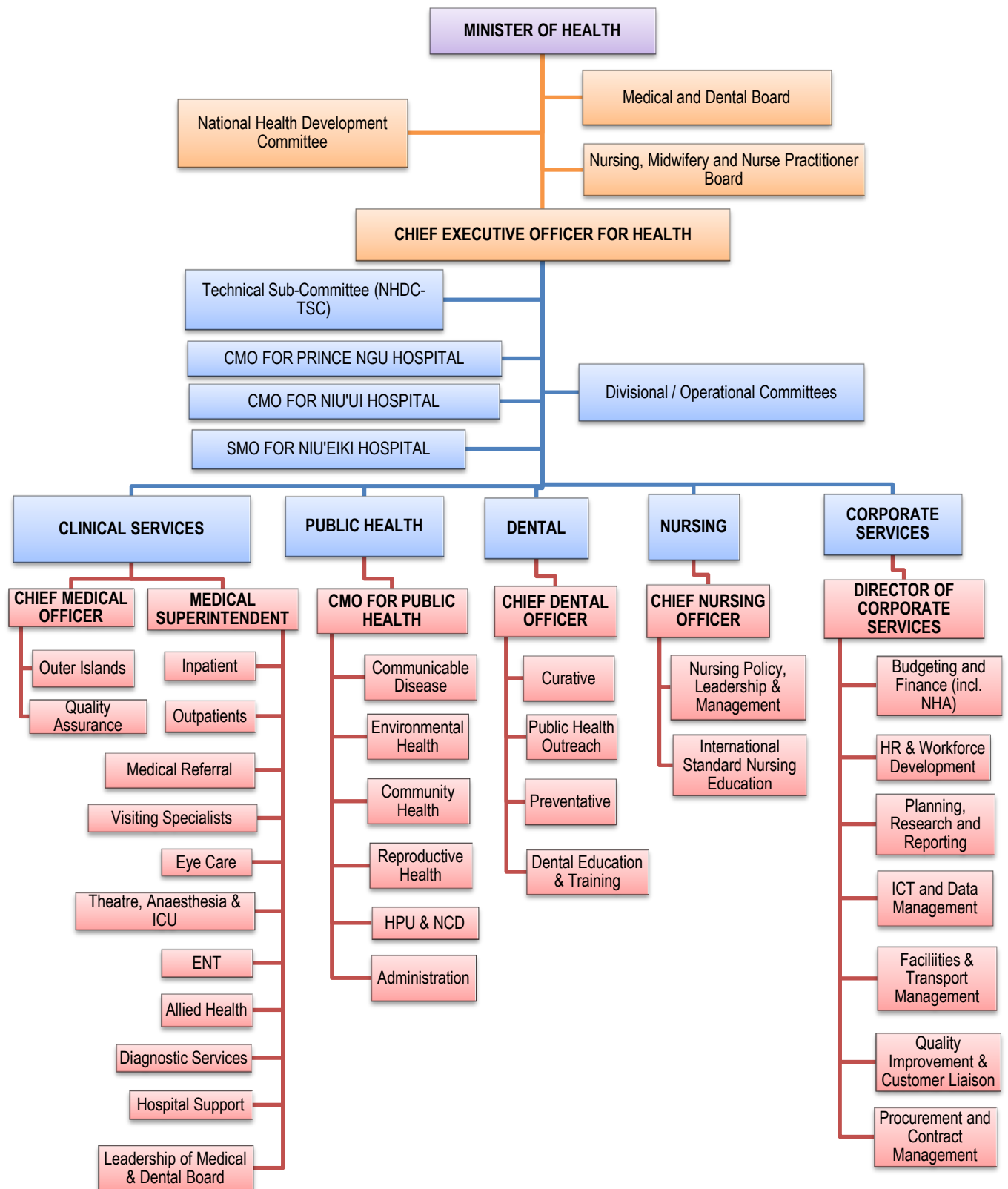
5 HEALTH ADMINISTRATION AND MANAGEMENT

5.1 Ministry of Health Executive

As of 31st of December 2017 the following officers were responsible for the administration and management of the Ministry and its respective Divisions.

Minister of Health and Public Enterprises	Hon. Dr. Saia Ma'u Piukala
CEO for Health	Dr. Siale 'Akau'ola CEO for Health
Corporate Services	Vacant Director of Corporate Services
Clinical / Medical Services	Dr. Lisiate 'Ulufonua Medical Superintendent
Public Health	Dr. Reynold 'Ofanoa Chief Medical Officer for Public Health
Nursing	Dr. 'Amelia Tu'ipulotu Chief Nursing Officer
Dental	Dr. 'Amanaki Fakakovikaetau Chief Dental Officer

5.2 Organizational Structure



5.3 District Hospitals

As of 31 December 2017 the following officers were responsible for the management of the outer island health districts.

Prince Ngu Hospital

Vava'u Health District

Dr John Lee Taione

Acting Chief Medical Officer

Niu'ui Hospital

Ha'apai Health District

Dr Tevita Vakasiuola

Senior Medical Officer

Niu'eiki Hospital

'Eua Health District

Dr. Maleta Lolesio

Senior Medical Officer

5.4 Legislation

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

- Therapeutics 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 2012)
- Health Services Act 1991 (Amendment Act 2010)
- Health Promotion Act 2007(Amendment Act 2010)

In delivering its services to the public, the Ministry is divided into five functional divisions;

1. Corporate Division
2. Public Health Division
3. Medical/Clinical Division
4. Nursing Division
5. Dental Division

Divisional heads are responsible to the CEO of Health for the implementation of each Division's services.

6 LEADERSHIP, POLICY ADVICE AND PROGRAMME ADMINISTRATION

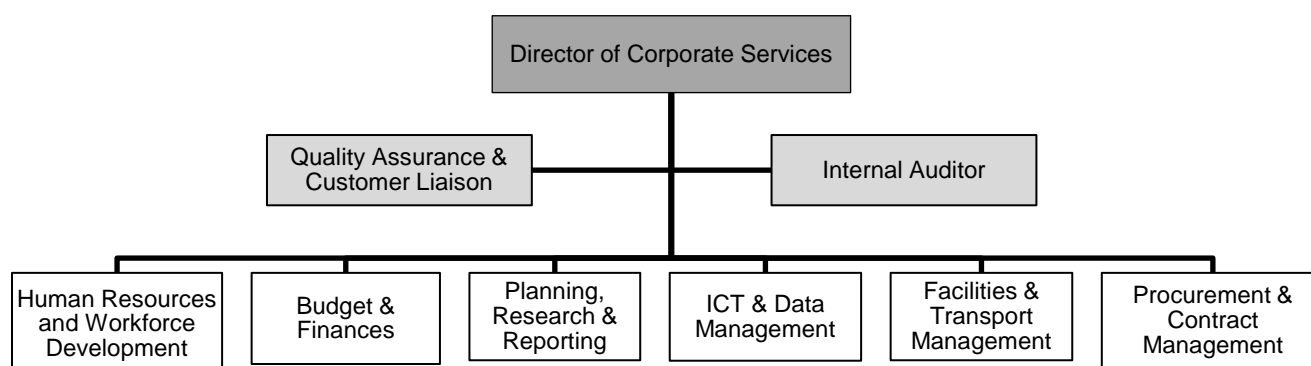
6.1 CORPORATE SERVICES DIVISION

Corporate Services is responsible for establishing standard timeframe for processing administrative procedures; update the administrative protocols; and develop an up-to-date asset management procedure and register.

6.1.1 Mission Statement

To provide efficient and effective support services to the Ministry and all health districts with regard to administration, human resources, planning, information, financial management, national health accounts, transport and communication services.

6.1.2 Corporate Services Organizational Structure



6.1.3 Sections and Heads of Sections

#	Sections	Head of Section
1	Director of Corporate Services	Vacant
2	Human Resource & Workforce Development	Mrs. Salote Puloka
3	Budget & Finances	Mrs. 'Amelia Tu'ipulotu
4	Planning, Research & Reporting	Mr. Sioape Kupu
5	ICT & Data Management	Mr. Walter Hurrell
6	Facilities & Transport Services	Mr. Tevita Latu
7	Quality Assurance & Customer Liaison	Vacant
8	Procurement & Contract Management	Mrs. Salele 'Oliveti

6.1.4 Human Resource & Workforce Development Section

The Human Resources unit is responsible for the sustainable and efficient use of human resources for the development and delivery of quality healthcare services. In addition, how best to create a health workforce that is fit for purpose and fit to practice in response to population health needs and practices.

Table 8: Occupation Groups for the Ministry of Health 2013/14 - 2017/18

Occupation Groups	2013/14	2014/15	2015/16	2016/17
Health Associate Professionals	127	123	124	121

Health Management and Support Personnel	129	119	172	169
Health Professionals	427	405	503	494
Health Service Providers not elsewhere classified	115	137	133	163
Personal Care Workers in Health Services	41	44	48	46
Grand Total	839	828	980	993

*Source: Staff Budget List 2017/2018

Based on Table 1 above, half of the workers in the Ministry of Health are **Health Professionals** which comprises of Medical Officers, Specialists, Dentists, Midwives, Nurses, Pharmacists and Physiotherapists. This is followed by 17% as **Health Management and Support Personnel**, which comprises of workers in managerial roles, clerical workers, ICT staff, trades workers and accountants. 16% of the workers are **Health service providers not elsewhere classified**; these are staffs that are still trainees including health inspector trainees, assistant radiology trainees and nursing students.

Profession	2014	2015	2016	2017
Generalist Medical practitioner	49	44	49	50
Specialist Medical Practitioner	5	11	10	11
Associate Intern Medical Practitioner	0	5	5	5
Health Officers	13	12	12	11
Pharmacist	2	3	3	6
Dietician and Nutritionist	3	3	2	2
Optometrist and Ophthalmic Opticians	4	4	4	4
Physiotherapist	1	2	2	2
Podiatrist	0	1	1	1
Nurse Practitioner	6	6	6	5
Midwifery	24	22	22	23
Nursing Professional	257	333	329	399
Dentists	10	10	9	13

Source: Human Resources / Staffing Budget

In 2016 the nursing profession (including registered nurses, midwives and student nurses) comprised half (51.8%) of the health workforce, having increased by 7% since 2005. There has however been a decrease in the number of midwives from 32 to 23 between 2005 and 2017. As of 2016 there were a total of 63 doctors, representing 6.3% of all MoH posts. There has been an increase in the number of doctors who have specialized since 2005. These medical specialists include surgeons, anaesthetists, obstetricians and gynaecologists, internists, paediatricians, and one pathologist, psychiatrist, ophthalmologist and radiologist, respectively. The number of health officers has also decreased significantly, from 31 to 11 between 2005 and 2017.

6.1.5 Budget & Finances Section

Budget & Finances section is responsible for managing the Recurrent Budget, in terms of budget development and budget expenditure.

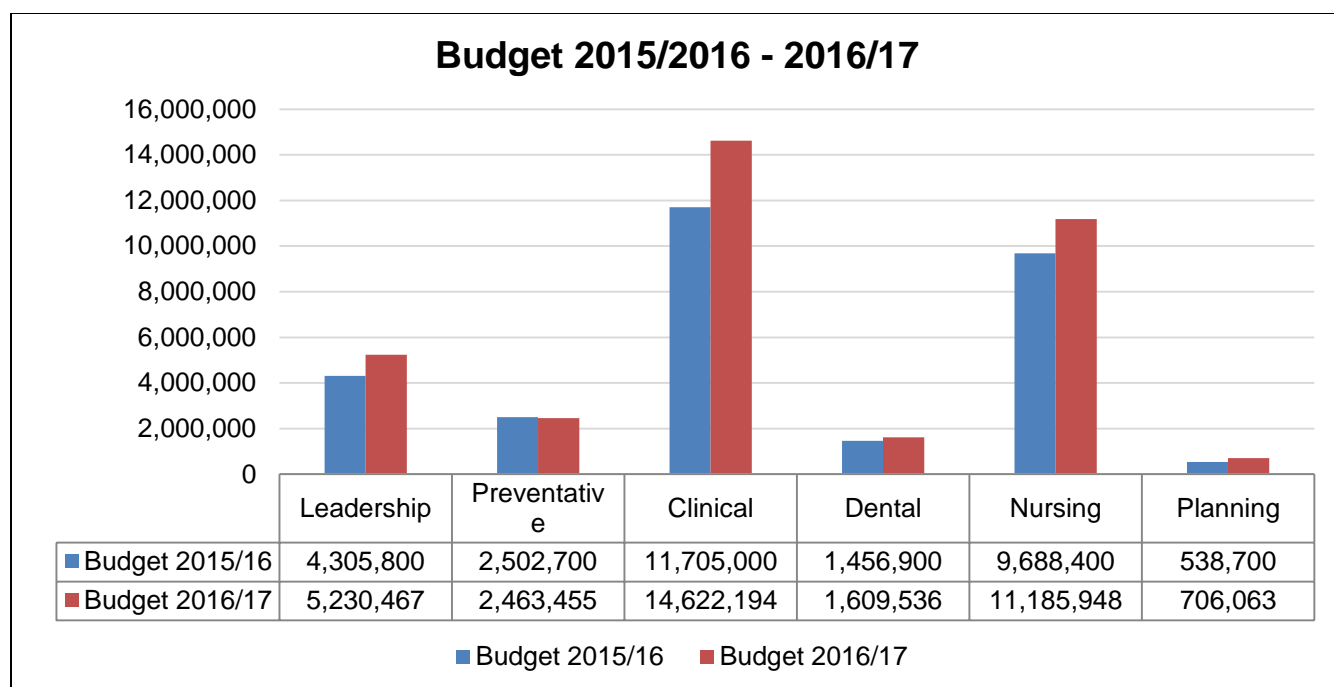


Figure 1: The Ministry of Health Budget for 2015/2016 – 2016/17

Over 60% of the Ministry of Health budget is allocated to the Clinical Section, and has seen a huge increase of over 50% from the last budget. This is a reflection of how majority of the service delivery and staff are in the clinical and nursing Units. The Public Health Unit (Preventative) has around 13% of the budget and since slight increases of the years. It should be noted that majority of the budget are salaries (75-80%) which leaves only around 20% of the budget for operations. However, due to Tonga's Health System being a National Health System primarily funded via taxes the proportion of the population facing financial risk is reduced due to low burden of out-of-pocket spending. There is still much progress needed to raise the amount of funding or budget in the Preventative or Public Health budget, since more funding and investments in health promotion, prevention and protection can alleviate costs in the future

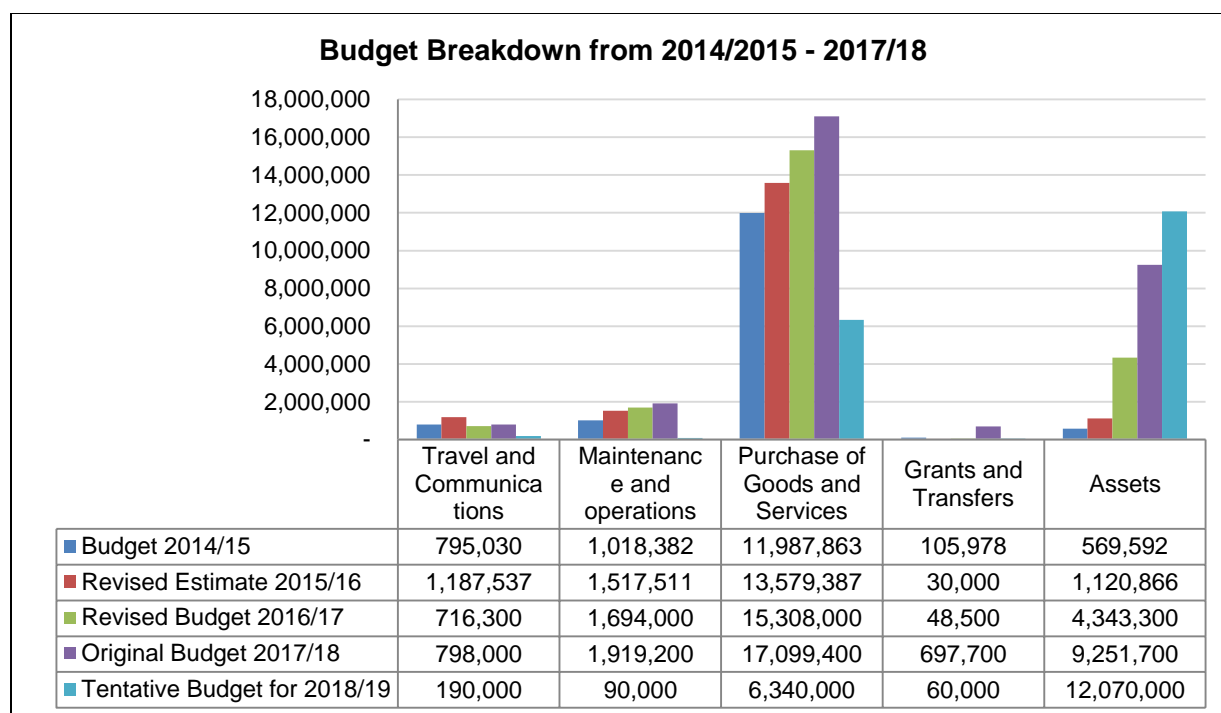
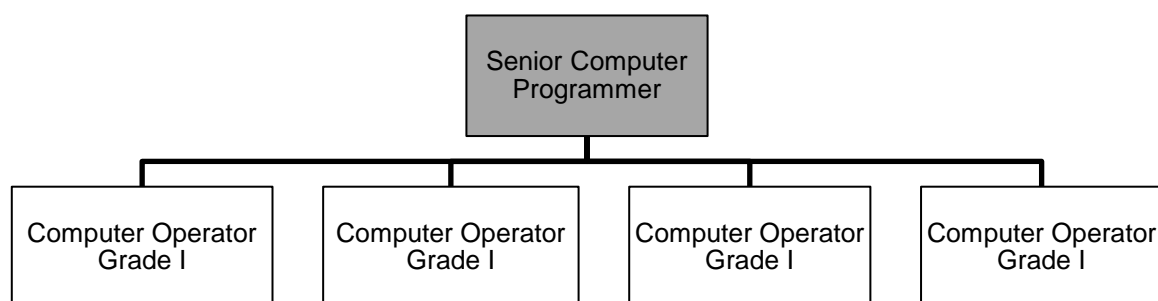


Figure 2: Ministry of Health Budget Breakdown 2014/2015 – 2017/2018

6.1.6 Information, Communications and Technology Section

The ICT Section is responsible for provide strategic and policy IT directions and advice, maintain and improve the IT infrastructure of the Ministry of Health while ensuring health data and information security and safety.



#	Objective
1	To provide strategic and policy IT directions and advice for the Ministry of Health.
<p>There is no health IT strategic plan in place that holistically draws up a roadmap on how to strategically maintain and enhance the digital environment in a seamless and consistent manner. However, the IT section (with some external assistance) is currently developing a National eHealth Strategy to address this gap. This National eHealth Strategy is expected to be completed and implemented in the next financial year – 208/2019</p> <p>Although an official eHealth Strategy document is not in place (yet), the IT section has been using available IT related reports (researches and reviews) as its guiding tool. As a result, the IT section is now refraining from operating in an ad-hoc manner</p> <p>The existing health information policies and IT guidelines are out-of-date and needs to be reviewed. There is no health IT policy in place. However, the IT section (with some external assistance) will be</p>	

developing appropriate policies and guidelines and are expected to be completed and implemented in the next financial year – 208/2019

2 To maintain and improve the IT infrastructure of the Ministry of Health

Internet

Digicel is the current Internet Service Provider (ISP) of the Ministry

- Every hospital and health centres (in Tongatapu only) have access to the internet
- Internet speed (bandwidth) - 20Mbps (download and upload). This internet speed is sufficient to accommodate the basic internet services such as emails, web surf etc
- Unlimited download and upload data capacity

Patient Administration System

- A web-based system (webPAS) that is designed for automating the administrative and management processes of a patient's journey throughout the hospital
- Also known as Tonga Hospital Information System (THIS)
- Commercial Product
- Customized for Vaiola Hospital only
- Outer island hospitals can only view patient information stored in this system
- Maintenance activities are carried out by the health IT staff
- This system is scheduled to be upgraded to the latest version or at least latest version – 1 in the next financial year – 2018/2019
- This system is also scheduled to be expanded/customized to extend its functionalities to the outer island hospitals, health centres, and health clinics

mSupply

A digital system that is designed to record, manage, report, procure, and distribute medical drugs and supplies throughout the hospitals and health centres (in Tongatapu only)

- Also known as mSupply
- Commercial Product
- Currently used in every hospital and the health centres (in Tongatapu only). Initially, the mSupply system was only used in the hospitals, but with the recent roll out of the mSupply mobile technology, health centres are now able to use them as well
- Maintenance activities are carried out by the health IT staff and the vendor

Radiology System

- A digital solution that is comprised of two systems that are integrated to be able to accommodate radiology demands
- Also known as RIS/PACS
- Commercial Product
- Currently used in Vaiola Hospital only. However, authorized users from the outer island hospitals, health centres, and health clinics can view patient information stored in this solution, as long as they have internet connection

3 To ensure health data and information are secured and safe

SonicWall

A network firewall namely SonicWall was the initial firewall solution that was used for the first half of the year. The available features and functionalities of this firewall accommodated the basic and advanced requirements or needs of the Ministry

IPFire

A switch was made in the second half of the year to host-based firewall called IPFire. The available features and functionalities of this firewall accommodated the basic requirements or needs of the Ministry

The Ministry has leveraged Digicel's new network technology called Private Branch Network (wireless), to connect all hospitals and health centres (in Tongatapu only) together as a single LAN. This technology has provided the Ministry with a single platform that not only improves the sharing and accessing of information between hospitals and health centres, but also provides stable and consistent internet speed and capacity throughout them

Maintenance activities are carried out by the health IT staff with the assistance of the Digicel technicians (if needed)

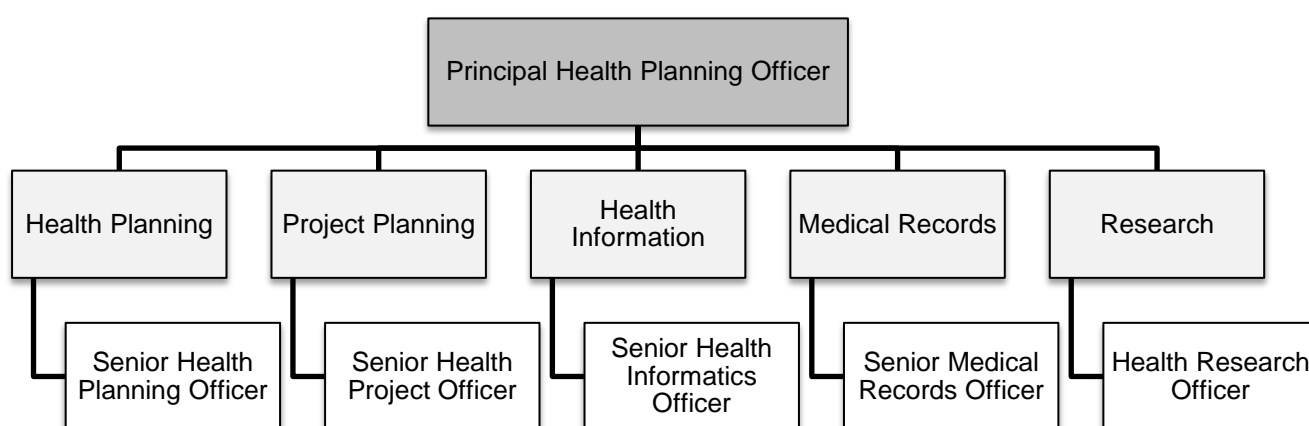
Anti-Virus

The Ministry is still using the Symantec Endpoint Protection as the most suitable (cost-effective) anti-virus countermeasure

6.1.7 Health Planning, Research & Reporting Section

To provide efficient and effective health planning, health information, project planning and medical records services to its customers and stakeholders within and from outside the Ministry locally, regionally and internationally.

6.1.7.1 Organizational Structure



6.1.7.2 Health Planning Unit

Health Planning is responsible for coordinating, formulating and aligning of sectional and divisional planning in a way it will achieve the Ministry's vision and mission. It also responsible for managing all development funds (donor funding) and other section worked under this division.

Milestones

Supervisory Visit to the Outer Islands for the development of the Annual Management Plans and Budget Dissemination for 2017/2018 completed.

Tonga represented in the Second Meeting For Technical Advisory Group For Universal Health Coverage For The Western Pacific Region Who Regional Office For The Western Pacific, Manila, Philippines on the 13th – 15th November 2017. Mr. Sioape Kupu attended on behalf of the Ministry highlighting Tonga's key successes and ways forward in achieving and monitoring UHC.

Health Planning Forum: Planning for Our Health Forum – the theme “No One Gets Left Behind” was held on the 31st October – 2nd of November 2017 held at the Tonga National Centre.



Table 9: Health Donor Indicators

Indicator(s)	Total
Total WHO Budget (2016 - 2017)	~1.8 million (USD)
Total UNFPA Budget (2017)	-
Percentage of WHO Budget Utilization	>99%
Percentage of UNFPA Budget Utilization	>99%
Total Number of DFC Requests Submitted	69
Total Number of FACE Reports Submitted	69
Total Sectional Meetings (Head of Sections only)	9
Total Divisional Meetings	1



*WHO: World Health Organization

*UNFPA: United Nations Population Fund

*DFC: Direct Financial Cooperation

*FACE: Funding Authorization and Certificate of Expenditure

6.1.7.3 Health Project Unit

#	Objectives	Milestones
1	Monitor, evaluate, manage and Identify Ministry of Health Project	
	<p>Projects</p> <p>4 Scooters were donated to the Ha'apai Group on the 16th of May 2017 through the WHO Aid. The Scooters were to be utilized for Universal Health Coverage at the Outer Islands and to mobilize nurses to reach their respective communities.</p> <p>2 Ambulances were donated to the Ministry of Health by the Japan AID for the Niu'ui Hospital and Niu'eiki Hospital on the 19th of December 2017. This is to assist outer island emergency services in the Outer Islands.</p>	
	 	
	<p>Likamonu Hospital Construction</p> <p>Work to be Done – Medical Incinerator</p>	

- Staff Quarter
- Medical Equipment (Overseas & Local)

Niu'ui Hospital Relocation Project

Work Done - 100% detail design completed, call for tender's submission date extended to 13th October 2017, the ground breaking scheduled for Q4 2017, 1 year construction

2 Effective evaluation feedback system to access the impact of training and identify and provide training opportunities for the health staff

POLHN

The Continuation of POLHN DFL courses have contributed immensely to the Ministry of Health. For the first semester of 2017, there were a total of 7 students with one new student, similar to semester 2 with a total of 8 students with two new students. Details are shown in the table below.

In addition, 3 students completed their studies under the POLHN scheme. 1 student completed POLHN with a FNU Postgraduate Diploma in Health Service Management (Semester 1, 2017) and 2 students completed the FNU Postgraduate Certificate in Health Services Management in Semester 1 and the Semester 2 (2017).

Staff Exchange (Saint John of God Ballarat Hospital)

The ongoing partnership with SJOG Hospital continues to be one of the greatest milestones and collaborations of the Ministry of Health. In 2017, the Ministry of Health exchanged staff with SJOG twice throughout the year.

The first staff exchange was on the 3rd of March 2017 until the 01st of April 2017. For the first exchange, there was a total of 5 Ministry of Health staff sent to Ballarat. The exchange staff were:

1. **Folole Suliafu** – Senior Nursing Sister
2. **Litia 'Ahoafi** – Pharmacist Graduate
3. **Meleane Eke** – Eye Clinic Nurse
4. **Dr. Pita Pepa** – Medical Officer in the Psychiatric Ward
5. **Sioeli Manu** – Biomedical Dental Engineer

For the second staff exchange on the 03rd of November, 2017 until the 02nd of December 2017. For the second exchange, there was a total of 4 Ministry of Health Staff. The exchange staff were:

1. **Latu Fusimalohi** – Senior Medical Records Officer
2. **Estelle Tui** – Nutritionist
3. **'Ofa Kapiolani Vea** – Principal Staff Nurse
4. **Lesieli Tutone** – Staff Nurse

WHO Fellowship 2017

The ongoing support and collaboration between the Ministry of Health and the World Health Organization (WHO) has paved the way in terms of capacity building and skill development for Tonga's Healthcare Workforce.

In 2017, a total of 7 Overseas Fellowship Awardees (shown in the table below), these areas focusing on key priority areas that needs to be addressed and catered for to enhance and improve the health service delivery for the Ministry. In addition, 4 Local Fellowships were awarded for MOH staff to continue their studies locally in Tonga via the USP campus. In addition, some short-term attachments were rewarded to the IT staff to enhance their skills and knowledge in preparation for many e-government initiatives.

Table 10: Health Project Indicators

Indicator(s)	Total	Q1	Q2	Q3	Q4
Training and Development Committee Meetings					
Total Number of TDC meetings	7	2	1	2	2
Dates of TDC meetings		06.02.17 13.03.17	18.04.17	21.08.17 22.09.17	09.10.2017 21.11.2017
Number of POLHN students enrolled					
	Semester 1 2017		Semester 2 2017		

Number of POLHN students enrolled	7	7
Number of New POLHN students	1	1
Number of Continuing POLHN students	6	6
Number of Students Completed	2	1
Indicator(s)		Total
Total Number of Projects submitted		2
Total Number of Projects completed		2
Total Number of TDC meetings		7
Total Number of AusAID Scholarship Awardees		10
Total Number of NZAID Scholarship Awardees		8
Total Number of Tonga Government Scholarship Awardees		4
Total Number of 'Other' Scholarship Awardees		3
Total Number of Scholarships Awarded		25
Total Number of Returning Scholars		19
Total Number of Staff within Exchange Programs		9
Total Number of Overseas Training Workshops Attended by MOH Staff		62

*Q1: January – March 2017, Q2: April – June 2017, Q3: July – September 2017, Q4: October – Dec 2017

6.1.7.4 Health Research

#	Objectives	Milestones
1	Monitor, Regulate, Review and Approve Research Application/Proposals submitted to the Ministry of Health	<ul style="list-style-type: none"> ❖ Number of research studies implemented in 2017 (n = 25) has increased by 47% from 2016 (n = 17) ❖ For more detailed information regarding the Research studies, please refer to the NHERC Annual Report and MOH Website. ❖ Studies implemented in 2017 include: <ul style="list-style-type: none"> ○ The STEPS Survey (2017) in May 2017 ○ The Mental Health Survey (2017) in November 2017 ❖ Studies completed and final reports submitted include the: <ul style="list-style-type: none"> ○ Tonga Global School-based Student Health Survey 2017 spearheaded by the MOH (Public Health Division) ○ Food Taxation in Pacific Small Island Developing States (SIDS) by C-POND. Details of studies are to be found in the 'NHERC Annual Report 2017'.
2	Strengthening the Research Capacity of the Ministry of Health staff	<ul style="list-style-type: none"> ❖ Eu'ese Fetokai had the first workshop for 2017, in Fiji regarding cancer registration on the 22/05 – 26/05 ❖ The HIES dataset workshop of which Va'inga Tone attended on the 27th of November – 1st December 2017. ❖ Organizations collaborated with the Ministry of Health in implementing Research studies include: <ul style="list-style-type: none"> ○ Fiji National University ○ University of Auckland ○ Sydney University
3	Development of Vaiola Hospital's Cancer Registry	<ul style="list-style-type: none"> ❖ Increasing percentages of Quality Data Checks since 2014 – 2016, target met for 2017 as it is above 80%.

Table 11 Health Research Indicator(s)

Indicator(s)	Total	Q1	Q2	Q3	Q4
Health Research Monitoring					
Total Number of Research Proposals Submitted	25	6	9	6	4
Total Number of Research Proposals Approved	25	6	9	6	4
Total Number of Research Proposals Rejected	0	0	0	0	0
Total Number of Research Final Reports Submitted	17	3	4	6	4
Indicator	Total	2017	2016	2015	2014
Total Number of Research Proposals Submitted / Approved	65	25	17	11	12

Indicator(s)	Total	Q1	Q2	Q3	Q4
NHERC Meetings					
Total Number of NHERC meetings	2	1	1	0	0
Dates of NHERC meetings		06/02/2017	15/07/2017		
Total Number of NHERC expedited reviews	18	2	5	9	2
NHERC Annual Report 2017	NHERC Annual Report Completed / Submitted				
Evidence-based Practice Course					
Continuation of EBP class at QSSNAH	Completed, extended to Radiology students				
HINARI database access available for 2017	Access secured via TongaHealth funding				
Cancer-Registration					
Indicator(s)	Total	Q1	Q2	Q3	Q4
Total Cancer cases registered for 2017	125	31	21	35	38
Average Quality Data Percentage	88%	100%	80%	80%	90%
Total cancer-related mortality for 2017	31	11	6	4	10
Indicator	Total	2017	2016	2015	2014
Quality Data Percentage	82%	88%	89%	77%	73%
Total Cancer Incidence	598	125	125	163	185
Total Cancer-related Mortality	191	31	27	61	72

Cancer Cases by Sex (2017)

Female

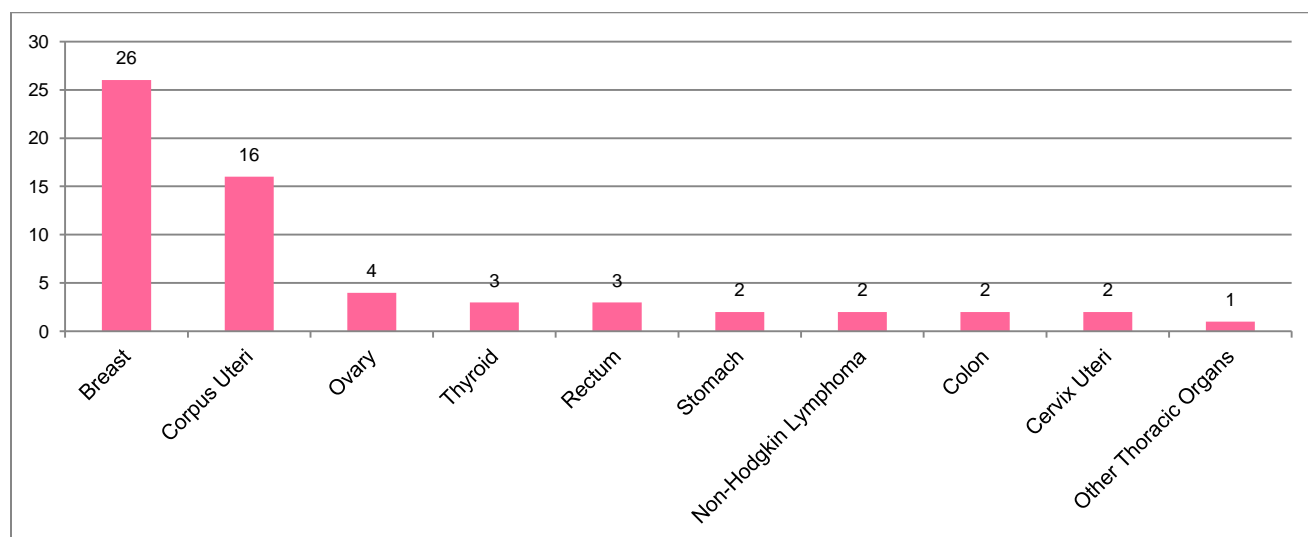


Figure 3: Top 10 Cancer Cases for Women (2017) registered in the Registry

Figure 3 illustrates the top 10 cancer sites for females with Breast Cancer still leading with 26, followed by Corpus uteri then Ovary. The trend still shows the disproportional difference of breast cancer compared to the other cancer sites, this can be associated to many different reasons including the availability of mammography machine, women being more proactive with seeking consultations to name a few.

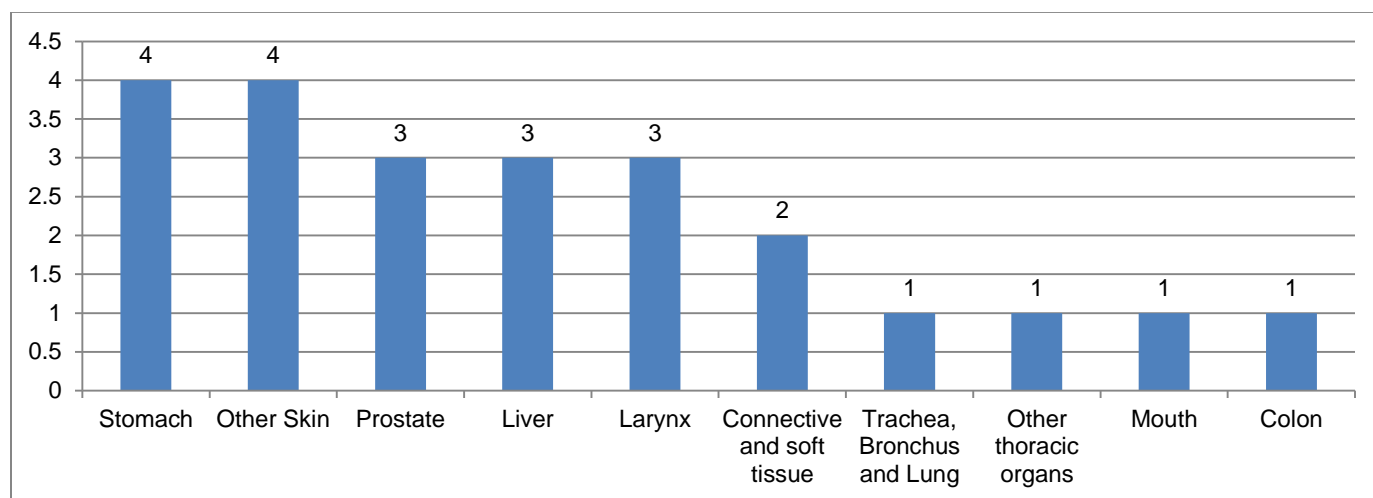
Male**Figure 4: Top 10 cancer sites for Males (2017)**

Figure 4 illustrated the Top 10 cancer sites for Males for 2017. The leading cancer site is Stomach followed by other skin then Prostate. It should be noted that the number of male cases are too low to make any useful analysis of the cancer trends.

6.1.7.5 Health Information**Table 12: Health Information Indicators**

Indicator(s)	Total
Total Live-Births registered for 2017	2246
Total Deaths registered for 2017	556
Total Perioperative Mortality recorded for 2017	2
Perioperative Mortality Rate (2017)	0.068

Source: Mortality Database, Live-Birth Database and Perioperative Mortality Report 2017

6.1.7.6 Medical Records

#	Objectives	Milestones
1	Maintain and promote complete patient confidentiality within the Section, Vaiola Hospital and throughout the entire Ministry of Health.	<ul style="list-style-type: none"> Vaiola's Medical Records Committee proposed and established. Completed Supervisory visits to Motu (Vava'u, Ha'apai and 'Eua) Mar.-Jun 2017
2	Provide quality and efficient medical records service delivery.	<ul style="list-style-type: none"> Approval of 4 Medical Records Staff members for WHO Fellowship funding; Courses commence in 2018 (Ms. Mioko Veilofia, Ms. Lisita Holani, Ms. Leonia Finau and Ms. 'Ilaise Tu'utafaiva). One Staff attended a 1-month attachment in Ballarat, Australia (Ms. Latu Fusimalohi).
3	Provide timely, relevant, accurate data for clinical and administrative uses.	<ul style="list-style-type: none"> Monthly and Quarterly reports are up to date.

Table 13: Medical Records Indicators

Indicator(s)	Total
Total Number of Admissions (Inpatient) (Jan – Dec 2017)	9650
Total Number of Discharges (Jan – Dec 2017)	9660

Total Number of Consultations (incl. discharged deceased) (Jan Dec 2017)	90407
--	-------

Source: Medical Records Unit Annual Report

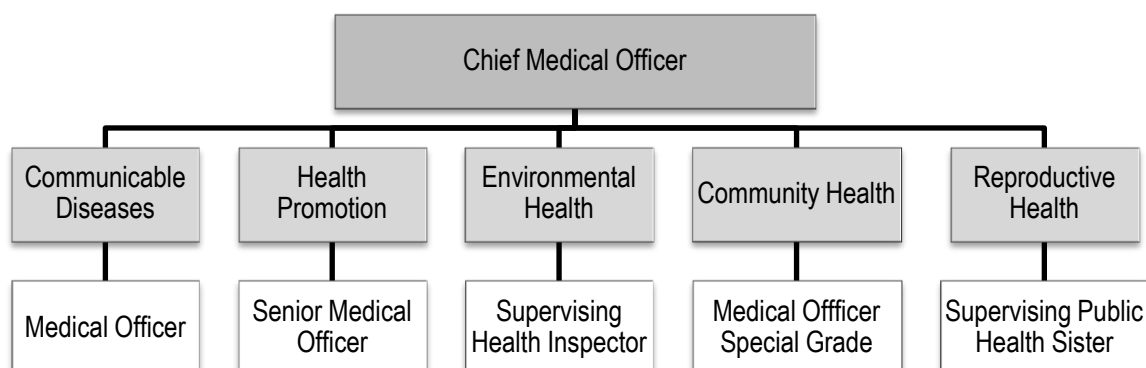
Note: *The Admissions and Consultations data is illustrated in the Clinical Services and Outpatient Unit Sections respectively.*

Based on the table above, the figures cover the period of January – December 2017, the total number of admissions to all wards with beds intended for a long period of stay is 9,650 admissions. These include readmissions as well. For the total number of discharges, there was a total of 9,660 and the total number of consultations including discharged as deceased was 90,407. The breakdown of the admissions and consultations are shown in the Outpatient and Clinical Services Unit.

7 PUBLIC HEALTH SERVICES

7.1 Mission Statement:

To help all people in Tonga to achieve the highest attainable level of health defined in WHO's constitution as **"a state of complete physical, mental and social well-being and not merely the absence of infirmity"**; by significantly reducing morbidity and mortality due to infectious diseases and improving the quality of life.



7.2 Head of Sections

Sections	Head of Section
Communicable Diseases	Dr. Louise Fonua
Health Promotion	Dr. 'Ofa Tukia
Environmental Health	Mrs. Sela 'Akolo Fa'u
Community Health	Dr. Lemisio Sa'ale
Reproductive Health	Sr. 'Atalua Tei

7.3 Communicable Diseases Section

Communicable Diseases Section is responsible for developing guidelines for prevention and control of outbreak prone diseases; develop treatment protocols; manage the suspected/confirmed STI patients; implement and monitor *DOTS* strategy.

7.3.1 Statistical Information for the Communicable Disease Unit

Table 14: Sexually Transmitted Infections (STI)

STI January – December 2017												
AGE GROUP	Gonorrhea		Chlamydia		Syndromic		Others		Both		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F
0-14	0	0	0	0	0	0	0	0	0	0	0	0
15-24	52	0	12	68	81	26	0	2	7	0	152	96
25-34	15	0	0	32	33	12	0	0	0	0	48	44
35-44	5	0	0	3	9	2	0	1	0	0	14	6
45-54	1	0	0	0	2	1	0	1	0	0	3	2
55-64	1	0	0	0	3	0	0	0	0	0	4	0
65+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	74	0	12	103	128	41	0	4	7	0	221	148
	74		115		169		4		7		369	

Source: Communicable Diseases STI Registries

Summary: There were a total of 369 cases seen in the Communicable Diseases Unit from January to December 2017 of which 196 cases were confirmed from the Laboratory and 169 cases that were also treated. Please note that 'OTHERS' column consists of 4 females diagnosed with Syphilis

6.1.1.1.1 Tuberculosis (TB)

Total of 14 TB cases registered (8 males, 6 females) of which 7 were smear positive (3 males and 4 female), 2 smear negative (1 male, 1 female) and 3 Extra pulmonary TB (3 males) 2 transfer in cases (1 male, 1 female).

6.1.1.1.2 Typhoid (Salmonella Typhi)

From January to December 2017, there were a total of 32 cases of typhoid fever (22 males, 10 females) from Veitongo, Folaha, Fanga, Nakolo, Haveluliku, Niutoua, Tofoa, Kolonga, Nukuhetulu, Lapaha, Maufanga, Houma, Lakepa, Sopa, Vaini, Halaleva, Fangaloto, Longolongo of which 8 Healthy carriers were identified for the same period.

6.1.1.1.3 Tuberculin Skin Test (Mantoux test)

There were a total of 190 clients seen in the Unit for a mantoux test, 159 were requested for a medical check-up for both US. Visa and LDS missionary candidates, 31 patients were requested from the wards for a TB screening.

6.1.1.1.4 Lymphatic Filariasis

Tonga was declared Lymphatic Filariasis free. The country joins Cambodia, China, Cook Islands, Niue, the Marshall Islands, the Republic of Korea and Vanuatu in WHO's Western Pacific Region that have been validated as having achieved elimination of lymphatic filariasis as a public health problem since WHO launched the Global Programme to Eliminate Lymphatic Filariasis in 2000

6.1.1.1.5 Visa and Employment

Visa –180	}	total numbers of health certificates and medical checkup processes for 2017
Employment – 420		
		seen in Center.

7.4 Health Promotion Section

Health Promotion section is responsible for identifying and providing intervention programmes for at risk persons/group in public particularly on Non Communicable Disease.

7.4.1 Staffing for the Health Promotion Unit as of 31st December 2017

Title	No. of Posts	Post Filled	Vacancies
Medical Officer Special Grade	1	1	0
Senior Health Promotion Officer	1	1	0
Health Promotion Officer Graduate	1	1	0
Nutritionist Diplomate	1	1	0
Health Promotion Officer Grade 1	4	4	0
Health Promotion Officer Grade 2	9	6	2
Total	16	14	2

7.4.2 Key Milestones

Objectives	Selected Milestones
------------	---------------------

<p>To provide high standard health promotion services through proficient skilled-staff and sufficient resources</p>	<p>Human resources: staff recruitment & capacity development</p> <ul style="list-style-type: none"> Recruitment of a Nutritionist with a bachelor degree to lead and drive healthy eating and nutrition programs provided by the Unit Establishment of the senior tobacco control position as an absorption from a daily-paid position that had been existed for almost 3 years. <p>Other resources:</p> <ul style="list-style-type: none"> Secured funding for implementing health promotion programs from multiple donors (WHO, THSSP, TongaHealth & Recurrent Fund) Developed overarching work plan with harmonized budget from multiple sources as to guide the delivery of health promotion services required by the Ministry and other Partners.
<p>Strengthen links with community through building on the Healthy Setting programs</p>	<p>Increased supply of local low cost healthy activities to community through churches:</p> <ul style="list-style-type: none"> Ongoing provision of healthy lifestyle programs through health promoting churches (Haofaki Mo'ui Program). The round 2 of THSSP grants for the implementation of the individual Church Health Coordinators' (CHC) work plans, released in Q2 to 8 churches. Some of the healthy lifestyle programs included community trainings on NCDs and other health issues, health screenings, youth sports, physical activity/aerobics sessions, vegetable gardening and healthy cooking demonstration. A team from HPU visited Vava'u in Q2 conducted community setting-based health promotion initiatives such as community trainings through churches, and health screening of workplaces. The team also attended the FWC's annual conference 2017 held in Vava'u during their visit, conducted health screening and physical activity/aerobics sessions for church conference members. Haofaki Mo'ui Program received an international recognition from the World Council of Churches (WCC) where Tonga had been considered as one of the 3 piloted countries in the world for this faith-based health initiatives; the other two countries are Jamaica and Charlotte of North Carolina, US. The Haofaki Mo'ui program was invited by the WCC to participate and share its program with other participated countries in an international meeting held in North Carolina in November 2017 where the chair of the working committee, Rev. Fili Lilo and Eva Mafi from HPU attended. HPU completed two review workshops on the implementation progress of the CHC's work plans, one introductory on First Aid training for the CHCs and Parters; and there was one 'train the trainers' training conducted to community volunteers in Vava'u to assist in the provision of community-based physical activities and for sustainability of the programs. Community-based (healthy setting) health programs heavily rely on commitment of volunteers, therefore it's important to develop volunteer management system including incentives, so that volunteer commitment can be fostered through it. <p>Improved healthy eating habit of school children:</p> <ul style="list-style-type: none"> Review of the School Health Policy was conducted by a team from Otago University led by Dr Viliami Puloka. Findings showed that the content of the policy was comprehensive but the key

	<p>weakness identified was the implementation of the policy as there was no implementation plan in place to clarify who is doing what. The findings of the review were used for the development of the new Policy.</p> <ul style="list-style-type: none"> The Unit strengthened the partnership with WHO in addressing childhood obesity in Tonga. The program included the extension of its health promoting school programs to early childhood education centres (pre-school level) as part of the Ending Childhood Obesity (ECHO) Project. The ECHO project launched in November 2017 piloted in 8 pre-schools. The project key focus was on healthy eating, physical activity and policy development included the review of the School Food Policy. The 8 schools were empowered with provision of sport equipment and upgrading playgrounds, installation of rainwater catchment system to promote drinking water, and provision of seedlings, manure and top soils for veggie gardening and cooking equipment to promoting cooking healthy snacks to children using local food items and veggies. Mai-e-Nima Project led by Nishi Trade Limited still going well with support from all stakeholders involved. Part of it was the cooking competition held at Ahopanilolo Institute revealed improvement in children's knowledge on food and nutrition and how to compose a healthy recipe. <p>To increase number of health promoting workplaces:</p> <ul style="list-style-type: none"> Fiefia Tonga Sport expanded to an all-year-round event through provision of other sport activities and boot camp sessions to workplaces. It was started in January all throughout to the launch of the main event in September. Fiefia Sport rolled out to outer-islands including Haapai, Vava'u and Eua. Installation of 4 outdoor exercise stations along the Nuku'alofa waterfront to promote resistance exercise as complement to physical activity and aerobic exercises.
To provide high quality media programs	<ul style="list-style-type: none"> Routine health media programs continuously provided throughout the year via the two popular outlets, Tonga Broadcasting Commission and Tonga BroadCom Ltd. HPU managed to upgrade its media unit to include a studio room for recording of TV and audio programs in-house before sending for broadcasting at the two outlet stations.
To reduce tobacco use and its adverse health effects in Tonga	<ul style="list-style-type: none"> As routine, the Tobacco Control Unit continuously provided quitline services to smokers who committed to quit smoking with number of cumulative cases registered for quit support in 2017 was 309, and 115 of them successfully quit from smoking. HPU successfully launched and implemented phase 2 of its national hard-hitting mass media anti-tobacco campaign "Tuku Ifi Leva" in September 2017 with the Hon Minister of Health was Guest of Honor. The campaign, <i>Tuku Ifi Leva</i> (Quit Smoking Now) used a variety of media to deliver the key messages throughout Tonga over 6-week period. It adapted specifically for Tonga, graphically shows the risk of tobacco use with the key focus was on personal consequences of smoking included cancer, strokes, heart attack, and blindness. Enforcement activities still ongoing throughout the main island and rolled out to the outer islands as well.
Research	<ul style="list-style-type: none"> The 2nd Global School-based Health Survey (GSHS) for Tonga completed in May 2017, with the official fact-sheet of the findings already released while the general report still with WHO Suva

	<p>Officer to assist in the 'write-up' of the official Report.</p> <ul style="list-style-type: none"> The GSHS fieldworks conducted by the HPU staff throughout the whole of Tonga included the two Niuas. Response rate of school participation was 100% and students participation was 92%
--	---

Table 15: Health Promotion Unit Indicators

Program	Indicators	Outcomes
Tuku Ifi Leva Campaign 2017 Primary focus of the campaign was on personal health consequences of smoking including cancer, strokes, heart attacks, disability, and blindness	# of materials printed and distributed	2283
	# of TV, radio ads during campaign period	144
	# of press release	2
	# of Facebook reach, engaged and paid ad likes	Facebook reach (view content): <ul style="list-style-type: none"> Campaign 30 sec TV ad views = 22,084 Total minutes of video ad viewed = 9,300 Total # of unique individuals reached = 32,689 (of which 87% are located within Tonga) Facebook engagement (have liked, commented, or shared) <ul style="list-style-type: none"> Campaign post likes = 1,890 Campaign page likes = 737 Click through to campaign's website = 3,994
	# of visits to microsites	Campaign website (www.tapuifitonga.com) <ul style="list-style-type: none"> Total visits = 3,884 Unique visitors = 2,150 Average time on website = 2.02min
Quitline Services	# of registered quit line calls	201
	# of smokers where affordability is a factor in making a quit attempt	144
	% of call follow-ups	75
	# of callers who have quit for at least 6 months	75
	# of health professionals trained in tobacco control/brief intervention	2

Source: HPU Annual Report 2017

7.5 Community Health Section

Community Health section is responsible for providing health services in the community, educates and promotes healthy life style in the community and encourages community participation in community health development.

7.5.1 Staffing for Community Health Section as of the 31st of December 2017

Title	No. of Posts	Post Filled	Vacancies and Daily Paid
Medical Officer special Grade	1	1	
Nurse Practitioner Supervisor	1	1	

Health Officer Supervisor	1	1	
Senior Health Officer	4	4	
Health Officer	10	10	
Nurse Practitioner	3	3	
Care Taker	1	1	9 (daily paid)
Computer Assistant	1	1	1 (daily paid)

There are 4 staff retiring 2017-18, 1 approved deferral until December 2018, 2 applied for deferral for 2 years and 1 will retire in June 2018. There are currently 2 Nurse Practitioners trainees in Fiji expected to graduate mid 2019

7.5.2 Key Milestones

#	Selected Milestones
1	<p>Service Delivery at the Community Health Centres</p> <p>Ongoing Specialist NCD Clinics were implemented and completed at all 7 Community Health Centres in Tongatapu with support of Diabetes Mellitus and Medical Specialist including the Pharmacy team.</p> <p>The NCD nurses completed RHD screening and auscultation done by the Community Health team to pick cases for ECHO screening at primary school.</p> <p>Rheumatic Heart Disease (RHD) Screening was completed around all of Vava'u and part of Tongatapu (Western and part of Central schools). There was a total of 6,167 screened (3,997 Echo) with 226 RHD, 247 Borderline RHD, 34 Congenital heart disease and 5 postop follow up detected. RHD patients were organised and referred for OHI heart surgery of September 2017</p> <p>CH attended initiatives by DM Specialist 1) Projects each for 3 Health Centres 2) DM Standard Treatment Guideline approved and implemented 3) Updated NCD workshop.</p> <p>Ongoing health promotion on Typhoid outbreak and assistance on healthy lifestyle activities such as physical activities with the Communicable Disease Unit and Health Promotion Unit respectively.</p> <p>The Community Health team have supported the School Health Program however not on a regular basis</p> <p>The Community Health team are members of District and Village Council with ongoing support of village "a'ahi kolo" and other health activities.</p> <p>The staff assisted and coordinated the process of the Disability welfare fund form with the Ministry of Internal Affairs.</p>
2	<p>Capacity Building and Training Workshops</p> <p>The following trainings and workshops were implemented and funded by various donors.</p> <p>DFAT-funded Trainings</p> <ul style="list-style-type: none"> • RHD Screening Phase 1 and 2 • Disability (Vehicle for HC Houma) • Outreach Petrol support • Leadership and Planning retreat workshops • NCD data Supervise visits to the Outer islands <p>WHO-funded Trainings</p> <ul style="list-style-type: none"> • Disability training workshops • PEN training workshops • RHD funding support <p>WHO PEN workshop Dr Saale attended the Western Pacific Regional PEN Workshop in Auckland</p>

New Zealand.

PEN workshops delivered to Outer Islands (Ha'apai, Vava'u, Niuafoou). 'Eua and Niuatoputapu delayed.

Supported Ministry of Internal Affairs on **Disability Caregivers training**

The Community Health Unit staff participated in many Ministry of Internal Affairs international workshops held in Tonga amongst other trainings like VIP.

WHO funded Workshops at Manila, Phillipines and Nadi, Fiji for Mental Health was attended by Dr Saale with the *mhGAP* and *PFA* training for CHC staff (Nurses and HO) underway.

Ongoing follow up with support and education on data entry and reporting for CHC staff (both CH and NCD teams).

3 Policies and Human Resources for the Community Health Unit

Package of Essential Health Services has completed and now rolled out to site survey by using IT Tupaia system is a tool record and make improvement on services provided at all level of Health care including Community Health centres.

Posting for 2018-19 were approved and implemented. There were 6 staff moved by January 2018 and two staff expected to move on November 2018. One will retire in June 2018.

The Community Health team co-operated with the **completion of weekly surveillance forms** by Tuesday afternoon for each of the CHCs on Tongatapu

Health Officer Remuneration Authority (RA) **salary appeal** submitted November 2016 and awaiting decision.

4 Infrastructural Development of the Health Centers

Completed renovation and maintenance with major tiling replacement at **Vaini HC**.

Four vehicles replacement for Vaini, Fua'amotu and Kolonga (from Parliamentarian funding) and Houma CHCs (from DFAT Disability funding). That left only Nukunuku HC to be replaced. Petrol for vehicles increased to 40L every 2 weeks.

All seven CHCs on Tongatapu have **working computers** with templet installed in place for Consultation and NCD by Karen Thomas our Volunteer Adviser. Data has been entered and updated with regular quarterly report and a final of year report provided by the 2 CA.

NCD nurses in Vaiola Hospital relocate to the **CHC** space

7.5.3 Statistical Information for the Community Health Section

Table 16: Number of Consultations by Community Health Centre (2017)

#	Community Health Centre	Total Consultations (2017)	Average Number of Consultations per day
1	Fua'amotu	5,431	20.89
2	Houma	5,114	19.67
3	Kolonga	4,476	16.02
4	Kolovai	4,765	15.78
5	Mu'a	9,150	25.20
6	Nukunuku	4,102	35.19
7	Vaini	6,552	17.22
	TOTAL	39,590	

Number of consultations per diagnosis category for Tongatapu rural (exclude greater Nuku'alofa) – 2017

Table 17: Overall Consultations by Diagnosis at Community Health Centers (2017)

DIAGNOSIS	TOTAL NUMBERS	PERCENTAGE (%)
Dermatology/Skin	4415	26.61
Respiratory	3919	23.62
Diabetes	2139	12.90
Hypertension	1610	9.71
Others	1218	7.34
MSK/Pain	946	5.70
Gastrointestinal	736	4.44
Acute/ Injury	645	3.89
ENT/Eye	439	2.65
Reproductive/ Genitourinary	167	1.01
Dental	150	0.90
Cardiovascular	123	0.74
Chronic other	43	0.26
Administration	35	0.21
Disability/Mental Health	2	0.01
TOTAL	16587	100

The following data was obtained from electronic NCD registers at the 7 Community Health centres in Tongatapu and their follow-up databases during 2017.

Table 18: NCD Cases seen by Health Centres (2017)

	CVD	Cancer	COPD	Chronic Respiratory	Diabetes	Hypertension	TOTAL
Fua'amotu	201	0	0	1	185	193	580
Houma	218	0	7	19	189	211	644
Kolovai	260	0	6	19	152	208	645
Nukunuku	208	2	11	14	174	201	610
Vaini	236	3	4	11	317	298	869
Mu'a	315	0	10	26	309	309	969
Kolonga	200	0	1	7	216	196	620
TOTAL	1638	5	39	97	1542	1616	4937

From the table above, majority of NCD cases are seen at the Mu'a Clinic (969) followed by Vaini (869). For CVD cases, cases appear higher in Mu'a compared to other Health Centers. For Chronic Respiratory cases, similar trends are seen. It is evident that majority of NCD cases are higher in Centres that cover more villages, or villages with higher density and provide more services.

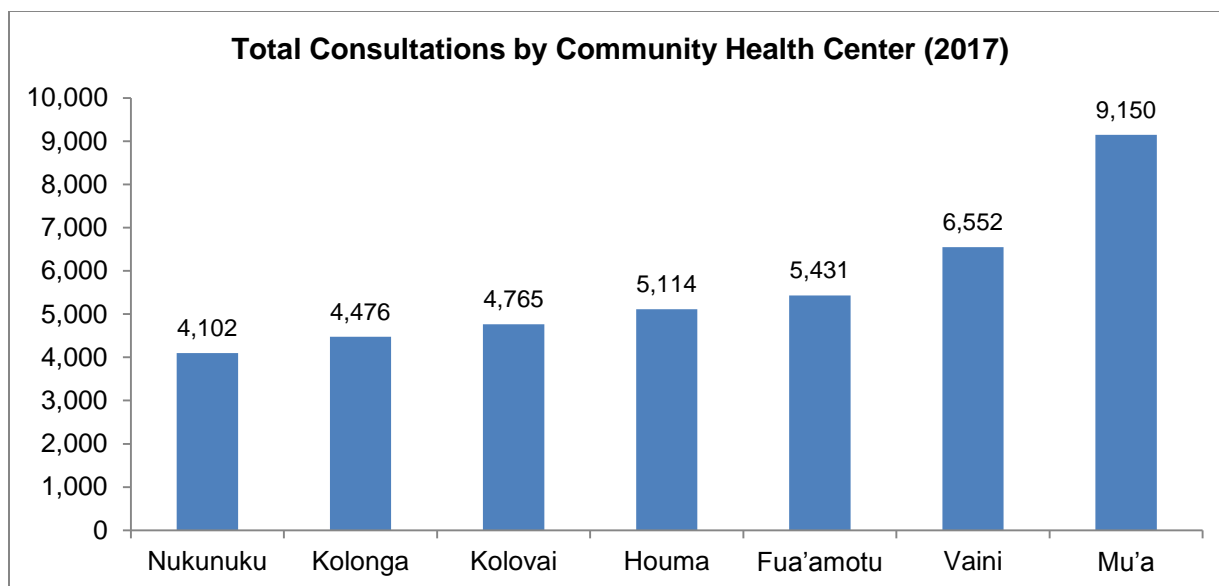


Figure 5: Total Consultations by Community Health Centres (2017)

As illustrated above, Mu'a Health Center sees the most patients and has the largest number of consultations.

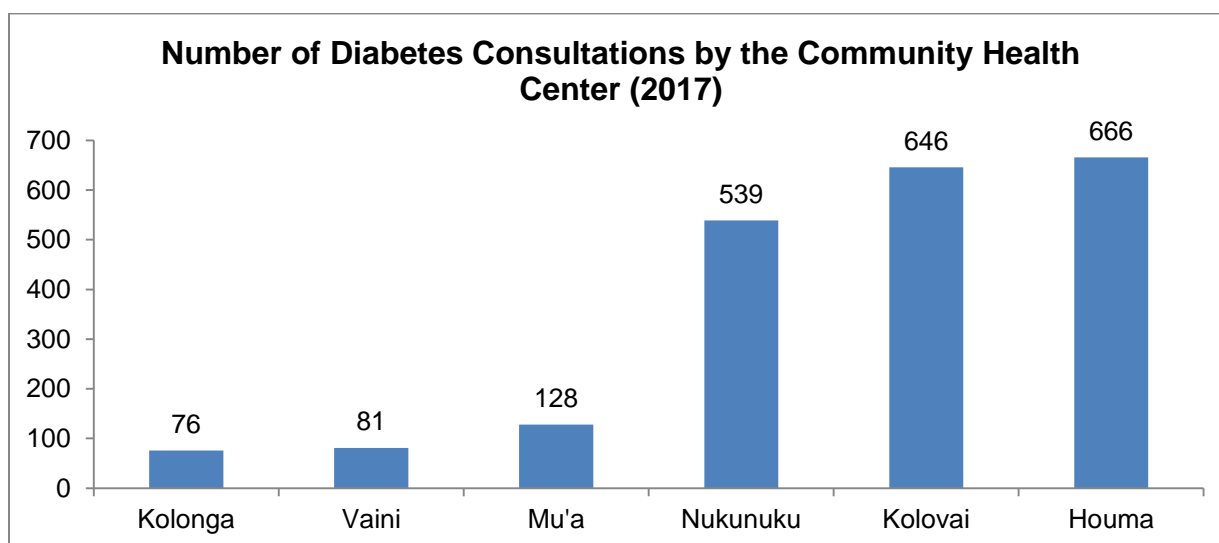


Figure 6: Total Number of Diabetes consultations by Community Health Centre (2017)

As shown in the above graph, the largest numbers of diabetes consultations take place at the Houma and Kolovai Health Centers.

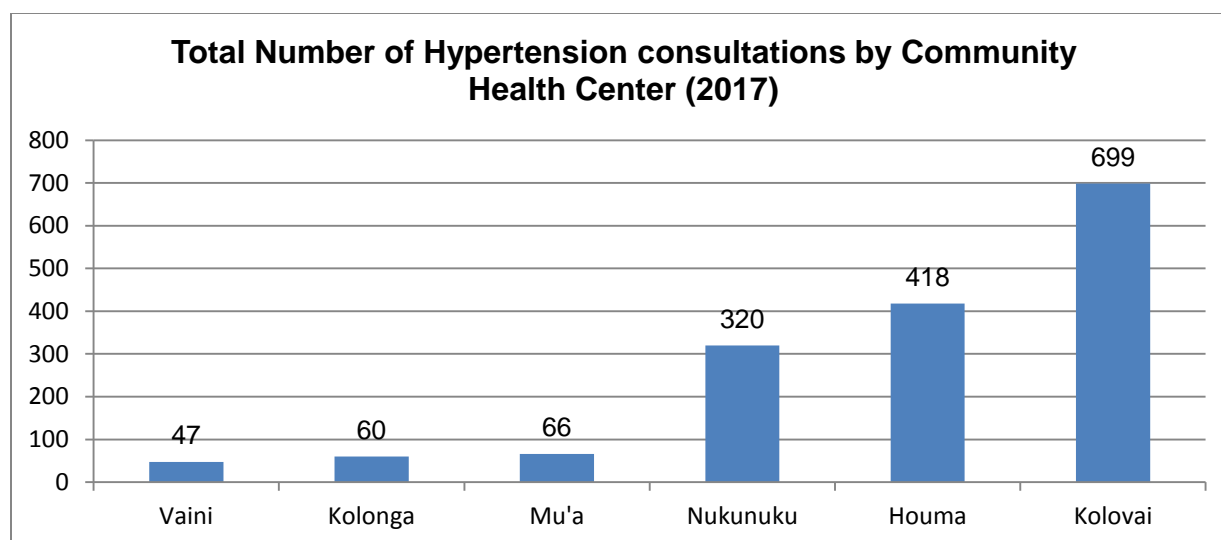


Figure 7: Total Number of Hypertension consultations by Community Health Center (2017)

As shown in the graph above, majority of the cases of hypertension are seen at the Kolovai Health Center, followed by the Houma Health Center.

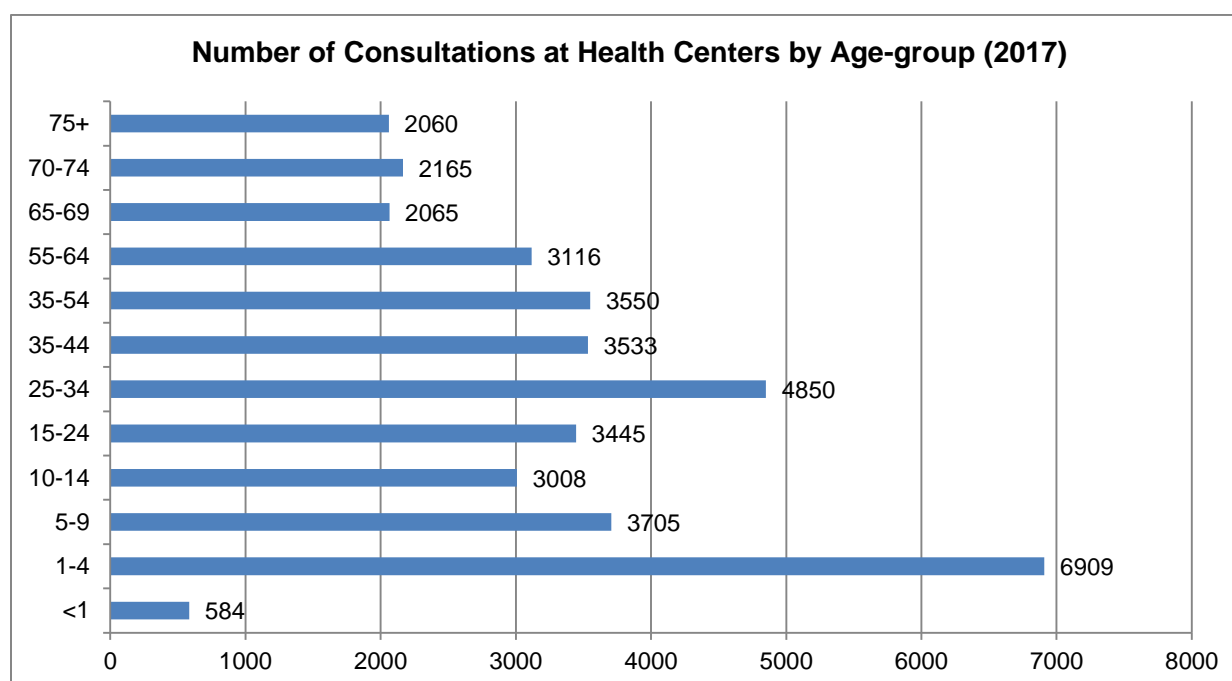


Figure 8: Consultations at Community Health Centers by Age-group (2017)

It is evident that majority of the cases seen at Community Health centers are children under the age of 5, this is followed by the age-group 25 – 34 years of age.

7.6 Reproductive Health Section

Public Health -Reproductive Health Nursing is responsible for providing quality, efficient and effective nursing services to mothers, infants, children and communities through reproductive health strategic approaches to the general population of the Kingdom of Tonga.

7.6.1 Key Milestones

#	Selected Milestones
1	<p>Trainings and Continuous Professional Development for the Unit</p> <p>Training on EPI to all Reproductive Health Nurses in Tongatapu was implemented in June 2017</p> <p>Continuous Professional Development on EPI diseases conducted in the immunization once a week</p> <p>CPD for all Reproductive Health Nurses in Tongatapu was implemented once a month on varies topics related to Reproductive Health.</p>
2	<p>Policy and Regulation for the Unit</p> <p>Immunization Handbook and Cold Chain Policy are ready for publish</p>
3	<p>Service Delivery and Operations of the Unit in relation to Reproductive nurses working in accordance to their working programme and ensure they cover all the services related to reproductive health and also cater the needs of the community.</p> <p>Regular supervisory visits to the Health centres and Reproductive health Clinics was done to oversee the daily activities carry out in the community.</p> <p>Jadelle is a method of contraceptives that was introduced in November 2015 and up to date there more than 2000 cases. About 35 % of the total new family planning cases is Jadelle</p> <p>Reproductive Health Nurses participated various workshops including Communicable Diseases and Disability.</p> <p>Monthly meeting with Head of Nursing Sections.</p> <p>Five refrigerators add on to our cold chain equipment donated by WHO. Supervisors are responsible for checking of resources at Health Centres as well as Health Clinics to ensure resources and equipment's are adequate and quality at all time.</p> <p>Eight new nurses transferred to Reproduction Health section</p> <p>Reading club conducted once a month in different groups and varies topics.</p> <p>RHNs are divided into groups according to their weights and are weighed monthly. We have then set weight targets for each group and are checked in December. This is a team activity.</p>

7.6.2 Statistical Information for the Reproductive Health Section

7.6.2.1 Vital Statistics

	Number
Total Households	21723
Total Women CBA, 15 - 49 years	26025
Total Pop. Female Adolescent 10-24 years old	16043
Total Pop. Male Adolescent 10-24 years old	17504
Total children under 5 years	13677
Total infants: 0 – 12 months	2543
Total Live births during 12mth period	2413
Crude Birth rate	22.64

Source: Reproductive Health Annual Report 2017

7.6.2.2 Live births & Crude Birth Rate

	Male	Female	Total
number	1199	1214	2413
%	49.7	50.3	
Crude Birth Rate, CBR - per 1000 population	$= \frac{\text{Total Live Births} \times 1000}{\text{total population}} = 22.64$		

Table 19: Deliveries by place of delivery and attending personnel

PLACE	TBA	DRS	NURSES	H.OFFICER	OTHERS	TOTAL
Home	8		1		20	29
H.Centre or RH. Clinics			5	2		7
Hospital		445	1973		4	2422
Others (Specify)		1			4	5
TOTAL	8	444	1968	2	26	2463

Source: Reproductive Health Annual Report 2017

***TBA: Traditional Birth Attendant**

From the table above, majority of cases are seen by medical officer or a nurse during their birth. In the case of others, it is either a different health professional or a relative/family.

Table 20: Obstetrics and Infant Mortality Data

Type of death	Number
Number of Abortions, <28 weeks	52
Number of Stillbirths, >28 weeks	23
Number of Perinatal deaths, 28 weeks up to 7 days post delivery	37
Number of Neonatal deaths, 0-4 weeks	19
Number of Infant deaths 0-12 months	37
Deaths in children below 5 years – 0 – 5years	38
Number of maternal deaths	0

Source: Reproductive Health Annual Report 2017

7.6.2.3 Immunization Coverage**Table 21: Childhood Immunization**

Vaccination	No. of children to be Immunized	No. of children immunized	Percentage (%) coverage
BCG 1	2392	2392	99.7
Hep B Birth dose	2392	2392	100
Polio 1	2432	2426	99.7
Polio 2	2379	2369	99.5
Polio 3	2313	2292	99.1
IPV	2313	2426	99.1
DPT/HIB/Hep B 1	2432	2426	99.7
DPT/HIB/Hep B 2	2379	2369	99.5
DPT/HIB/Hep B 3	2313	2292	99.1
MR 1	2521	2489	99.4
MR 2	2463	2440	99
DPT 4	2463	2440	99

Table 22: Immunization of Women (Tetanus Toxoid)

No. of ANC (New) Pregnant women	Dose	No. to be immunized	No. immunized	Percentage (%) covered
TT 1	0.5mls	457	453	99
TT 2	0.5mls	249	246	99
TT Booster	0.5mls	183	183	100

7.6.2.4 Contraceptive Prevalence Rate

Practicing at the start of the year	8246
New acceptors	1451
Transfer in	138
Transfer out	222
Discontinued	1076
Practicing at the end of the year	8537
Contraceptive prevalence Rate (%) = $\frac{\text{Total users} \times 100}{\text{CBA}}$ CPR = 33%	

Table 23: Total Number of New Acceptors by Method

	IUD	Pills		Depo	Condoms		TL	Vas	Nat. Method	Jad.	TOTAL
		C	M		M	F					
No.	12	42	45	358	50	8	111		88	675	1389
%	1%	3%	3%	26%	4%	1%	8%	0%	6%	49%	

M = Male, F = Female,
 Jad. = Jadelle, TL = Tubal Ligation, Vas. = Vasectomy, Dep. = Depo Provera, C = Combined, M = Mini,
 IUD = Intrauterine Device

Table 24: Total Contraceptive Users by Method and Age

Age-Group	IUD	Pills		Depo	Condoms		TL	Vas	Nat. Method	Jad.	TOTAL	
		C	M		M	F					No.	%
Below 20	2	7	2	26	7		1		21	89	155	2%
20 – 24	27	30	50	302	89	1	19		53	302	873	10%
25 – 29	114	83	99	490	184		109		104	366	1549	18%
30 – 34	197	101	79	544	173	2	263		149	349	1857	21%
35 - 39	210	204	61	463	143	3	468	2	147	245	1946	22%
40 - 44	153	75	25	234	99	1	492		140	118	1337	15%
45 +	137	27	10	122	36		535	1	59	27	954	11%
TOTAL	840	527	326	2181	731	7	1887	3	673	1496	8671	
%	10%	6%	4%	25%	8%	0%	22%	0%	8%	17%		

M = Male, F = Female,
 Jad. = Jadelle, TL = Tubal Ligation, Vas. = Vasectomy, Dep. = Depo Provera, C = Combined, M = Mini,
 IUD = Intrauterine Device

It is evident in the table above that majority of the contraceptives used are Depo and TL, then followed by the Jadelle. Contraceptives utilization appears higher in individuals aged- 35 – 39 and 30 – 34. It is thus recommended that more health promotion and awareness be made for younger individuals.

7.6.2.5 Population Breakdown 2017

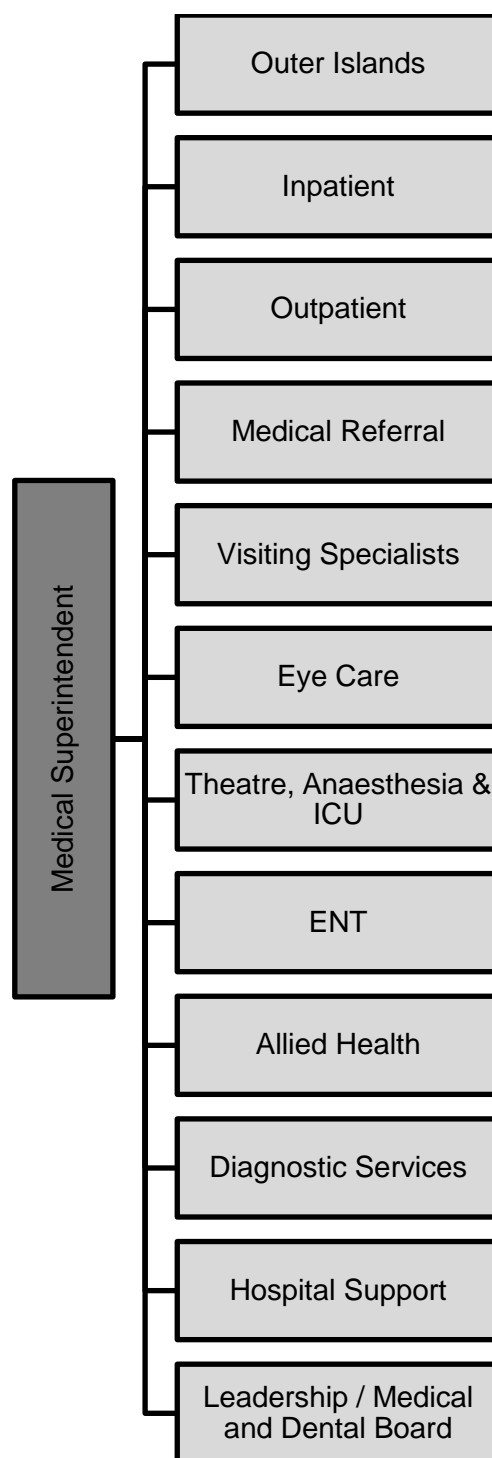
Population Breakdown			Total	
Population	Male	Female	Number	%
<i>Infants (below 1 year)</i>	1269	1274	2543	2%
<i>1 - 4 years</i>	5762	5387	11149	10%
<i>5 - 9 years</i>	6632	6176	12808	12%
<i>10 - 14 years</i>	6362	5838	12200	11%
<i>15 - 19 years</i>	5783	5438	11221	11%
<i>20 - 24 years</i>	4687	4780	9467	9%
<i>25 - 29 years</i>	4056	4099	8155	8%
<i>30 - 39 years</i>	6184	6605	12789	12%
<i>40 - 49 years</i>	5132	5103	10235	10%
<i>50 - 59 years</i>	3486	3816	7302	7%
<i>60 - 69 years</i>	2304	2683	4987	5%
<i>70 + years</i>	1637	2054	3691	3%
<i>TOTAL POP. - this period</i>	53294	53253	106547	
<i>Total Deaths</i>	357	280	637	

Source: Reproductive Health Annual Report 2017

8 CURATIVE HEALTH SERVICES

8.1 CLINICAL SERVICES

8.1.1 Organizational Structure



8.1.2 Staffing for the Clinical Division as of 31st December 2017

Section	Head of Section
Paediatrics and SCN	Dr. George 'Aho
Surgical Ward	Lord Tangi
Medical Ward	Dr. Sione Latu
Obstetrics and Gynaecology	Dr. Ma'ake Tupou
Mental Health	Dr. Mapa Puloka
Anaesthesia and ICU	Dr. Selesia Fifita
National Diabetes Clinic	Dr. Veisia Matoto
Emergency and Outpatient	Dr. Matamoana Tupou Dr. Viliami Vao
ENT	Dr. Leiukamea Saafi
Ophthalmology Services	Mrs. Savelina Veamatahau

8.1.3 Admissions

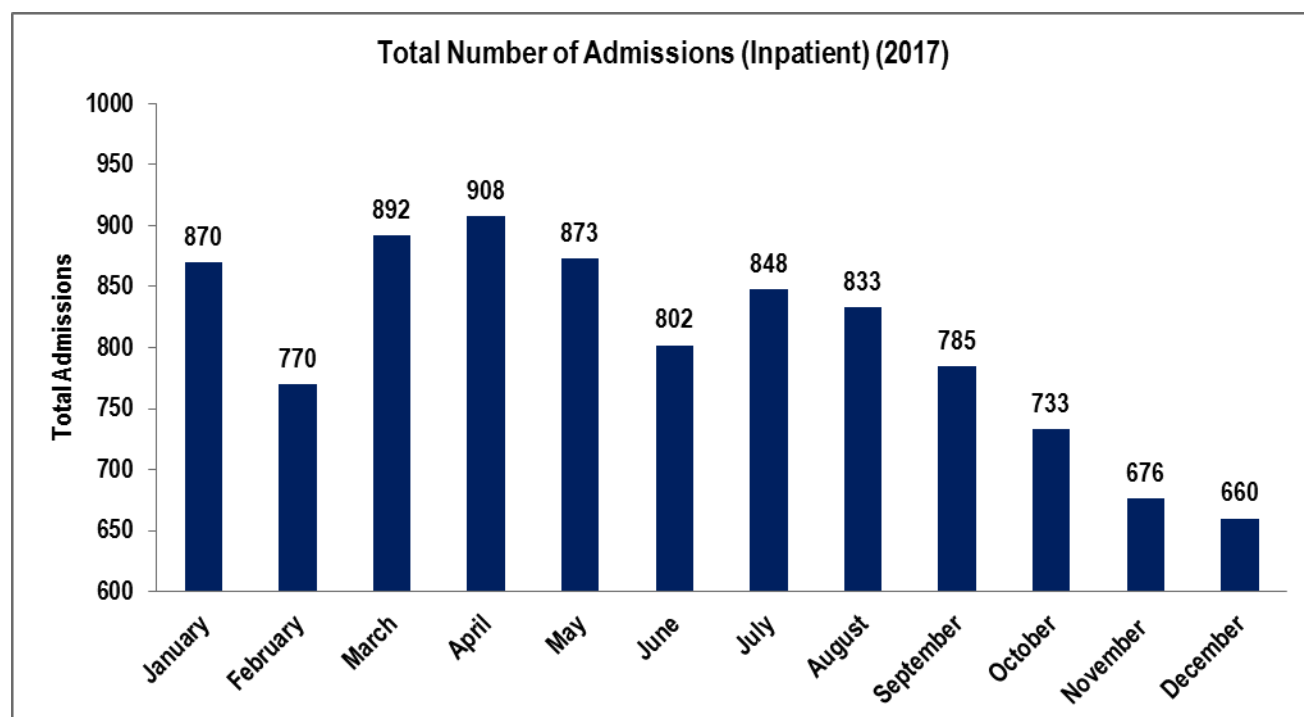


Figure 9: Total Number of Admissions by Month (2017)

For admissions to Vaiola Hospital, it is shown that the highest number of admissions were in April, followed by March the lowest number of admissions was in December, followed by November.

8.2 Paediatric Ward and Special Care Nursery

Paediatric Ward is responsible for providing health care services for children aged 0 to 14 years including special care for premature babies. The ward houses 31 beds for infants, children and adolescents with a variety of medical and surgical conditions.

Table 25: Admissions to Paediatrics Ward by Age-Group (2017)

Age-Group	Number	%
>1	531	31%
1 - 4	629	37%
5 - 10	392	23%
>10	159	9%
Grand Total	1711	

***Source: Paediatrics Admission Registry (2017)**

Table 8 above illustrates the admissions to the Paediatrics ward by Age-Group (2017). As illustrated the age-groups for the Paediatrics centre on children below the age of 5.

Table 26: Length of Stay (Days) at Paediatrics Ward (2017)

Length of Stay (Days)	#	%
<1	114	7%
1 - 4	1187	69%
5 - 9	263	15%
10 - 19	77	5%
20 - 39	31	2%
40 - 59	13	1%
60 - 79	2	0%
80 - 100	2	0%
>100	3	0%
Unspecified	19	1%
Grand Total	1711	

***Source: Paediatrics Admission Registry (2017)**

For Table 9, majority of cases (69%) at the Paediatrics Ward are admitted for a period of 1 – 4 days prior to discharge, followed by 5 – 9 days (15%). There are 19 cases that had unspecified discharge dates, which meant that the length of stay could not be calculated – further investigation is needed as it may just be a case of mistyping or not entering the data into the data-set.

Table 27: Top 10 Causes of Admissions to Paediatrics Ward (2017)

#	Cause of Admission	Total	%
1	Pneumonia	221	13
2	Acute Gastro-enteritis	136	8
3	Wound / Injury	80	5
4	Bronchiolitis	78	4
5	Abscess	73	4
6	Lower Respiratory Tract Infection	64	4
7	Acute Viral Illness	60	4
8	Asthma	49	3
9	Laceration	45	3
10	Acute Exacerbation of Asthma	37	2

Source: Paediatrics Admissions Registry (2017)

The table outlines the Top 10 reasons for admissions to the Paediatric Ward (2017) and it is mainly for Pneumonia followed by AGE or Acute Gastro-enteritis.

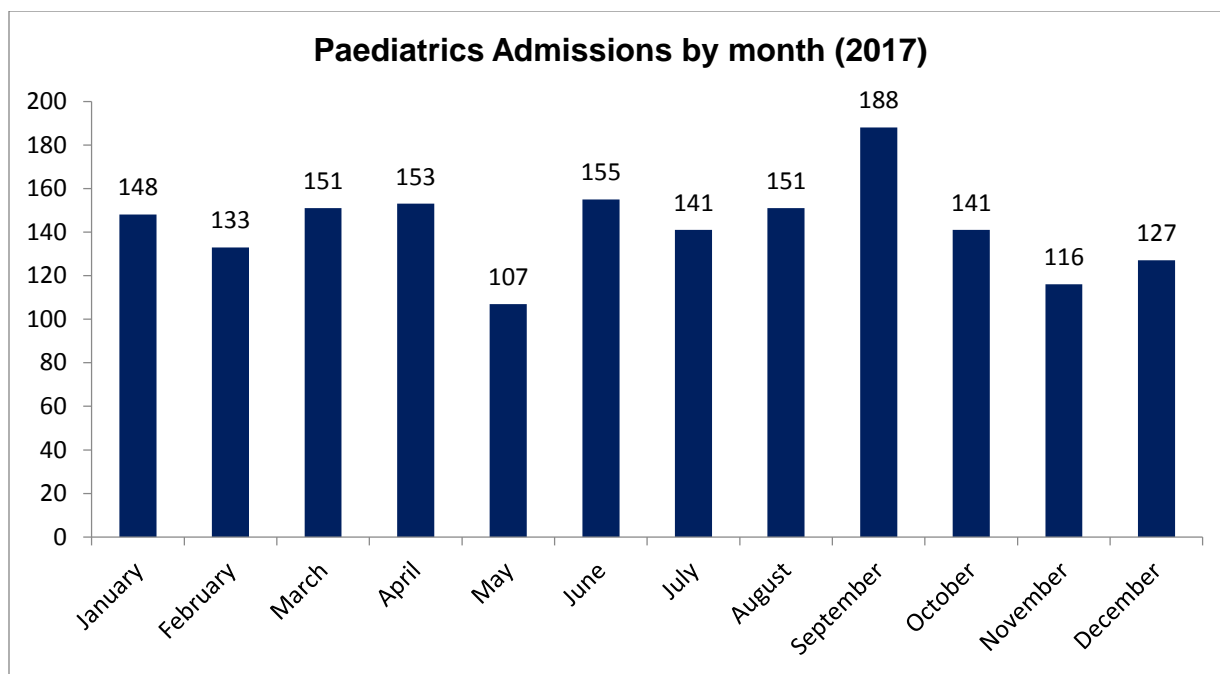


Figure 10: Paediatrics Admissions by month (2017) Source: Admissions Registry

Figure 10 illustrates the admissions by month for the year 2017. The highest number of admissions was in September and the lowest was in May. The total number of admissions to Paediatrics was 1711 admissions.

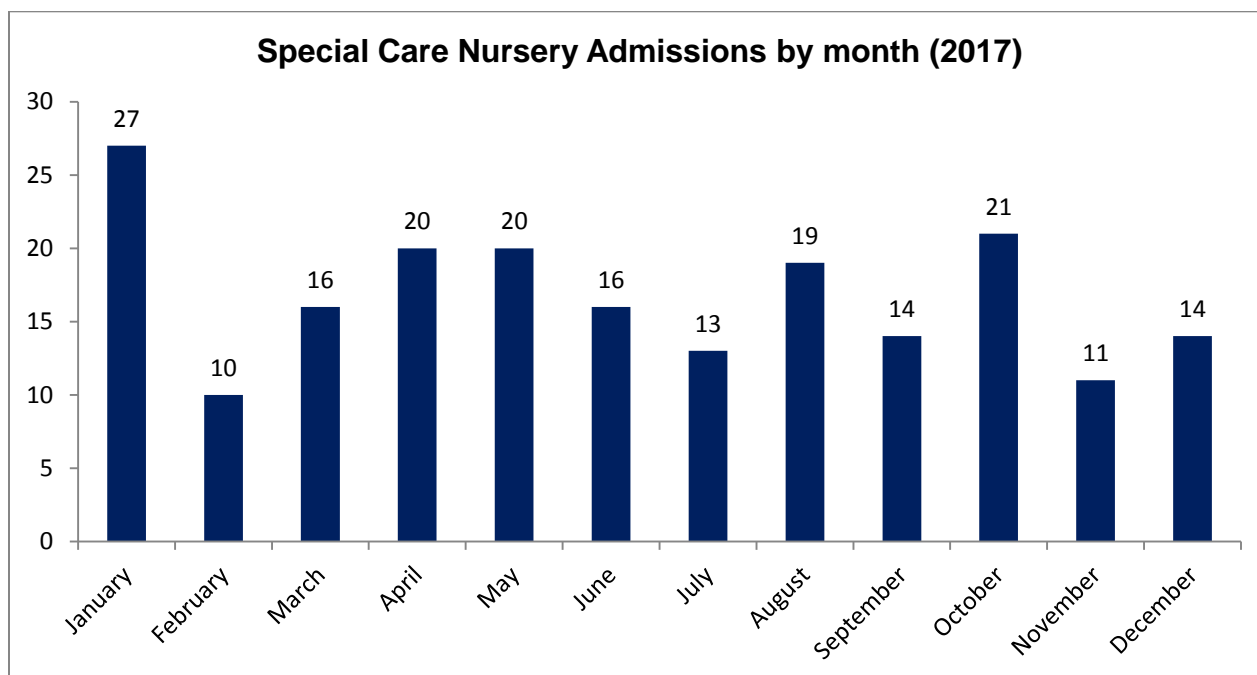


Figure 11: Special Care Nursery Admissions by month (2017) Source: Admissions Registry

The 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 (Paediatric). The figure above illustrates that the highest number of admissions to SCN were in January and the lowest in February and November respectively.

8.3 Surgical Ward and Operating Theatre

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

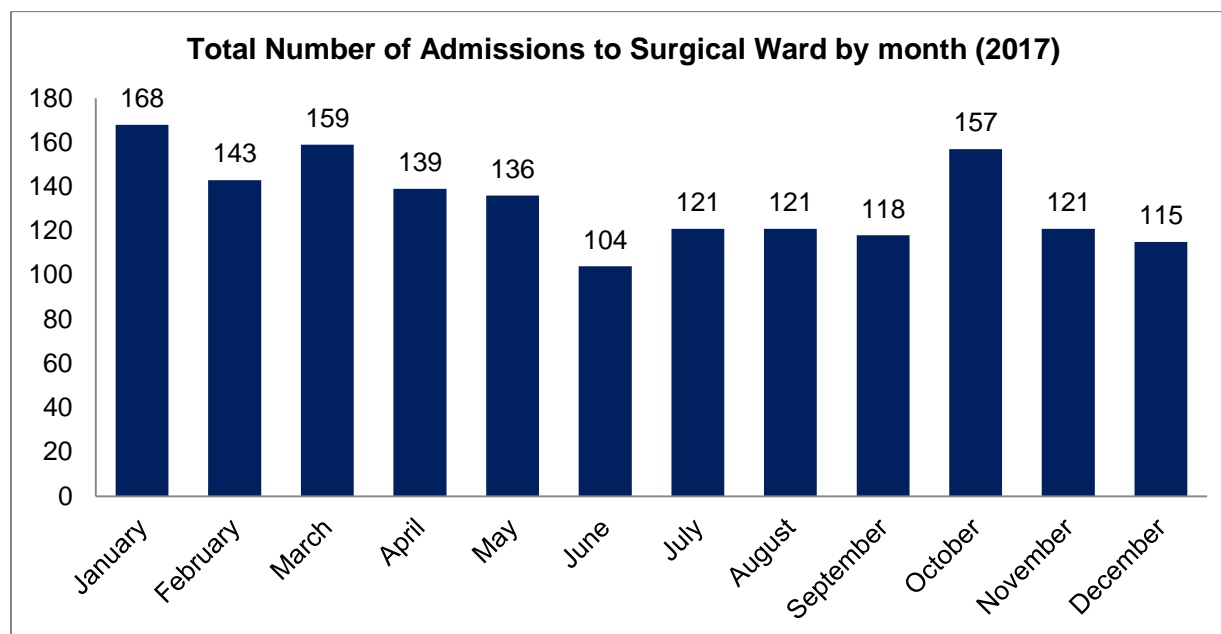


Figure 12: Total Number of Admissions to Surgical Ward by month (2017)

Admissions to the Surgical Ward are quite stable throughout the year ranging from 100 to roughly below 170 admissions.

Table 28: Length of Stay (Days) at Surgical Ward

Length of Stay (Days)	Frequency
<1	37
1 - 4	518
5 - 9	297
10 - 19	159
20 - 39	100
40 - 59	60
60 - 79	26
80 - 100	12
100+	65
Unspecified	328
Total	1602

Source: Admissions Registry

As shown in the Table above, majority of cases admitted to Surgical Ward are within the ward for roughly less than a week (less than 5 days), followed by to roughly a week (5 – 9 days). There is quite a number of cases that have unspecified lengths of stay however that is due to data entry and quality issues.

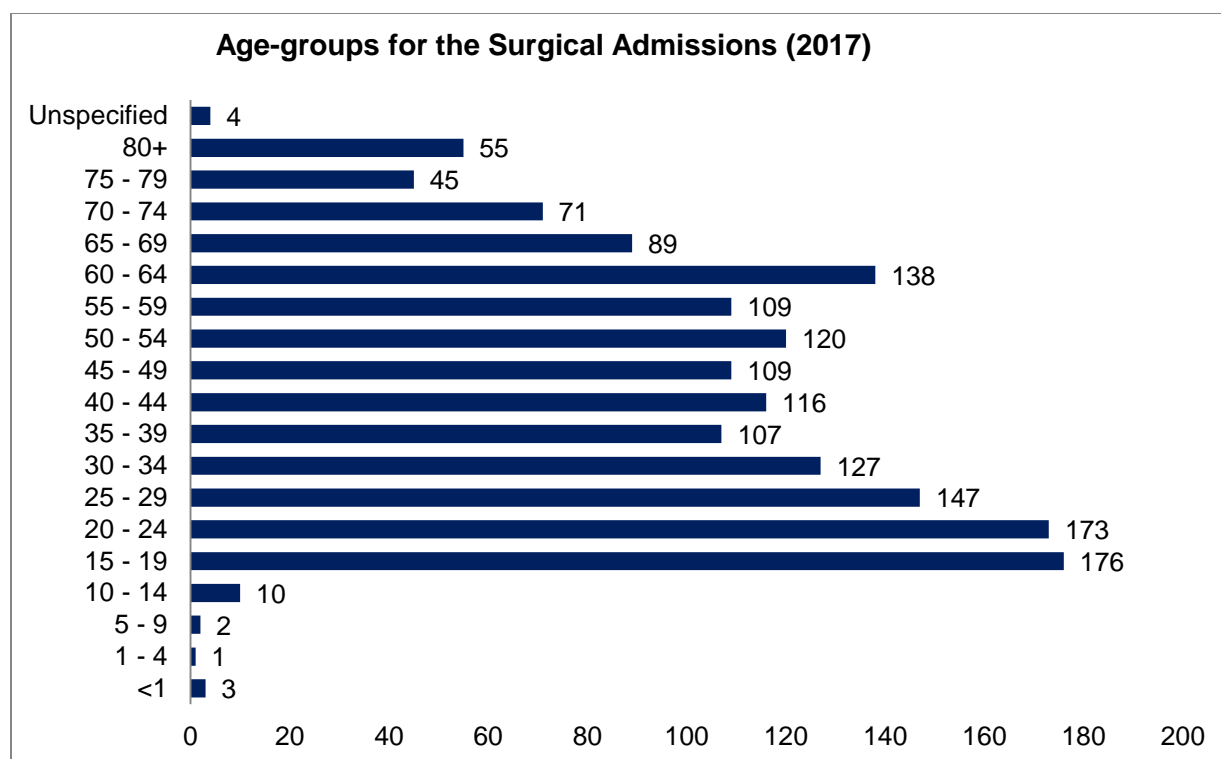


Figure 13: Age-groups for the Surgical Admissions (2017)

The graph above shows that majority of the cases admitted to Surgical Ward are adolescents from the ages of 15 – 24 years of age. This is followed by the age group 25 – 29 and then 60 – 64 years of age.

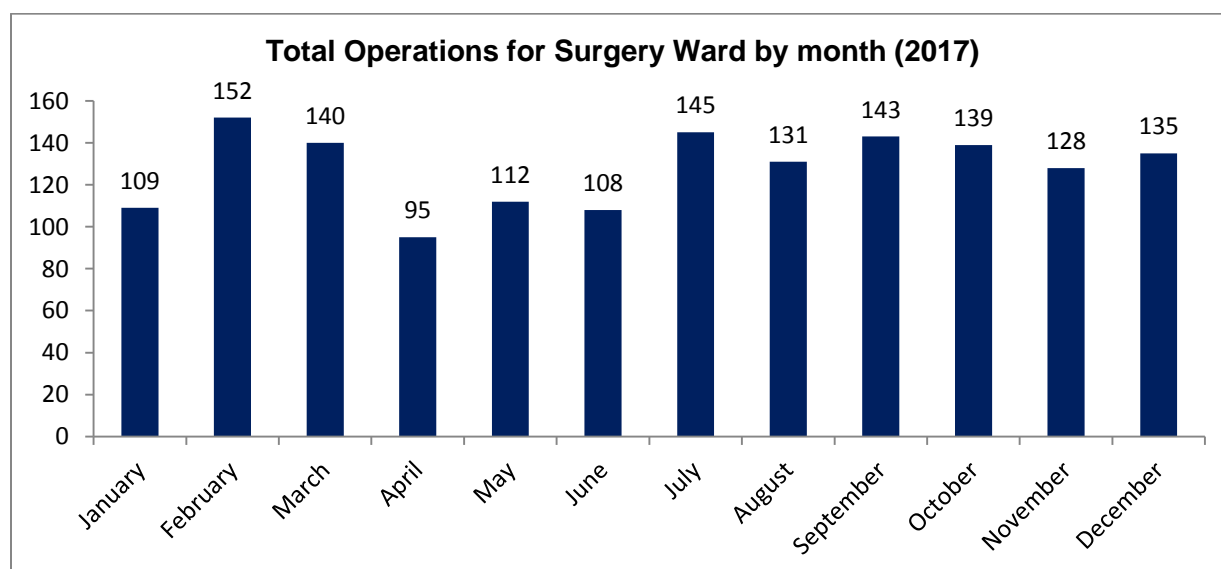


Figure 14: Total Operations (Operating Theatre) by month (2017)

Figure 14 above shows that the highest number of operations were in February followed by July and September. The lowest number of operations was in April.

Table 29: Total Number of Operations by Sex (2017)

Sex	Frequency	%
Female	552	36%
Male	970	63%
Unspecified	15	1%
Total	1537	

Source: Operating Theatre Registry

Majority of cases that are being operated on at the Operating Theatre are males (63%) with the remaining as females.

Table 30: Operations by Wards (Referred to Surgical Ward for Operating Theatre) (2017)

Referral Wards	Frequency	%
Surgical	687	45%
Outpatient	409	27%
Paediatric	339	22%
Medical	83	5%
ICU	7	0%
Obstetric	3	0%
Isolation	2	0%
Nursery	1	0%
Psychiatry	2	0%
Special Clinic	1	0%
Unspecified	3	0%
Total	1537	

Source: Operating Theatre Registry

Majority of the cases being operated at the Operating Theatre were from the Surgical Ward (45%) followed by the Outpatient Clinic (27%) and Paediatrics (22%). **It should be noted that there are other units not included in this table including Ophthalmology, Obstetrics and Gynaecology, ENT and Dental**, which have their own Operating Registry. Eye Clinic Operations are shown below, however please refer to the relevant Section for their respective Surgical Operation figures.

Table 31: Surgical Operations for Eye Clinic cases by month (2017)

Month	Frequency
January	1
March	3
April	144
October	3
November	37
Total	188

Source: Eye Clinic Registry

Table 32: Surgical Operations on Eye Clinic cases by Sex and Age-Group (2017)

Age-Group	Female	Male	Unspecified	Total
1 - 4		1		1
5 - 9		2		2
10 - 14		1		1

20 - 24	1	1		2
25 - 29	1	2		3
30 - 34	1	1		2
35 - 39	1	1		2
40 - 44	3	1		4
45 - 49	3	7		10
50 - 54	4	5		9
55 - 59	6	13		19
60 - 64	16	8		24
65 - 69	6	14		20
70 - 74	23	7		30
75 - 79	12	15		27
80 +	12	13		25
Unspecified	1		6	7
Total	90	91	6	188

Source: Eye Clinic Registry

8.4 Isolation Ward

Table 33: Isolation Ward Top cases of Admission

Diagnosis	Total
MRSA	37
Typhoid	33
Tuberculosis	6
ESBL	2
TOTAL	77

Source: Communicable Disease Annual Report 2017

From January to December 2017, there were a total of 77 admissions to Isolation Ward of which 37 MRSA cases, 32 Typhoid fever cases include 1 typhoid healthy carrier case, 6 Pulmonary TB and 2 ESBL cases.

Table 34 Length of Stay (Days) at the Isolation Ward (2017)

Length of Stay (Days)	Total
1 - 4	5
5 - 9	7
10 - 19	38
20 - 39	20
40 - 49	1
50 - 69	1
Unspecified	5
Total	77

Source: Isolation Ward Registry

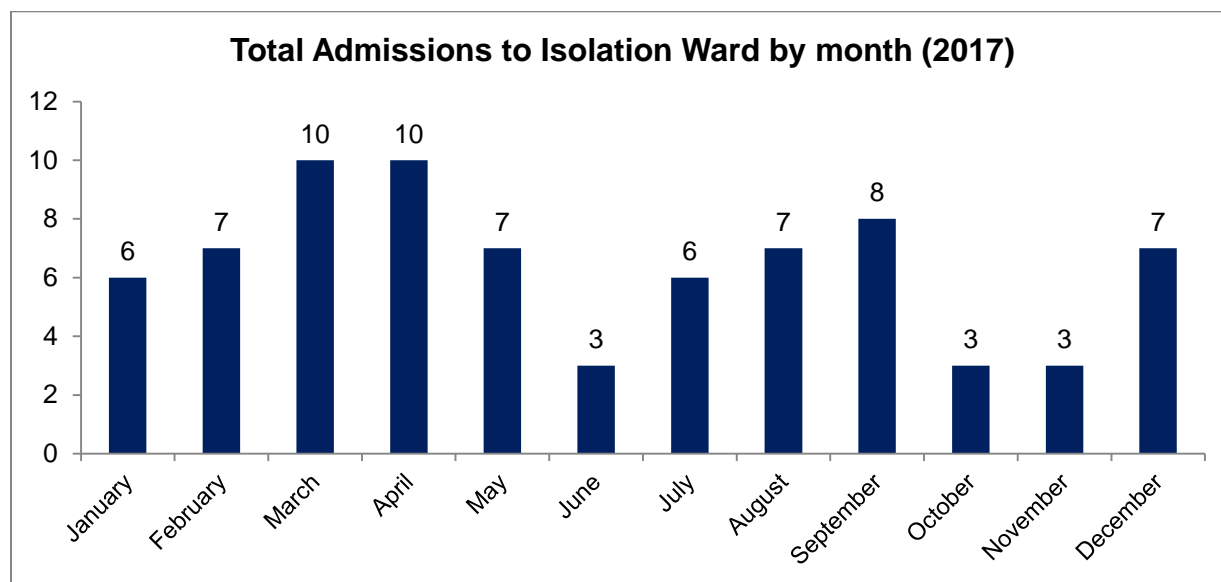


Figure 15: Total admissions to Isolation Ward by month (2017)

Figure 15 illustrates the total admissions to the isolation ward by months for the year 2017. The highest numbers were March and April with the lowest numbers in June, October and November.

8.5 Emergency and Outpatients:

Emergency and Outpatients is responsible for delivering health services for patients seeking emergency and outpatient care.

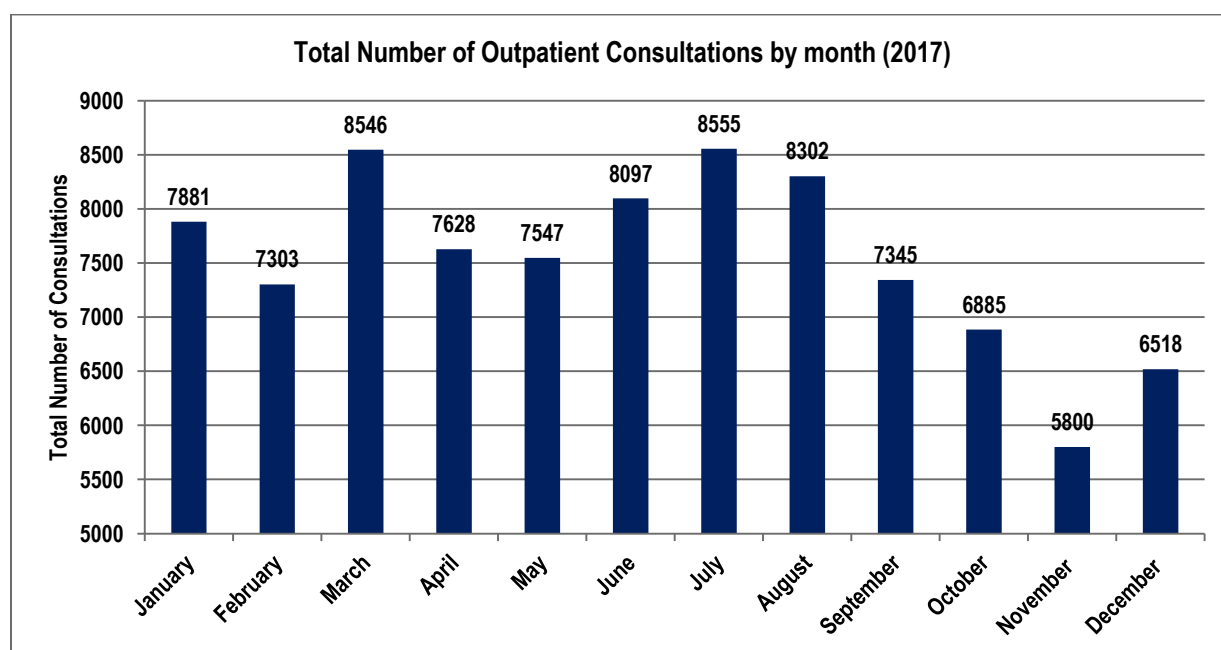


Figure 16: Total Number of Outpatient Consultations by month (2017) Source: Medical Records

Based on the graph above, the highest number of consultations were in July and March and the lowest number of consultations was in November. The total number of outpatient consultations for 2017 was 90407.

Table 35: Number of Cases seen at Emergency Unit from April – December 2017

Months	Emergency Cases Seen
April	772
May	848
June	873
July	899
August	1006
September	913
October	932
November	794
December	931
Total	7968

Source: Emergency Unit Registry

The table above illustrates the number of cases seen at the Emergency Unit. The registry from January to March was not available at the time; hence only 3 quarters are shown. The highest number of cases was seen in August, while the lowest was in April.

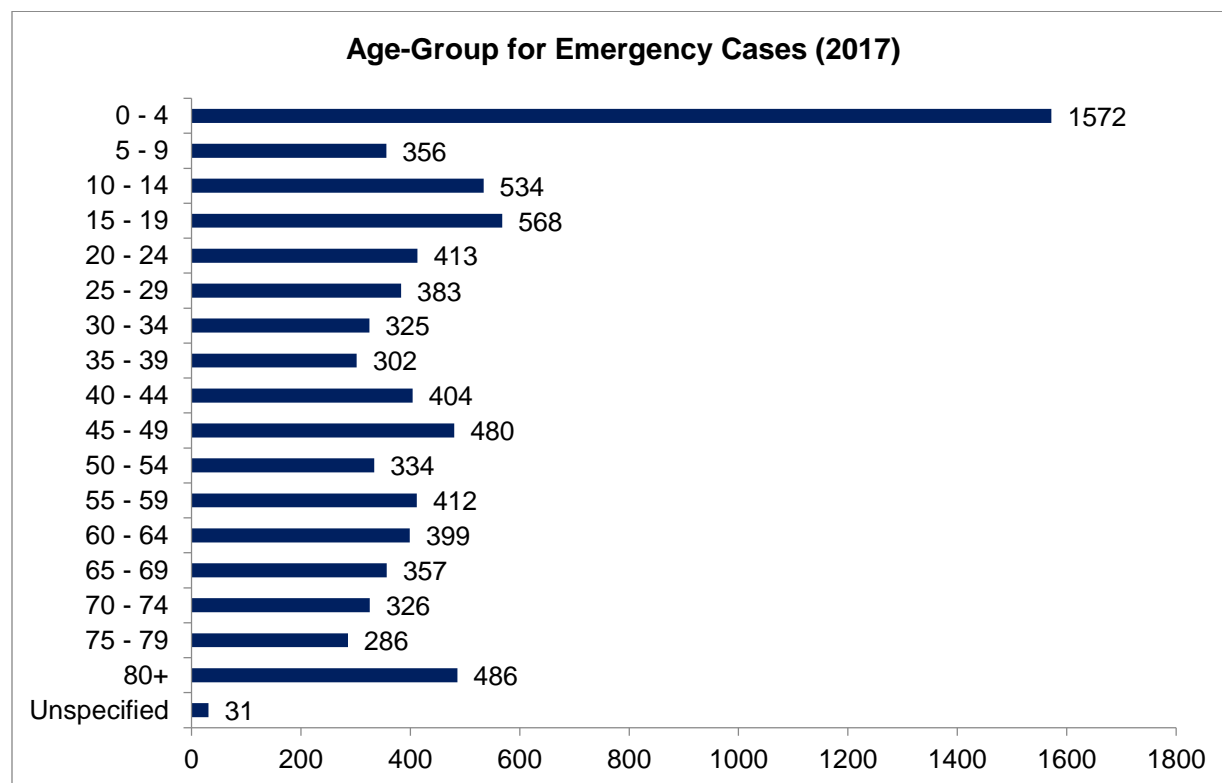


Figure 17: Emergency Cases by Age-Group (2017)

The graph above shows that majority of the cases sent to the Emergency Unit are children under the age of 5. Following suit are the age-groups 15 – 19 and then 10 – 14 years of age. It is evident that

adolescent and children are prevalent at the Emergency Unit.

Table 36: Emergency Cases by Sex (2017)

Sex	Frequency	%
Male	3902	50%
Female	4040	49%
Unspecified	26	1%
Total	7968	

Source: Emergency Unit Registry

Table 37: Emergency Cases seen by Category (2017)

Category	Frequency	%
1	65	1%
2	363	5%
3	7303	92%
4	152	2%
5	34	0%
Unspecified	51	1%
Total	7968	

Source: Emergency Unit Registry

8.6 Medical Ward

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

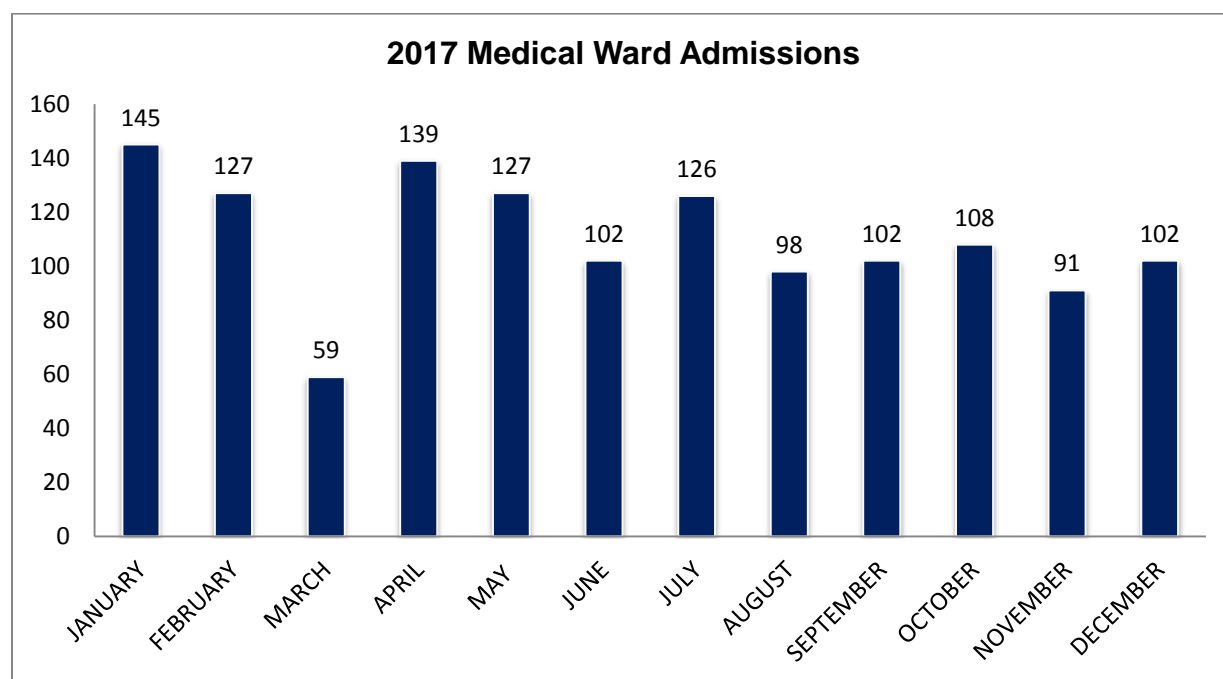


Figure 18: Medical Ward Admissions by month (2017).

Source: Admission's Registry

Figure 18 above illustrates the admissions by month for the year 2017, with January as the highest number with March having the lowest number of admissions. There were a total of **1335 admissions** to the Medical Ward in 2017.

Table 38: Length of Stay at the Medical Ward (2017)

Length of Stay (Days)	Frequency
<1	47
1 - 4	768
5 - 9	312
10 - 19	100
20 - 39	29
40 - 59	2
90 - 100	1
100+	3
Unspecified	73
Grand Total	1335

Source: Medical Ward Admission Registry

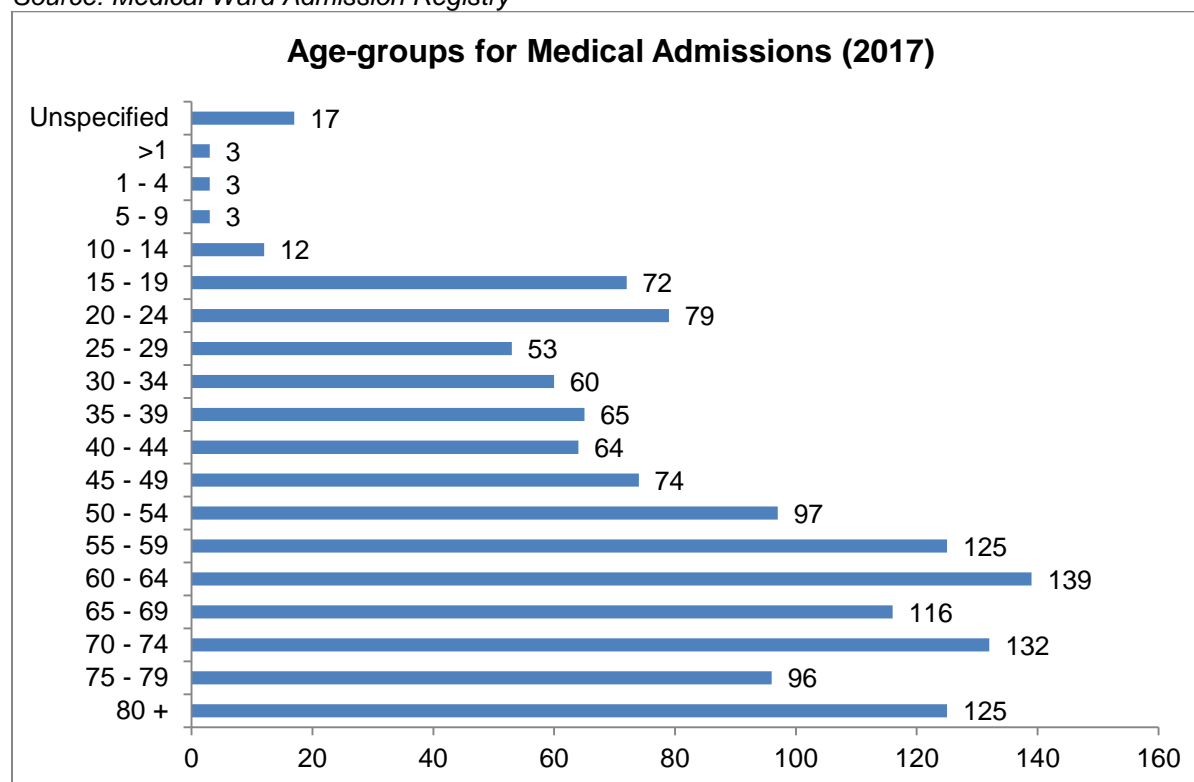


Figure 19: Medical Admissions by age-group (2017)

8.7 Obstetrics and Gynaecology Ward

Obstetrics and Gynaecology Ward is responsible for providing obstetric services as well as health services to all patients admitted with gynaecological problems.

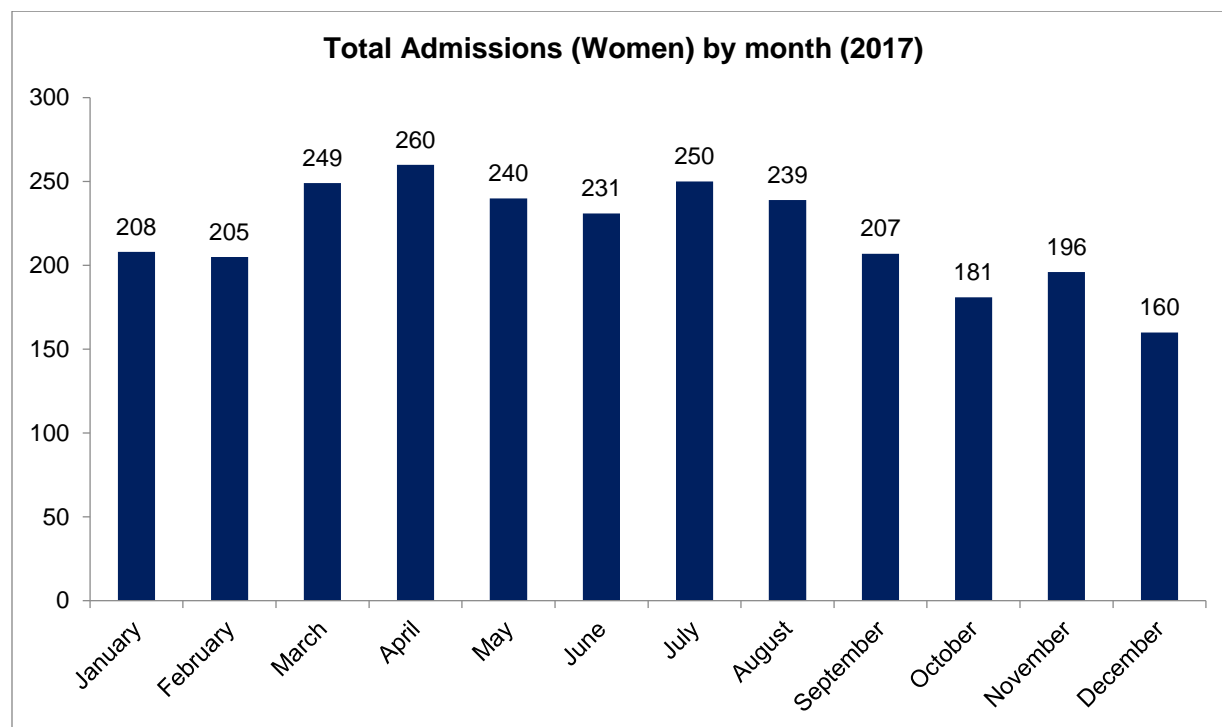


Figure 20: Obstetrics and Gynaecology Ward Women Admissions by month (2017).

Source: Admission's Registry

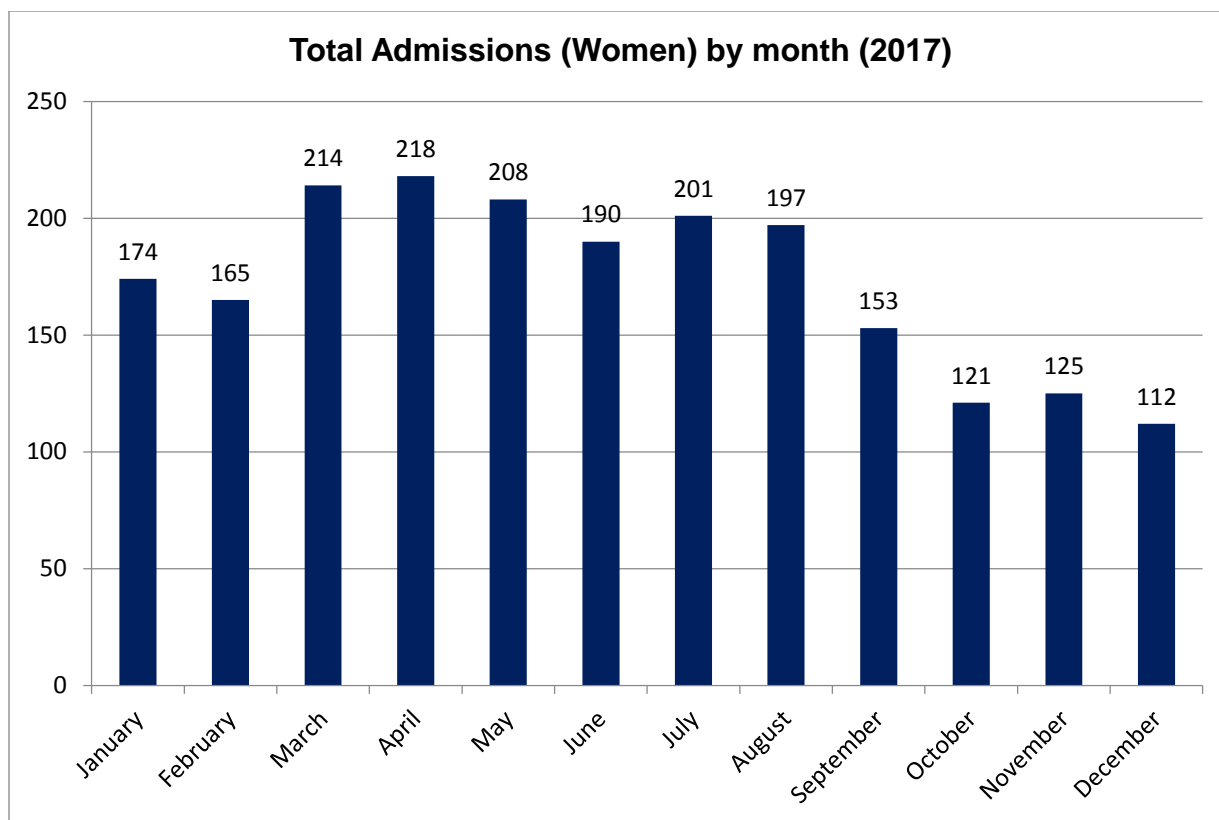


Figure 21 Obstetrics and Gynaecology Ward Newborn Admissions by month (2017).

Source: Admission's Registry

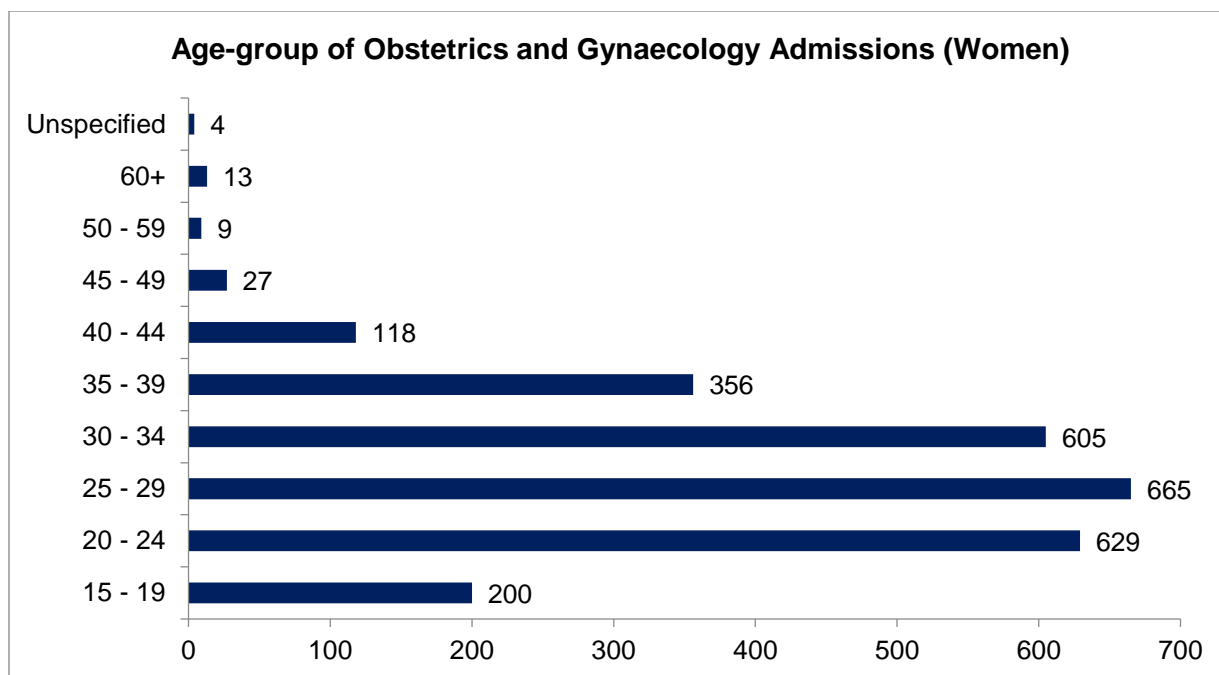
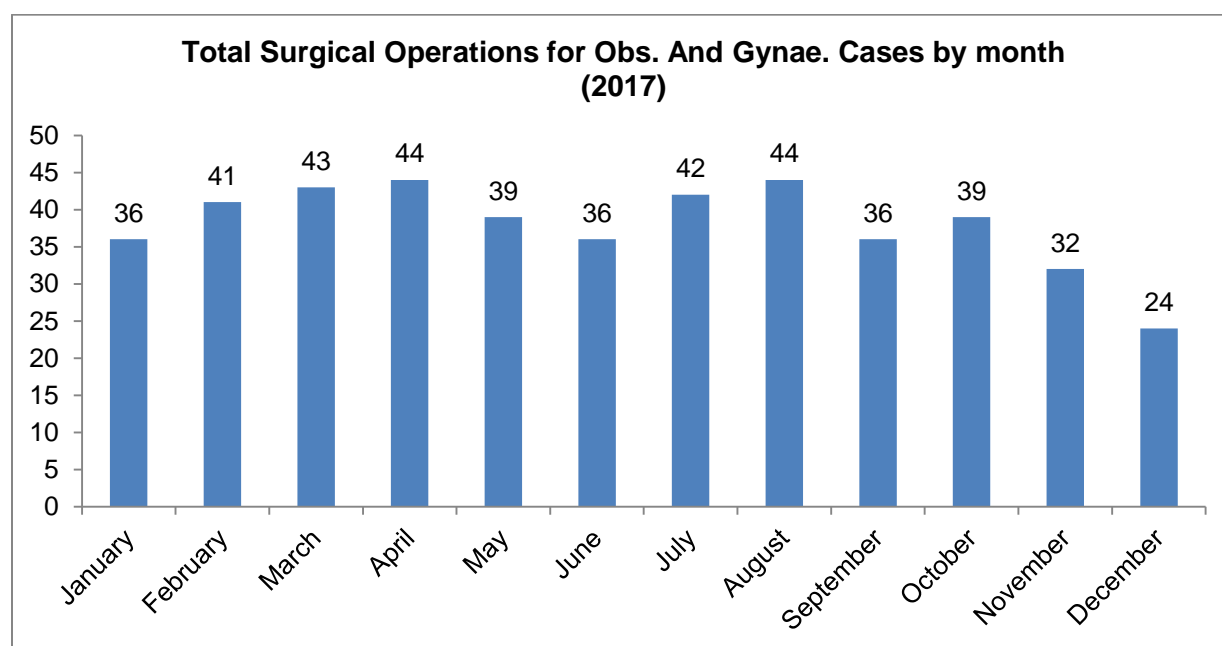


Figure 22: Obstetrics and Gynaecology Admissions by Age-Group (Women) 2017

Table 39: Length of Stay (Days) at the Obstetrics and Gynaecology Ward for Women (2017)

Length of Stay (Days)	Frequency
<1	83
1 - 4	2277
5 - 9	197
10 - 19	36
20 - 39	17
40 - 59	4
60 - 89	1
90 - 100	1
100+	1
Unspecified	9

Source: Obstetrics and Gynaecology Admission Registry

**Figure 23 Total Surgical Operations by month for Obstetrics and Gynaecology Ward (2017)**

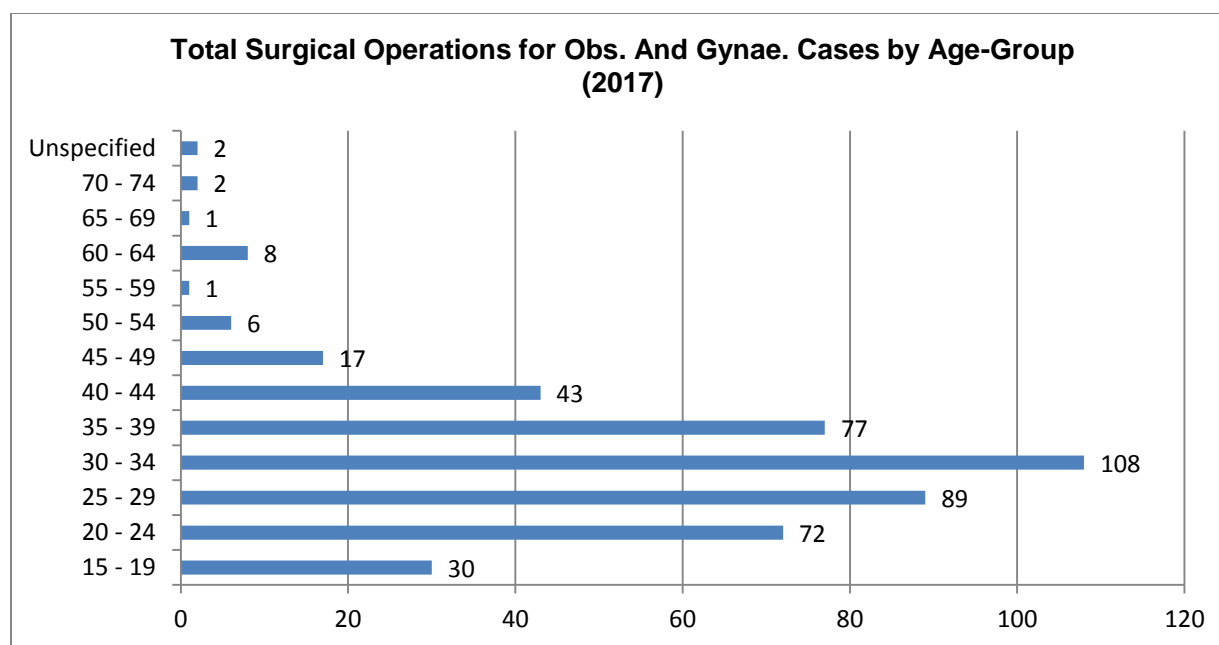


Figure 24: Total Surgical Operations for Obstetrics and Gynaecology cases by age-group (2017)

There were a total of 456 Surgical Operations for the Obstetrics and Gynaecology cases, majority of the cases that had an operation majority were from the age-group 30 – 34 years old followed by 25 – 29 and 35 – 39 years of age. This may correlate to the childbirth age-range for Tonga women.

8.8 Mental Health

Mental Health section is responsible for providing health services and psychiatric care to patients who have suffered institutionalization and to continue the process of deinstitutionalization for all psychiatric cases.

#	CASES	#	%
1	Schizophrenia	95	37%
2	Bipolar Affective Disorder	70	28%
3	Schizoaffective Disorder	18	7%
4	Mental and behavioral disorder due to use of cannabinoids	16	6%
5	Other Mental Disorder due to brain damage and dysfunction and physical disease	13	5%
6	Adjustment disorder with para-suicidal act	6	2%
7	Mental Retardation	5	2%
8	Acute and transient psychotic disorder	5	2%
9	Dementia of Alzheimer's disease	4	2%
10	Adjustment disorder	3	1%
11	Manic Episode	3	1%
12	Mental Retardation and Bipolar affective disorder (comorbidity)	3	1%
13	Mental Retardation and Dissocial Personality disorder	2	1%
14	Mental and behavioral disorder due to use of alcohol	1	0%
15	Recurrent depressive disorder	1	0%
16	Depressed Episode	1	0%
17	Tic disorder	1	0%
18	Dissocial Personality Disorder and Dependence Syndrome	1	0%
19	Personality and behavioral disorder due to brain disease, damage and dysfunction	1	0%

20	Phenothiazine and Butyrophenone neuroleptics adverse effects in therapeutic use. (ICD Code y 49.3)	1	0%
21	Dystonia (ICD Code G 24.0)	1	0%
22	Mental Disorder, not otherwise specified. (ICD Code F99).	1	0%
23	Other Non-Organic Psychotic Disorder (ICD Code F 28).	1	0%
24	Persistent Delusional Disorder (ICD Code F 22)	1	0%
TOTAL		254	

8.8.1 Milestones

8.8.1.1 National Mental Health Policy

Drafting of the first draft of the National Mental Health Policy was completed. Need to consult the MS regarding the draft.

Continue working on our National Mental Health Policy, Mental Health & Psychiatric Unit Admission Guideline and the Monthly report for February, 2017. A one day workshop on the formulation of a Mental Health and Psychiatric unit Admission Guideline (February)

8.8.1.2 National Mental Health Symposium / Mental Health Day

Start of the continuing meeting of the Tonga Mental Health and Disability Association (TMHDA) as a preparation for the National Mental Health Symposium in October 2017 during the mental health week. Part of networking with NGOs and the meeting was hosted by the secretary of the TMHDA Mrs Sela Tupou Bloomfield. The spirit of Partnership is shown here as one of the MOH's core values (January)

Text message send via mobile phone to the public by Digicel to emphasize the topic for 2017 Mental Health Day "Depression, Let's talk". (March)

A Tapa printing activities was held with the inpatients involved on the 21/08/2017 – 25/08/2017. This was done in response to the request by the TMHDA for gifts to be made up of the inpatient's product of their tapa printing activities for the overseas and local presenters during the Inaugural Tonga National Mental Health and Disabilities Symposium Nuku'alofa, Tonga 9 – 13 October, 2017. (August)

As a preparation for the National Mental Health Symposium the TMHDA has arranged the Talakite Production to create a video clip for mental health to present to the public. The Psychiatric Specialist/ Authorized Psychiatrist was included and made a comment on mental health issue in Tonga. Also some of the staffs, inpatients and the infrastructures of the Psychiatric Unit were filmed. (September)

The first ever Mental Health Symposium was held from the 9/10/2017 – 13/10/2017. Was attended by 6 Professors from overseas that included 3 Consultant Psychiatrists (2 professors) , 2 Psychologists, 2 Anthropologists. Other guest speakers included consultants and experts in the field of mental health. The title of the symposium "Langima'a : Inaugural Tonga Mental Health and Disability Symposium, Nuku'alofa, Tonga, 9 – 13 October, 2017". The Tonga Mental Health and Disability Association (TMHDA) was the coordinator of the symposium and in collaboration with the Ministry of Health and DFAT was the main sponsor. The symposium was held in the Tanoa – Dateline International Hotel. (October)

A special few specimen of calendars with patient's tapa printing on the calendars were displayed for the first time during the symposium.

8.8.1.3 Attachments / Training / Outreach

Dr. Pita Pepa went to Australia for an attachment in a Drug and Alcohol Centre . This is an attachment arranged by the Ballarat Twinning Program facilitated by the coordinator Mr. John Macdonald (February)

Visit to Tuvalu by the Psychiatric Specialist/ Authorized Psychiatrist as a Mental Health Specialist to

give clinical session in Psychiatry for 19 days to the Tuvaluan internes from Cuba who have completed the one year Kiribati Internship Training Program (KITP) in Kiribati. (May)

Inclusion of Psychiatry in the island visit by all Clinical Specialist and Allied Health Workers to the main outer islands of Vava'u and Ha'apai to emphasize Universal Health Coverage (UHC). (March)

Formal recognition of the importance to see victims in Vava'u of the recent bus crash in NZ where more than 50 students and teachers of Mailefihi and Siulikutapu College suffered. The Psychiatric Specialist and Clinical Psychologist travelled to Vava'u to assess and gave psychological interventions to the victims of the bus crash. (March)

Psychiatric Specialist and MOSG of the Community Health, Public Health Division attended the Pacific Island Mental Health network (PIMHnet) 5 days workshop in Nadi, Fiji. (October)

8.8.1.4 World Health Day

Presentation by the Authorized Medical Practitioner and Clinical Psychologist at Digicel Tonga Office for a PEP TALK – World Health Day theme “Depression: Let's Talk”. (April)

Commemoration of World Health Day 8/4/2017 (mental health theme – “Depression : Let's Talk”) in the Tanoa International Hotel. Also sending of information and pictures regarding our activities associated with the World Health Day through WHO in the internet for the other Pacific Islands to share our experiences. (April)

A Tapa printing session was held in September with the psychiatric inpatients to use for a 2018 calendar and to be launched at the Mental Health Day 10/10/2017. (September)

8.8.1.5 Contributions to the Mental Health Unit

On the 12th June 2017 the Disability Inclusive Development Fund from the DFAT has been deposited to the Tonga Mental Health and Disability Association's (TMHDA) account in the Tonga Development Bank. A sum of TOP \$100000.00. (June)

Psychiatric Inpatients received a set of table tennis material from the Tonga Table Tennis Federation (TTTF). A program for the presentation of table tennis equipment was held on the 22/08/2017. The matron of Vaiola Hospital represented the MOH in receiving these table tennis equipment from the TTTF. (August)

8.8.1.6 Mental Health Advisory Committee (MHAC)

The 3rd Mental Health Advisory Committee (MHAC) meeting was held on 14/09/2017. Also the first MHAC annual report of 2016 according to section 125 of the Mental Health Act (MHA) #8, 2001 was submitted to the MHAC and to be signed by the CEO of Health who is also the chairman of the MHAC. (September)

Submission of the MHAC annual report of 2016 to the NHDC. (September)

8.8.1.7 Mental Health Survey

A 3 days training of doctors and nurses for the first ever mental health survey of this kind in the general population from the 8/11/2017 – 10/11/2017. The survey covers generally the Anxiety disorders, Depressive disorders, Substance Related disorders, Psychotic disorders, Suicide risks and Insomnia. Only two countries (Tahiti and New Caledonia) in the South Pacific in which this type of mental health survey has been conducted and Tonga is the third one. The main sponsors of this survey are the French government and WHO. The pollsters (30) were nurses started the mental health survey in the Tongatapu area only from the 13/11/2017 – 24/11/2017. The survey was completed on the 24/11/2017. (November)

8.8.1.8 mhGAP Intervention

Lobbying for the training and teaching of the mhGAP Intervention Guide Version 2.0 module among significant stakeholders within the Ministry of Health has started. This includes the Queen Salote Nursing School (QSSN), NCD nurses, and other Public Health nurses. The teaching of the mhGAP module is going to be a major undertaking on on-going basis to conduct series of workshops and the participants will include mostly nurses, doctors and health officers. In principle the Principal of the QSSN has already approved to include officially the teaching of the mhGAP module in the QSSN curriculum and this will start in 2019 but at the same time there is a tentative plan for the preliminary teaching of the current final year – nurses before April (graduation) 2018. (December)

8.8.1.9 Collaborations with some NGOs

The networking between the Psychiatric service and the Tonga National Centre for Women and Children (TNCWC) has been always strong and active throughout the year as Mrs. Leti Siliva from TNCWC and the Clinical Psychologist work together in managing cases through discussion (and psychological therapies) with clients in the hospital or during home visits. The Annual General Meeting (AGM) of the TNCWC was attended by Her Majesty the Queen of Tonga and the Clinical Psychologist had the opportunity to give a speech explaining the importance of the networking between the psychiatric service and the TNCWC. There was a positive response from the Queen and the participants with regard to this undertaking (December)

8.8.1.10 Reform / Deinstitutionalization

After the homicide incident on the 25th August 2017 in the psychiatric unit and the reform (a revolution) that currently undergoing by the psychiatric service by a “hundred and eighty degree turn” from institutionalizing patients in the ward to deinstitutionalizing patients into the community this has been successful with very minimal complaints from the community but at the same time we have to significantly increase our outreach activities to psychiatric patients in the community (refer to graphs).

According to Dr. Puloka this is the biggest sudden change that has ever happened in the way how psychiatric service is delivered to psychiatric patients in the psychiatric unit and psychiatric patients in the community. All problems that was associated with overcrowding in the psychiatric unit has ceased significantly. It is now decided that patients admitted to the psychiatric unit only include a) acute psychiatric emergency cases, b) all Court referrals from Supreme Courts and Magistrate Courts c) all referrals from main Prisons and Police according to the provisions of the MHA, and d) all self-harm patients. The process of sudden deinstitutionalizing of inpatients in the psychiatric unit into the community has been accompanied by a significant change in the way of our delivery of psychiatric service into the community and this has been realized in the

- (i) gradual significant increase in the number of MOW into the community since the homicide incident after August 2017
- (ii) gradual increase in the number of referral by medical officers to the MHWO for home-visits and the MHWO own home visits
- (iii) home –visits conducted by medical officers into the community (iv) home visits conducted by the Clinical Psychologist and at times together with Leti Siliva from the Child and Woman centre

8.9 ENT (Ears, Nose, Throat)

The ENT Unit provides clinical services related to areas of the Ears, Nose and Throat.

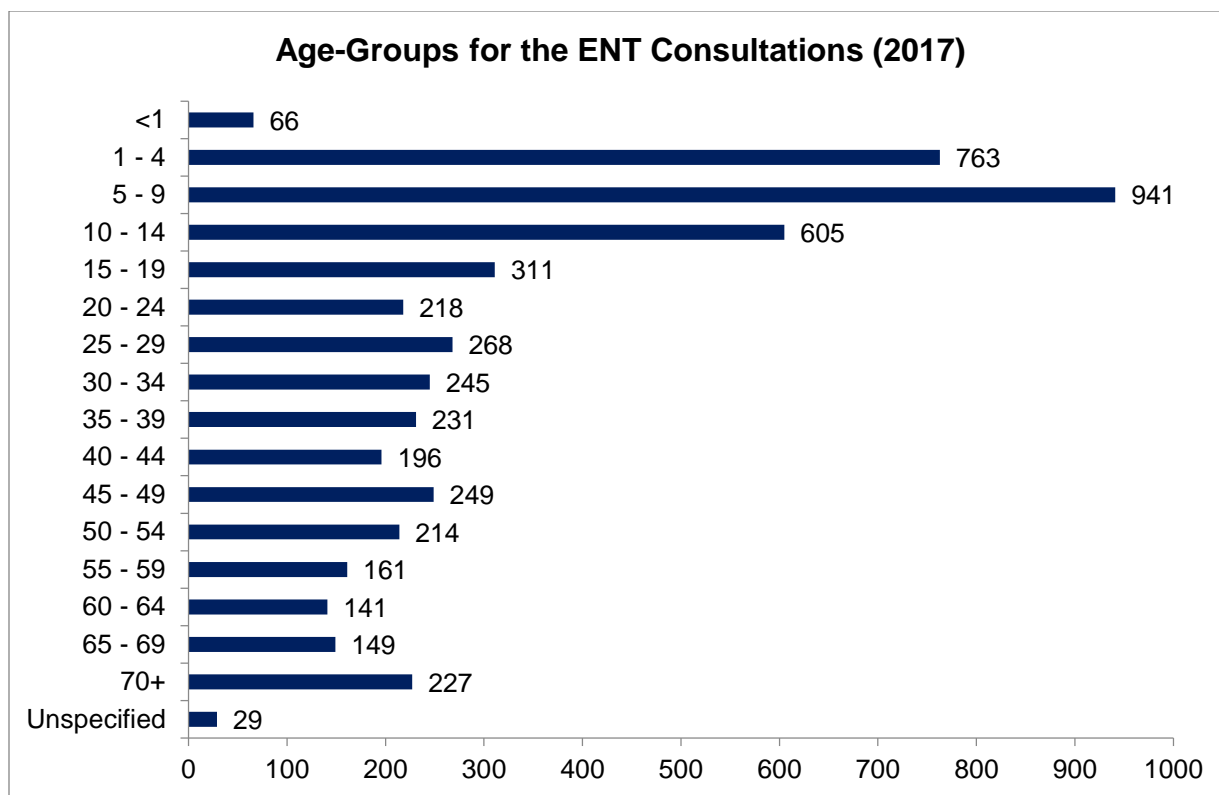


Figure 25: Age-groups for the ENT Consultations (2017)

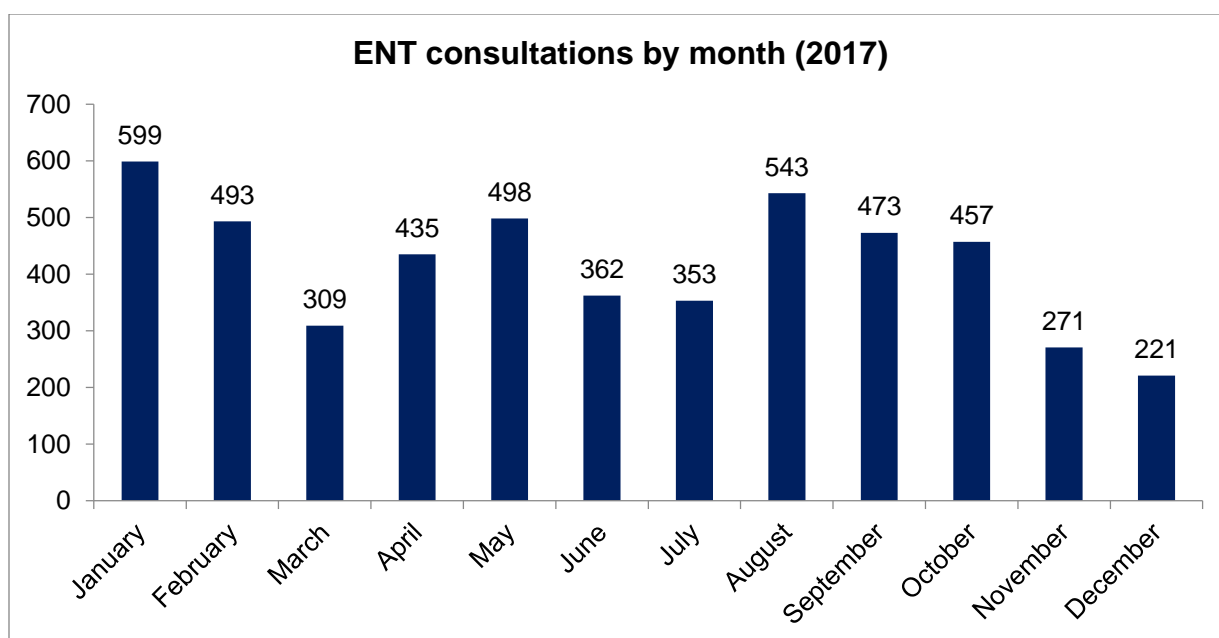


Figure 26: ENT Consultations by month (2017)

For the ENT Consultations, there was a total of 5,014 cases consulted for the year 2017, with the most cases seen in January with 599 followed by August. The lowest numbers seen were in December and November.

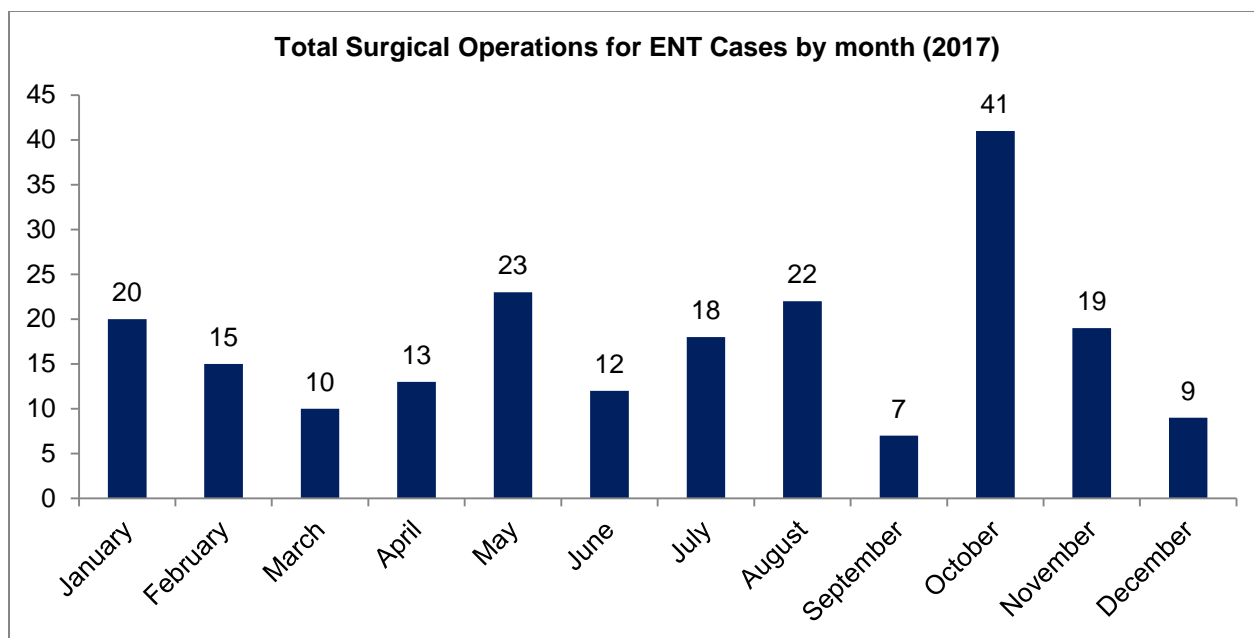


Figure 27: Total Surgical Operations for ENT Cases by month (2017)

With a total of 209 cases having undergone surgical operations, the highest number of surgical operations for ENT was in October with the lowest in September.

8.10 Anaesthesia and ICU

Anaesthesia and ICU is responsible for providing anaesthetic services including managing of Intensive Care Unit.

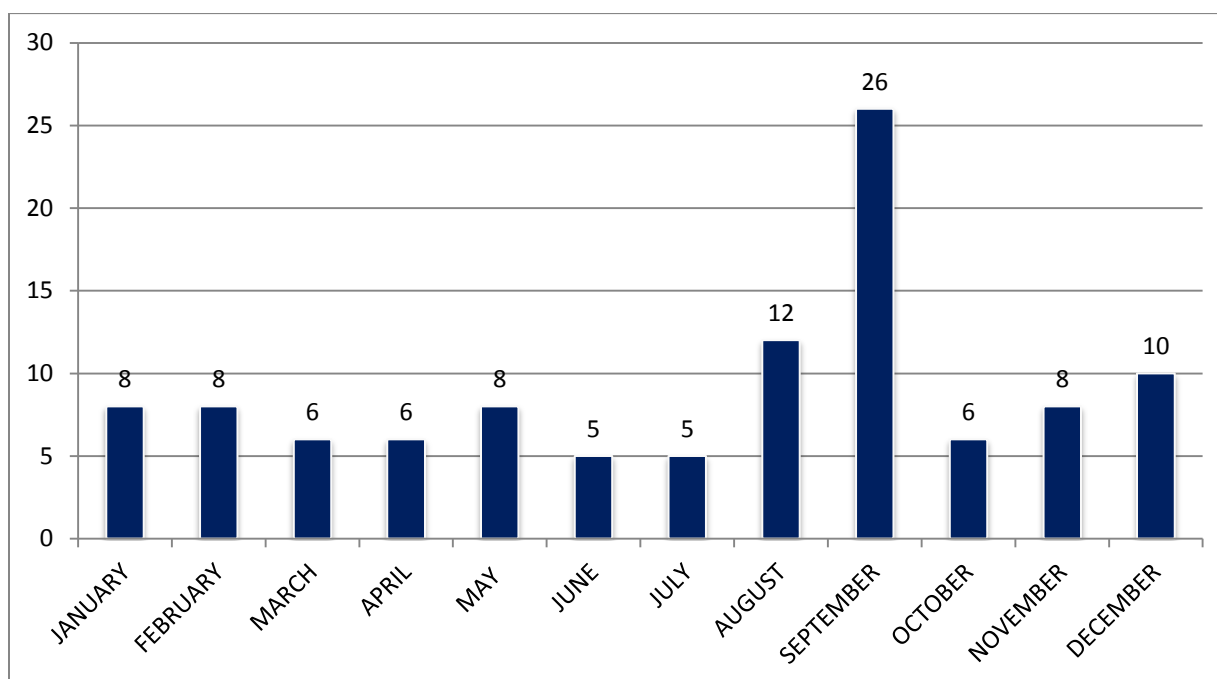


Figure 28: Total Admissions to the ICU ward by months for 2017. Source: Admissions Registry

Table 40: Length of Stay at the Intensive Care Unit (2017)

Days	Frequency
<1	7
1-4	47
5-8	5
Pass Away	4
Transfer	7
Unspecified	16
Grand Total	86

Source: ICU Registry

8.11 National Diabetes Centre

The National Diabetes Centre (NDC), in under the Ministry of Health, and located at the Vaiola Hospital, Tofoa, Tonga.

8.11.1 Core Functions

- ❖ Advisory on matters regarding the welfare of people living with diabetes, as well as on prevention and promotion.
- ❖ Clinical Management and Diabetes care
- ❖ Community Outreach services
- ❖ Training and capacity building of health workforce as well as partners and stakeholders
- ❖ Data Collection, analysis and reporting to assist in planning and decision making

To prevent or delay the onset of Diabetes complications by providing best management practice using the resources available.

8.11.2 Activities

1. Participation, advocating and providing support for the establishment of National policies for integrated prevention and control of diabetes.
2. Becoming a member of the National NCD Committee and its subcommittees and be involved in the development and implementation of integrated strategies for the prevention of diabetes with emphasis on primary prevention and promotion of healthy lifestyle.
3. Developing, review and update the National Diabetes Treatment Guideline for Tonga and ensuring training on use and dissemination of this guideline in Tonga
4. Strengthening of community-based prevention and controlling of Diabetes at the Health center clinics and Outer Island Hospital
5. Revision, establish and strengthen appropriate epidemiological surveillance and monitoring of Diabetes and their risk factors
6. Increase capacity for research on Prevention and control of diabetes.
7. Strengthen the partnerships with the Tonga Diabetes Association and stakeholders to ensure those living with diabetes lead a healthy and productive life.

In 2017 National Diabetes Centre services has expanded over the past three years to address the needs of the public. Current services delivered include;

- Diabetes Care Clinic
- Newly diagnosed
- Follow-up clinic
- Diabetes screening
- Clearance for dental procedures
- Diabetes Foot Check
- Dietitian's Clinic
- Lifestyle Clinic
- Group Education
- Wound dressing (open door policy))
- GDM Screening and Management (collaboration with NCD Nurses)
- GDM postnatal follow up (collaboration with NCD Nurses)
- Home visit and Dressing (collaboration with NCD Nurses)
- Specialist outreach clinic to the Health Centre
- Specialist outreach clinic to the Island Hospital
- Ongoing capacity building and training of health staff
- Inpatient diabetes care
- Disability assessment for National Disability Benefit Scheme (collaboration with Community Health)

8.11.3 Milestones

8.11.3.1 Project with the Community Health Centers (Phase 1) funded by DFAT

Observing from outreach clinics, there need to be more involvement of communities in tackling health issues that directly affect them. Furthermore, there need to be better working relationships amongst staff at health centres, and lastly, we felt that health centres should be encouraged to take on projects that would improve the health of their communities without promptings from Vaiola. Thus, three health centres were chosen to pilot this initiative, whereby the staff is trained on basics of proposal writing, budgeting and carrying out a community project that will address a diabetes problem within their communities. A senior medical officer is tasked with supervising and offering support to these groups. To keep the momentum going, an incentive of \$1000 kindly donated by DFAT is given to the best presentation which is scheduled for every quarter, as this is a one year project.

The first quarter presentation was a huge success, and we are optimistic that this is one of the ways of mobilizing both health centre and community to work together to improve diabetes care.

8.11.3.2 Overseas visiting team Amanaki Lelei

'Amanaki Lelei has been our partner, from the United States of America, for many years now and we always look forward to their annual visits. They have improved our local staff capacity especially around the area of wound care.

8.11.3.3 World Diabetes Federation(WDF) Gestational Diabetes (GDM) Project launched

Since 2015, NDC have been involved in the multidisciplinary team managing Gestational Diabetes (GDM). As member of the GDM Taskforce, we are involved in screening, counselling, educating of GDM mothers and follow-up of these mothers postnatally.

- This project has provided a window opportunity to perhaps prevent these mothers (and babies) at risk, or delay and ensure they get good diabetes care early.
- Production of four IEC materials for Healthy Eating, GDM Screening, What is GDM? Preparing for a healthy pregnancy funded by Tonga Health Promotion
- Re-launching of Tonga Diabetes Association

Tonga Diabetes Association is in the process of getting registered as a non-profit organization to further provide support for people living with diabetes.

8.11.3.4 Celebration of World Diabetes Day 14th November

We identified the Lady (Tuna 'Aleamotu'a) Fielakepa as a Diabetes Champion and was the guest of honor on this day which also saw the launching of the GDM IEC posters and leaflets, as well as the

- National Diabetes Guidelines.
- Visiting Podiatry Team from Auckland, New Zealand
- This is the first collaboration with a Podiatry Team of Tongan descent, who wished to work further in the community to improve diabetes foot care. Their short stint improved our local staff capacity and also provided further opportunities to tap into this professional group for assistance in the future.
- Vehicle for NDC provided by DFAT

We were grateful to finally be provided with a vehicle of our own at NDC. This has improved the services especially for home visits and home dressings, as well as outreach clinics

8.11.3.5 Training / Attachments

Dr. Ana Pifeleti Maile graduated with her Diploma of Medicine, Internal Medicine from FNU. She will join NDC Team starting 2018. Dr Maile was specifically sent on a DFAT scholarship to return to NDC.

8.11.3.6 Tonga National Diabetes Guideline 2017

The highlight of 2017 for NDC was the launching of the **Tonga National Diabetes Guideline 2017. We were proud to be the first guideline endorsed and published, with training and distribution currently underway. Content addresses issues raised by the health centres needing clarification on management and referral issues, ongoing diabetes care as well as inpatient care.** We thank Ms. Caroline Martin for her valuable assistance in the production of this guideline, as well as the government of Australia, through DFAT for funding this project.

8.11.4 Statistical Information

Due to an unfortunate technical problem, the official National Diabetes Database can no longer be accessed. Thus, a simple database was devised and was in effect by April. As of the end of 2017, there were 2575 people living with diabetes, registered in this new database. The Registry will be referring to only these people.

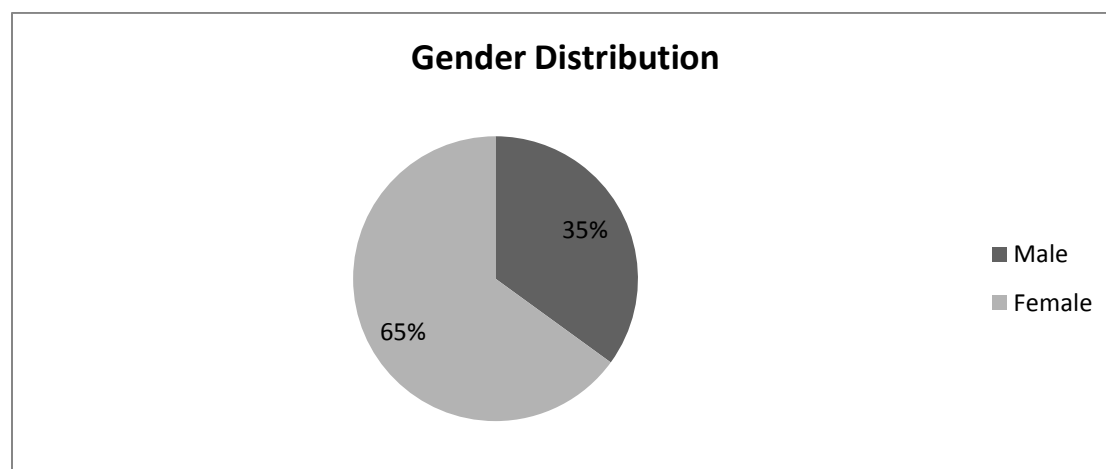


Figure 29: Gender Distribution of NCD cases registered (2017)

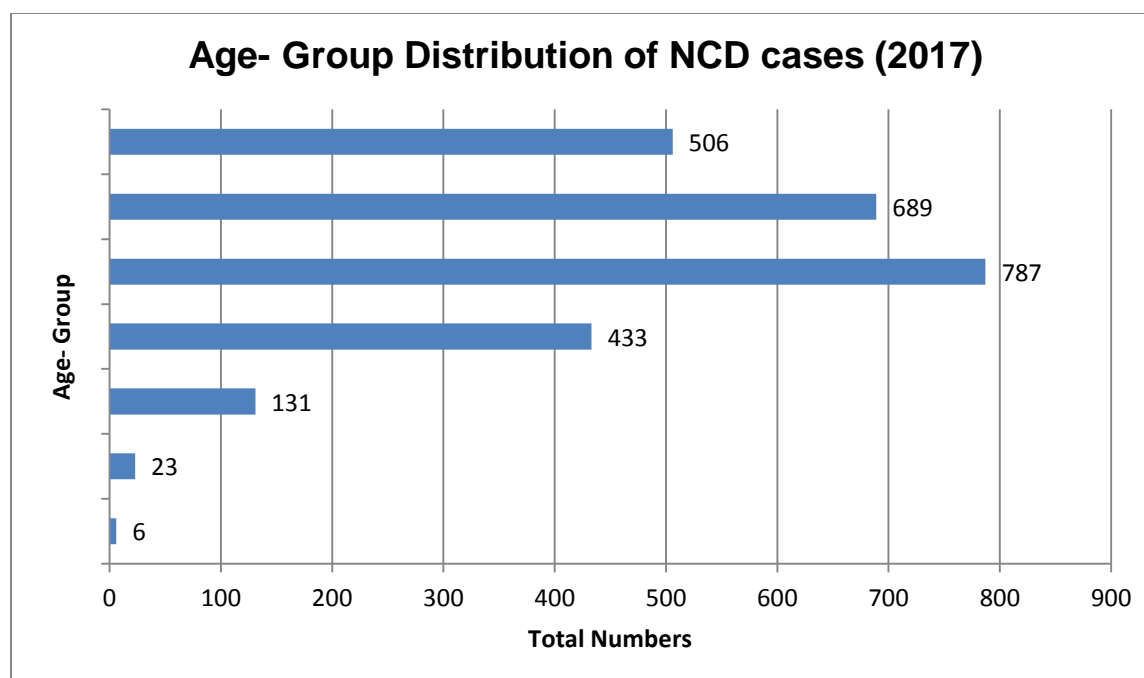


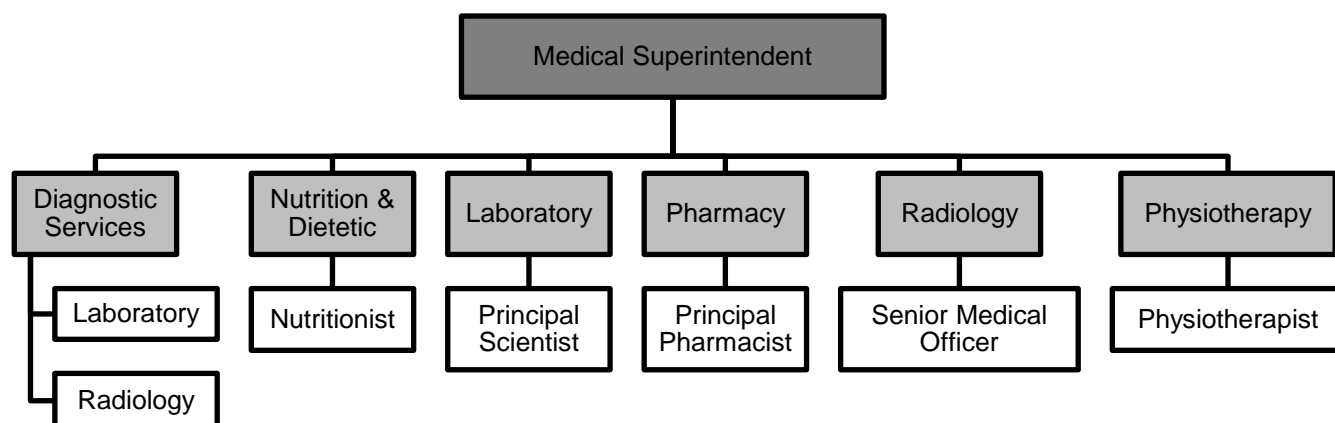
Figure 30: Age-Distribution of NCD cases registered in the registry (2017).

Based on Figure 30, Majority of the patients are Female (65%). 52% of the patients fall within the age-group of 30 – 59 years old, thus the productive group.

Table 41: Total NCD cases recorded in the NCD Registry

Hospital / Health Centre	Registry
Vaiola / NDC	2,575
Vava'u	893
Ha'apai	318
'Eua	326
Kolonga	201
Fua'amotu	198
Kolovai	149
Houma	181
Vaini	314
Mu'a	309
Nukunuku	126
Total	5,590

8.12 CLINICAL SUPPORT SERVICES



8.12.1 Sections and Head of Sections

Sections	Head of Section
Nutrition & Dietetic	Ms. 'Esiteli Tu'i
Laboratory	Dr. 'Eka Buadromo
Pharmacy	Mrs. Melenaite Mahe
Radiology	Dr. 'Ana 'Akau'ola
Physiotherapy	Mr. Sione Po'uliva'ati

8.12.2 Nutrition and Dietetic Unit

Nutrition and Dietetic is responsible for providing health services for all inpatients and outpatients patients with diet related problems. The section's functions are:

- **Assess and Review patients with diet's related problems at the wards.**
- **Promote healthy eating lifestyle through Lifestyle education & Diet review.**
- **Providing healthy menu standard for catering services in the hospital.**
- **Monitor Catering Services among hospitals in Tonga**

8.12.2.1 Staff Establishment as of 31st December 2017 (Jan – Dec 2017)

Title	No. of Post	Post Filled	Vacancies
Senior Nutritionist	1	1	
Catering Supervisor	1	1	
Assistant Cook	10	8	2
Assistant Cook Labor	2	2	

8.12.2.2 Section's Objectives and Updates

#	Objective	Status
---	-----------	--------

1	To provide nutritious meals at low cost as possible for all inpatients in accordance with their body requirements.	Ongoing providing of nutritious meals at low cost as possible for all Inpatients.
2	To improve dietary lifestyle of all patients with diet related problems including NCD's, and to promote healthy eating among them.	Assess and review all patients with diet related problems has been referred by any Medical Doctors from the wards and out patients. Tues & Wed consultation with T ₂ DM at DM Clinic Thurs consultation with GDM at Antenatal Clinic. Involve with Tonga Customs regarding taxation on imported sugary foods and drinks.
3	To build up capacity of Nutrition & Dietetic Unit	Diabetic Guideline Retreat- Review Tonga Diabetes Guideline; 3.3.17 Participant of Nutrition & Diabetes Workshop 10-13 Oct 17 St John of God & Vaiola Hospital Twinning Program; 3.11-2.1217
4	To improve quality of hospital's Catering Services	Catering Manual for hospitals in Tonga to approve & publish Ongoing: internal training for staffs Ongoing: inpatients' survey
5	To record, report & monitor food stocks, kitchen technical equipment, and to maintain food spending within budgeted	Ongoing: unsuccessful, need to allocate assistant cook specifically for this data entry and recording.
6	To improve efficiency and effectiveness of other function of Catering Services	Ongoing: request forms to be approved by MS and reached kitchen at least 2 days prior. 1 st priority for overseas visiting teams.

Table 42 Total number of patients referred to the dietician (Jan-Dec 2017)

Months	Referred from the Wards and Out patients ¹	Antenatal Clinic (GDM) ²	Diabetic Clinic (T ₂ DM) ³	Total
January	-	33	-	33
February	20	76	-	96
March	8	99	-	107
April	11	54	43	108
May	8	47	74	129
June	14	64	44	122
July	18	28	53	99
August	5	46	64	115
September	17	52	33	102
October	8	72	45	125
November	-	-	0	0
December	-	38	16	54
Total	109	609	372	1090

Source: ¹ Patient's referrals to dietician record 2017, ² Antenatal Clinic GDM record 2017, ³ Diabetic Clinic referred to Dietician record 2017

Table 1 above shows the total number of patients had been seen and reviewed by the dietician from January to December 2017. There were more appointments had been booked from the clinics but only 1090 patients were able to turn up to see the dietician. This included those 109 patients referred from the wards and outpatients, 609 Gestational Diabetics referred from Antenatal Clinic, and 372 T₂DM referred from Diabetic Clinic. There was no patient seen at the DM clinic from January-March last year, as the dietician commenced with those referrals in April the same year. In addition, there was no patient seen in November 2017 due to the dietician's duty travel.

Table 43 Numbers of food plates served for breakfast, lunch, and dinner (Jan-Dec 2017)

Months	Breakfast (plate)	Lunch (plate)	Dinner (plate)	Total (plate)
January	4471	4863	4146	13480
February	4107	4465	3787	12359
March	4806	5200	4380	14386
April	4370	4732	4054	13156
May	4313	4720	3907	12940
June	3993	4383	3725	12101
July	4114	4515	3745	12374
August	4422	4832	4076	13330
September	3967	4382	3607	11956
October	3440	3842	3188	10470
November	3205	3586	3007	9798
December	3033	3403	2697	9133
Total	48241	52923	44319	145483

Source: Catering Services Diet record 2017

The Table above shows the total number of patient's food in plates prepared and served to the wards in breakfast, lunch and dinner in 2017. There were a total number of 145,483 plates (included both full/normal & special diets) delivered to the wards. These included 48,241 plates that were served for Breakfast, 52,923 plates served for Lunch, and 44,319 plates served for Dinner.

Period 2017/2018
Annual Budget Allocation TOP\$325,000.00 (monthly allocation: TOP\$27,083.33)
 (Jan-Dec 17: Over Spending TOP\$23,797.77)

Table 44 Food cost & food supplied from hospital's kitchen (Jan- Dec 2017)

Months	Food Cost (pa'anga)	Total # of food supplied (plate)	# of patient's food (plate)	#of other authorized foods (plate)
January	\$24,096.60	13666	13480	186
February	\$25,533.60	12915	12359	556
March	\$29,657.82	14698	14386	312
April	\$32,203.50	13568	13156	412
May	\$31,391.50	13184	12940	244
June	\$31,677.60	12373	12101	272
July	\$29,667.80	13216	12374	842
August	\$30,502.70	14041	13330	711
September	\$35,057.30	15123	11956	3167
October	\$30,511.45	10774	10470	304
November	\$26,056.40	10214	9798	416
December	\$22,441.50	9370	9133	237
Total	\$348,797.77	153142	145483	7659

Source: Catering services diet record 2017, Account department ration record 2017

The table above shows the total food cost in pa'anga and the total number of foods in plates supplied by the hospital's kitchen from January to December 2017. The total cost of foods was \$348,797.77 pa'anga from January to December last year. This food cost was be able to provide 153,142 plates for both patients (145,483 plates) and other authorized foods (7,659 plates) from Jan-Dec 2017. This result revealed that the cost of a plate provided from the hospital kitchen was approximately \$2.28 pa'anga last year. High food cost of \$35,057.30 in September was the direct influenced of demands for OH17 meals and refreshments, as the results the number of other authorized foods increased to 3,167 in September last year.

8.12.2.3 Milestones

- 3rd March 2017: Dietician participated in Diabetes Guideline Retreat where good knowledge on Diabetes guideline and overview of diabetes management in Tonga to start with Medical Nutrition Therapy (MNT) on Type 2 Diabetes Mellitus (T₂DM).
- 10th -13th Oct, 2017: Dietician participated in Nutrition & Diabetes Training Workshop where good knowledge updating and skills gained on Non-Communicable Diseases (NCDs)
- 2nd Nov-3rd Dec 2017: Dietician attended in St John of God & Vaiola Hospital Twinning Program where gained good knowledge and experiences.

8.12.3 Laboratory

Laboratory Services seeks to provide the best, highest quality and cost effective services which has been standardized to comply with professional principles and ethically accepted as embodied in accreditation criteria.

8.12.3.1 Staff Establishment as of 31st December 2017 (Jan – Dec 2017)

Title	No. of posts	Post filled	Vacancies
Consultant Pathologist	1	1	0
Medical Officer Special Grade	1	1	0
Principal Medical Scientist	1	1	0
Senior Medical Scientist	3	3	0
Medical Scientist	1	1	0
Senior Laboratory Technician	1	1	0
Laboratory Technician Grade 1	3	3	0
Laboratory Technician Grade 2	19	19	0
Assistant Laboratory Technician Grade 2	1	1	0
Computer Operator Grade 3	1	1	0
Laboratory Maid	3	3	0

On study leave as of December 2017:

- 1 Senior Medical Scientist – Telesia 'Apikotoa
- 4 Laboratory Technician Grade II – Timote Fakasi'i'eiki, Mele Ve'a, Mele Mo'ungavalu

8.12.3.2 Section's Objectives and Updates

1. Provide best quality services
<ul style="list-style-type: none"> ➤ The Ministry through DFAT continued to employ a Consultant Pathologist. Dr. Eka Buadromo whom has worked in the Pacific for years including Fiji and Australia. She has been instrumental in the development of the laboratory standard and where the laboratory services are at the moment. She has been with the Laboratory since 2012. ➤ A Medical Officer (Dr. Seventeen Toumoua) funded by WHO for Training in Fiji National University (FNU) successfully completed his Masters in Pathology in December 2017. ➤ Purchase of new analysers funded by Pacific Paramedical Training Centre (PPTC). This is the e411 analyser from Roche which can run tests that were usually sent overseas which was otherwise not done locally. Currently PPTC is funding for reagents as to run tests that helps in diagnosing myocardial infarction (high sensitive troponin), tumour markers (PSA, Beta HCG, AFP) and thyroid function tests (T3, T4 and TSH). Previously these tests were sent to Labplus for analysis which the turnaround time was up to a minimum of month the earliest. <u>The turnaround times for these tests have dramatically changed since the introduction of the analyser.</u> ➤ GeneXpert analyser funded through the UNDP installed in Laboratory as to aid and improve

<p>diagnosis of tuberculosis especially for multidrug resistance, testing of body fluids and useful in paediatric patients as quality of sputum is not so good.</p> <ul style="list-style-type: none"> ➤ We do encourage customers to give and rate the services we provide however it is not very popular with patients as to fill out questionnaires or give a feedback however we are looking at ways to make it faster and easier to give a feedback based on their experience while being served by laboratory staff. ➤ We encourage clinicians and other health professionals to give feedback however we only receive it verbally but we are looking at ways to capture this easily and documented.
<p>2. To upgrade staff knowledge through continuous training program</p>
<ul style="list-style-type: none"> ➤ Returning scholar Mrs. Senisaleti Pasikala resumed duty after completing Masters in Medicine Medical Laboratory from the University of Sydney. She was head of microbiology unit but upon return in addition to overlooking microbiology work she was given National Laboratory Quality Manager. She was also promoted to Senior Medical Scientist. ➤ The Laboratory Quality Management System (LQMS) training and management review was done in September 2017. This training funded by WHO which is aimed at addressing the 12 essentials of laboratory work. ➤ Accreditation of the local training curriculum by the Tonga National Quality and Accreditation Board (TNQAB) of the local Diploma in Laboratory Technology. Thus this is a Level 5 Diploma. Nine trainees graduated with Diploma in Laboratory Science in May 2017 they are now Laboratory Technician Grade II. ➤ Currently working with TNQAB in trying to recognized prior learning (RPL) of our current long service staff with local training prior to introducing of the Level 5 Diploma above. ➤ Mr. Filimone Fili and Ms Andrea Kisina attended a week long workshop in Nadi Fiji on GeneXpert testing and also IATA training. This GeneXpert training is online with the new recommendation for diagnosis of Tuberculosis by the WHO and also with multi drug resistance tuberculosis. ➤ Semisi Lenati attended a workshop in Fiji funded by UNDP on the DUO HIV/Syphilis test kits and was this was for Tonga and other Pacific Island Countries. This is still rolled out with the pilot in Tonga and Vava'u ➤ The Laboratory internal weekly presentations with selected topics from the laboratory staff
<p>3. Performance of the section regularly assessed and corrective actions taken</p>
<ul style="list-style-type: none"> ➤ Enrolled in the RCPA (Royal College of Pathologist Australasia) in the External Quality Assurance program for histology and cytology. ➤ Continuous audit visitation from PPTC consultant throughout 2017. Also as part of their program that they meet with the CEO and clinicians concerning the performance of the Laboratory. <u>The latest finding is the five star achievements in the audit and planning to move forward to the International Accreditation New Zealand.</u> The report of the audit result has been submitted to Medical Superintendent and also the Chief Executive Officer for their reference and information. ➤ Microbiology, Serology, Haematology, Biochemistry and Blood Bank are enrolled in the PPTC (Pacific Paramedical Training Centre) external quality assurance program. ➤ The Laboratory conducts internal audit which is three times are year with follow up corrective actions being regularly monitored and presented at Head of Sections meeting within the Laboratory
<p>4. Increase Laboratory Services Capacity in the Outer Islands</p>
<ul style="list-style-type: none"> ➤ The C111 biochemistry analyser was sent to Vava'u. This means that there will be a

decrease in the number of specimens being referred to Vaiola.

- Rapid Chemistry Electrolyte Analyser available in Ha'apai and Vava'u
- The National Laboratory Quality Manager did the Outer Islands Supervisory visits whereby she did an audit and also recommendations for work to be done in areas that needed to be strengthened.
- The Outer Islands Laboratory has a HbA1c point of care testing which was funded through the Diabetes National Centre funding from Vaiola Hospital. All outer island laboratory staff and NCD nurses have been trained as to how to operate these points of care devices. Ordering biochemistry analysers for 'Eua and Ha'apai that are cost effective for their usage of doing basic biochemistry. Ha'apai laboratory in November have received a dry biochemistry analyser which can run basic chemistry like blood glucose level, lipid profiles and we looking at expanding this service. This analyser was fund through the International Diabetic Federation in collaboration with the National Diabetic Centre.
- The Lab is now running internal quality assurance program from all outer islands laboratory in haematology, serology. We look at expanding this program to other sections of the laboratory.

Table 45: Laboratory Specimens and Tests Data

#	Laboratory	Specimens Received	Tests Performed	Average Test performed / month
1	Vaiola Lab	70,674	236,287	19,690
2	Prince Ngu Lab	6,376	46,171	3,847
3	Niu'ui Lab	754	3,264	272
4	Niu'eiki Lab	1,102	2,212	184
	TOTAL	78,906	287,934	

***Source: Laboratory Annual Report 2017**

It is clear seeing these figures the distribution of the workload in the Outer Islands laboratory but it may also be that the tests that they are able to perform at each laboratory.

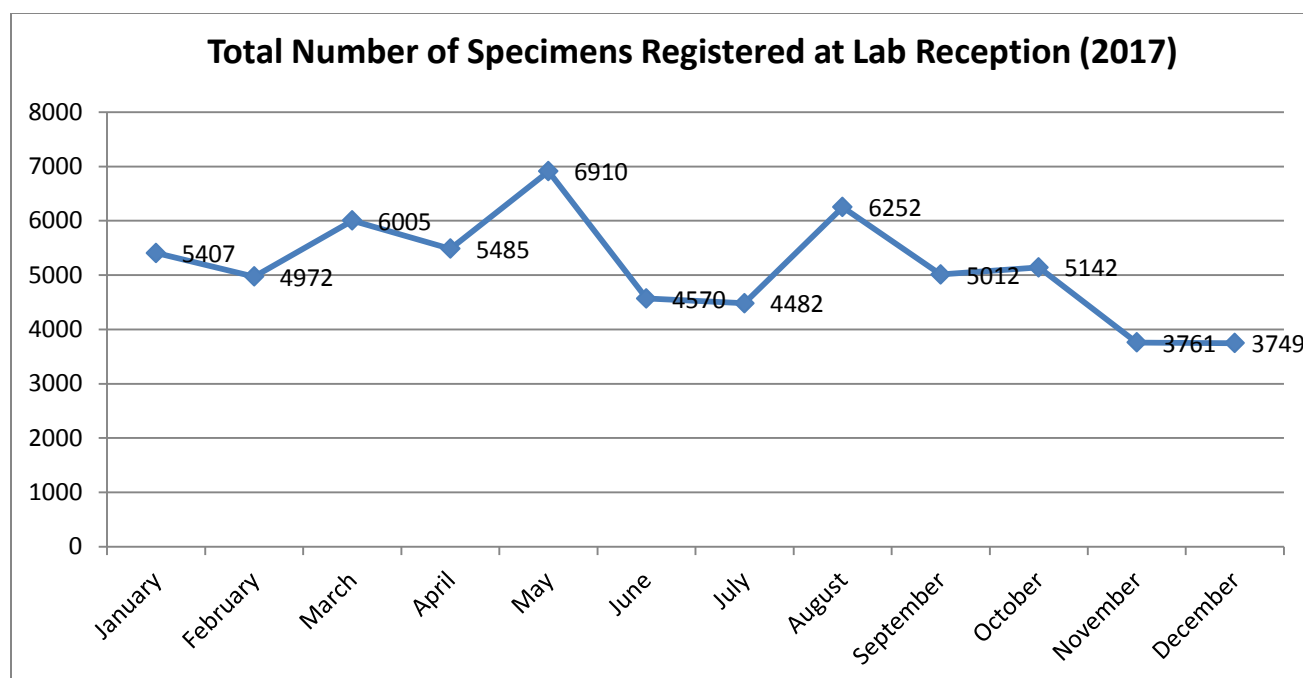
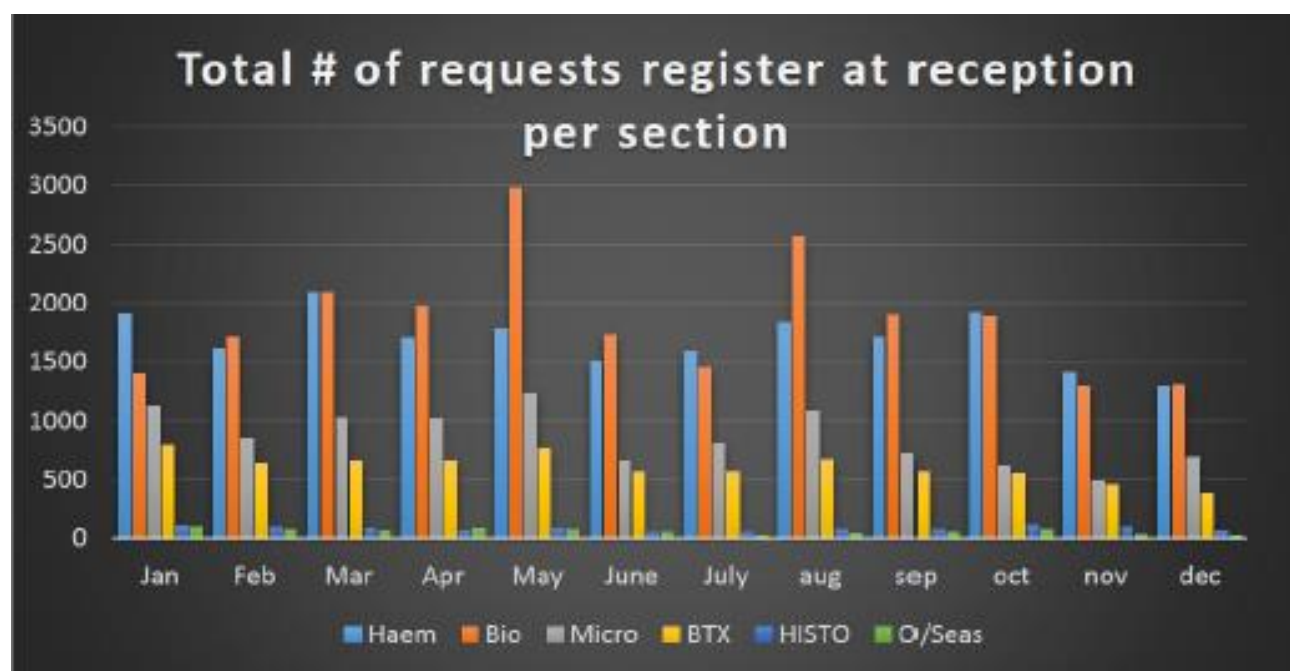


Figure 31: Total Number of Specimens Registered at Lab Reception by month (2017)

***Source: Laboratory Annual Report 2017**

The graph above shows the total number of specimens registered in the laboratory reception of Vaiola hospital for the year 2017. The year 2017 there was a total of 61,747 number of specimens registered in the reception area with the highest of 6,910 in May and lowest of 3749 in December. The average number of specimens received in the laboratory reception is 5,146/month



***Source: Laboratory Annual Report 2017**

Total numbers of requests per section as from laboratory reception record

The graph shows that most requests were for haematology and biochemistry all throughout the year with both sections receiving over 1000 test requests in each month, microbiology and blood transfusion

in third and fourth place averaging at just over 300 requests per month respectively.

Table 46: Total Number of Tests by Outer Island

#	Section	Prince Ngu Lab	Niu'ui Lab	Niu'eiki Lab
1	Haematology	20,620	1,057	1,182
2	Biochemistry	21,704	0	0
3	Blood Bank / Serology	1,630	774	931
4	Microbiology	2,220	1,433	99
5	Histology / Cytology	0	0	0

***Source: Laboratory Annual Report 2017**

The table above shows the total number of tests performed in each of the Outer Islands Laboratories. What is to take note of is that Prince Ngu has got a haematology and biochemistry analyzer whereas the other two Niu'ui and Niu'eiki is done manually for haematology and biochemistry is sent to Vaiola for testing. All cytology and histology specimens are sent to Vaiola Laboratory. We are currently looking at what would be the most cost effective way to get a basic haematology and biochemistry analyser for Ha'apai and 'Eua.

2017 INTERNAL AUDIT FINDINGS

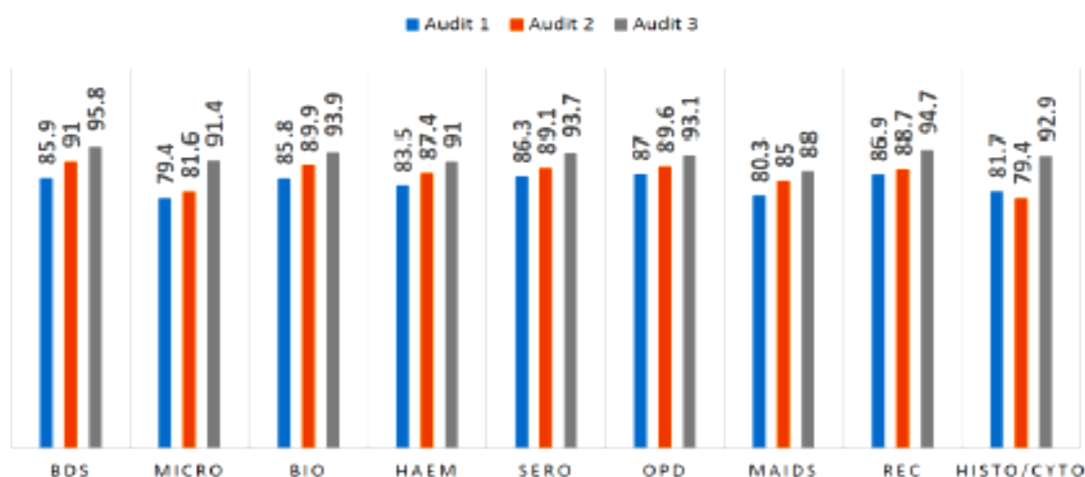


Figure 32: Findings of the 2017 Internal Audit

***Source: Laboratory Annual Report 2017**

Figure 32 shows the laboratory internal audit results for the year 2017. The internal audit is done three times a year and this is done by the National Laboratory Quality Manager with schedule follow up of actions to be taken to address weak areas from the audit findings. Generally all section improved from the initial audit with all achieving above 90% on the last audit and this was a huge contribution to the overall achievement of the PPTC audit result done by Mr. Russel Cole from PPTC.

Table 47: Improvement Percentage of each Laboratory Section (Audit 2017)

#	Section	% improvement 1-2 nd audit	% improvement 2-3 rd audit
1	BDS	5.1	4.8
2	Microbiology	2.2	4.8
3	Biochemistry	4.1	4
4	Haematology	3.9	3.6
5	Serology / BTX	2.5	4.6
6	OPD	2.6	3.5

7	Maids	4.7	3
8	Reception	1.8	6
9	Histology / Cytology	-2.3	13.5

*Source: Laboratory Annual Report 2017

As evident above it shows the improvement percentage of each section during the Internal Audit for 2017. The most improved section was Histology and Cytology with reception second and serology and blood transfusion third however some sections did drop from their previous percentage of improvement in the 1st and 2nd audit. The negative scoring of the percentage improvement for histology and cytology was due to the fire incident that happened in March 2017. But in conclusion the improvement noted in the 3rd audit findings was the major contributor to the achievement observed in the PPTC audit results.

8.12.4 Radiology

To provide quality radiological services at all time to the people of Tonga with available modality

8.12.4.1 Staff Establishment as of 31st December 2017 (Jan – Dec 2017)

Post	Number in Post	Station
Radiology Specialist	1	Vaiola Hospital
Senior Radiographer Graduate	1	Vaiola
Radiographer	1	Vaiola
Assistant Radiographer Grade I	1	Vaiola
Radiographer Graduate	2	Vaiola
Radiographer Trainee	6	Vaiola
Assistant Radiographer Grade II	2	Study Leave (FNU, 1 st and 2 nd year)
Assistant Radiographer Trainee	2	Study Leave (FNU, 2 nd and 3 rd year)

8.12.4.2 Section's Objectives and Updates

- To aid the clinicians in their endeavor to reach the right diagnosis of patients.
- To advise clinicians, if required on radiological procedures best fit for patients given their presenting symptoms.
- To provide screening services such as CXR for Immigration purposes as well as Mammography services for early detection of breast cancers.
- To ensure that procedures carried out are to the best benefit for the patient and not be more harmful than useful in line with ALARA (As low as reasonably allowable) concept of Radiation Exposure.

Table 48: Total number of Radiology Tests by Type

Modality	#	%
X-ray	12,280	66
Mammography	200	1
CT scan	1,259	7
Ultrasound Scan	4,815	26
Total	18,554	100

Source: Radiology Annual Report 2017

For the detailed breakdown of the modalities, please refer to Appendix 3

The numbers of x-rays performed at Vaiola Hospital in 2017 were 12,280. Of this number, the most requested body part to be x-rayed was the chest at 8259 (67%) of all x-rays. This is not too surprising as this examination is performed on patients for diagnostic purposes as well as healthy individuals for screening purposes such as for Visa and Immigration needs.

Note that number of contrast studies had fallen over the years due to availability of gastroscopy and colonoscopy services performed by clinical doctors. It does not help when the Fluoroscopy Machine is often out of service as it is at present. This machine is now more than 21 years and may soon be written off.

There were 4,815 Ultrasound scan performed in 2017. Majority of ultrasound performed were for obstetric services at 2,592 (54%). Ultrasound of upper abdomen and pelvis followed at 20% and 19% consecutively.

There were 1,259 number of CT scan performed in 2017. 569 (45%) were for chest, abdomen and pelvis (CAP) mostly to assess tumors or look for tumors, followed closely by CT head at 471 (37%). Most CT heads were done to look for CVA (cerebro-vascular accidents), looking for space occupying lesions (SOL) or in trauma looking for extend of head injuries.

Mammography services is offered at Vaiola Hospital. The idea is to screen women of certain age (50years and over) every 2 years for early diagnosis of cancer. This service has an open door on Fridays where women do not have to be referred but can come straight and asks for this service on Fridays. Unfortunately, as per available data only in the month of October and November that this service is being used to its' potential. This is due to the drive by Tonga Breast Cancer Society in the month of October, Pink October.

The PACS, Picture Archiving Communication System provided by Voyager in Melbourne completed 1 year in 2017. This technology had raised the standard of services in Tonga. Tonga is one of the 1st small Pacific Island to have this available.

Assistant Radiography Training Program.

The Assistant Radiographer program is in their last year in 2017. We are indeed grateful to the tutors of Queen Salote School of Nursing and Allied Health for the ongoing support to see this program through

Lake Imaging & MOH Radiology Twinning Partnership

Lake Imaging continues to offer support to the Radiology department. Fakapulua Bloomfield spent 4 weeks at the Lake Imaging in Ballarat for capacity building particularly in the field of CT. This was much needed as Ikuna Tohotoa, the technician that was trained in CT left for study leave at FNU, Fiji. We were hoping to send another staff in November but there was some problem with the contract.

8.12.5 Pharmacy

To provide good quality, safe effective, and affordable essential medicinal drugs, and standard medical supplies to the people of Tonga and to ensure rational and optimum use of these commodities..

Staff Establishment as of 31st December 2017 (Jan – Dec 2017)

Title	No. of Posts	Post filled	Vacancies	Update
Principal Pharmacist	1	1	0	To retire Dec 2020
Senior Pharmacists	2	2	0	
Pharmacist Graduate	4	4	0	
Assistant Pharmacist – Dip.	10	9	1	1 migrated overseas
Assistant Pharmacist Grade I	6	3	3	1 passed away, 3 retired end 2016
Assistant Pharmacist Grade II	12	12	0	1 on study leave
Procurement officer	1	1	0	Under Procurement section
Medical Store man	1	0	1	Post vacated 2 nd half of year
Assistant Med. Store man	1	0	1	Vacant for few years
Store Assistant	3	2	1	Resigned 2016, 2015

Ward Maid	1	0	1	Daily paid
Computer operator Grade III	1	0	1	Retired 2016 temp. daily paid reliever only
TOTAL	43	34	9	

8.12.5.1 Section's Objectives and Updates

Objectives	Selected Milestones
To ensure proper selection of Drugs and Medical Supplies through the National Drugs and Medical Supplies Committee.	<p>Work in progress with Clinicians to update Standard Treatment Guidelines to update required medicines for the Essential Medicine List and the Medical Supplies List</p> <p>Delays in finalizing the STGs lead to delay in updating the list. NDMSC continue to vet any new items requested based on justification and evidence based practice presented to the committee.</p>
Ensure best procurement practice is used	Continual effort to foster good team work and good communication with all stakeholders to ensure procurement process is timely and meet the demands from end users. Capacity building is important to ensure staff have competency and skills to carry out the procurement at all level.
Ensure appropriate storage condition requirements are followed	Several ways to ensure correct storage conditions such as daily monitoring of refrigerators to meet the right temperature requirement. Stock must be on pallets off the floor to avoid moisture and stock are zoned according to proper storage requirement as stated by manufactures.
Good distribution process in place.	<p>Schedule delivery timetable, for all facilities are used to meet their demand.</p> <p>Follow- up reminders for timely requisitioning to meet delivery timetable.</p> <p>Report back and signed invoices are required to be returned within a set period of time to complete the chain and make relevant adjustment to records. Major obstacle is no transport (no replacement for 2 tonne truck since 2015) and a shuttle or small vehicle for transportation on rainy days and for supervisory visits and regulatory inspections.</p>
Ensure Legislative framework is operational	<p>Tonga Registered List for medicinal drugs is regularly updated to ensure compliance with law. There were 183 new products registered this year and have been entered in to the Registered List. Pharmacy Premises and retail shops that sell Class 1 medicinal drugs are inspected routinely together with other ministries task force.</p> <p>The Drug Regulatory Unit works closely with customs to ensure that incoming medicines are screened to ensure that they comply with the Regulation. During the year there were 161 custom invoices screened. Mostly from the Public Sector and Private Pharmacies All import permits for controlled drugs are channelled through this unit and 9 import permits were approved and signed by the Minister of Health</p>
Ensure Availability of Essential Medicine and Standard Supply in all facilities	<p>Work in progress to capture data on availability and ensure appropriate stock level is available in all health facilities.</p> <p>Health Centres in Tongatapu started using mobile mSupply which would assist in the visibility of supplies in these centres.</p>
Ensure best pharmacy practice is used	<p>In house training on dispensing and drug information is conducted in the Pharmacies.</p> <p>Standard of Procedures is in place in most areas.</p>

Objectives	Selected Milestones
Ensure adequate manpower is properly trained.	3 Graduate Pharmacist joined the Ministry after graduating from FNU Fiji. 1 Pharmacy undergraduate scholarship has been offered in the past years
Overseas short training, workshops and meetings	Workshop in Fiji – Quality Assurance and Rational Use of Essential Medicines 14-17 Feb attended by Principal Pharmacist and Medical Superintendent Principal Pharmacist attended a Technical Consultation on Reporting Mechanisms for Shortages and Stock out of Medicine Geneva July 26-27 2017, Principal Pharmacist joined a team of representative from Tonga to attend the Regional Sub-recipient Meeting within Multi-country Western Pacific Integrated HIV/TB Program funded by Global Fund to fight AIDS TB, and Malaria 21-213 Nov in Nadi Fiji
Ensure that Enough Funding is provided for the procurement of Essential Medicines and Medical Supplies.	Request through Budget Committee for necessary vote allocations to be used for example freight cost for inter-island transportation of drugs and supplies to outer islands. Request for funding for the support and maintenance of the mSupply to continue using the software for good inventory control and dispensing use.
Ensure Medicine and Medical Supplies are used rationally	Data collection and visits to some of the facilities to ensure appropriate use of medicine and medical supplies in their care. Requisitioning officers are required to provide regular report of stock on hand to ensure that they regularly keep track of their supplies. The Antibiotic Awareness Week was officially opened by Her Royal Highness, Princess Pilolevu Mafile'o Tuita followed by various programs including radio talk back TV panels were conducted throughout the week to encourage public to use their antibiotic as directed and complete their course.

Table 49: Total costs of Pharmaceuticals ordered by Location (2017)

#	Facility	Total Cost	%
1	Vaiola Hospital	2,330,788	67%
2	Ngu Hospital	603,949	17%
3	Niu'ui Hospital	187,096	5%
4	Niu'eiki Hospital	122,685	4%
5	Health Centres- Tongatapu (7)	145661	4%
6	Niufo'ou and NTT Health Centers	30660	1%
7	Ha'afeva and Nomuka Health Centres	20140	1%
8	Reproductive Health Clinics	10,145	0%
9	Others	16,315	0%
	Total	\$3,467,439	100%

***Vaiola Hospital Pharmacy record was not able to retrieve their data and is not included in this report.**

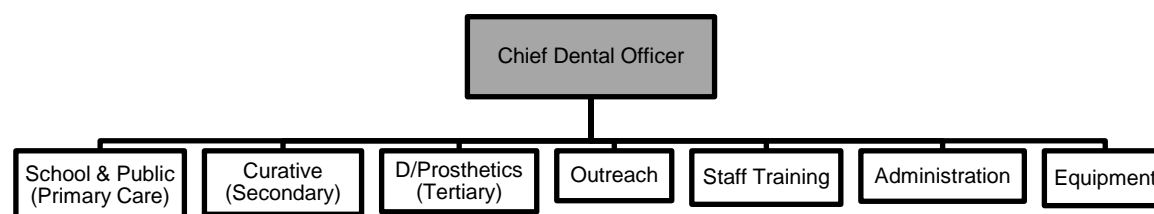
As evidently shown in the above table, majority of the Pharmacy budget is the Vaiola Hospital alone with 67% of the budget utilized for Inpatient and Outpatient Pharmacy alone. The second is Ngu Hospital, the costs appear to be correlated to how large the service delivery point and the nature of the services delivered.

9 DENTAL SERVICES

9.1 Mission Statement

To provide a Dental Health Service for Tonga in such a way that people would actively participate and make Tonga a dentally fit country.

9.2 Staffing and Organization Structure



9.2.1 Staffing over the whole Tonga (2017)

Hospital	District	No. of Post	Post Filled	Vacancies
Vaiola hospital	Tongatapu	34	32	2
Niu'eiki hospital	`Eua	2	2	0
Niu`ui hospital	Ha`apai	2	2	0
Ngu hospital	Vava`u	4	4	0
NiuaToputapu	NiuaToputapu	1	1	0
Tu`a-ki- fa-lelei	NiuaFo`ou	1	1	0

*10 Dental Chairside Assistants were currently in training and also included in Vaiola Hospital

#	Post	Staff in Charge
1	Chief Dental Officer	Dr. 'Amanaki Fakakovikaetau

9.2.2 Milestones

Objectives	Selected Milestones
1 Staff Training & Capacity Development Initiatives	<p>Staff Training: - commenced the 12 months coursework for 20 Dental Chairside Assistant (DCA) trainees (10 posts, 5 reserves and 5 privates) in March, 2017.</p> <p>Return of two undergraduate scholars from FNU with BDS degree to Tonga.</p> <p>Completed 12 months course for one post-graduate student in Oral Surgery.</p> <p>Staff Capacity Building overseas:</p> <ul style="list-style-type: none"> • Mr Sioeli Manu (bio-dental engineer) 2 months attachment in Ballarat and Melbourne, Australia for up-skilling funded by DFAT. • Dr Sisilia Fifita and Dr. 'Amanaki Fakakovikaetau spent two weeks at Victoria Institute of Forensic Medicine, Monash University, Melbourne for Forensic Odontology up-skilling and practicals, funded by DFAT.
2 Oral Health Week (OHW) Program	<p>Oral Health Promotion: The Oral Health Week (OHW) Program: Sunday 20th – 24th August, 2017 with the theme of “care of the oral structures and the signs and symptoms of diseases affecting them”.</p>

Division`s overseas based Stakeholders visited in 2017:

1. **Faculty of Dentistry, Mid-Western University, Arizona, USA ...develops the curriculum and donates for DCA Trainees and clinical consultations and treatments.**
2. **South Pacific Medical Team-Japan - Malimali Program 1 and 2 continues throughout this year**

3 Clinical Services, Oral Health Screening and Prevention Programs

A national oral health screening was done for 6-12 years old in primary school for dental caries prevalence (data analysis in progress)

Oral Health Prevention: Oral health screening to all Primary schools in the Kingdom and some Secondary Schools.

Service Delivery: Routine outreach to Special Need/Care Institutions: `Alonga Centre, OTA and Mango Tree Centre and home visits when appointment confirmed.

For cases that were operated on there were no re-admissions. Details of Dental Operations are shown in Appendix 4

4 Outer islands oral health outreach and preventive maintenance of oral equipment and assets registry.

There were a total of three outer island outreach visits for 2017:

- **February 2017: Visit to Niu`ui hospital (Ha`apai).**
- **June 2017: Visit to Ngu hospital (Vava`u)**
- **July 2017: Visit to Niu`eiki hospital (`Eua)**

9.2.3 Statistical Information

Curative Services at Vaiola oral clinic (Working Hours)

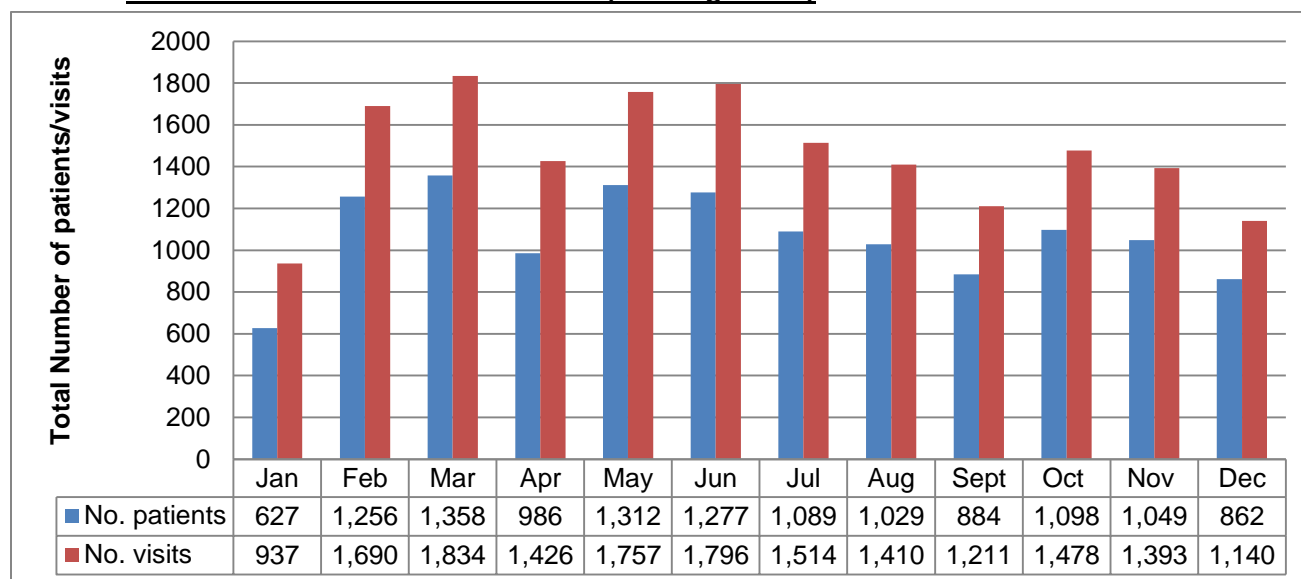


Figure 33: Total Number of Patients/Visits at the Vaiola Clinic (working hours) by months (2017)

*Source: Tonga Health Information System

Note: Refer to Appendix for more information on the detailed services provided
Based on the figures shown in Figure 33 the trends show fluctuating trends with the highest peaks around March, June and May while the lowest numbers in January.

9.2.3.1 Antenatal mothers

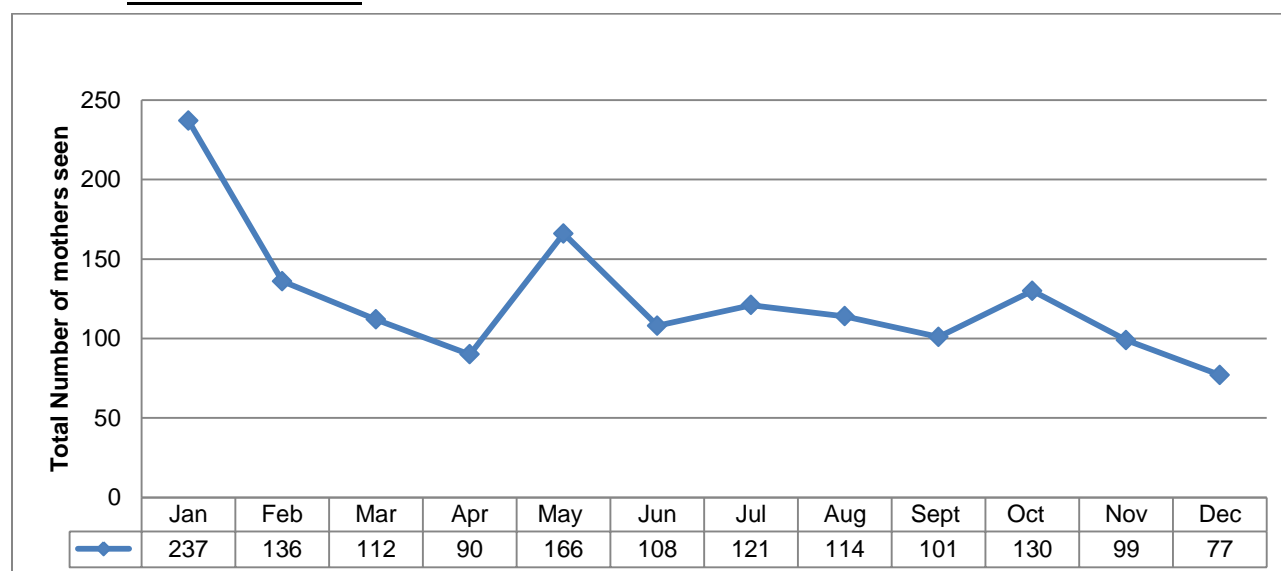


Figure 34: Total Number of mothers assessed in Tongatapu (Vaiola Clinic) by month (2017)

Source: Dental Division's Records Book

9.2.3.2 School Preventive Program (Malimali Program 1) in Tongatapu.

For schools (pre-school, and primary) the programs consisted of tooth brushing, fluoride mouth rinses, body exercise (weekly) during school hours and hand washing once quarterly. For Secondary schools the unit managed to conduct oral screening and health talks as shown in the Table below.

Table 50: School Preventative Program

MALIMALI 1			
SCHOOL LEVEL	SCHOOL VISITED	NUMBER OF SCHOOLS	TOTAL PUPILS
Pre-Schools	Vahe Hahake	13	262
	Vahe Kolo	16	813
	Vahe Hihifo	11	303
TOTAL		40	1,378
Primary School	Vahe Hahake	26	4,351
	Vahe Kolo	12	4,612
	Vahe Hihifo	21	3,907
TOTAL		59	12,870
SCHOOL LEVEL	SCHOOL VISITED	ACTIVITY DONE	
Secondary School	Tupou College	Oral Screening	
	Tailulu College	Oral Screening	
	Tonga College	Oral Screening	
	'Apifo'ou College	Oral Screening	
	Beaulah College	Oral Health Talk	
	Tupou High School	Oral Health Talk	

Source: Dental Division's Record Book

9.2.3.3 Dental prosthetics (tertiary care) at Vaiola hospital.

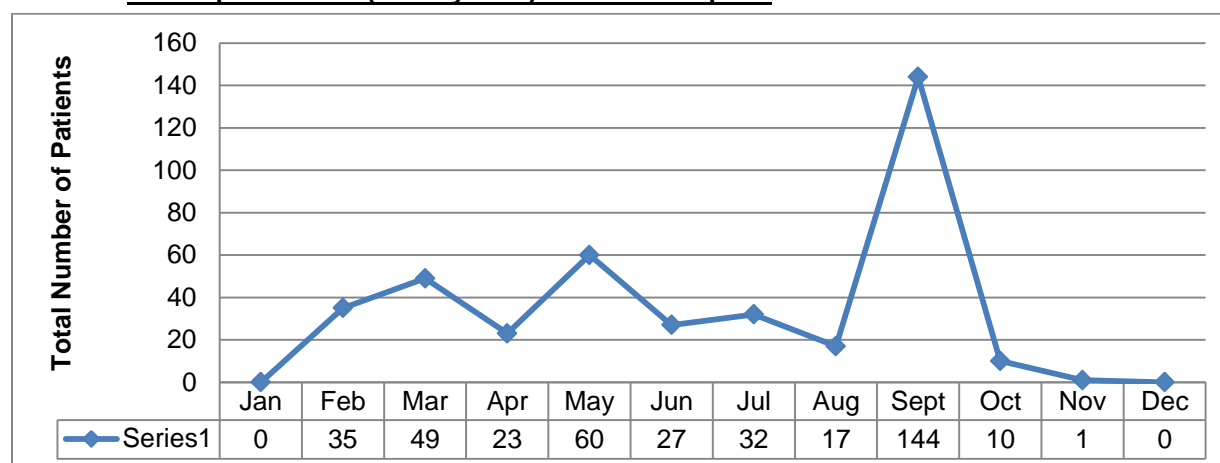


Figure 35: The total number of patients seen and received prosthetic treatment by month (2017)

*Source: Tonga Health Information System

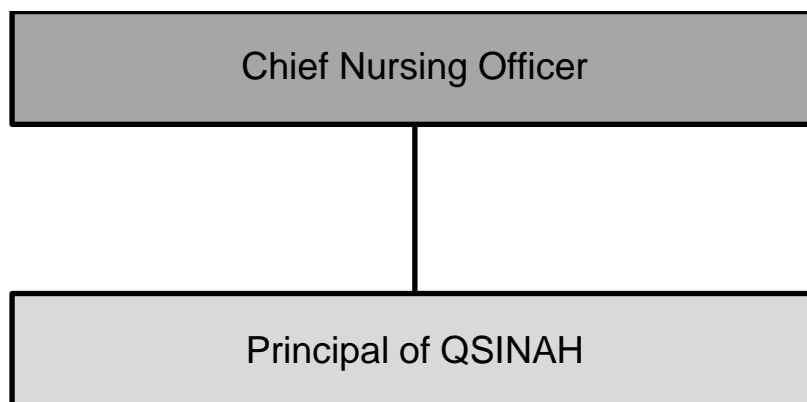
Based on the above figure, there was a spike of patients seen and treated with prosthetics in September 2017, with 144 cases, however majority of the year the cases range from zero to 60 cases.

10 NURSING LEADERSHIP AND EDUCATION

10.1 Mission Statement:

To Improve Quality and Safe Nursing practices. School of Nursing is responsible for training of student and staff nurse for the nursing services in Tonga

10.2 Staffing and Organizational Structure



Sections	Head of Section
Chief Nursing Officer	Dr. 'Amelia Tu'ipulotu
School of Nursing	Mrs. Tilema Cama

10.2.1 School of Nursing:

QSINAH stands to provide quality nursing and allied health trainings with sound theoretical knowledge, broad skills and attributes to meet the health care needs of the people of Tonga.

#	Selected Milestones
1	Nursing and Allied Health Graduation HRH Crown Princess Sinaitakala Tuku'aho cheerfully presented 41 diplomas to successful students of the Queen Salote School of Nursing at their Graduation on the 15 th of May 2017 with 31 nursing diplomas and 10 allied health diplomas. 31 students graduated with diplomas of nursing level 5 and 10 diplomas in medical laboratory technology level 5.
2	Policy and Procedure Manual for Nursing Practice Review and Development The purpose of redesigning, reviewing and development of Policy and Procedure Manual for Nursing Practice is to ensure safe and quality standard of practice for the population. Policy and Procedure Manual aim to guide all nurses to safe and quality care thus enhancement of population health outcomes. Policy and Procedure Manual aims to provide evidence-base and contextually relevant policies and procedures to be implemented in all health care facility in Tonga. There were three phases to the development process Phase 1 <ul style="list-style-type: none"> Leadership Technical Workshop 1: 2 days (30) Literature review on Nursing Policy and Procedure Consultations with key stakeholders and appropriate partners Workshop for all Nursing Unit Managers plus Sectional Heads <ul style="list-style-type: none"> Draft Nursing Policy and Procedure Phase 2 <ul style="list-style-type: none"> UHC Technical Detail Workshop 2: 4 days Engage outer Islands – Vava'u, Ha'apai and 'Eua Nursing Unit Managers & Nurse leaders

#	Selected Milestones			
	<ul style="list-style-type: none"> Engage Resource persons: Retired Nurses, Medical Officers, TNQAB officer. Phase 3 <ul style="list-style-type: none"> Retreat: 2 nights Editing, Printing, Presentation & Dissemination Document 'Policy & Procedure Manual' 			
3	Tonga Nurses Research Alliance and Reading Club			
	As from January to July 2017, nurses section conducted fifteen sessions in various areas on health services, which were 2 session by TNRA, Clinical nursing 2, Reproductive Health nursing 6, QSINAH 5 while NCD nursing not able to engage due to their workload and short staffs.			
4	Outer Islands training – Continuing Professional Development and Leadership Training			
	<p>This training also features the following key topics which were relevant to current nursing development and they were:</p> <ul style="list-style-type: none"> New PSC Performance Management System Policy and Procedure Manual –work currently undertaken on the main island Nurses, Nurse Practitioners and Midwives Act 2017 –currently on formality processes Tongan Nurses, Nurse Practitioners and Midwives Code of Ethics and Conduct Ama Takiloa –Nursing Supervisors Roles and Responsibilities (Supervision, Coaching, Training and Monitoring & Evaluation) <p>In addition, there were nurses from the outer islands whom completed their training on specific areas as outlined in the table below:</p>			
#	Names	Island	Specific Target Area	Time Frame
1	Eviline Tai, Staff Nurse#	Niua TT	Emergency/Medical/ Surgical/ Management/ Obstetric/ Paediatrics PH, NCD Nursing	2weeks
2	Monika 'Onesi, In Charge	Niua TT	Emergency/Medical/ Surgical/ Management/ Obstetric/ Paediatrics PH, NCD Nursing	3weeks
3	Penisimani Pau, In Charge	Niua FF	Emergency/ Management/ Obstetric/ Paediatrics PH, NCD Nursing	3weeks
4	Mele Falemaka, In Charge	Ha'apai	Emergency/ Surgical/ Medical/ Obstetric/ Paediatrics/ Management/ Leadership/ NCD Nursing, PH	2weeks
5	Inaise Fisiilose, Senior Nurse	Ha'apai	Emergency/ Surgical/ Medical/ Obstetric/ Paediatrics/ Management/ Leadership/ NCD Nursing, PH	2weeks
6	Lolotonga Sekeni, Staff Nurse	Vava'u	Emergency/ Surgical/ Medical/ Obstetric/ Paediatrics/ Management/ Leadership/ NCD Nursing, PH	2weeks
7	Kilisita Fa, Senior Nurse	Vava'u	Emergency/ Surgical/ Medical/ Obstetric/ Paediatrics/ Management/ Leadership/ NCD Nursing, PH	2weeks
8	Tutaleva Sitaleki, Staff Nurse	'Eua	Emergency/ Surgical/ Medical/ Obstetric/ Paediatrics/ Management/ Leadership/ NCD Nursing, PH	2weeks
9	Malia Taiamoni, Staff Nurse	'Eua	Emergency/ Surgical/ Medical/ Obstetric/ Paediatrics/ Management/ Leadership/ NCD Nursing, PH	2 weeks

11 ISLAND HEALTH DISTRICTS

There are 5 island groups that make-up the outer island health districts. These island groups are 'Eua, Ha'apai, Vava'u, Niuafo'ou and Niuatoputapu. Within each of the island groups are health service providers and facilities catering to their respective areas. The total number of facilities is outlined in the table below:

Table 51: Health Facilities by Island Group/District

Island Group	Number of Health service facilities (Public System)			
	Referral Hospital	Community Hospital	Health Centre	MCH Clinic
Tongatapu	1	0	7	15
Vava'u	0	1	3	5
Ha'apai	0	1	2	3
'Eua	0	1	0	3
Niuafo'ou	0	0	1	1
Niuatoputapu	0	0	1	1

*Maternal and Child Health Clinic / Reproductive Health Clinics.

The Islands of Tonga consists of five main island groups: Tongatapu, Vava'u, Ha'apai, 'Eua and the Niua Groups (Niuafo'ou and Niuatoputapu). In each island, there are hospitals, health centres and reproductive clinics or maternal and child clinics. The main referral hospital (Vaiola Hospital) is in the main island of Tongatapu, with 7 Health Centres located in Vaini, Mu'a, Kolonga, Fua'amotu, Nukunuku, Houma and Kolovai and 19 Maternal Health Clinics with 1 Clinic at Vaiola Public Health Building and 7 in each of the aforementioned Health Centres, the remaining 7 clinics located at Ma'ufanga, Sopo, Longolongo, Kolofo'ou, Tofoa, Havelu and Pea.

Table 52: Summary of Outer Island Indicators

Indicator	Vava'u	Ha'apai	'Eua	Niuafo'ou	Niuatoputapu
Total # of Medical Officers	5	2	1	0	0
Total # of Health Officers	2	2	1	1	1
Total # of Nurse Practitioners	0	1	0	0	0
Total # of Clinical Nurses	22	12	13	1	1
Total # of Reproductive Nurses	10	8	4	0	1
Total # of NCD Nurses	3	2	1	0	0
Total # of Dental Officers	1	1	0	0	0
Total # of Dental Therapists	2	1	2	1	1
Total # of Radiographer Assistants	1	0	0	0	0
Total # of Laboratory Assistants	2	1	1	0	0
Total # of Pharmacy Assistants	4	1	1	0	0
Total # of Health Inspectors	2	1	1	0	0

Indicator	Vava'u	Ha'apai	'Eua	Niuafo'ou	Niuatoputapu
Total Population	15,431	6,347	5,427	531	892
Total Budget Allocation (TOP\$)	428,400	299,200	151,800	81,900	81,300
Total # of Beds	60	26	16	2	5
Total Referrals to Vaiola	85	21	28	3	4
Total # of Vehicles	10	7	5	1	1

Indicator	Vava'u	Ha'apai	'Eua	Niuafo'ou	Niuatoputapu
Total Deaths (General)	102	36	27	5	12
Total Live-Births	310	106	100	0	0
Total Consultations	*	13,122	11,528	3,020	2,685
Total Admissions	1,709	469	371	14	34

*Vava'u Prince Ngu Data Unavailable.

11.1 'EUA

This Section of the Report was developed with the invaluable contribution of the Niu'eiki Hospital staff and the Senior Medical Officer Dr. Maleta Lolesio.

The Island of 'Eua is the closest island to Tongatapu (30km) and consists of 2 districts: 'Eua Fo'ou and 'Eua Motu'a. There is one main Community Hospital (Niu'eiki Hospital) located at 'Esia and three reproductive health clinics.

According to the latest 2016 Government Census* the population of 'Eua was estimated at 4,945 (2,483 males and 2,459 females). The Reproductive Health Nurse's Survey** however, estimated a total population of 'Eua is estimated at 5,427 with 2,748 males and 2,679 females.

Source: *Tonga 2016 Census of Population and Households (2016)

**Reproductive Health Nurses Annual Survey (2017)



Figure 36: Niu'eiki Hospital

'Eua only has 1 Community Hospital which also includes a Maternal and Child Health Clinic at the Niu'eiki compound.

11.1.1 Staffing for Niu'eiki Hospital as of the 31st of December 2017

Sections	Head of Section	# of supporting staff
Medical Officer in Charge	Dr. Maleta Lolesio	1
Clinical Nursing	Sr. Kaufo'ou Taufu	11
Public Health Nursing	Sr. Uikelotu Filikitonga	3
NCD Nurses	Manatu Vea	0
Environmental Health	'Amelia Vea	2
Pharmacy	Finau Lalahi	0
Laboratory	'Epitani Vaka	0
Dental	Talanoa Tufui Vaka	0
Administrative Support	Lute 'Eli	11
Medical Records	Emeli Palei	0
TOTAL	10	28

11.1.2 Organizational Structure

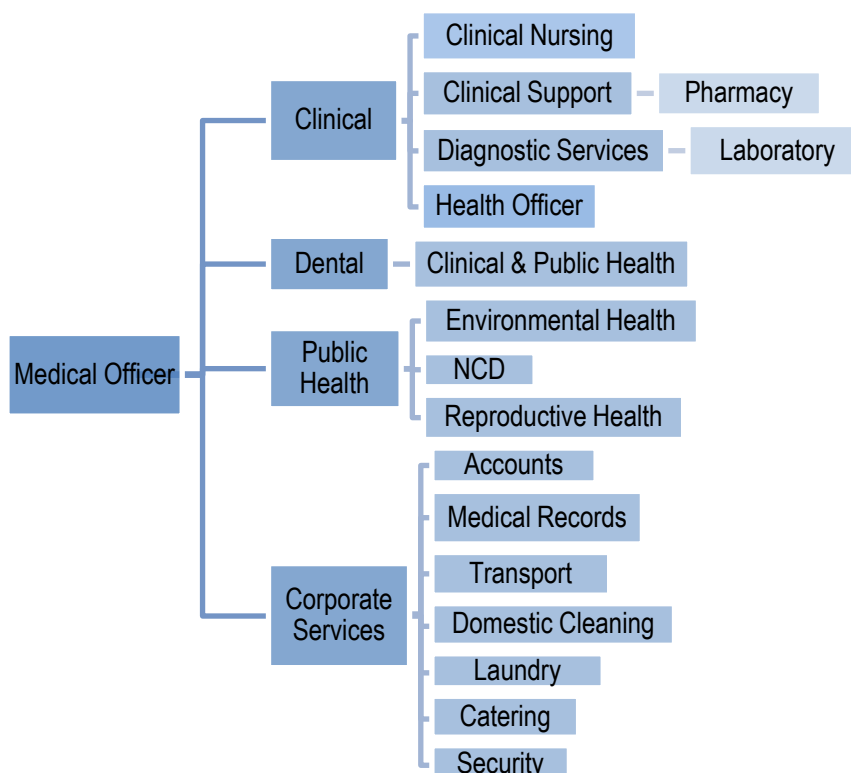


Table 53: Summary of Service Provider Staff at Niu'eiki Hospital (2017)

ADMINISTRATIVE DATA	
Indicator	Number
Total Number of Staff	38
Total Number of Vehicles	5
Health Professionals	
Total Number of Medical Officers	1
Total Number of Health Officer	1
Total Number of Nurse Practitioner	0
Total Number of Clinical Nurses	12
Total Number of Public Health Nurses	4
Total NCD Nurses	1
Total Number of Dental Officers	0
Associate Health Professionals	
Total Number of Dental Therapists	1
Total Number of Radiography Assistants	0
Total Number of Pharmacy Assistants	1
Total Number of Laboratory Assistants	1

*Source: Human Resources Staff Listing / Asset Registry

11.1.3 Financial Allocation 2017/2018

NAME VOTE	AMOUNT (TOP\$)
Domestic Travel	8,000.00
Telecommunication Charges	6,000.00
Fuel	8,000.00
Freight	1,000.00
Maintenance of Computer System	2,000.00
Maintenance of Office Equipment	800.00

Maintenance of vehicles	6,000.00
Maintenance of Buildings & Compound	15,000.00
Laundry services	3,500.00
Electricity	10,000.00
Water	2,500.00
Office supplies	3,000.00
Printing & Stationery	8,000.00
Ration & Diets	39,000.00
Technical supplies	25,000.00
Internal Medical Referral	8,000.00
Technical equipment	3,000.00
New equipment	3,000.00
TOTAL	151,800.00

*Source: Accounts Section

11.1.4 Milestones

Objectives	Selected Milestones
Adequate good clean water supply for 'Eua	❖ Collaboration with TWD & EWCC to monitor and improve the water supply.
Improve staff performances	❖ Monthly staff meetings to enhance performances. ❖ Encourage further training opportunities overseas & locally ❖ Fortnightly continuous education.
Talk for the health needs/reduce morbidity of NCDs	❖ Quarterly outreach clinics and home visits for non-ambulant cases ❖ Health education sessions for clinic patients and community groups.
Better financial management	❖ Reduction of unnecessary expenditures ❖ Improve revenue collection ❖ Improve inventory & recording.
Good health care services	❖ Better communication & referral system with Vaiola Hospital ❖ Encourage regular clinical meetings & training workshops.

11.1.5 Statistical Information

Table 54 Demographic Summary of 'Eua Island for 2017

Population	Gender		Total	
Age-Group	Male	Female	Number	%
Infants (below 1yr)	64	48	112	2%
1 – 4 years	328	302	630	12%
5 – 9 years	331	308	639	12%
10 – 14 years	313	331	644	12%
15 – 19 years	285	286	571	11%
20 – 24 years	236	193	429	8%
25 – 29 years	183	190	373	7%
30 – 39 years	295	307	602	11%
40 – 49 years	275	268	543	10%
50 – 59 years	204	206	410	8%
60 – 69 years	144	138	282	5%
70 years+	90	102	192	4%
TOTAL POPN – this period	2748	2679	5427	100%
TOTAL POPN – last period	2694	2677	5371	
	Male	Female	Total	
Migration out > 6/12	54	60	114	
Migration in > 6/12	67	64	131	

Source: Reproductive Health Section

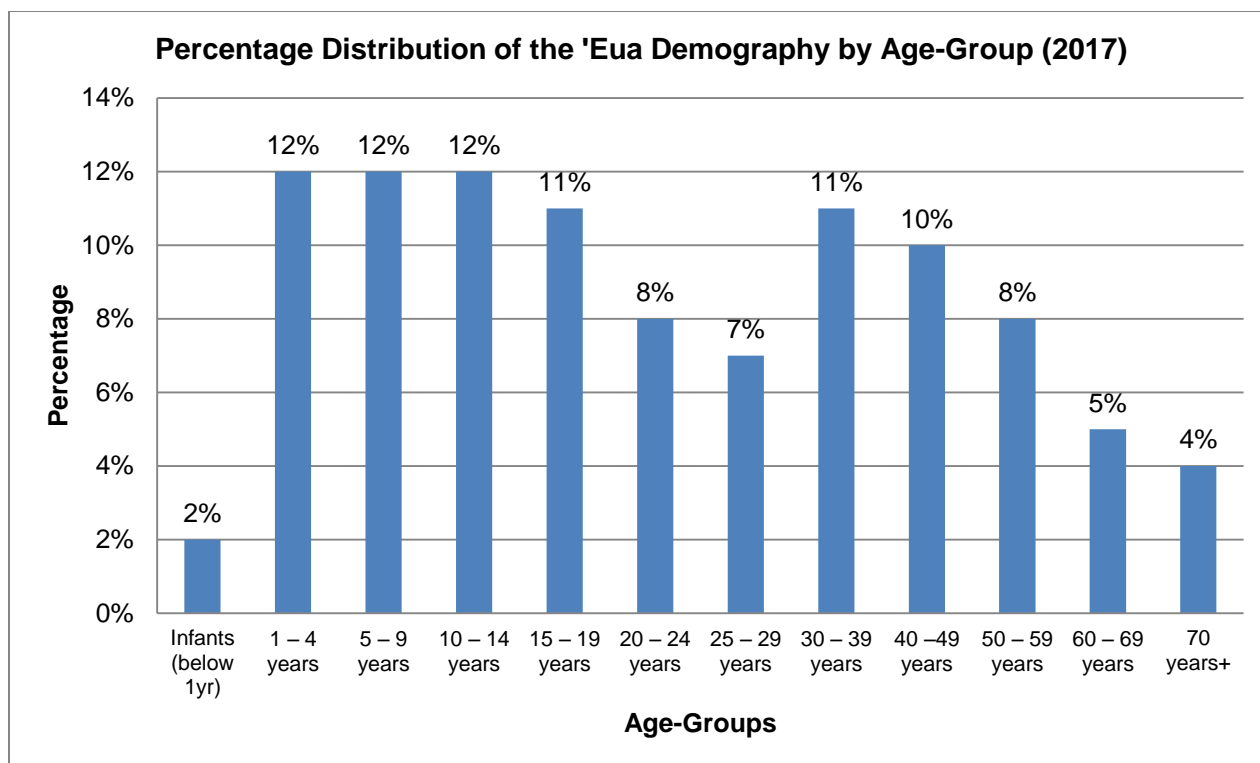


Figure 37: Bar Graph on the Percent Distribution of the 'Eua Demography by Age-Group (2017)

Based on the figures above the key area to notice is that there is low proportion of adolescent and young adults captured during the Reproductive Health catchment. This can be accounted for migration to the main island during tertiary school, employment or seasonal working. 'Eua is the closest main island to Tongatapu so movement between the main island is convenient.

Table 55: Vital Statistics Indicators for 'Eua (2017)

VITAL STATISTICS	
Indicator	Number
Total Household	877
Total Number of Death (Female)	15
Total Number of Death (Male)	12
Total Number of Death	27
Crude Death Rate	5 per 1,000
Number of Stillbirths (> 28 weeks)	0
Number of Perinatal deaths / Rate	0
Number of Neonatal deaths / Rate	0
Number of Infant Deaths / Rate	1
Number of Deaths for Children < 5years / Rate	1
Number Maternal Deaths / Rate	0
Total Number of Live Births	100
Proportion of Births Attended by Skilled Practitioner	99%
Crude Birth Rate	18 per 1,000
Total Fertility Rate	2.1

* **Source:** Reproductive Health Section

** **Stillbirth:** Foetal death after 28 weeks gestation

** **Perinatal death:** Infant death after 28 weeks gestation up to 7 days after delivery

** **Neonatal death:** Infant death upto 28 days after delivery

Based on the Vital Statistics Table, the key indicators show that there were 27 deaths per 100 live-

births. The Crude Death Rate for 'Eua is relatively low with 5 deaths per 1,000 persons. The Total Fertility Rate of 2.1 which means that the women of 'Eua are likely to have on average 2 births throughout their lives. For the proportion of births attended by a skilled practitioner, the remaining 1% was a delivery at the woman's home which was delivered by a family member. However these indicators must be taken with caution as the population is small and the period is just one year.

Table 56: Clinical Section Indicators for Niu'eiki Hospital (2017)

CLINICAL DATA	
Indicator	Number
Total Number of Beds	16
Total Number of Admissions (New)	371
Total Number of Consultations	11,528
Total Number of Internal Referrals	28
Total Number of Specimens (Laboratory)**	2,212
Total Number of Tests (Laboratory)**	1,102
Total Number of Items (Pharmacy)	3,8731
Total Number of Prescriptions (Pharmacy)	17,950
Total Dental Attendance	1,724
Total Number of Schools Visited	7
Total Number of Students Seen	1,911

Source: *Health Information System (Niu'eiki Hospital), **Laboratory Annual Report (2017), ***Pharmacy Annual Report (2017)

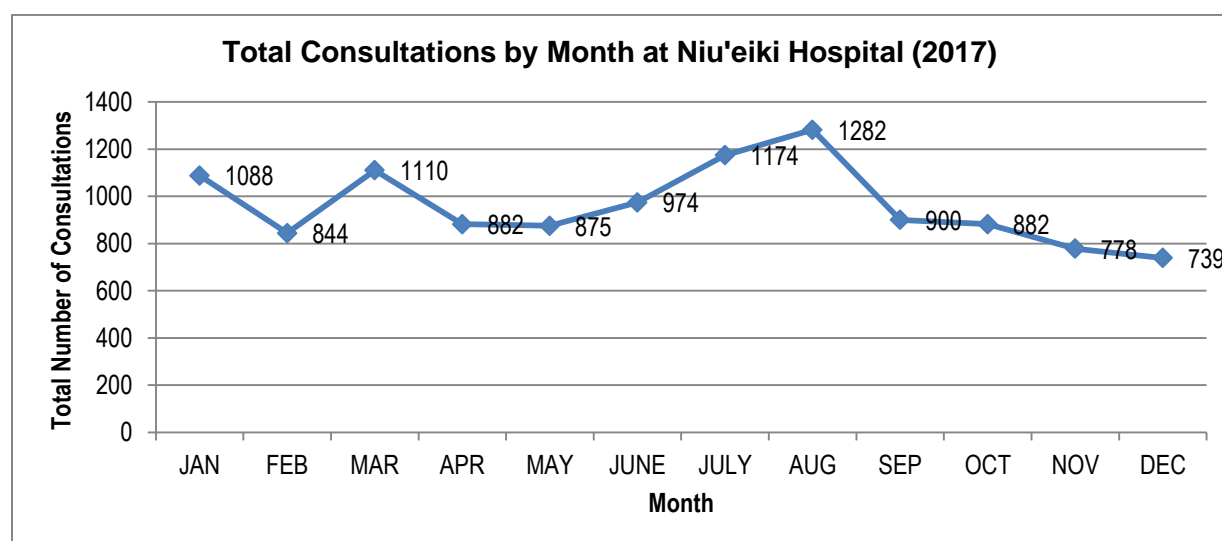


Figure 38: Line Graph on the Total Consultations at Niu'eiki Hospital by month (2017)

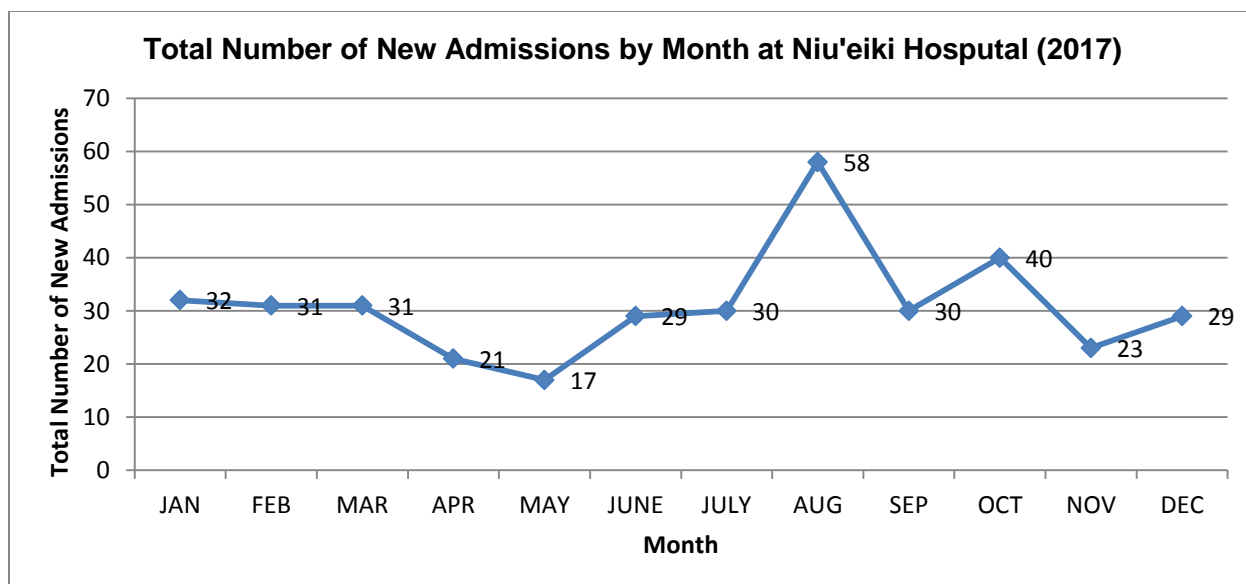


Figure 39: Line Graph showing Total Admissions at Niu'eiki Hospital by Month (2017)

Table 57: Public Health Section Indicators for Niu'eiki Hospital (2017)

PUBLIC HEALTH	
Indicator	Number
Child Immunization (DTP3) Percentage	100%
Immunization Coverage	99.6%
Number of Babies with Low Birth Weight (<2500 gm)	4
Number of Malnutrition 0 – 2 years	0
Total Teenage Pregnancy / Percentage	4
Number of Home Deliveries	1
No ANC Booking (no ANC)	1
Low ANC Coverage (4 or less clinics)	19 (17%)
High ANC Coverage (5+ clinics)	91 (82%)
Total Antenatal Care Coverage (%)	110 (99%)
Postnatal (PNC) Coverage (%)	100%
Contraceptive Prevalence Rate (%)	39%
Total Number of Inspections (Environmental)	3,381
Total Number of Health Promotion Activities	108

Source: Reproductive Health Section

*ANC: Antenatal Care

Table 58: Non-Communicable Disease (NCD) Indicators for Niu'eiki Hospital (2017)

NCD	
Indicator	Number
Total Number of Hypertension only (Female)	265
Total Number of Hypertension only (Male)	140
Total Number of Hypertension only	405
Total Number of Diabetes only (Female)	239
Total Number of Diabetes only (Male)	91
Total Number of Diabetes only	330
Total Number of CVD	449
Total Number of Cancer	1
Total COPD	15
Total Chronic Respiratory	41
Total NCD Registered (April – Dec 2017) by NDC	326
Total NCD	1241

***NCD Annual Report 2017 – Community Health Section Annual Report 2017**

***CVD:** Cardiovascular Disease includes Hypertension, Cardiac (CCF, IHD, CHD, RHD, other) and CVA: Cardiovascular Attack (Stroke, TIA, Other).

****Chronic Respiratory** includes Asthma and COPD: Chronic Obstructive Pulmonary Disease.

*****NDC:** National Diabetes Center Annual Report 2017

Table 59: Prescription Records for Niu'eiki Hospital Pharmacy (2017)

Months	Number of Prescriptions	Number of Items
January	1688	3625
February	1391	3045
March	1687	3619
April	1203	2520
May	1423	3003
June	1647	3608
July	1799	3894
August	1847	3935
September	1452	3116
October	1461	3332
November	1316	2883
December	1034	2151
Total	17950	38731

11.2 VAVA'U

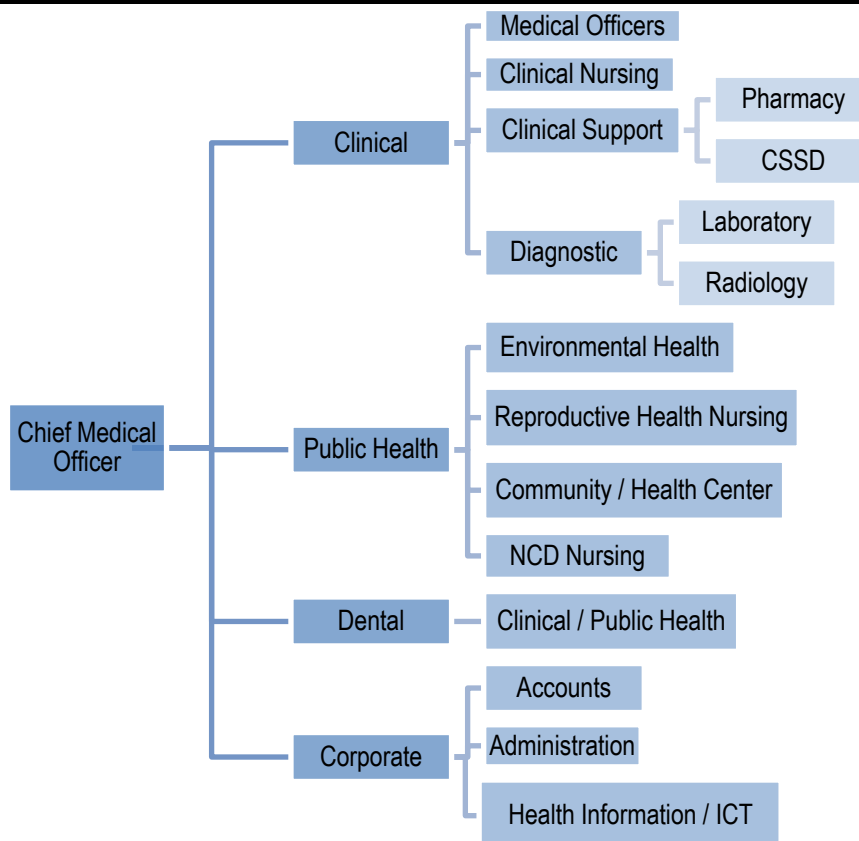
This Section of the Report was developed in collaboration with the wonderful team of Prince Ngu Hospital led by Dr. John Lee Taione.

The Vava'u Group is consisted of 6 districts which is Neiafu, Leimatu'a, Hahake, Hihifo, Pangaimotu and Motu District. There is one main Hospital (Prince Ngu) which is located at Neiafu and two Health Centers in Ta'anea, Falevai, Tefisi and Hunga. Services at Falevai Health center are currently halted due to land management issues.

The Acting Chief Medical Officer (A/CMO) Dr. John Lee Taione was responsible for managing health services in the Vava'u District for the year 2017 All services provided in Prince Wellington Ngu hospital are under the supervision and leadership A/CMO.



11.2.1 Organizational Structure



11.2.2 Staffing for Prince Wellington Ngu Hospital as of 31st of December 2017

CLINICAL		
Section	Head of Sections	Supporting staff
A/Chief Medical Officer	Dr. John Lee Taione	4
Clinical Nursing	Sr. Meliame Tupou	21
Laboratory	Mrs. 'Aiona Kauvaka	1
Pharmacy	Mr. Ma'u Tu'ineau	3
Radiology	Mrs. 'Atomi Havea	0
Sterile Supply Assistant	Mrs. Petsy Lomu	0
DENTAL		

Dental	Dr. 'Aleva Takau	2
PUBLIC HEALTH		
Environmental Health	Mrs. 'Akata Saafi	4
Public Health Nursing	Sr. 'Ana Tautua'a	9
NCD	Sr. 'Ana Fe'aomoeata	2
Community / Health Center	Mr. Lyall Ika	1
CORPORATE SERVICES		
Accounts	Mr. Neil Armstrong	1
Administration	Mrs. Pelenatita Siasau	29
Health Planning/Information	Mr. Viliami Misi	3
TOTAL	14	80

Table 60: Summary of Service Provider Staff at Prince Ngu Hospital (2017)

ADMINISTRATIVE DATA	
Indicator	Number
Total Number of Staff	94
Total Number of Vehicles	10
Health Professionals	
Total Number of Medical Officers	5
Total Number of Health Officers	2
Total Number of Nurse Practitioners	0
Total Number of Clinical Nurses	22
Total Number of Public Health Nurses	10
Total NCD Nurses	3
Total Number of Dental Officers	1
Associate Health Professionals	
Total Number of Dental Therapists	2
Total Number of Radiographer Assistants	1
Total Number of Pharmacy Assistants	3
Total Number of Laboratory Assistants	2

11.2.3 Financial Allocation 2017/2018

NAME VOTE	AMOUNT (TOP\$)
Location Allowance	2600
Domestic Travel	35000
Telecommunication Charge	10800
Postal Charge	1000
Advertising & Publicity	1000
Fuel	24000
Freight	5000
Maintenance of Office Equipment	1000
Maintenance of Vehicle	18000
Maintenance of Specialized Equipment	3000
Maintenance of Building & Compound	30000
Laundry	7000
Medical Waste	8000
Electricity	65000
LPG	10000
Water	14000
Office Supplies	5000
Printing & Stationary	6000
Ration & Diet	35000
Technical Supplies	30000

Licenses	3000
Internal Medical Referral	80000
Internal Medical Referral	20000
New Equipment	5000
New Computer	5000
Technical Equipment	4000
TOTAL	428,400

*Source: Accounts Section

11.2.4 Statistical Information

Table 28: Demographic Summary of Vava'u Island Group for 2017

Population	Gender		Total	
Age-Group	Male	Female	Number	%
Infants (below 1yr)	192	155	347	2%
1 – 4 years	777	715	1492	10%
5 – 9 years	940	888	1828	12%
10 – 14 years	957	839	1796	12%
15 – 19 years	888	803	1691	11%
20 – 24 years	652	651	1303	8%
25 – 29 years	462	479	941	6%
30 – 39 years	856	902	1758	11%
40 – 49 years	820	823	1643	11%
50 – 59 years	602	595	1197	8%
60 – 69 years	374	428	802	5%
70 years+	236	397	633	4%
TOTAL POPN – this period	7756	7675	15431	100%
TOTAL POPN – last period	7796	7568	15364	
	Male	Female	Total	
Migration out > 6/12	431	444	875	
Migration in > 6/12	396	401	797	

Source: Reproductive Health Section

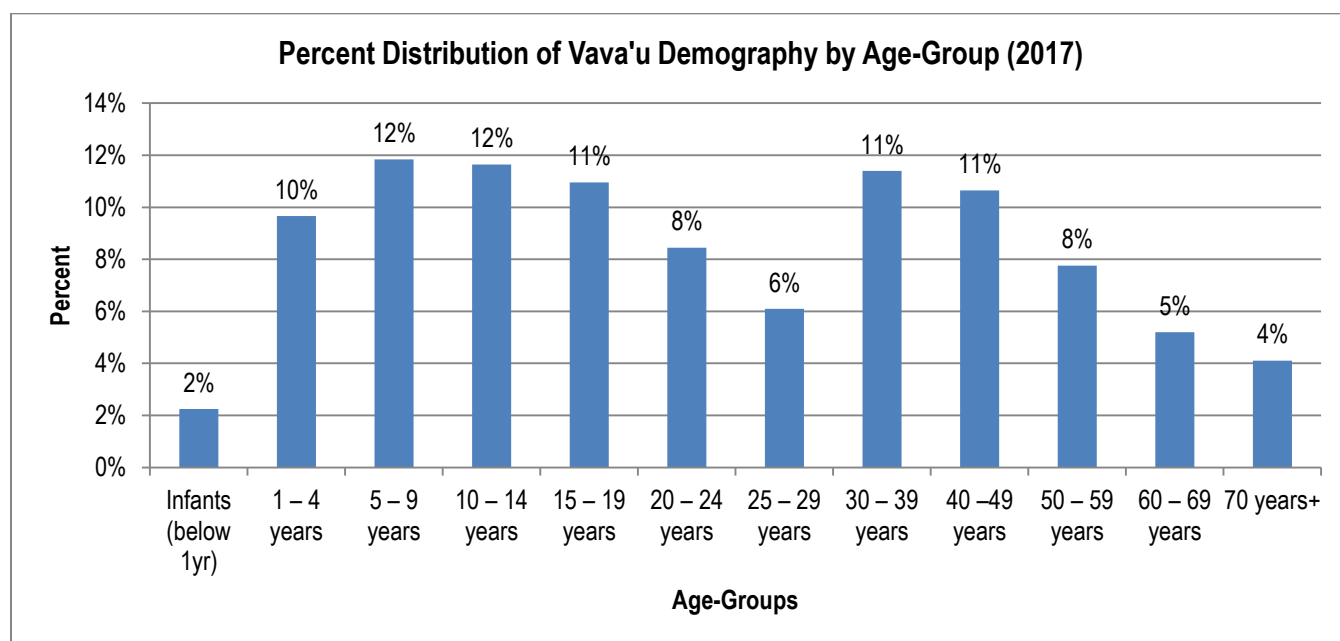


Figure 40: Bar Graph on the Percent Distribution of the Vava'u Demography by Age-Group (2017)

Table 61: Vital Statistics Indicators for Vava'u (2017)

VITAL STATISTICS	
Indicator	Number
Total Household	2783
Total Number of Death (Female)	64
Total Number of Death (Male)	38
Total Number of Death	102
Crude Death Rate (per 1,000)	7
Number of Stillbirths (> 28 weeks)	2
Number of Perinatal deaths / Rate	4
Number of Neonatal deaths / Rate	3
Number of Infant Deaths / Rate	5
Number of Deaths for Children < 5years / Rate	6
Number Maternal Deaths / Rate	0
Total Number of Live Births	310
Proportion of Births Attended by Skilled Practitioner	99%
Crude Birth Rate (per 1,000)	20
Total Fertility Rate (births per woman)	2.3

*Source: Reproductive Health Section

Table 62: Clinical Section Indicators for Prince Ngu Hospital (2017)

CLINICAL DATA	
Indicator	Number
Total Number of Beds	60 – 61
Total Number of Admissions (New)	Obstetrics: 336 Paediatric: 436 Medical: 515 SCN: 12 Surgical: 410 Total: 1,709
Total Number of Consultations	Not available
Total Number of Internal Referrals	Obstetrics: 5 Paediatric: 14 Surgical: 45 Medical: 21 SCN: 0 Total: 85
Total Number of Specimens (Laboratory)**	6,376
Total Number of Tests (Laboratory)**	46,171
Total Number of Items (Pharmacy)	113,424
Total Number of Prescriptions (Pharmacy)	53,645
Total Number of Patients Screened (Radiology)	592
Total Number of Chest Radiography	272
Total Number of Abdomen Screenings	37
Total Number of Bone Screenings	283
Total Dental Attendance (Dental)	5,447
Total Number of Schools Visited (Dental)	Not available
Total Number of Students Seen (Dental)	Not available

Source: *Health Information System (Prince Ngu Hospital), **Laboratory Annual Report (2017),
***Pharmacy Annual Report (2017)

Table 63: Public Health Section Indicators for Prince Ngu Hospital (2017)

PUBLIC HEALTH

Indicator	Number
Child Immunization (DTP3) Percentage	100%
Immunization Coverage	99.9%
Number of Babies with Low Birth Weight (<2500 gm)	7
Number of Malnutrition 0 – 2 years	2
Total Teenage Pregnancy / Percentage	19
Number of Home Deliveries	2
No ANC Booking (no ANC)	3
Low ANC Coverage (4 or less clinics)	47 (39.8%)
High ANC Coverage (5+ clinics)	275 (99.9%)
Total Antenatal Care Coverage (%)	322 (98.8%)
Postnatal (PNC) Coverage (%)	100%
Contraceptive Prevalence Rate (%)	30%
Total Number of Inspections (Environmental)	Not available
Total Number of Health Promotion Activities	Not available

Source: Reproductive Health Section

Table 64: Non-Communicable Disease (NCD) Indicators for Prince Ngu Hospital (2017)

NCD	
Indicator	Number
Total Number of Hypertension only (Female)	818
Total Number of Hypertension only (Male)	384
Total Number of Hypertension only	1202
Total Number of Diabetes only (Female)	639
Total Number of Diabetes only (Male)	287
Total Number of Diabetes only	926
Total Number of CVD	1273
Total Number of Cancer	3
Total COPD	3
Total Chronic Respiratory	46
Total NCD Registered (April – Dec 2017) by NDC	893
Total NCD	3453

*NCD Annual Report 2017 – Community Health Section Annual Report 2017

*CVD: Cardiovascular Disease includes Hypertension, Cardiac (CCF, IHD, CHD, RHD, other) and CVA: Cardiovascular Attack (Stroke, TIA, Other).

**Chronic Respiratory includes Asthma and COPD: Chronic Obstructive Pulmonary Disease.

***NDC: National Diabetes Centre (NDC) Annual Report 2017

Table 65: Prescription of Ngu Hospital Pharmacy (2017)

Month	AM Shift		PM Shift		Total Prescriptions	Total Items
	Prescription	# of items	Prescription	# of items		
January	3964	8427	1681	3419	5645	11846
February	3260	7068	1084	2099	4344	9167
March	3730	8148	1494	3017	5224	11165
April	2968	6127	1302	2569	4270	8696
May	3484	7530	1221	2225	4705	9755
June	2899	6359	1140	2201	4039	8560
July	3363	7401	1417	2761	4780	10162
August	3477	7552	1391	2720	4868	10272
September	3079	6769	1457	2733	4536	9502
October	3000	6531	1070	2070	4070	8601

November	2778	6278	901	1831	3679	8109
December	2546	5613	939	1976	3485	7589
Totals	38548	83803	15097	29621	53645	113424

11.3 HA'APAI

Firstly, this Annual Report was developed in collaboration with the diligent healthcare workers of Niu'ui Hospital led by Dr. Tevita Vakasiuola.

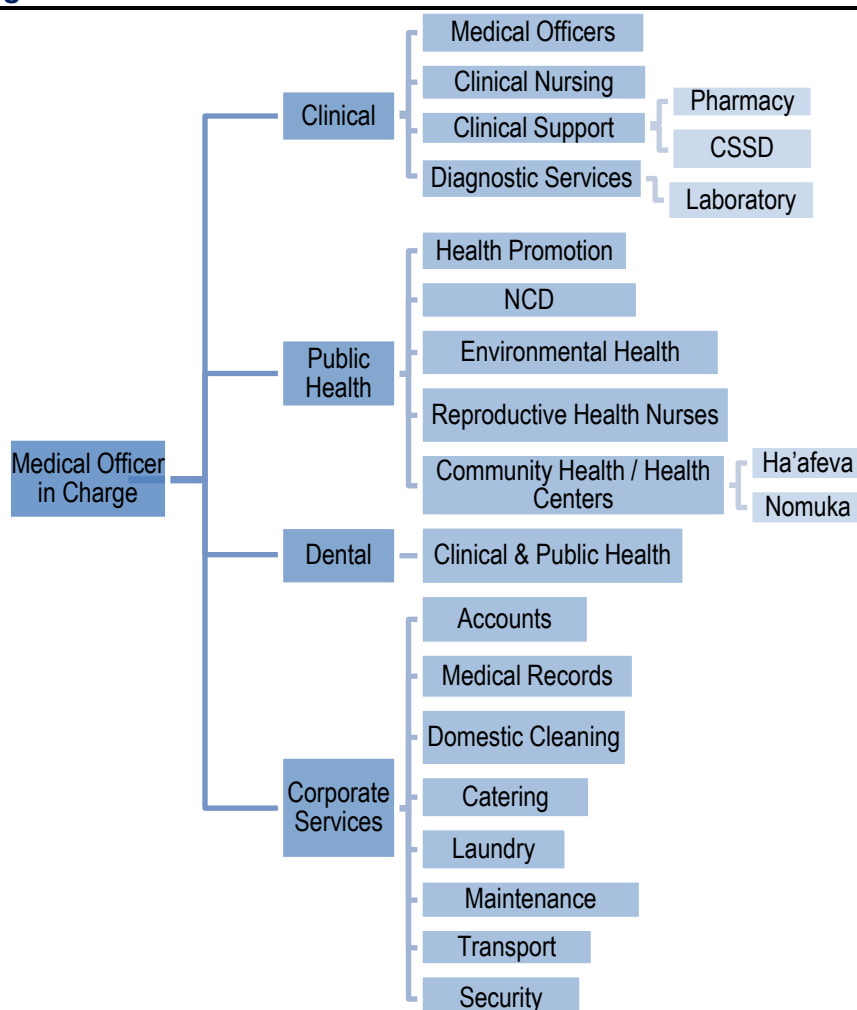
The Ha'apai Group consists of 6 districts which are Pangai, Foa, Nomuka, 'Uiha, Lulunga and 'Ha'ano. There is one main Community Hospital which is located at Lifuka Island (Hihifo) and two Health Centers in Nomuka and Ha'afeva (Lulunga District). There are also reproductive health clinics located at Lotofoa (Foa), Fakakai (Ha'ano) and 'Uiha and within the two respective Health Centers.

According to the latest 2016 Government Census* the population of Ha'apai was estimated at 6,125 (3,118 males and 3,007 females). The Reproductive Health Nurse's Survey** however, estimated a total population of Ha'apai is estimated at 6,347 with 3182 males and 3165 females.

Source: *Tonga 2016 Census of Population and Households (2017)

*Reproductive Health Nurses Annual Census (2016)

11.3.1 Organizational Structure



The hospital of Niu'ui is the primary healthcare provider for the island of Ha'apai and holds a bed-capacity of 24 – 26 manned by 46 established staff with 16 daily-paid contract workers. One Senior Medical Officer in Charge manages the hospital with one additional Medical Officer, together with the Senior Sister in Charge and the Health Officers at Nomuka and Ha'afeva Health Centres respectively. The hospital provides basic medical/clinical, pharmaceutical, laboratory and limited emergency services. In addition, reproductive health and NCD/ public health nurses provide community-based services such as immunizations, family planning and treatment management for defaulters to name a few. Complicated cases are transferred to Tonga for further treatment.

11.3.2 Staffing for Niu'ui Hospital by the 31st of December 2017

CLINICAL		
Sections	Head of Section	Supporting staff
Chief Medical Officer in Charge	Dr. Tevita Vakasiuola	1
Clinical Nursing	Sr. Mele Falemaka	12
Laboratory	Fe'ofa'aki Nonu	0
Pharmacy	Temaleti Funaki	0
CSSD	Salesi Fangupo	0
DENTAL		
Dental	Dr. Lesieli Tomiki	1
PUBLIC HEALTH		
Environmental Health	Mosese Fifita	1
Health Promotion	Meleane Fifita	0
NCD Nurses	Kalolaine Hoeft	1
Reproductive Health Nurses	Sr. 'Ilaisaane Fahamokioa	7
Nurse Practitioner	Paea Fifita	0
Ha'afeva H/C	Lineti Koloi	0
Nomuka H/C	Tupou Taufu	0
CORPORATE		
Administrative Support	Latu Fangupo	8
Medical Records	Siosi'ana Fotofili	0
TOTAL STAFF	14	32

Table 66: Summary of Service Provider Staff at Niu'ui Hospital (2017)

ADMINISTRATIVE DATA 2017	
Indicator	Number
Total Number of Staff	46
Total Number of Vehicles	7
Health Professionals	
Total Number of Medical Officers	2
Total Number of Health Officers	2
Total Number of Nurse Practitioners	1
Total Number of Clinical Nurses	13
Total Number of Public Health Nurses	10
Total Number of Dental Officers	1
Associate Health Professional	
Total Number of Dental Therapists	1
Total Number of Radiographer Assistants	0
Total Number of Pharmacy Assistants	1
Total Number of Laboratory Assistants	1

*Source: Human Resources Staff Listing / Asset Registry

6.1.1.2 Daily-Paid Labour

Staffing Classification	Number of Staff		
	Total	Female	Male
Ground Keeper	1	0	1
Ward maid	3	3	0
Laundry-maid	1	1	0
Male Orderly	2	0	2
Assistant Cook	1	1	0
Sterile Assistant Officer	1	1	0
Driver	1	0	1
Caretaker	5	2	3
Junior Medical Recorder	1	1	0

TOTAL	16	9	7
--------------	-----------	----------	----------

*Source: Human Resource Daily-Paid List

11.3.3 Financial Allocation 2017/2018

NAME VOTE	AMOUNT
Domestic Travel	12,000
Telecommunication Charge	8,400
Fuel	12,000
Freight	1,000
Maintenance of Office Equipment	800
Maintenance of Vehicles	8,000
Maintenance of Buildings and Compounds	30,000
Laundry Services	4,000
Electricity	20,000
LPG Supplies	5,000
Water	5,000
Office Supplies	2,000
Printing & Stationary	7,000
Rations & Diets	30,000
Technical Supplies	30,000
Licenses	4,000
Internal Medical Referral	10,000
New Equipment	5,000
New Computers	2,000
Technical Equipment	3,000
TOTAL OPERATION BUDGET	299,200

*Source: Accounts Section

11.3.4 Milestones

Selected Milestones

Donation of Ambulance from Japan-Aid: Ambulances were donated to the Ministry of Health by the Japan AID for the Niu'ui Hospital and Niu'eiki Hospital on the 19th of December 2017. This initiative was part of Japan's ongoing support for emergency health in the Outer Islands so that emergency and ambulance services are available in the Outer Islands.

Environmental Health Clean-up campaigns

Relocation Project for new Ha'apai Hospital; which is funded by the Asian Development Bank (ADB) on their climate resilience project. The relocation project

11.3.5 Statistical Information:

Table 67 Demographic Summary of Ha'apai Island Group for 2017

Population	Gender		Total	
Age-group	Male	Female	Number	%
Infants (below 1yr)	67	56	123	2%
1 – 4 years	271	289	560	9%
5 – 9 years	395	370	765	12%
10 – 14 years	370	335	705	11%
15 – 19 years	327	319	646	10%
20 – 24 years	295	256	551	9%
25 – 29 years	216	201	417	7%
30 – 39 years	370	411	781	12%
40 – 49 years	338	333	671	11%
50 – 59 years	237	242	479	8%

60 – 69 years	168	206	374	6%
70 years+	128	147	275	4%
TOTAL POPN – this period	3182	3165	6347	100%
TOTAL POPN – last period			6430	
	Male	Female	Total	
Migration out > 6/12	195	202		397
Migration in > 6/12	126	118		244

Source: Reproductive Health Section

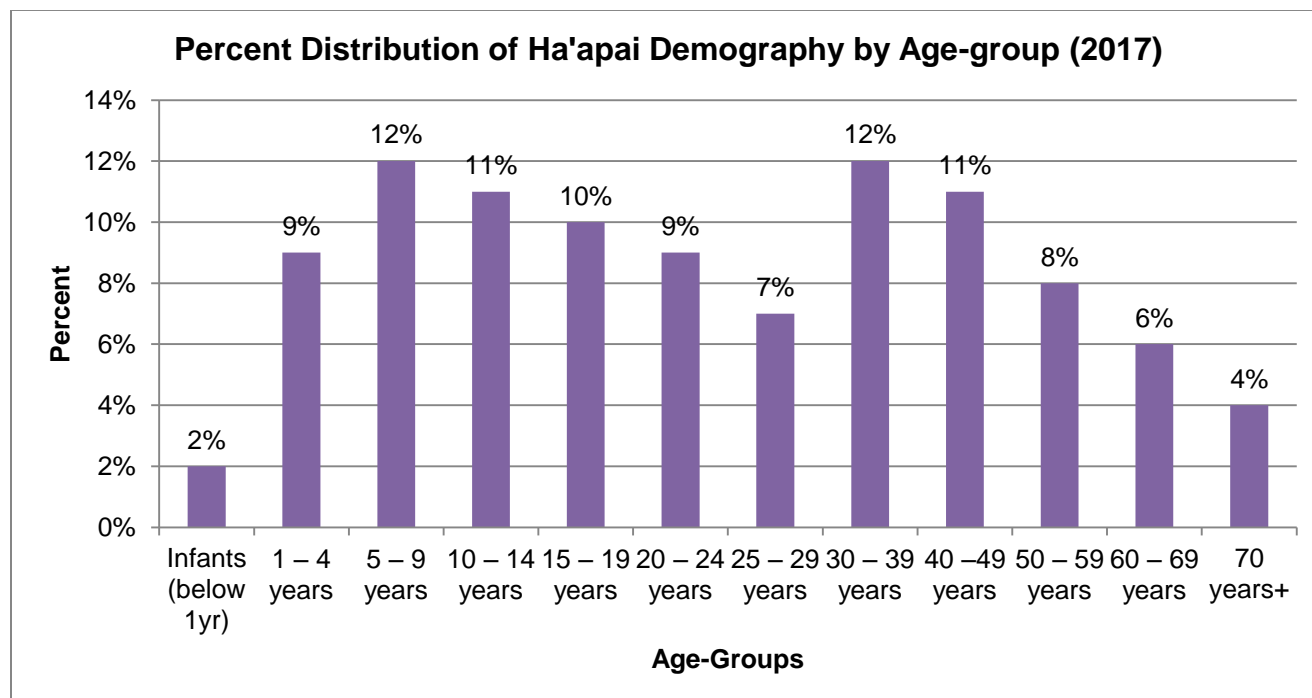


Table 68: Ha'apai Vital Statistics 2017

VITAL STATISTICS 2017	
Indicator	Total Number
Total Household	1288
Total Number of Death (Female)	22
Total Number of Death (Male)	14
Total Number of Death	36
Crude Death Rate	6 per 1,000
Number of Stillbirths (> 28 weeks)	3
Number of Perinatal deaths	3
Number of Neonatal deaths	3
Number of Infant Deaths	3
Number of Deaths for Children < 5years	3
Number Maternal Deaths / Rate	0
Total Number of Live Births	106
Proportion of Births Attended by Skilled Practitioner	96%
Total Live-Births	106
Crude Birth Rate	17 per 1,000
Total Fertility Rate	2 births per woman

*Source: Reproductive Health Section

Table 69: Ha'apai Clinical Data (2017)

CLINICAL DATA 2017	
Indicator	Total
Total Number of Beds	26
Total Number of Admissions	469
Total Number of Consultations (AM shift)	9368
Total Number of Consultations (PM shift)	3754
Total Number of Consultations	13122
Total Number of Internal Referrals	21
Total Number of Specimens (Laboratory)**	754
Total Number of Tests (Laboratory)**	3264
Total Number of Items (Pharmacy)	22,210
Total Number of Prescriptions (Pharmacy)	11,389

Source: *Health Information System (Niu'ui Hospital), **Laboratory Annual Report (2017), ***Pharmacy Annual Report (2017)

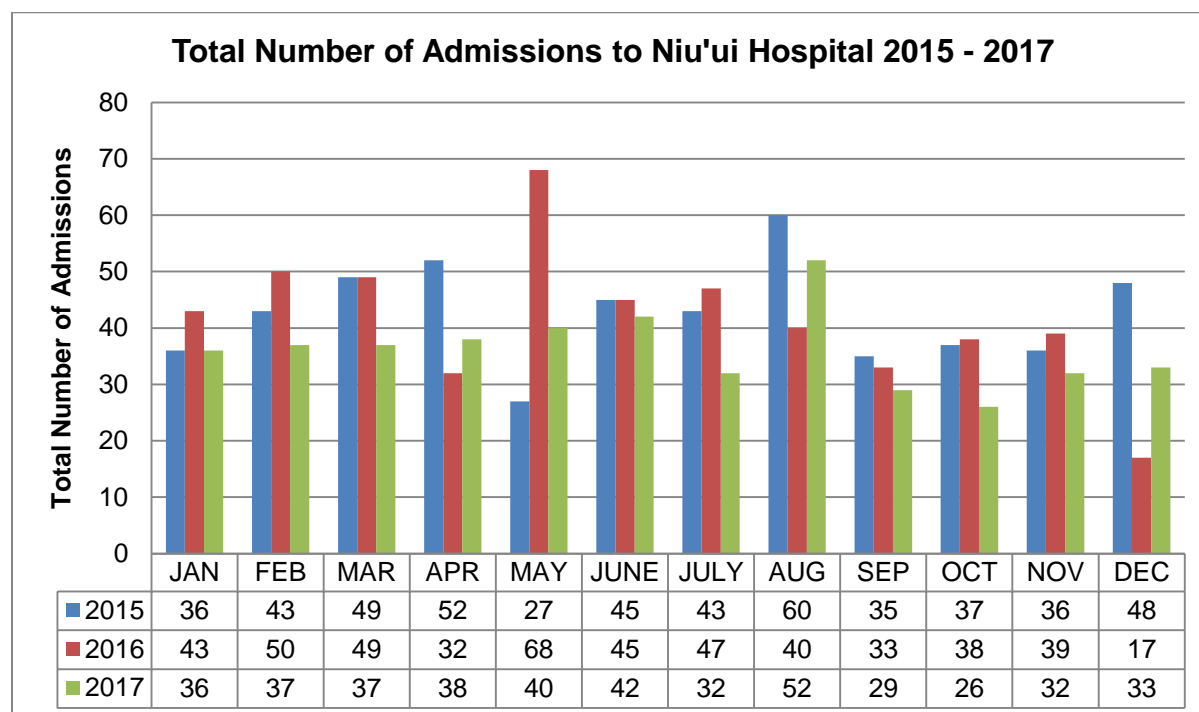


Figure 41: Total Number of Admissions at Niu'ui Hospital (2015 – 2017)

*Source: Health Information System (Niu'ui)

As illustrated in the figure above, there is no obvious trend in relation to the number of admissions by month each year. The highest month of admissions for 2015 was August, 2016 was May and 2017 August.

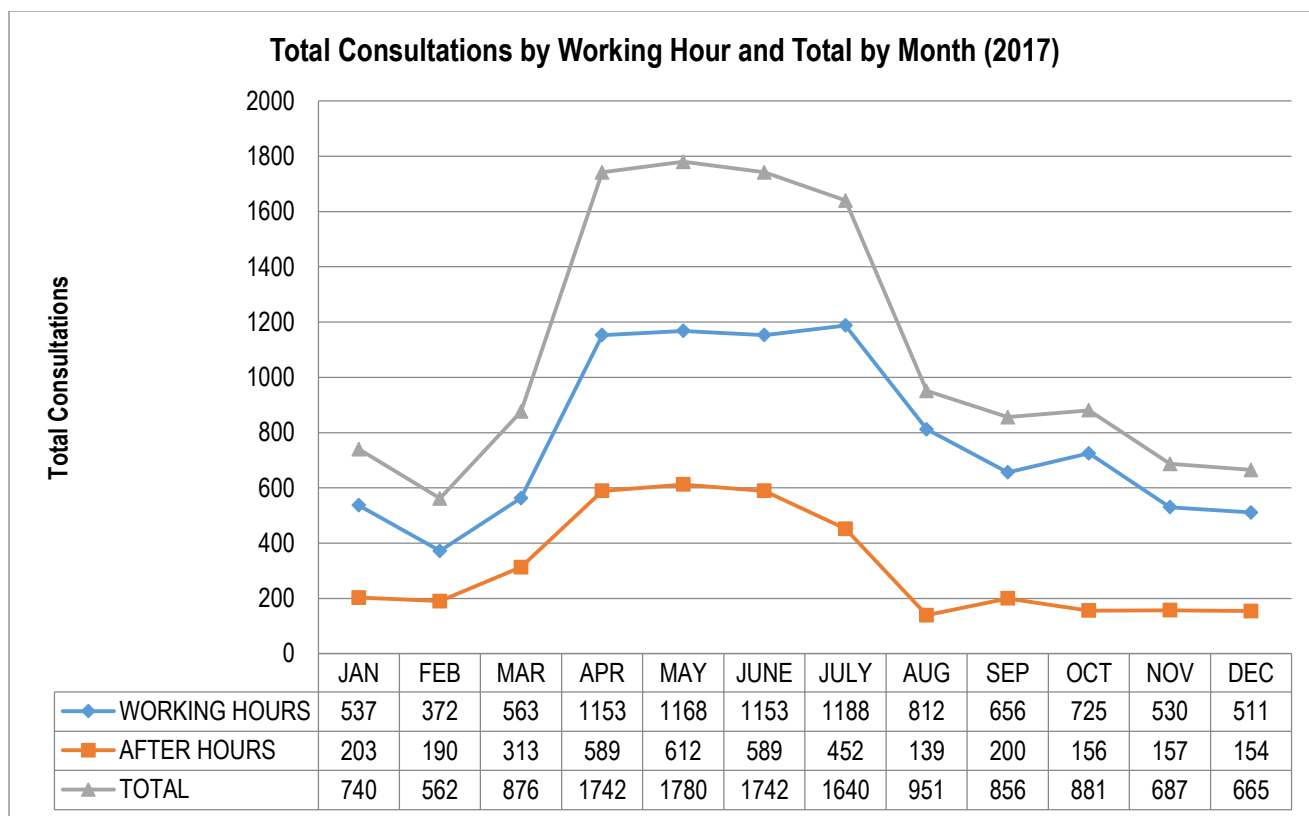


Figure 42: Total Consultations by Working Hour and Total by Month at Niu'ui Hospital

***Source: Health Information System (Niu'ui Hospital)**

As shown in the figure above, there is an increase in consultations from March to July and once after July the numbers decrease with slight increases in October before continuing to decrease throughout the rest of the year.

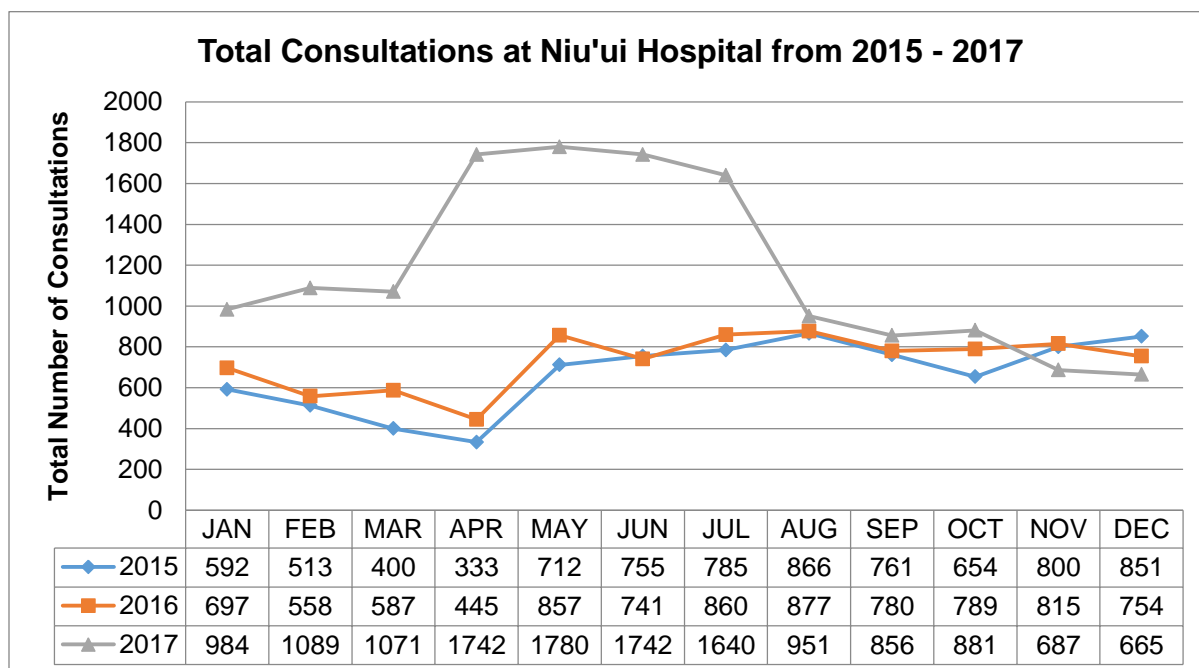


Table 70 Niu'ui Hospital Public Health Indicators

PUBLIC HEALTH	
Indicator	Total
Number of Island Tours (Rural Islands)	1
Child Immunization (DTP3) Percentage	100%
Immunization Coverage	100%
Number of Babies with Low Birth Weight (<2500 gm)	2
Number of Malnutrition 0 – 2 years	2
Total Teenage Pregnancy / Percentage	6 (5% of births in Ha'apai)
Number of Inspections	10 villages (quarterly), 12 outer islands (annual)
Number of Home Deliveries	3
No ANC Booking (no ANC)	2
Low ANC Coverage (4 or less clinics)	24 (14%)
High ANC Coverage (5+ clinics)	95 (61%)
Total Antenatal Care Coverage (%)	119 (98%)
Postnatal (PNC) Coverage (%)	95 (100%)
Contraceptive Prevalence Rate (%)	45%

Source: Reproductive Health Section Annual Report 2017
Environmental Health Sectional Annual Report 2017 (Niu'ui)

NCD	
Total Number of Hypertension only (Female)	342
Total Number of Hypertension only (Male)	127
Total Number of Hypertension only	469
Total Number of Diabetes only (Female)	224
Total Number of Diabetes only (Male)	93
Total Number of Diabetes only	317
Total Number of CVD	484
Total COPD	1
Total Chronic Respiratory	4
Total NCD	1275

*NCD Annual Report 2017 – Community Health Section Annual Report 2017

*CVD: Cardiovascular Disease includes Hypertension, Cardiac (CCF, IHD, CHD, RHD, other) and CVA: Cardiovascular Attach (Stroke, TIA, Other).

**Chronic Respiratory includes Asthma and COPD: Chronic Obstructive Pulmonary Disease.

Table 71: Prescription Records for Niu'ui Hospital Pharmacy (2017)

Month	Prescriptions –Normal working hours	Items	Prescriptions After hours and weekends	Items
January	475	903	183	222
February	533	1024	227	314
March	1285	2254	164	228
April	435	882	199	327
May	488	1135	139	254
June	632	1264	228	403
July	578	1156	276	552
August	1328	2541	464	620
September	1232	2464	289	578
October	627	1481	232	464
November	448	1052	153	206
December	358	1074	416	812
Total	8419	17230	2970	4980

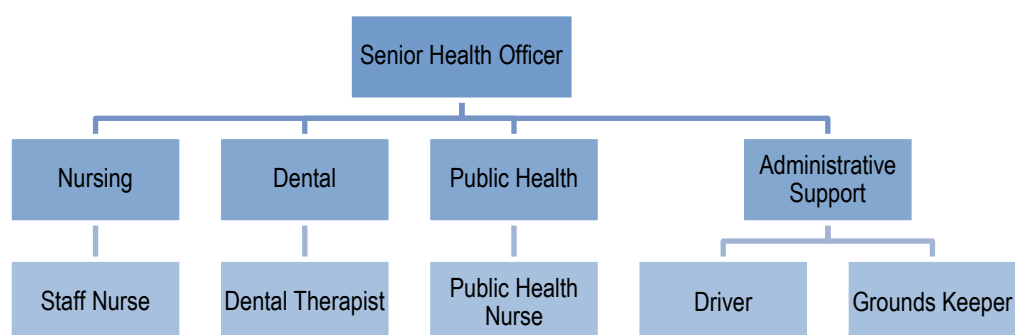
11.4 NIUAFO'OU

The furthest island from the main island Tongatapu is Niufo'ou which is 695 km to the North. The Niufo'ou island has 8 villages with 114 households. The villages of Niufo'ou include 'Esia, Kolofo'ou, Sapa'ata, Fata'ulua, Mata'aho, Mu'a, Tongamama'o and Petani.

According to the latest 2016 Population Census the population of Niufo'ou was estimated at 493 (264 males and 229 females), a decrease from the previous 2011 Census which recorded a population of 523 (277 males and 246 females).

There is one Health Center which is the primary healthcare service provider in Niufo'ou and that is **Tu'afakilelei Health Center**.

11.4.1 Organizational Structure



11.4.2 Staffing for Tu'afakilelei Health Center by the 31st December 2017

Staff Category	Total	Male	Female	Filled	Vacancy
Health Officer	1	1	0	1	0
Nurse Diplome	1	1	0	1	0
Dental Therapist	1	1	0	1	0
Driver	1	1	0	1	0
Grounds Keeper	1	1	0	1	0
TOTAL	5	5	0	5	0

Sections	Head of Section	Number of supporting staff
Clinical / Medical	Viliami Falevai	0
Nursing	Penisimani Pau	0
Dental	Tevita 'Akauola	0
Administrative Support	Vacant	2
Total staff	3	2

11.4.3 Financial Allocation 2017/2018

NAME VOTE	AMOUNT
Fuel	7000
Maintenance of vehicles	4000
Maintenance of building + compound	10000
Electricity	4000
Water	2000
Domestic Travel	2000
Telecommunication	1200
Internal Medical Transfer	10000
Printing /Stationary	10000

Technical supplies	1500
Technical Equipment	12000
Laundry Services	2800
Office Supplies	5000
Location allowance	10400
TOTAL	81900

11.4.4 Statistical Information:

VITAL STATISTICS	
Indicator	Total Number
Total Population (Female)	262
Total Population (Male)	269
Total Population	531
Total Household	121
Total Number of Death (Female)	1
Total Number of Death (Male)	4
Total Number of Death	5
Total Number of Pregnancies	5

CLINICAL DATA	
Total Number of Admissions	14
Total Number of Consultations	3020
Total Number of Internal Referrals	3
Total Number of Viral Influenza	1090
Total Number of Broncho pneumonia	18
Total Number of Bronchi otitis	14
Total Number of Broncho-Asthma	3
Infant Diarrhoea	0
Total Number of Gastro-interitise	15
Total Number of Minor Surgery	21
Total Number of Suture	40

NCD	
Total Number of Hypertension only (Female)	16
Total Number of Hypertension only (Male)	4
Total Number of Hypertension only	20
Total Number of Diabetes only (Female)	6
Total Number of Diabetes only (Male)	4
Total Number of Diabetes only	10
Total Number of Heart Disease (Female)	1
Total Number of Heart Disease (Male)	1
Total Number of Heart Disease	2
Total Number of Hypertension / Diabetes	18
Total NCD	50

11.5 NIUATOPUTAPU

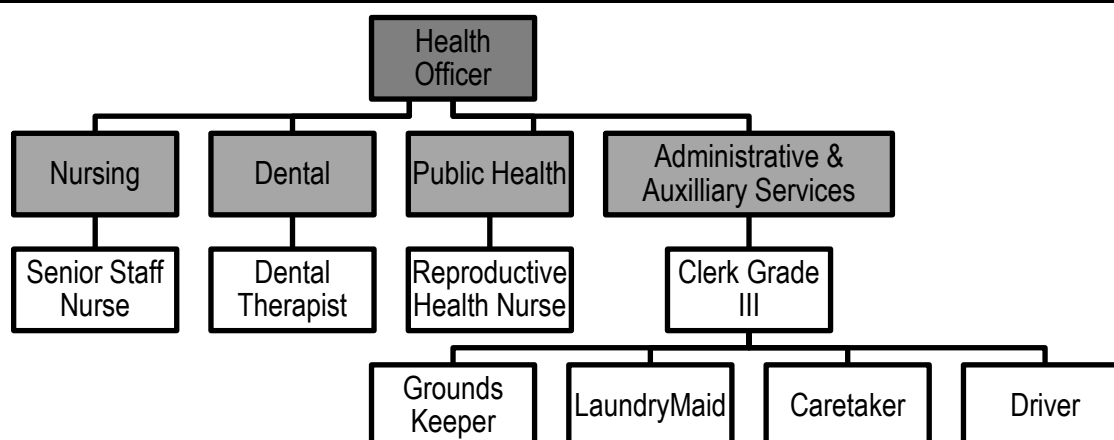
This report was developed in collaboration with Mr. Sonasi Hu'ahulu and the dedicated team of Likamonu Community Health Center.

The island of Niuatoputapu is the second furthest island (605km) from the main island of Tongatapu. The island has only 1 district with 4 villages with 168 Households. The four villages in Niuatoputapu include the Tafahi Island, Falehau, Vaipoa and Hihifo.

According to the latest 2016 Population Census the population of Niuatoputapu was estimated at 739 (386 males and 353 females), a decrease from the previous 2011 Population Census which had a total population of 759 (390 males and 369 females).

There is one Community Health Centre in Niuatoputapu named Likamonu which is the primary healthcare service provider in the island.

11.5.1 Organizational Structure



11.5.2 Staffing for Likamonu Health Centre by 31st December 2017

Staff Category	Total	Filled	Vacancy	Male	Female
Health Officer	1	1	0	1	0
Public Health Nurses	1	1	0	0	1
Senior Nurse Staff	1	1	0	0	1
Dental Therapist	1	1	0	1	0
Clerk	1	1	0	0	1
Laundry Maid	1	1	0	0	1
Driver	0	0	1	1	0
Caretaker	2	2	0	2	0
TOTAL	8	8	1	5	3

Likamonu Health station has been managed by the Health Officer Sonasi Hu'ahulu since February 2015. In 2017 Likamonu began with nine staff however in the end of the year was left have eight staff, after the driver had his pension in April 2018 leaving a gap in the driver post. The health centre was located at Falehau village; however with the new building project for Likamonu the new health centre will now be located at Hihifo near the Tsunami evacuation side. In Niuatoputapu, the health services serve three villages including Tafahi Island with a total population of over eight hundred people in the island and a life expectancy of over 90 years old.

Sections	Head of Section	Number of supporting staff
Health Officer	Sonasi Hu'ahulu	0
Nursing	Monika 'Onesi 'Uvea	0
Dental	'Usaia Kisina	0
Public Health	'Evelini Tai	0

Administrative Support	Lilo Kohinoa	3
Total	5	3

11.5.3 Financial Allocation 2017/2018

NAME VOTE	AMOUNT
Fuel	5000.00
Maintenance of vehicles	4000.00
Maintenance of building + compound	5000.00
Electricity	800.00
Water	2000.00
Maintenance of office equipment	1000.00
Domestic Travel	8000.00
Telecommunication	1200.00
Internal Medical Transfer	13000.00
Printing /Stationary	5000.00
Technical supplies	1500.00
Technical Equipment	2500.00
Laundry Services	3000.00
New Equipment	2000.00
Office Supplies	1500.00
Rations/Diets	5000.00
Location allowance	20800.00
TOTAL	81,300

11.5.4 Milestones

Objectives	Selected Milestones
To provide and serve, with the best possible quality, health care to all the people of Niuatoputapu within the limited resources available	

11.5.5 Statistical Information

11.5.5.1 Clinical Services

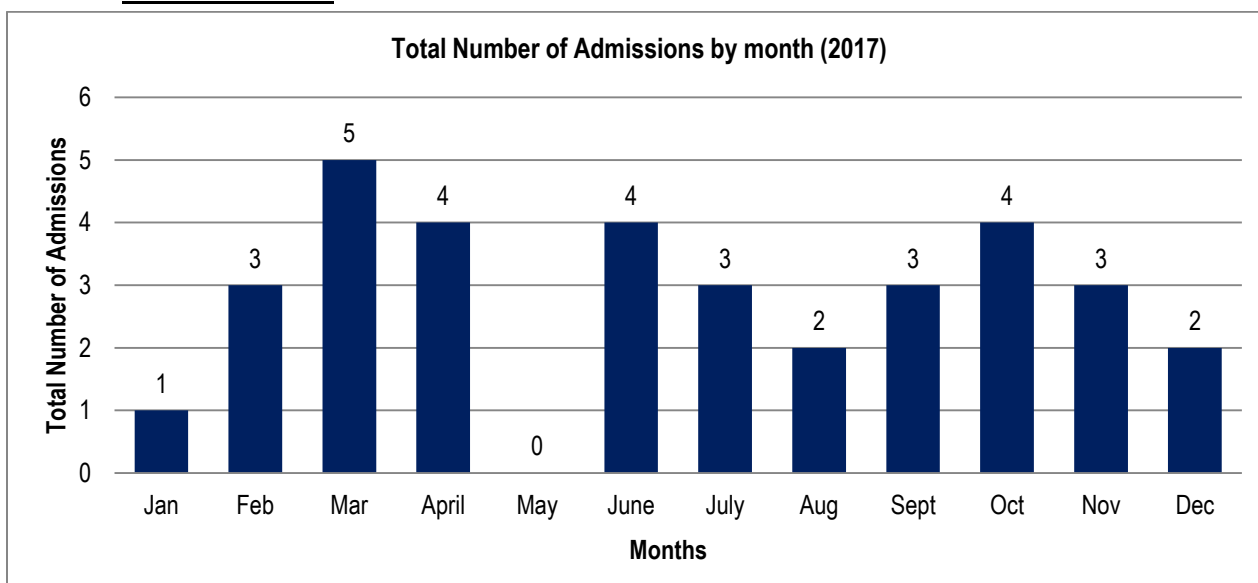


Figure 43: Total Number of Admissions by month (Likamonu Health Center) 2017.

Number of Admissions													
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
# of cases	1	3	5	4	0	4	3	2	3	4	3	2	34
Number of Transfers Out	4												
Average Number of Admissions per month	3												
Number of Deaths in Health Centre	2												
Number of Deaths in Vaiola	3												
Number of Deaths incl. Disability + NCD	12												
Number of Discharged	28												

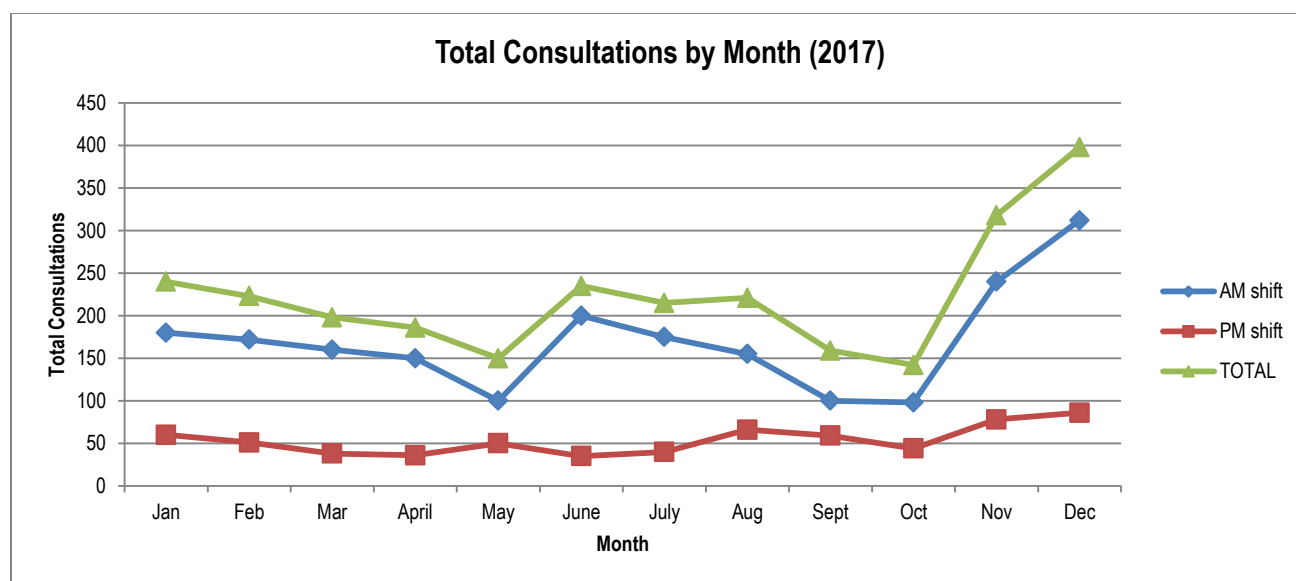


Figure 44: Total Consultations at Likamonu by month (2017)

Table 72: Total Number of Consultations by month for Likamonu (2017)

Number of Consultations													
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
AM shift	180	172	160	150	100	200	175	155	100	98	240	312	2042
PM shift	60	51	38	36	50	35	40	66	59	44	78	86	643
TOTAL	240	223	198	186	150	235	215	221	159	142	318	398	2685
Average Consultations per day													
AM shift						10							
PM shift						4							
Average Consultations per month													
AM shift						170							
PM shift						54							
TOTAL Average						224							

6.1.1.3 Public Health Services

6.1.1.3.1 Rheumatic Heart Disease (RHD) Secondary Prophylaxis

Female	Male	Total	Transfer Out	Defaulter	Carry Forward by end of Year
9	2	11	3	1	7

6.1.1.3.2 Non-Communicable Diseases

	DM alone	HTN alone	DM /HTN alone	Cardiac alone	Total NCD	Transfer Out	Death	Defaulter	Carry Forward

Female	12	32	12	0	56				
Male	3	16	4	2	25				
TOTAL	15	48	16	2	81	3	4	0	74

*DM = Diabetes Mellitus

*HTN = Hypertension

***Source: Niuatoputapu Annual Report (2017)**

6.1.1.3.3 Tuberculosis (TB)

Female	Male	Total	Transfer Out	Carry Forward by end of Year
0	2	2	2	0

***Source: Niuatoputapu Annual Report (2017)**

These two cases were presented to Likamonu with weight loss and prolonged cough. They were thus sent to Vaiola for further investigation and later diagnosed with TB. After further treatment and management in Vaiola they returned healthy.

6.1.1.3.4 Disability

Disability					
Total	Transfer Out		Death	Carry Forward by end of Year	
32	1		3	28	
Epilepsy					
Male	Female	Total	Transfer Out	Death	Carry Forward by end of Year
1	5	6	1	0	5

***Niuatoputapu Annual Report (2017)**

6.1.1.3.5 Tafahi Island Data

Total population: **30**

Tafahi NCD Registry					
	DM alone	HTN alone	DM /HTN alone	Cardiac alone	Total NCD
Female	2	2	1	0	5
Male	0	0	0	0	0
TOTAL	2	2	1	0	5

***Niuatoputapu Annual Report (2017)**

Table 73 Demographic Summary of Niuatoputapu and Niuafu'ou Island Group for 2017

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	17	16	33	2%
1 – 4 years	59	82	141	10%
5 – 9 years	67	89	156	11%
10 – 14 years	93	82	175	12%
15 – 19 years	91	87	178	13%
20 – 24 years	57	54	111	8%
25 – 29 years	40	53	93	7%
30 – 39 years	66	77	143	10%
40 – 49 years	69	82	151	11%
50 – 59 years	56	68	124	9%
60 – 69 years	33	41	74	5%
70 years+	22	22	44	3%
TOTAL POPN – this period	670	753	1423	100%
TOTAL POPN – last period				
	Male	Female	Total	
Migration out > 6/12			0	
Migration in > 6/12			0	
Total Deaths	12	5	17	
Total Live-Births	17	15	32	

12 ANNEX

12.1 Annex 1: Leadership, Policy Advice and Administration

12.1.1 POLHN Students

POLHN Students for Semester 1 and 2 of 2017				
#	Name	Semester	Program of Study	New/Continuing
1	Dr. Susitina Piukala	1	Postgraduate Diploma in Health Services Management	Continuing Student
2	Kalolaine Malolo	1 & 2	Postgraduate Diploma in Public Health	Continuing Student
3	Latai Lui Fifita	1 & 2	Postgraduate Certificate in Public Health	Continuing Student
4	'Ilaisaane Peaua Vi	1 & 2	Postgraduate Certificate in Public Health	Continuing Student
5	Manafonu Siola'a	1	Masters in Health Service Management	Continuing Student
6	Dr. Sitaniselao Kisina	1	Postgraduate Certificate in Health Services Management	Continuing Student
7	Seini Vi	1 & 2	Postgraduate Certificate in Public Health	New Student
8	Limisesi Kaivelata	2	Postgraduate Certificate in Public Health	New Student
9	Moli Kiola	2	Postgraduate Diploma in Health Services Management	Continuing Student
10	Suliana Tu'itupou	2	Postgraduate Certificate in Public Health	Continuing Student
11	Sione Hala'api'api Tongia	2	Postgraduate Certificate in Health Services Management	New Student

WHO Fellowships Recipients

WHO Fellowship Nomination 2016 – 2017 OVERSEAS Short-term Attachment				
#	Name	Program	Location	Progress (2017)
1	Viliami Va'inga Misi	IT Training	NZ	Completed
2	Clifton Latu	IT Training	NZ	Completed
WHO Fellowship Nomination 2016 – 2017 OVERSEAS Formal Award				
1	Dr. Canieli Poesse	Postgraduate Diploma in Oral Surgery	Fiji	Continuing
2	Dr. Viliami Vao	Postgraduate Diploma in Accident and Emergency	Fiji	Complete
3	Dr. Alamea 'Aholelei	Master in Medicine and Surgery	Fiji	Continuing
4	Dr. Seventeen Toumo'ua	Master in Pathology	Fiji	Completed
5	Dr. Siale Hausia	Postgraduate Diploma in Anaesthesia	Fiji	Completed

6	Telesia Tu'itupou	Postgraduate Diploma in Midwifery	Fiji	Completed
7	Matangisinga Taufu	Postgraduate Diploma in Health Science and Health Professional Education	NZ	Continuing
WHO Fellowship Nomination 2016 – 2017 LOCAL Formal Award				
1	Viliami Va'inga Misi	Bachelor of Science (Major in Computing Science and Information Systems)	Tonga USP	Incomplete
2	Clifton Latu	Bachelor of Science (Major in Computing Science and Information Systems)	Tonga USP	Continuing
3	Mele Siutiti Faka'iloatonga	Diploma in Management	Tonga USP	Completed
4	Laupoini Tu'akalau	Preliminary and Foundation Science Program	Tonga USP	Completed

Fred Hollows Foundation Recipients

FRED HOLLOWS FOUNDATION NZ RECEIPIENTS			
Student Name	Scholarship	Programme/Course	Location
Mr. Sione Vainikolo	Fred Hollows Foundation NZ	Postgraduate Diploma in Eye Care	Fiji
Ms. Mele Taufu Toutai	Fred Hollows Foundation NZ	Postgraduate Certificate in Diabetic Eye Care	Fiji
Ms. Melenau Afungia	Fred Hollows Foundation NZ	Postgraduate Diploma in Eye Care	Fiji

NZAid Scholarship Recipients

NZAID SCHOLARSHIPS RECEIPIENTS			
Student Name	Scholarship	Programme/Course	Location
Dr. Tevita Tu'ungafasi	NZAid	Master in Surgery	Fiji
Katarina Kaitapu	NZ Aid	Bachelor of Nursing	NZ
Evelyn Makahununiu	NZAid	Bachelor of Health Science	NZ
Dr. Sisilongoa'a Mataka	NZAid	Master in Medicine	Fiji
Leti Finau	NZAid	Postgraduate Diploma in Nursing	NZ
Makasiamane Taulangovaka	NZAid	Bachelor of Physiotherapy	Fiji

Lenity Scholarship Recipients

LENITY SCHOLARSHIPS RECEIPIENTS

Student Name	Scholarship	Programme/Course	Location
Aspasia Katherine Vaka	Lenity Scholarship	Master of Emergency Nursing	Australia
Meleane Siale	Lenity Scholarship	Master Degree in Advance Nursing Practice	Australia

AUSAID SCHOLARSHIPS RECEIPIENTS

Student Name	Scholarship	Programme/Course	Location
Dr. Tusiga Poloniati	ARDS	Postgrad.Dip in Internal Medicine	Fiji
Tuna Masi	ARDS	Bachelor of Nursing	Fiji
Pafilio 'Amato	ARDS	Bachelor of Nursing	Fiji
Kasanita 'Ahokava	ARDS	Postgraduate Certificate in Mental Health	Fiji
Phebe Taufu'i	ARDS	Bachelor of Nursing	Fiji
Malia Hala'api'api Tongia	ARDS	Master in Nursing Education	Australia
Malia 'Alisi Tatafu	ARDS	Master of Clinical Psychology	Australia
Kavafau Maile	ARDS	Postgraduate. Dip Nursing Practice	Fiji
Dr. Sepiuta Lopati	ARDS	Master in Surgery	Australia
Lu'isa Vailanu	ARDS	Bachelor in Clinical Laboratory Tech.	Fiji

PRIVATE STUDENTS

Student Name	Scholarship	Programme/Course	Location
Neomai Fatai	Private	Bachelor of Nursing	Fiji
Loloma Matakaio	Private	Bachelor of Nursing	Fiji

JAPAN SCHOLARSHIP RECEIPIENTS

Student Name	Scholarship	Programme/Course	Location
Dr. Na'ati Fakatava	Japan	Major Dental Science, Doctoral course	Kyushu, Japan

12.2 Annex 2: Preventative Health

Age specific births by age-group (2017)

Age of Women	No. of women in this age group	No. of births in this age group
Below 14		
15 – 19	5418	176
20 – 24	4816	622
25 – 29	4179	724
30 – 39	6604	822
40 – 49	5008	119
Total	26075	2463

Antenatal Booking by Gestational Age

Gestational Age at booking	Number	%
12 weeks and below	152	6%
13 – 20 weeks	536	23%
21 – 30 weeks	1183	50%
30 + weeks	463	19%
No Booking [no ANC]	47	2%
Total	2381	

Malnutrition Data

	Number
No. Babies with Low Birth Weight (<2500 gm)	69
No. of Malnutrition 0 - 2 yrs	13
No. of infants receiving 3 or more home visits or child clinics	2507

Syndromic Surveillance 2017

Months	AFR	Diarr	ILI	PF	STI	SARI	DLI	AFNS	UE	Others						MRSA	Typ	TOTAL
										conj	CP	Food	Fish	Measles	Mumps			
Jan	0	231	273	11	1	19	0	1	0	34	17	9	6	1	0			603
Feb	0	217	400	8	3	9	1	0	0	44	39	15	5	0	0			741
March	0	471	554	16	5	9	2	0	0	40	8	13	4	0	30			1152
April	0	336	553	16	0	14	0	0	0	30	4	8	2	0	49	1	1	1012
May	0	225	335	14	0	8	0	0	0	29	7	6	9	1	130	1	1	764
June	0	317	687	20	1	51	3	0	0	8	4	18	2	0	645			1756
July	2	231	1027	23	3	8	0	0	0	11	5	2	2	0	520			1834
August	0	320	1773	29	2	28	0	0	0	12	7	69	4	0	215			2459
September	0	249	1265	18	2	4	0	0	0	7	6	5	1	1	49		1	1607
October	0	206	1043	21	1	9	0	0	0	14	24	5	3	0	5			1331
November	0	271	597	4	3	22	0	0	0	1	7	1	0	0	2			908
December	0	260	333	2	4	3	0	1	0	3	1	20	2	0	0			629

***Please note that STI data in the above table is excluding CDOP data

AFR: Acute Fever & Rash

Diarr: Diarrhoea

ILI: Influenza-like-illness

PF: Prolong fever

SARI: Severe Acute Respiratory Infections

DLI: Dengue-like-illness

AFNS: Acute Fever and Neurological Signs

Food P: Food Poisoning

Fish P: Fish Poisoning

Typh: Typhoid

12.3 Annex 3: Curative / Clinical Services

Table 74 The number of other authorized food provided from Jan-Dec 2017

Months	Breakfast (per head)	M/tea (per head)	Lunch (plate)	A/tea (per head)	Total (plate)
January	0	103	83	0	186
February	0	145	285	126	556
March	0	80	209	23	312
April	0	94	244	74	412
May	0	34	198	12	244
June	0	108	163	1	272
July	0	251	351	240	842
August	0	191	329	191	711
September	910	971	456	830	3167
October	0	97	127	80	304
November	0	119	179	118	416
December	0	95	121	21	237
Total	910	2288	2745	1716	7659

Source: Catering services diet record 2017

Table above shows the total number of food had been authorized to be prepared and served to those that was requested such as visiting teams, workshop & trainings, meetings and interview from January to December 2017. The unit used, “*plate*” refers to those food delivered in plates per person and “*per head*” refers to those food distributed in buffet style, thus both units mean the same. Normally, Breakfast is not served from hospital’s kitchen, but September was very special because of the Open Heart International 2017 (OHI17), which is normal for OHI every 2 yrs. There were a total number of 7,659 plates prepared and served for those authorized meals last year. This included 910 per head for Breakfast, which was the OHI17 team only, 2,288 per head for morning tea, 2,745 plates for Lunch, and 1,716 per head for Afternoon tea.

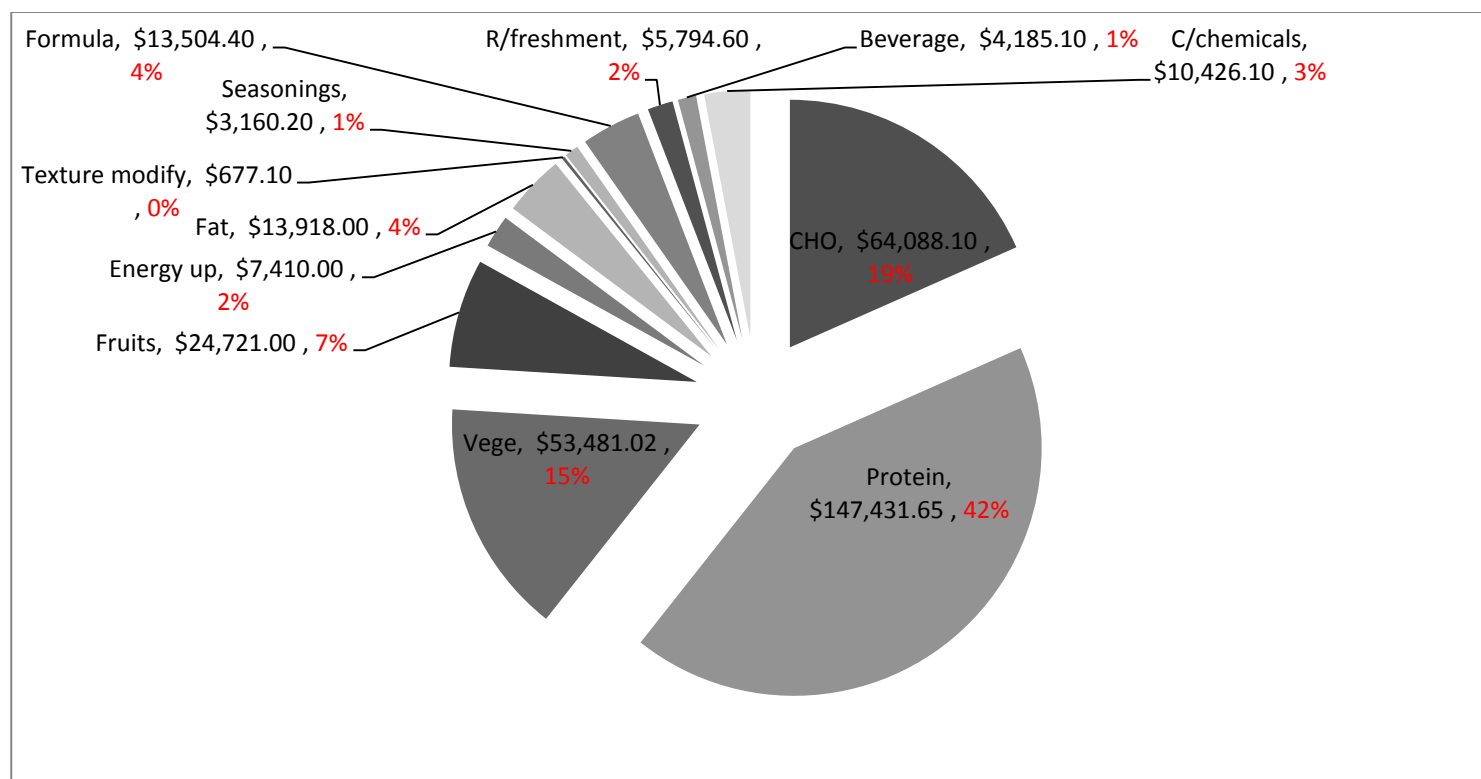


Figure 45: Total cost of different items purchased for kitchen in 2017

Source: Catering services diet record 2017, Account department ration record 2017

Figure 45 shows the cost of different items purchased for patients' diet in 2017. The total cost of all items purchased for kitchen was 348,797.27 pa'anga. There were 42% on Protein (sources of protein, eg: meat, fish, eggs, milk, T/fish, c/beef, & sausages), 19% was on CHO (sources of carbohydrates, eg: root crops, s/bread & cereals, pasta & noodles, and rice), 15% was on Vegetables, 7% was on Fruits, 4% was on Fats (incl: oils, margarine & coconuts), also on Infant & Tube feeding Formula (eg: SMA, Ensure powder, Ensure plus, Sustagen diabetic etc), 3% was on cleaning chemicals (eg: mama, janola, p/clean, mortein, jif, oven cleaner etc), 2% was on Energy up food (eg: pineapple pie, custard pudding etc). These foods were served once a week, only on Sunday's dinner, this helped with the patient's appetite, energy intake and food's varieties. There were 2% on Refreshment for other authorized foods, 1% on Seasonings (eg: soya, black & white pepper, tomato & chilli sauce, pineapple cans etc.), and on Beverages as well (incl: sugar & cocoa), and 0.2% was on Texture modified items such as custard, c/flour, and b/powder.

Radiology Data**X-ray**

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Chest (chest & ribs)	908	783	725	492	539	552	647	798	898	818	577	522	8259
Abdomen	27	39	34	55	40	26	29	45	40	41	41	40	457
Extremities (upper & lower extremities)	159	156	179	154	152	148	185	168	127	193	180	186	1987
Head (skull, mastoid, parotid, mandible, nasal bone, sinus etc.)	18	48	60	50	68	36	78	98	56	63	48	34	657
Shoulder/Clavicle	6	14	22	14	23	25	22	2	6	11	7	10	162
Spines (lumbar-sacral, thoracic, cervical spine)	15	36	41	38	46	43	58	63	49	46	36	44	515
Pelvis (pelvis & hip)	4	26	15	17	13	13	12	18	3	15	11	22	169
Neck	5	9	5	4	7	3	5	7	5	7	2	4	63
Barium Meal	3	1	2	-	2	-	-	1	1	-	1	-	11
Total	237	329	358	332	351	294	389	402	287	376	326	340	12,280

MAMMOGRAPHY

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Breast	6	6	15	6	5	2	8	20	21	64	40	7	200
Total													200

CT SCAN

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
CAP (Chest, Abdomen, Pelvis ect.)	46	62	67	41	45	35	44	47	43	55	45	39	569
Head	49	30	46	43	39	41	51	41	26	40	31	34	471
Extremities (upper/lower extremities)	5	4	1	3	6	11	4	4	3	4	1	3	49
Spines (thoracic/cervical/lumbar)	9	6	10	5	17	17	9	7	10	10	7	12	119

Neck	4	2	8	3	1	6	6	2	5	3	6	5	51
Total	113	104	132	95	108	110	114	101	87	112	90	93	1,259

ULTRASOUND SCAN

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OBS	264	282	225	185	243	230	203	226	166	221	207	140	2592
Abdomen (liver, gall bladder, renal, kidney etc.)	72	95	98	67	99	65	80	81	98	91	68	54	968
Pelvis (pelvis, prostate, scrotum etc.)	49	101	98	64	95	62	108	81	76	90	76	33	933
Breast	6	11	15	3	6	3	1	10	9	13	9	8	94
Head (Mandible etc)	3	2	4	1	3	5	3	7	2	8	1	-	39
Extremities	6	6	2	6	7	3	4	7	10	11	5	2	69
Chest	7	7	5	2	7	3	8	6	1	5	2	3	56
Thyroid	4	5	6	5	8	5	4	8	2	8	4	5	64
Total	411	509	453	333	468	376	411	426	364	447	372	245	4,815

12.4 Annex 4: Dental Services**12.4.1 Curative Services at Vaiola oral clinic (working hours).**

Month	No. patients	No. visits	Filing teeth	RCT complete	Exo teeth	Scaling Polishing	A/B	X-rays
-------	--------------	------------	--------------	--------------	-----------	-------------------	-----	--------

Jan	627	937	62	14	430	58	52	44
Feb	1,256	1,690	212	58	1,242	150	154	32
Mar	1,358	1,834	236	94	1,382	114	164	8
Apr	986	1,426	164	50	798	100	108	36
May	1,312	1,757	186	60	1,222	120	154	46
Jun	1,277	1,796	216	70	1,134	120	186	134
Jul	1,089	1,514	118	34	834	120	126	72
Aug	1,029	1,410	216	38	682	78	92	36
Sept	884	1,211	48	20	190	24	46	24
Oct	1,098	1,478	52	16	292	44	52	44
Nov	1,049	1,393	130	42	884	94	82	30
Dec	862	1,140	10	2	66	10	10	0
TOTAL	10,124	17,586	1,556	498	9,156	956	1,226	506

*Data from the Tonga Health Information System

NB: data from Vaiola Hospital HIS

Filling = conservative of teeth structure

RCT = Root canal treatments teeth

Exo = exodontia (teeth extraction)

A/B = antibiotic prescribed

12.4.2 Curative services at Vaiola oral clinic at after hours.

Month	Total patients.	Exodontia teeth			Antibiotics	Other advice
		Caries	Perio	Others		
January	178	78	50	12	34	27
February	154	68	56	17	30	24
March	167	76	38	15	24	18
April	157	69	27	18	26	26
May	140	70	30	16	29	20
June	137	72	28	12	30	23
July	148	66	26	14	28	27
August	168	82	30	16	24	30
September	160	78	26	14	22	22
October	174	82	22	15	20	26
November	171	88	20	18	28	17
December	243	106	36	27	23	51
TOTAL	1,897	935	359	197	318	311

*Dental Division's Record Book

12.4.3 Oral surgery cases done at the Operating Theatre.

	Total Cases	Exo	Minor Procedure	Major Procedure	GA	Other	Admission
Jan	32	21	9	2	28	4	4
Feb	18	15	3	-	17	1	2
Mar	34	24	7	3	34	-	8
Apr	12	5	1	6	12	-	5
May	22	17	5	1	21	1	3
Jun	24	14	7	2	22	2	9
July	17	10	2	4	15	2	5
Aug	15	10	4	1	12	3	4
Sept	15	11	2	3	14	1	1
Oct	28	20	4	4	28	-	6
Nov	18	10	5	3	18	-	6
Dec	14	9	2	4	14	-	4
TOTAL	249	167	51	33	235	14	56

***Source: Theatre Book and Dental Division's Record Book**

Minor procedures: biopsy, surgical removal of retains roots etc.

Major procedures: surgical removal 4x 3rd molars, facial fractures, severe odontogenic infections etc.

Other: other type of anesthesia: Local (LA) or IV Sedation plus LA.

Admission: patients were admitted to the ward pre-surgical or post-surgical.

There was no re-admission for any case in 2017.

12.4. Oral Health Outreach at TBU HC's.**12.5. (data from Division's Record Book)**

	No. of patients	Fillings Tem-perm	Exo	RCT patients	Scale & Polishing	A/B	Sealant & safor
Sept	40	10 – 6	26	1	2	2	-
Oct	179	34 – 121	98	9	7	7	25
Nov	229	33 - 69	167	14	17	14	36
Dec	29	3 - 12	14	2	4	3	3
TOTAL	477	74 - 208	305	26	30	26	64

12.4.4 Dental prosthetics (tertiary care) at Vaiola hospital.

The number of patients seen and received treatment

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
0	35	49	23	60	27	32	17	144	10	1	0	398

*Source: Tonga Health Information System

12.4.5 The total dental prosthetics treatments provided January - December 2017

Total dental prosthetics treatments provided	Numbers
1.Dentures	
Full upper and full lower dentures	93
Full upper denture only	11
Full lower denture only	13
Full upper and partial lower dentures	10
Full lower and partial upper dentures	5
Partial upper dentures	99
Partial lower dentures	17
Partial upper and partial lower dentures	37
Denture relines	7
Addition to partial upper	15
Addition to partial lower	1
Addition to partial upper and lower	2
Adjusted dentures	81
Denture Repairs	70
2. Orthodontic - appliances made	2
-adjusted	1
3. Mouth guard made	1
TOTAL	465 patients

12.4.6 Antenatal mothers assessed and advice treatment needs at TBU and Vaiola oral clinic.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
237	136	112	90	166	108	121	114	101	130	99	77	1527

* Dental Division`s Record Book



12.5 Sustainable Development Goals

Goal 3: Ensure healthy lives and promote well-being for all ages

SDG 3 Indicators progress towards 2030 Agenda Target

3.1.1: Maternal Mortality Ratio					
3.1.2: Births attended by skilled health personnel					
3.2.1: Under-5 mortality rate					
3.2.2: Neonatal Mortality rate					
3.3.2: TB incidence (100,000)					
3.3.5: People requiring interventions for neglected tropical diseases					
3.4.1: Mortality attributed to NCD					
3.5.2: Harmful use of alcohol					
3.7.1: Met needs with modern methods of women (15 – 49 years)					
3.7.2: Adolescent birth rate (1,000)					
3.8.1: Coverage of essential					
3.9.2: Mortality rate due to unsafe water, sanitation and lack of hygiene					
3.a.1: Age-standardized prevalence of current tobacco use (15+ years)					
3.c.1: Health worker density and distribution					
3.d.1: International Health Regulation (IHR) capacity and health emergency preparedness					

Keys:

Value	Bar Type	Shading Interpretation				
Grey Bar	No established indicator. Tier III indicator					
Red Bar	No country data, none or insufficient					
No coloured bar	No achievement against goal					
20% shaded	Minimal achievement					
40 % shaded	Some achievement					
60 % shaded	Average Progress					
80% shaded	Good Progress					
Fully shaded	Goal is fully achieved					

12.6 SDG3: Appendix

Indicator	Value	Year
3.1.1: Maternal Mortality Ratio	0	2017
3.1.2: Births attended by skilled health personnel	98.2	2016
3.2.1: Under-5 mortality rate	20	2017
3.2.2: Neonatal Mortality rate	6	2017
3.3.2: TB incidence (100,000)	15	2015
3.3.5: People requiring interventions for neglected tropical diseases	36,871	2015
3.4.1: Mortality attributed to NCD	25.09	2015
3.5.2: Harmful use of alcohol	1.4	2016
3.7.1: Met needs with modern methods of women (15 – 49 years)	47.9	2012
3.7.2: Adolescent birth rate (1,000)	31.9	2016
3.8.1: Coverage of essential services		
3.9.2: Mortality rate due to unsafe water, sanitation and lack of hygiene	4.8	2012
3.a.1: Age-standardized prevalence of current tobacco use (15+ years)	28.3	2015
3.c.1: Health worker density and distribution	0.56 (Physicians) 3.85(Nurses/Midwives)	2010
3.d.1: International Health Regulation (IHR) capacity and health emergency preparedness	73.9	2013



MINISTRY OF HEALTH
2020