GOVERNMENT

OF

TONGA

REPORT

of the

MINISTER

for

HEALTH

for the year

2010

TABLE OF CONTENTS

List of Tables

List of Figures

Statistical Tables

1 OVERVIEW OF THE NATIONAL STRATEGIC PLANNINNG FRAMEWORK

1.1 Introduction

The National Strategic Planning Framework is a long – term strategic approach that focuses on the key determinants of economic and social development. Many of these need, by their very nature, to be addressed through consistent and sustained policy implementation over many areas. The plan also focuses on a limited number of uniquely national or whole of government priorities.

National Vision

The Vision for Tonga:

To create a society in which all Tongans enjoy higher living standards and a better quality of life through good governance, equitable and environmentally sustainable private sector-led economic growth, improved education and health standards, and cultural development.

National Strategic Planning Framework Primary Outcome Objectives

The primary outcome objectives are to:

- Facilitate Community Development by involving district/village communities in meeting their service needs
- Support private sector growth through better engagement with government, appropriate incentives and streamlining of rules and regulations
- Facilitate continuation of Constitutional Reform
- Maintain and develop infrastructure to improve the everyday lives of the people
- Increase performance of Technical Training Vocational Education and Training to meet the challenges of maintaining and developing services and infrastructure
- Improve the health of the people by minimizing the impact of Non-Communicable Diseases
- Integrate environmental sustainability and climate change into all planning and executing of programs.

Enabling themes

The four key enabling themes support the achievement of these above outcomes are as follows;

- Continue progress to smaller and more efficient government to transfer resources to improved services and maintenance of resources
- Ensure State Owned Enterprises are accountable to government as owner and that they provide dividends for the benefit of the people in proportion to capital invested
- Improve the effectiveness of revenue collection to ensure a level of playing field and that services to the people can be appropriately funded
- Ensure a more coordinated whole of government approach to donor funding.

2 ORGANISATIONAL OBJECTIVES AND FUNCTIONS

The Ministry of Health is responsible for the delivery of preventative and curative health services in the country.

2.1 Mission and Vision:

Our Mission

To support and improve the health of the nation by providing quality, effective and sustainable health services and being accountable for the health outcomes.

Our Vision

By 2020, we are the healthiest nation compared with our Pacific neighbours as judged by international determinants.

Our Core Values are:

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

2.2 Tonga and its Neighbouring Countries:

Like most of the Pacific Islands Countries, Tonga share and learn from experiences of neighboring countries to improve our health services. The Ministry of Health repeatedly refines its focus and regularly reviews its performance to maintain and improve good health of the people of Tonga.

Selected health related indicators for Tonga and neighboring countries were obtained from the Country Health Information Profiles (CHIPs). They are presented to assess the comparability of our health care services delivery and health status to the neighboring developed countries. It is the same indicators which annually assess the health of Tonga. The entire discussion of this section is restricted to the countries and statistics provided in the table below.

Selected Health Related Indicators of Tonga and Neighboring Countries

	INDICATORS	Japan	Aust	NZ	Tonga
		Demographic			
1	Estimated Population ('000)	127692	21542.49	4268.9	103.1
2	Annual Population growth	…	1.71	1.00	0.3
3	Percentage of Population less than 4 years (per 100)	4.23	6.42	7.03	13
	Percentage of Population between 4-14 years (per 100)	9.21	12.83	13.81	25
	Percentage of population 65 years and over (per 100)	22.24	13.21	12.6	6
4	Percentage of urban population (per 100)	66.3	88.6	86.4	36
5	Rate of natural increase (per 1,000)	-1	6.9	8.2	19.9
		Health Status			

	INDICATORS	Japan	Aust	NZ	Tonga
6	Crude Birth Rate (per 1,000)	8.6	13.7	14.91	25.4
7	Crude Death Rate (per 1,000)	8.8	6.6	6.67	5.5
8	Maternal Mortality Rate (per 100,000)	3.2	8.4	6.81	114.4
9	Life Expectancy (Male)	79.19	79	78	70
	Life Expectancy (Female)	85.99	83.7	82.2	72
10	Infant Mortality Rate (per 1,000)	2.6	4.2	4.8	14.5
11	Total Fertility Rate	1.34	1.93	2.15	3.7
		Socioeconomic			
12	Total Health expenditure, amount (in million US$)	351472.94	82120	11683.09	11
	total expenditure on health as % of GDP	8	8.71	8.90	3
	per capita total expenditure on health (in US$)	2750.8	3886	2763.26	105
13	Health workforce				
	Physicians (per 1,000)	2.18	2.93	2.33	0.53
	Dentists (per 1,000)	0.76	0.68	0.45	0.13
	Nurses (per 1,000)	9.66	8.79	10.03	3.27
		Primary Health Care Coverage			
14	Proportion of population with sustainable access to an improved water source	100	100	…	100
15	Proportion of population with access to improved sanitation	100	100	…	100
16	Immunization coverage				
	BCG	89.5	…	…	99.8
	DTP3	98.3	91.8	87	99.8
	POL3	94.7	91.7	87	99.7
	Measles	…	…	…	99.4
	Hepatitis B III	…	94.4	88	99.7
17	Percentage of pregnant women immunized with tetanus toxoid 2	42.9	…	…	97.8
18	Percentage of pregnant women cared for by skilled health personnel	99.97	99.6	100	100
19	Percentage of women in the reproductive age group using modern contraceptive methods	43.9	65	72.0	29.8

Source: **Country Health Information Profile 2009 for 2008 health statistics**
World Health Organization, Western Pacific Region
National Health Account Report 2007/08

3 HIGHLIGHTS OF ACHIEVEMENTS IN 2010

In examining the attainability of the Ministry's vision, it was recognized that there are six key result areas that requires the Ministry's attention in the next 3 financial years.

The Ministry's Corporate Plan provides details of strategies, targets and performance indicators. The Ministry's Annual Report documents what has been implemented and achieved against each of the key result areas on annual basis.

Individual sections report on selected milestones that contribute to achieving their respective division's mission. Divisional mission and objectives must contribute to relevant strategies of respective key result areas as detailed below.

3.1 KEY RESULT AREAS:

3.1.1 Key Result Area 1:

Build capability and effectiveness in preventive health services to fight the NCD epidemic and communicable diseases

Goal: We will fight the NCD epidemic and communicable diseases using effective preventative health measures, being good role models and developing public participation and commitment.

On the 7th of April 2010, the National NCD Strategic Plan as known as "Halafononga ki he Tonga Mo'ui Lelei" were launched by the Hon. Deputy Prime Minister and Minister for Health. This is the revision of the Strategic Plan that was designed and guided NCD programme since 2003. The same document is expected to be instrumental in guiding the battle against NCD problems in the next 5 years. Given the major identified risk factors of NCD in Tonga, NCD Strategic focuses placed emphasis on

- **P**hysical Activity
- **A**lcohol Harm Reduction
- **T**obacco Control
- **H**ealthy Eating

Throughout the year, Public Health Division applied various health interventions with the intention to have better control of the risk factors of NCD such as

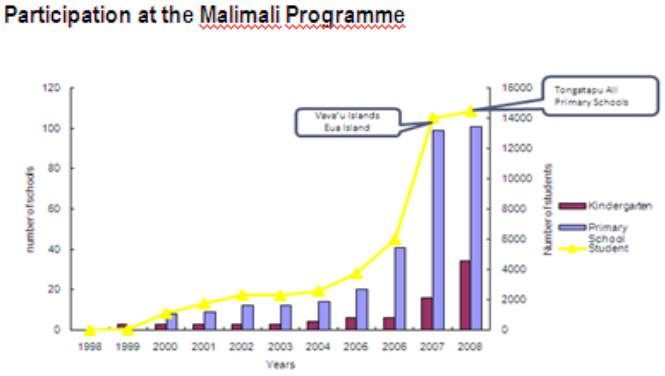
- Introducing "Fiefia Day" in partnership with JICA
- Maintaining health partnership with Churches as known as Health Promoting Church Partnership "Haofaki Mo'ui"
- Introducing healthy initiatives for kindergarten and primary school students

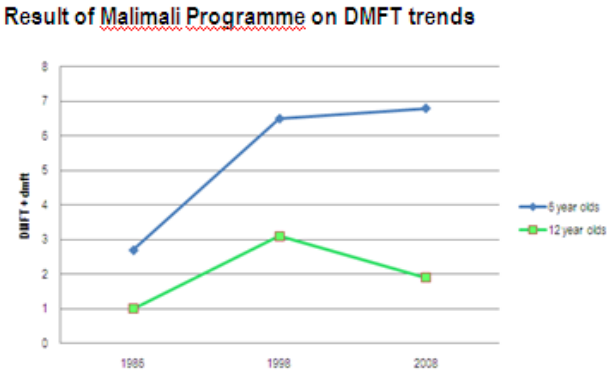
- Continuous NCD advocacy programme over the major media communication with the public (38 radio programme, 23 TV programme and 10 new spots)
- Implementing of the Global Youth Tobacco and Global School Health Surveys.

There are two major evidences suggested that NCD is a national emergency concern in Tonga. The prevalence of NCD was estimated to be 7% in 1973, 15% in 1999 and 18% in 2004. With reference to the Government Census in 1996, the life expectancy was 70 and 72 for male and female respectively. After a decade, the most recent Census in 2006 shows that life expectancy reduced by one 1 year for male (69 years) and no change for female (72 years). Recently in 2010, a new finding from a research conducted by the Ministry and the University of Queensland, Australia suggest that the life expectancy is even lower by at least three years for both males (65 years) and females (69 years).

Malimali Programme

Public Health Section of the Dental Division continues to implement the dental initiative called "Malimali Programme". This is an early dental intervention programme provided for primary schools at aged 6 which consist of dental health education specifically on tooth brushing technique, using of right toothpaste, having appropriate dietary plan for healthy teeth and preventative measures to avoid unnecessary decay and caries.





This initiative was introduced in 1998. The participation in this programme increased significantly for all categories.

In 2007, the programme expanded to Vava'u and 'Eua but in 2010, all primary schools were covered in the whole nation except few remote/scattered island in the Ha'apai Island Groups. This constraint is not only expensive to meet but deals with risk of sea travel.

As a result, the second graph convincingly portrayed those frequencies of reported carries for 6 years old children a plateau increased over the last decade compared to the period before the programme. Simultaneously, sudden decreased shows from children age 12 years old during the same period.

This programme continues to be supported by Japanese Group namely South Pacific Medical Team and JICA in conjunction with dental department of the Ministry of Health. As of now, it has funding until 2012.

Communicable diseases:

While we are experiencing the epidemiological transition from communicable diseases to non communicable diseases, there still a great effort apply to maintain the containment of common threat of communicable diseases in Tonga and around the world.

Overall, there was no major outbreak in 2010 in any of the common communicable diseases. There were 11 registered Tuberculosis cases in Tonga and they are managed by communicable disease section. There was no relapse case of TB, no cases of treatment failure, no defaulters which signify an effectiveness of Tonga's DOTS programme in 2010.

There was only 1 case of typhoid fever, no leprosy case but 5 cases confirmed meningococcal meningitis reported in 2010 where there was 1 fatality. There were 6 cases out of 30 reported cases of dengue fever were being confirmed using the Pan Bio kit and the rest were clinically suspected cases.

The reported number of sexual transmitted infectious diseases (498) raises major concern for the Ministry and the public at large. It is more than double compared to the reported cases (237) in 2009. The screening of pregnant women for HIV and other STIs at the antenatal clinical in Tongatapu is considered the most influential factor for this increase. It is estimated that 61% of all Chlamydia and Gonorrhea were females and alarmingly shows that 82% of all cases were between 16-30 age groups. Historically, the reported STIs cases were more common for males than females but the present of the screening prorgamme at the Ante-Natal clinic reverse this proportion significantly. However, this statistics is only applies for the main island of Tongatapu with suspicious that it is still under-reported. There is no doubt that a major increase is expected if the screening programme is expanded to the outer island hospitals.

3.1.2 Key Result Area 2:

Improve the efficiency and effectiveness of curative health service delivery

Goal: We will deliver the range and quality of services to meet the basic health requirements

A significant milestone introduced by the Mental Health Unit in 2010 is the incorporation of Mental Health into Sia'atoutai Theological College School Curriculum. It is not the first year; but it is the fifth year of implementation. Mental Health was also blessed with many donations from community members such as Toakase (Seventh Days Adventist), Fekau'aki 'a Fafine (Catholic Women Group), Salvation Army and Fofo'anga Club. The establishment of the first Non Government Organization for Mental Health and named "Tonga Mental Health and Disabilities Association" was also a success.

The ranges of clinical services received by the public expanded as a result of overseas visiting team to Tonga such as Open Heart Surgery and Urology Team. These visits delivered health services for cases that cannot be managed locally due to resources constraint. In addition, an extra effort was placed by the Hospital Administration to improve critical supporting services such as oxygen plant, standby generator, hospital kitchen, cleaning, ground keeping, security and administrative support services.

Human Resources development created new graduates with advance qualification in some specialized field of study such as Master in Obstetrics & Gynecology, Master in Surgery and four new intern completed their internship and post to the outer islands. Simultaneously, postgraduate training in pathology and internal medicine were identified and executed during the year. These training opportunities were mostly funded by the World Health Organization.

3.1.3 Key Result Area 3:

Provision of Services in the Outer Island Districts & Community Health Centres

Goal: We will provide appropriate services to all the Outer Island Districts and community health centres through effective resourcing. Specialized services will be provided through regular programmed visits.

The outer island groups continue to receive more visiting team from the main island (Tongatapu) in 2010 such Reproductive Health Services, Communicable Disease Section, Health Information Services, Diabetic and Ophthalmology team.

At the island of Ha'apai, health staff at the main hospital delivered the island visits to the remotes islands for health care services and ongoing training

Provision of health services at the outer island is expected to be also improved as a result of completed infrastructural development in the outer island. The Chinese Government funded a new infrastructure extension at Prince Ngu Hospital in Vava'u. This is part of the Health Centre Project started from Mu'a and Vaini Super Health Centres in Tongatapu. Similarly, there were infrastructural development at Uiha and Kauvai in Ha'apai jointly funded by AusAID and the community. Last but not the least, Government of Japan funded the construction of Children Ward and Clinic at Niu'eiki Hospital in 'Eua.

3.1.4 Key Result Area 4:

Build Staff Commitment and Development

Goal: We will build staff commitment and development by demonstrating to the staff that they are the most valuable asset of the Ministry.

The historic **First International Conference for Tongan Nurses** was held at Fa'onelua Convention Center, Nuku'alofa, Tonga from 10th – 14th March 2010. This was a result of joint venture by the Tonga Nurses Association and Tongan Nurses Association of New Zealand.

The theme of the Conference was: **"Nursing the Noble Profession: Navigating the Realities of Tongan Nurses"** The main objectives included; sharing of knowledge and achievements, and establishment of international networks. A total of more than 200 nurses attended this conference from Australia, New Zealand and Tonga.

Her Majesty, Queen Halaevalu Mata'aho who is also the Patron of the Tonga Nurses Association gracefully opened this important ceremony. In her royal address, she highlighted the pivotal role of Nursing in the Tongan society and the importance of stronghold faith in God for Nursing Practice. In doing so, nurses heart will be filled with love thus cultivating best nursing care for the glory of humanity and God Almighty. High Commissioners and Ambassadors attended the Grand Opening Ceremony.

Tonga Health Sector Support Project (THSSP):

AusAID established with the Ministry of Health the Tonga Health Sector Planning and Management Project in 1999 to strengthen the Health System in Tonga. This partnership favorably reflects on many milestones such as developing of the Ministry's Strategic Plan, Tonga's Health 2000, and revision of many policies and procedures for clinical setting as well as administrative and supporting services of the Ministry of Health. During this period, the project spent an estimated funds of AUD$5.7 million and they were all managed by the management team of the Project.

In 2009, this Australian Support was managed by the Ministry of Health and integrated into the Government of Tonga's management and accountability systems. More specifically, the utilization of this fund was managed in accordance to the Ministry and Government's management, procurement, implementation, monitoring and evaluation system.

The focus of this new arrangement primarily aimed at addressing the Key Result Areas identified in the Ministry of Health Corporate Plan where Non Communicable Diseases are the top priority. A special component called Flexible funds reserved for other priority needs that may be identified during the course of the implementation.

Significant amount of funds were disbursed in 2010 especially for setting up the project. Amongst the most successful expenses undertook was the introduction of the Corporate Plan and Annual Report Week.

This initiative was originated by the Health Planning and Information Division to:

- Review the progress of Corporate Plan implementation
- Annual Report presentation by each division and island
- Set the theme of the year
- Develop Ministry's calendar year

The Corporate Plan and Annual Report week for 2010 took place on the 14-18 February 2011. It was attended by representatives from all over the nation except the Niuas. This was amongst the first workshop officially opened by the new Health Minister, Hon. 'Uliti Uata.

At the end of this meeting, the Ministry has common understanding of its strengths, weaknesses and how they will be addressed given the resources available. This meeting also achieved consensus on the 2011 Theme **"Comprehensive maintenance of physical infrastructure, professional development & quality health environment for patient and staff is the road to success."**

This event was approved to be part of the Annual Event of the Ministry at that particular time. Because this week coincides with the Valentine Day, it is also known as “The week of Love”.

3.1.5 Key Result Area 6:

Continue to improve the Ministry Infrastructure and ICT

Goal: We will continue to improve the standard of existing facilities and ICT, and construct new facilities and introduce new ICT where needed.

The Vaiola Hospital main building was officially demolished on the 2nd June 2010 by HRH Princess Salote Mafile’o Pilolevu Tuita. This building was officially opened on the 4th June 1971 with estimated cost of TOP$1,090,000 at the time where TOP$765,979 donated by the United Kingdom and the remaining were funded by the Tongan Government with donation from private organization and individual in Tonga and overseas. There were 186 beds capacity hospital which caters for 4,147 admissions at year of official opening (1971).

On the 20th of October 2010, the ground breaking ceremony of the construction of the final phases of the project for the upgrading and refurbishment of Vaiola Hospital took place. These phases will include the Hospital Administration Building to accommodate the Outpatient Department, Accident & Emergency, Antenatal Clinic, Central Pharmacy, Medical Record, Special Clinic and Hospital Administration. Renovation of the existing laboratory building to accommodate Diabetic and Ophthalmology Clinics and Physiotherapy Unit. A new Dental Department, new School of Nursing Building, a multi-purpose Hall and extension to the Mortuary. The full cost of this work is estimated to be TOP36 million which is fully funded by the Government of Japan.

Workshop participants (left to right): Uaisele 'Epenisa, Tu'amelie Paea, Mesalina Fonua, Colin Madden (facilitator), Ripine Konelio, Peilifi Letaulau, Vaolupe

Through close partnership between the Ministry of Health of Tonga and the Department of Health and Aging, Canberra and the Ministry of Health of Samoa, a two weeks technical training on website training were conducted in Tonga, 22 Nov-3 Dec 2010. This training expanded the functionality of the Ministry’s website to cater for many electronic data sharing which allow electronic management of staff leave, calendar year events, electronic distribution and storage of meeting materials and keeping good records of visitors to the website. There were 7 attendees from Tonga, 2 from Samoa and 2 trainers from Australia funded by the Pacific Senior Health Official Network.

4 HEALTH ADMINISTRATION AND MANAGEMENT

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

- Therapeutics Goods (Amendment) Act 2004
- Pharmacy (Amendment) Act 2004
- Nurses (Amendment) Act 2004
- Medical and Dental Practice (Amendment) Act 2004
- Health Practitioners Review (Amendment) Act 2004
- Mental Health (Amendment) Act 2004
- Tobacco Control (Amendment) Act 2004
- Drugs and Poisons (Amendment) Act 2001
- Public Health Act 2008
- Health Services Act 1991
- Waste Management Act 2005
- Health Promotion Act 2007

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

- Administration
- Health Planning and Information
- Public Health
- Medical
- Nursing
- Dental

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

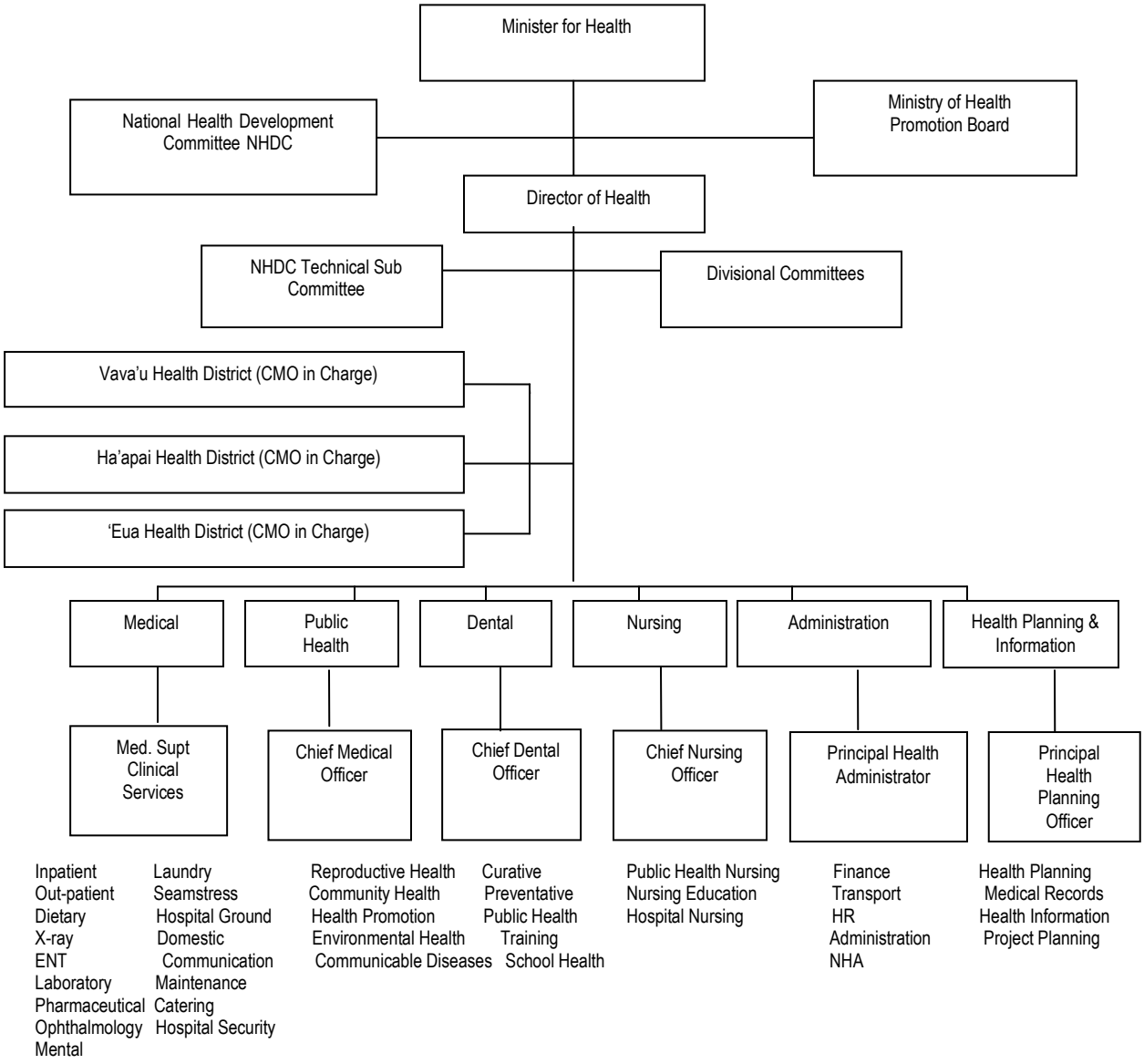
4.1 Ministry of Health Executive

As of 31 December 2010 the following officers were responsible for the administration and management of the Ministry and its respective Divisions.

Deputy Prime Minister and Minister for Health	**Hon. Dr Viliami Ta'u Tangi**
Head of Department	**Dr. Siale 'Akau'ola** Director of Health

Administration	**Mr Tu'akoi 'Ahio** Principal Health Administrator
Dental	**Dr Sililo Tomiki** Chief Dental Officer
Health Planning and Information	**Mr. Viliami Ika** Acting Principal Health Planning Officer
Medical Superintendent	**Dr. Toakase Fakakovikaetau** Medical Superintendent, Clinical Services
Nursing	**Mrs. Sela Paasi** Chief Nursing Officer
Public Health	**Dr Malakai 'Ake** Chief Medical Officer, Public Health

4.2 Organization Structure



4.3 District Hospitals

As of 31 December 2010 the following officers were responsible for the management of the outer island health districts.

Prince Ngu Hospital
Vava'u Health District

Dr Edgar 'Akau'ola
Chief Medical Officer

Niu'ui Hospital
Ha'apai Health District

Dr Tevita Vakasiuola
Acting Senior Medical Officer

Niu'eiki Hospital
'Eua Health District

Dr. Sione Sengili Moala
Senior Medical Officer

4.4 Overview of Health Indicators

The health situation for Tonga in the last five years is reflected in the following table.

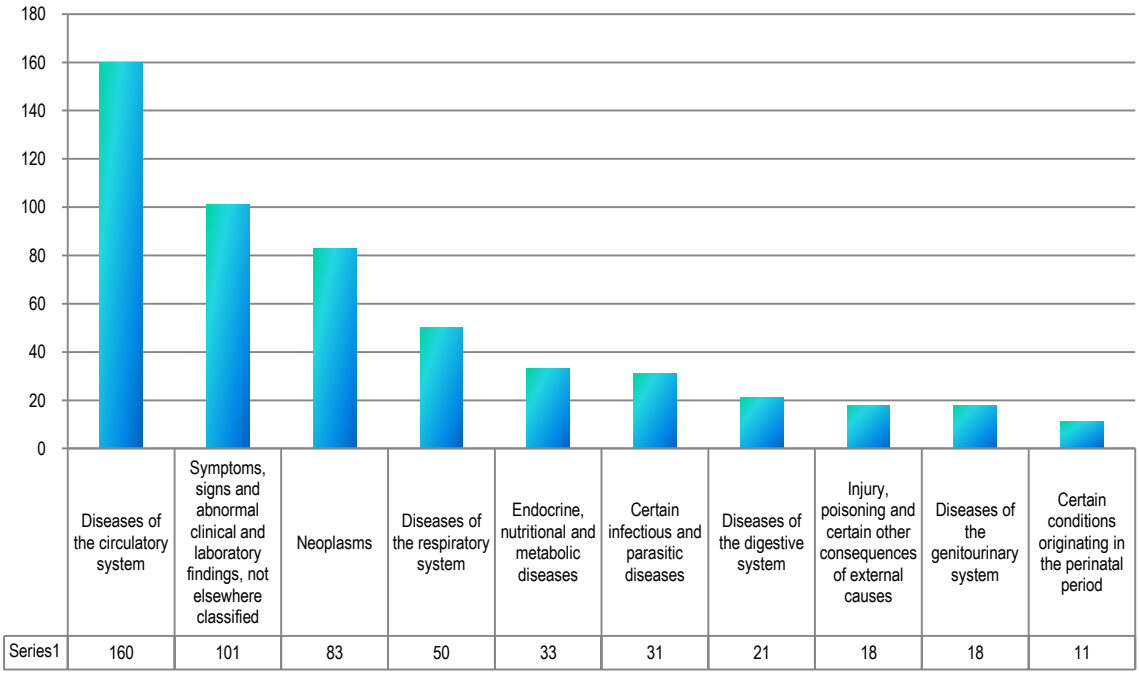
Table 1: Health Indicator(s) for Tonga 2006 – 2010

	INDICATOR	2010	2009	2008	2007	2006
1	Estimated Population ('000)	103.6	103.1	102. 3	103.3	102.4
2	Annual Population growth	0.3	0.3	0.3	0.3	0.3
3	Percentage of Population less than 14 years (per 100) Percentage of population 65 years and over (per 100)	38 8	38 6	38 6	38 6	38 6
4	Percentage of urban population (per 100)	36	36	36	36	36
5	Rate of natural increase (per 1,000)		19.9	21.6	21.3	21.5
6	Crude Birth Rate (per 1,000)	26.0	25.4	26.7	26.5	26.5
7	Crude Death Rate (per 1,000)	5.3	5.5	5.1	5.2	5.0
8	Maternal Mortality Rate (per 100,000)	37.1	114.4	76.1	36.5	110.5
9	Life Expectancy at Birth (combined) Life Expectancy (Male) Life Expectancy (Female)	 69 65	 70 72	 70 72	 70 72	 70 72
10	Infant Mortality Rate (per 1,000)	21.5	14.5	16.4	11.7	10.7
11	Perinatal Mortality Rate (per 1,000 live births)	12.4	13.5	18.9	13.0	13.1
12	Total Health expenditure ('000) Per Capita As a percentage of total recurrent budget	22500 217 10.1	21375 207 12.0	21580 210 10.0	17761 172 7.5	20170 196 10.4***
13	Health workforce Medical Officers at post Health Officers at post Nursing and Midwifery at post	 45 21 tbc	 55 22 355	 59 19 346	 58 17 302	 57 20*** 325***
14	Percentage of population with safe water supply	99	99.9	99	98	97.5
15	Percentage of household with adequate sanitary facilities	99	99.7	98	99.6	97.2
16	Immunization coverage	99.6	99.5	99.5	99.6	99.1
17	Percentage of pregnant women immunized with tetanus toxoid 2	97.9	97.8	99.0	97.6	97.2
18	Percentage of population with access to appropriate health care services with regular supply of essential drugs within one hours walk	100	100	100	100	100
19	Percentage of infants attended by trained personnel	100	100	100	100	100
20	Percentage of married couples practicing contraception	28.4	29.8	27.0	27.7	23.9
21	Percentage of pregnant women attending ante natal care	97.7	98.6	98	98.7	99
22	Percentage of deliveries conducted by trained personnel	99	98.1	97	98	98
23	Total Fertility Rate	3.8	3.7	3.7	3.7	4.1

*** Maternal Mortality Rate has been calculated using standard formula (per 100,000 live births).**
**** Calculated based on the assumption fertility rates will decrease and life expectancy will increase overtime.**
***** Amended from statistic published in 2001 and 2005 Annual Report.**

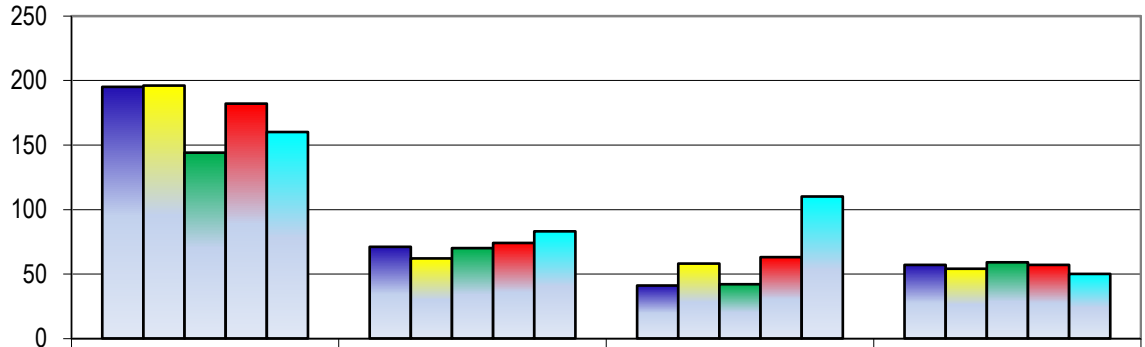
4.5 Mortality and Morbidity 2010

Leading Causes of Mortality, 2010



	Diseases of the circulatory system	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	Neoplasms	Diseases of the respiratory system	Endocrine, nutritional and metabolic diseases	Certain infectious and parasitic diseases	Diseases of the digestive system	Injury, poisoning and certain other consequences of external causes	Diseases of the genitourinary system	Certain conditions originating in the perinatal period
Series1	160	101	83	50	33	31	21	18	18	11

Leading Causes of Mortality, 2006-2010



	Circulatory system	Neoplasm	Symtoms, sign and III defined	Respiratory system
2006	195	71	41	57
2007	196	62	58	54
2008	144	70	42	59
2009	182	74	63	57
2010	160	83	110	50

Source: Health Information Mortality Database
Reproductive Health Section
Hospital Admission
Notice and Certificate of Death issued by the Ministry of Health

For more than a decade, the above leading causes of mortality remain the most common causes of death of all reported death to the Ministry in Tonga.

Cardiovascular diseases constantly dominate the leading causes of deaths. This table illustrates the distribution of mortality by sex and age for Circulatory system cause of death. There are a lot of premature deaths with at least 2-3 years within the age group of 45-64 compared to expected life expectancy reported in the last (2006) Census. Some cases within this category are considered avoidable death in developed countries. It should be noted that there is a great disproportion between males and females.

Age Group	F	M	Total	%
<1	1	3	4	3%
1-4	0	0	0	0%
5-14	0	0	0	0%
15-24	1	2	3	2%
25-34	1	2	3	2%
35-44	1	7	8	5%
45-54	3	12	15	10%
55-64	17	24	41	26%
65-74	11	29	40	25%
75+	20	25	45	28%
Total	55	105	160	100%

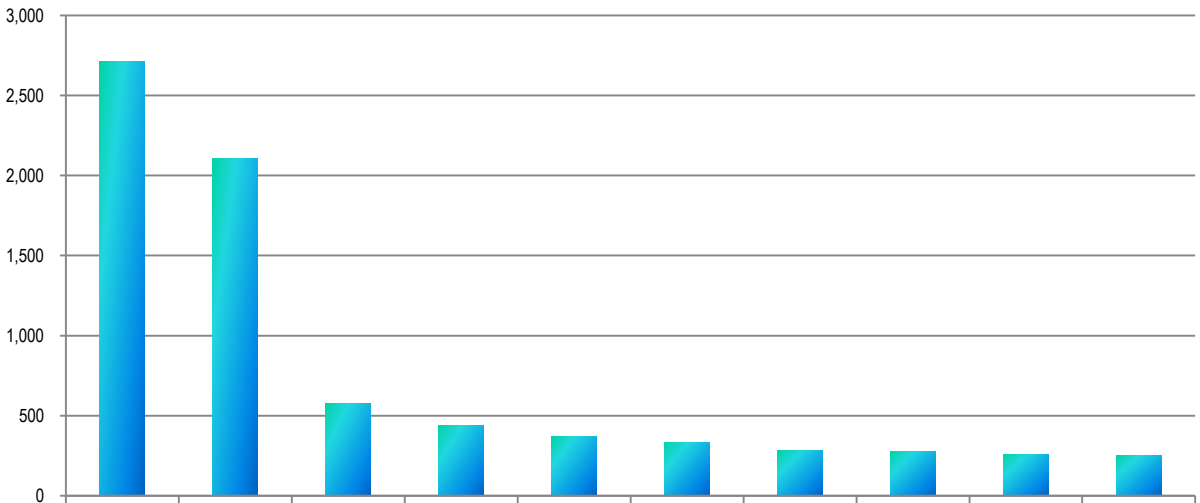
Symptoms, sign and ill defined became the second leading causes of death in 2010. As practiced, all death certification has to be certified by a Government Clinician in which majority of them operates in the Government health infrastructure. More than 50% (285 out of 553) of total deaths occurred outside the health infrastructure and they are vulnerable to have no official death certificate unless the close family requests it. About 84% (84 out of 101) of reported deaths in this category have unknown causes of death (48 out of 101) and 36% for old age (36 out of 101). About 73% (74 out of 101) of deaths under this category does not have death certificate, they were captured from other Ministry sources of data collections without certified causes of death and some with probable cause of death. The demographic details of these cases suggested that average age of these deceased is 63 for both males and females. The participation of the community in mortality data collection is very critical in terms of reporting the health status of the public.

Cancer believed to be under-reported due to resources constraint but constantly found at the four leading causes of mortality even though it is not a common cause of admission. The reported mortality related to cancer continues to increase over time and it can suggest that cancer cases are mostly detected late. It is suspected that some cancer cases may be categorized under symptoms, sign and ill defined category if they died in the community.

Pneumonia is the major (23 out of 50 deaths) causes of death in all diseases related to Respiratory System with an average age of 61 and 64 for male and female respectively. There were only 5 children and 18 adult deceased with age greater than 54. The reported deaths within this category fluctuate between 50 and 59 between 2006 and 2010 and seem to be slightly decreased in the last three years.

Leading Causes of Morbidity:

The most common causes of morbidity leading by admission to Vaiola Hospital came from female related diseases. The compilation of all admission other than the first two leading causes of admission remains lower by a thousand admissions than the two commonest causes of admission. Even though they are not amongst the major concern for mortality but they are directly related to the most sensitive indicator of Maternal Mortality Ration and Infant Deaths. On average, one maternal death generally equates to around more than 37 per 100,000 live birth. For infant deaths, at least three infant deaths could make changes to the Infant Mortality Rate per 1000 live birth. Both of which also contributes to the fulfilling of Millennium Development Goals.



	Pregnancy, Childbirth, and the Puerperium	Factors Influencing Health Status and Contact with Health Services	Diseases of the Respiratory System	Injury, Poisoning and Certain Other Consequences of External Causes	Diseases of the Genitourinary System	Parasitic and Infectious Diseases	Symptoms, Signs, and Abnormal Clinical and Laboratory Findings, not elsewhere classified	Diseases of the Circulatory System	Mental and Behavioural Disorders	Diseases of the Digestive System
Freq	2,713	2,105	579	437	373	336	280	279	261	254

Source: Tonga Hospital Information System

Diseases of the Respiratory system were the fourth leading causes of mortality but it is a third causes of admission to Vaiola Hospital. The average length of stay for females and males were 4.1 and 3.7 days respectively with an average age of 20 and 24 years old.

In contrast, the NCD related admission were not in the 10 leading causes of admission but the average length of stay were 17 and 18 days for females and males with the average age of 54 and 53 years old. They are small in numbers but commonly stayed longer than other types of admission with a higher average age. There are higher tendency for these patients to consume more resources and requires additional supports during their time in the hospital.

Admission related to Mental and Behavioral Disorders were not usually found at the 10 leading causes of admission in the past years. However, part of this increase is caused by an improvement in the coding of disease practices delivered by the Medical Records Section.

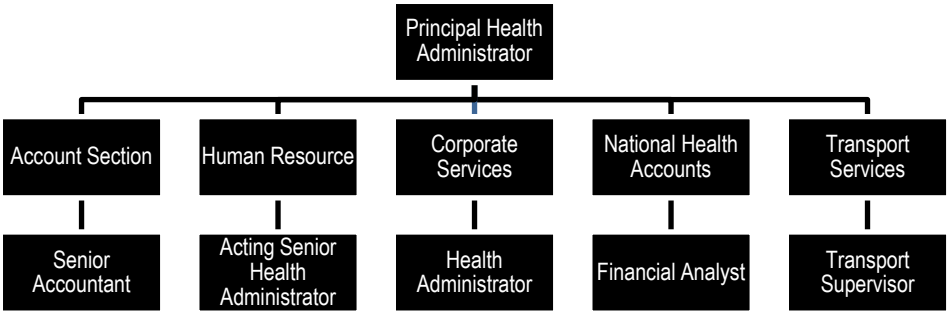
The remaining causes of admission used to be the same commonly found as the leading causes of admission to the main hospital and outer island.

5 LEADERSHIP, POLICY ADVICE AND PROGRAMME ADMINISTRATION

5.1 ADMINISTRATION AND MANAGEMENT SERVICES:

Mission Statement

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



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Account Section	Mrs. Lasini Sinamoni	14	
Human Resource	Mrs. Hatasou Taulanga	2	
Corporate Service	Mrs. Hatasou Taulanga	14	
National Health Accounts	Mrs. Mafi Hufanga	0	
Transport Services	Mr. Sifa Kafa	28	163,100
Total staff and financial resources	4	58	

5.1.1 Account Section:

Account section is responsible for managing the Recurrent Budget, budget development and monitoring,

Objectives	Selected Milestones
• To provide a timely payment of staff salary/wages/income tax etc.	• Provision of timely payment for staff's salary and wages.
• To improve revenue collection within the Ministry of Health	• Revenue collected from businesses was mobilized quarterly.
• Achieve annual revenue target.	• 91% of the revenue target was achieved.
• To provide an update reports on financial matter.	• Updated Monthly Financial Reports and distribute to Program Managers.
• To provide budget to all cost centers and monitor expenditure against the budget.	• 95% achieved.
• To produce a realistic Draft Estimates annually.	• Budget prepared and submitted on due date.

• To broaden staff skills and applies in workplace.	• Staff engaged in distance learning course with the University of the South Pacific.

5.1.2 Corporate Services:

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.

Objectives	Selected Milestones
• To ensure (justifiable) established vacant posts are filled.	• Continue working on filling vacant posts within the ministry internal and external.
• To improve all staff morale through improved communication and recognition of achievement.	• Developed career path and staff rotation for clerical staff. • Processed Acting Appointment – 68 • Settling Allowances – 17 • Loan letters – 387 • Visa Letters – 177 • Correspondences/Savingram – 172
• To improve customer service	• 96% of the administrative staffs are now owned new uniform which is a result of the 2008 customer service's survey. The uniform shows the staff commitment for a better future.
• To establish a standard timeframe for processing administrative procedures and protocols.	• Current procedures and protocols internal and external are well manages and there is a movement towards responding by email are becoming more effectively.
• To have an up-to-date and accurate asset register and furniture of the ministry.	• Upholding the initial registration. • Produce Annual Registrar. • Processed Pharmacy Regulation 2010.

5.1.3 Human Resource:

Human Resource section is responsible for managing all human resources information, provides induction programme for new staff, document and update all human resource Policies and Procedure, and enforce human resources related Rules and Regulations.

Objectives	Selected Milestones
• To provide staff with relevant trainings which brings motivation needed to provide a high quality HRM support services and assist in retaining staff.	• Staff completed distance learning courses at the University of the South Pacific, Tonga Campus, 'Atele, funded by the World Health Organization Fellowship Program. • Provision of a new computer set to assist staff and work needs.
• To ensure that staffing levels meet work needs	• Policy on annual leave has been successfully enforced with leave schedule in place.
• Maintain an accurate and up-to-date HRMIS	• Implemented new databases for staff health profiles and MOH profiles. • Maintain close files at the main office (5 years). • Implementation of Inward and Outward Flow System for the files and all correspondence.
• Managers are provided with Accurate, Relevant and Timely Human Resource Information.	• Monthly circulation of updated staff leaves entitlements to all Head of Divisions.
• To develop and introduce an	• New appointees attended an induction program delivered by the Public

induction programme suitable for all new members of staff.	Service Commission.
• To ensure that staffs recruited / selected meets the criteria for the position and fit the culture of the Ministry.	• Vacant positions have been advertised, shortlisted according to criteria / qualification / experience required by each post, interviewed, and then select the most appropriate person (s) to fill the post.

5.1.4 National Health Accounts:

National Health Accounts section is responsible for revising and developing the revised user fees, assessing the feasibility of implementing Social Health Insurance and providing financial report in regular basis according to the International National Health Account standards.

Objectives	Selected Milestones
• To provide staff with further appropriate training	• The Financial Analyst Mafi Hufanga, and PHA attended the Regional NHA Meeting in Nadi, Fiji, June 2010. • PHA attended a Regional Meeting on Revised SHA in Manila, August 2010.
• To ensure staff understand their job descriptions.	• Job Description reviewed and updated to reflect reality of workload in this unit.
• To benchmark national health accounts findings with other Pacific Islands	• NHA Findings for 2005 – 2006 were presented during the two meetings held in Fiji. • Tonga is the first in the Pacific to have established a sub-NHA section on NCD.
• To ensure national health accounts surveys and activities are institutionalized.	• Surveys for 2007/2008 Report have been undertaken and in the process of analyzing and producing the report.
• To review and update the revised fee scheduled every two years.	• Enforcement of 2009 Revised Fee Schedule.

5.1.5 Transport Services:

Transport section is responsible for providing transportation services including ambulance for the Ministry.

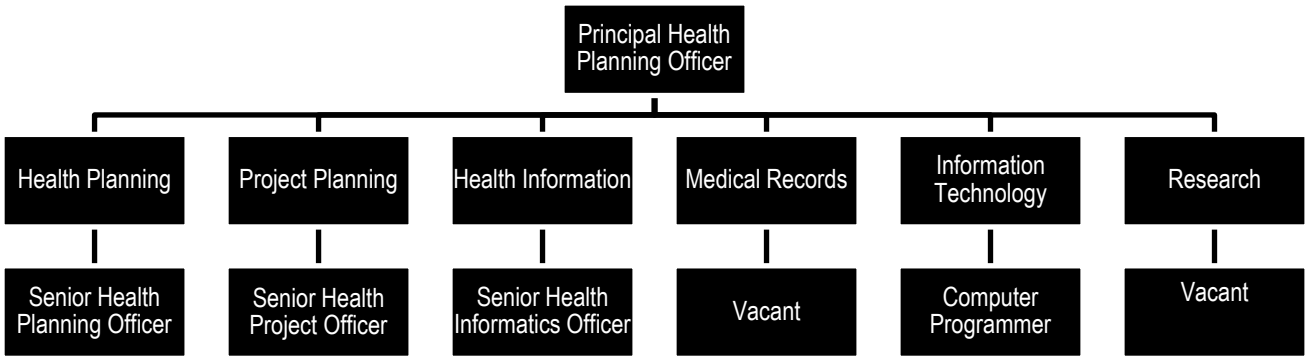
Objectives	Selected Milestones
• To ensure the availability of transport for the efficient mobilization of Health Personal and Distribution of medical supplies and equipment throughout the district.	• One new ambulance and 3 new vehicles donated for standby use. • Identified the on call requirement. • Developed staff roster to meet the workload. • Developed daily operation plan for each vehicle. • Managed the vehicles on use at after hours. • Occupy 2 Trained Program Staff for the utilization of the ambulance.

6 HEALTH PLANNING AND INFORMATION SERVICES:

6.1 Health Planning and Information Division:

Mission Statement:

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.



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Health Planning	Mr. Viliami Ika	1	7,000
Project Planning	Ms. Elsie Tupou	0	500
Health Information	Mr. Sione Hufanga	3	51,400
Medical Records	Mrs. Mioko Veilofia	13	800
Information Technology	Mr. Tu'amelie Paea	3	8,000
Research	Vacant	0	0
Total staff and financial resources	5	20	$ 67,700

6.1.1 Health Planning:

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.

Objectives	Selected Milestones
• To ensure the required number of staff with the appropriate knowledge and skills are employed to provide efficient and effective health planning services. • To provide training opportunities for the staff. • To secure funding for staff training. • To prioritize training needs.	• Mr. Uaisele 'Epenisa completed his Diploma in Information Technology • Ms. Tifa 'Atuekaho, Mesalina Fonua and Mr. Clifton Latu commenced their distance learning for Bachelor Degree in Information Technology • Ms. Mioko Veilofia and Ms. Lisita Holani commenced their distance learning for a Certificate in Health Information Management • Mr. Tu'amelie Paea awarded with an AusAID scholarship to pursue his Master Degree in Information Technology • Mr. Sione Hufanga completed his Master Degree in Biostatistics • Update of division's training needs on a six monthly basis.
• To document the planning process. • To disseminate the planning approach and educate staff.	• Tonga Health Sector Support Project supported the proposal to have Corporate Plan and Annual Report week as a standard event every year. This forum will review progress of the Strategic Plan at every divisions and island groups.
• To establish research capability. • To provide support for development of relevant health policies.	• Senior Health Informatics Officer Sione Hufanga was approved to undertake researches on Captured – Recaptured Assessment of Mortality in Tonga and Underlying Cause of Death from Medical

	Record Review in Tonga in conjunction with the School of Population Health, University of Queensland.
• To evaluate planning processes. • Develop the concept of Key Performance Indicators.	• Review of Corporate Plan for the period 2009 – 2012 allowed the documentation of achievements of the Sections, Divisions, and the Ministry as a whole during the period. • The concept of key performance indicators was identified to be still relevant and incorporated in the 2009 – 2012 Corporate Plan.
• Formulation of recommendations on matters pertaining to health policy, including legislation and regulations as required. • Formulate training and human resources plans. • Determine the programmes and projects required to fulfill the health development plan, and recommending development and recurrent estimates to support the programmes. • Fostering intra-service and inter-organizational cooperation and coordination of the various health programmes in operation. • Monitor the implementation of programmes and updating plans and programmes	• The Hon. Minister for Health is the Chairman of the National Health Development Committee (NHDC) and permanent members include the Director for Health, Chief Medical Officer Public Health, Chief Medical Officer Clinical Services, Medical Superintendent, Chief Dental Officer, Chief Nursing Officer, Supervising Public Health Sister, Principal Health Administrator, Senior Accountant and Principal Health Planning Officer as Secretariat. • The NHDC Committee continues to meet every last Friday of the month. • The Quarterly Reporting System continues to be a useful tool for reporting by the six Heads of Divisions of monthly activities highlighting achievements and constraints.

6.1.2 Project Planning:

Project Planning is responsible for developing, implementing and monitoring of health projects in conjunction with programme managers and donor agencies.

Objectives	Selected Milestones
• To increase the number of projects approved and implemented. • To develop plan for the Ministry's equipments/renovation and new building.	• China Government projects (Mu'a Super Health Centre, Vaini Health Centre and Prince Ngu Hospital Public Health Centre) completed and anticipated for the handover early 2011. • Tonga Health Systems Support Program for 10 years commenced with a Health Executive Team Plus meeting in April. • Likamonu Hospital Redevelopment Project commenced with the Italian Relief Fund of TOP$19,000 in July 2010.. • Ground breaking ceremony of Vaiola Hospital Redevelopment Project Phase II held on the 30th October 2010. Construction commenced in November. • Development Budget 2010/2011 submitted on time and presented to the Ministry's Budget Team on the required format. • Annual review of Health Projects registered continued.
• To prioritize and maintain the Ministry's training needs.	• Submitted on time and implementation of the ministry's training needs/schedule for 2010/2011 by the Training Development Committee.
• To provide efficient and effective secretarial tasks to the Training and Development Committee and also to the National Health Selection	• Reviewed the Training Development Committee's Terms of Reference. • The Principal Health Planning Officer is the Chairman of the Committee and permanent members include the Medical Superintendent Clinical Services, Principal QSSN, Principal Dental Officer, Senior Medical Officer Obstetric and Gynaecology, Senior Public Health Inspector, Senior Pharmacist Graduate, Senior Medical Officer Health Promotion and NCD, Senior Health Administrator,

Committee for Training.	Senior Hospital Administrator and Health Project Officer as Secretariat. • Training Development Committee convened 12 meetings during 2010.
• To improve staff knowledge and skills by further training.	• Training needs identified for the Section has been revised, prioritized and submitted to the Acting Principal Health Planning Officer, and was tabled in the Training Development Committee's meeting.

6.1.3 Health Information:

Health Information section is responsible for overseeing the development and operation of information systems and monitor the utilization and quality of the information collected by the Ministry.

Objectives	Selected Milestones
• To retain staff. • To provide staff with further training in Health Information Management and Data Analysis (Postgraduate studies in Health Informatics, Biostatistics and Epidemiology). • To ensure staff understand their job description. • To improve data analysis capability. • To improve the reporting of clinical information. • To improve report production. • To benchmark health status information with other Pacific Islands.	• Senior Health Informatics Officer, Sione Hufanga completed his Masters in Biostatistics from the University of Queensland, • Mr. Uaisele 'Epenisa completed his Diploma in Information Technology from the Tonga Institute of Higher Education. • Mrs. Vaolupe Finau completed her Diploma in Information Technology from the Tonga Institute of Higher Education. • The Pacific Senior Health Official Network (PSHON) funded E-Library training in Tonga from November to December 2010. IT staff of the Ministry of Health in Tonga and Samoa participated. Purpose of the workshop was for the Pacific participants to further develop their Ministry's intranet sites and to achieve the knowledge required to be able to independently expand their sites to meet future requirements. • Mr. Brendan Dennis completed his 12 months assignment as Computer Programmer for Health Information Section since July 2009. • Ms. Trish Ryan successfully extended her assignment for another 12 months to assist with Medical Records development particularly the preparation for the transition from the old to the new location in March 2012. • The President of the Pacific Health Information Network (PHIN) and Senior Health Informatics Officer, Mr. Sione Hufanga attended the 16th International Federation of Health Records Organization (IFHRO) held in Milan, Italy on behalf of the Pacific Island Countries. • Mr. Hufanga was also invited to attend a Donor meeting held in Brisbane regarding Vital Statistics hosted by the University of Queensland. Donor partners recognized in this meeting the invaluable roles plays by health information professional in improving vital statistics in their respective countries. The meeting concluded that a better coordinated effort will be put in place to ensure that the investment on vital registration will be improved using the most efficient strategies. • The Ministry approved the 30th of April to be the HIS day to signify the importance of Health Information Services for health care services delivery and the Ministry of Health. This event were attended by senior staff of the Ministry as well as representatives of HIS external stakeholders such as Tonga Communication Corporation (TCC), Government Statistics Department, Japanese International Corporation Agency (JICA), World Health Organization (WHO), Tonga Health Project and Health Information Management Association of Australia (HIMAA). The event also celebrated one year since the official launching of the Tonga Hospital Information System (THIS). • **Outer Island Hospital Services:** Health Information was invited by the Reproductive Health Service to participate in a joint visit to the outer island hospitals to review the progress of the H1N1 Vaccination Program implementation.

Objectives	Selected Milestones
	• In the attempt to improve weekly notifiable disease surveillance system, health information therefore participated in the outer island training and consultation organized by the Communicable Disease section towards the end of the year.

6.1.4 Information Technology:

The IT support section is responsible for supporting the operation of computers within the Ministry and developing policies and procedures for procurement of new IT equipment.

Objectives	Selected Milestones
• To ensure adequate staffing levels	• Computer Programmer, Tu'amelie Paea awarded with an AusAID scholarship to pursue Masters in Information Technology at 2012. • IT Section has been awarded with a WHO Fellowship for distance learning to commence in 2010 for two years. • Attended and participated in a one week workshop on Website Development and E-Library.
• To retain staff	• Distribute training opportunities for staffs and specify field for each staff in their interest field in IT. • Japanese volunteer joined the team in February for two years completed her term.
• To identify and address problems/difficulties with computers in sections	• According to our helpdesk registration, 90% of computer problems / difficulties identified have been addressed / solved by in-house maintenance.
• To ensure computer standards are maintained	• IT has developed a specification for computers and it is up to date to standardize procurement of new computers for the Ministry. Every computer procured must use this standard specification. • Information Technology has assigned a specification for computers, printer and server in which to keep the standard up to date. • Infrastructure/Hardware Preparation.
• To optimize support and development costs	• Completed the Internet Direct Connection process and the IP address for the ministry. Now we can access the ministry's IT service from anywhere the world by using the VPN service. • Outer island hospitals also centralized to use TCC internet service. • Launched the Intranet program of the Ministry. • IT provides HIS support online tool using VPN connection.
• To improve data quality	• Implemented the Intranet service and ready to launch. Digitized the annual reports and corporate plan in the ministry's intranet. • Launched the Hospital Information System. Available on the ministry's website for internal use only.
• To improve access for health planning and information internationally	• We have implemented an IT service VPN remote connection to our Local Area Network (LAN) from anywhere.

6.1.5 Medical Records:

Medical Records is responsible for providing fast, reliable, and secured record services and ensure health data is accurately abstracted and provided for statistical analysis in a timely manner.

Objectives	Selected Milestones
• To continue on-the-job-training and attachments for staff	• Five Medical Records Staff (Ms. Mioko Veilofia, Ms. Lisita Holani, Ms. 'Ilaise Tu'utafaiva, Ms. Palaniketi Talia'uli, and Ms. Leonia Finau) granted

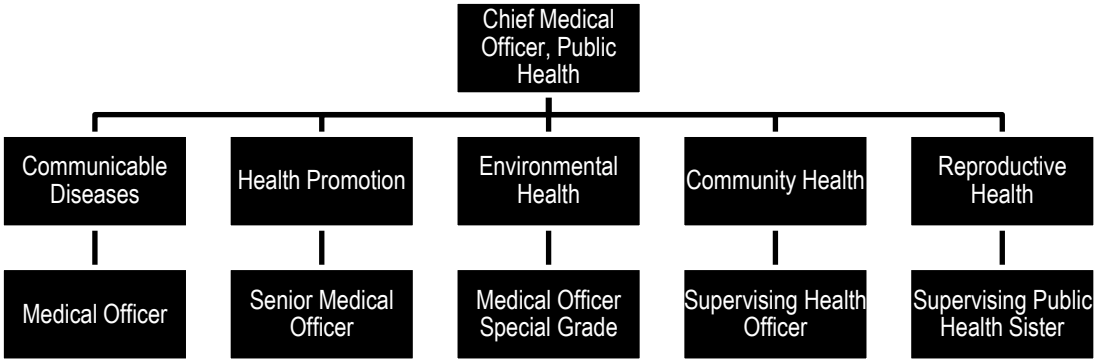
	with WHO Fellowship to pursue overseas training toward a Certificate on Medical Administration 3 for two years. • The VIDA application for Health Information Manager from the Health Information Management Association of Australia (HIMAA) was successfully considered by VIDA programme. Through effective partnership with the current President of HIMAA (Vicki Bennette), the former President of HIMAA (Ms. Trish Ryan) willing to take up this 12 months assignment with effect from January until December 2010.

7 PREVENTATIVE HEALTH SERVICES

7.1 PUBLIC HEALTH

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.



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Communicable Diseases	Dr. Louise Fonua	2	1,320
Health Promotion	Dr. Paula Vivili	12	1,800
Environmental Health	Dr. Raynold 'Ofanoa	20	6,850
Community Health	Mr. Simione Tei	14	7,502
Reproductive Health	Sr. 'Atalua Tei	47	81,000
Total staff and financial resources	5	95	$ 98,472

7.1.1 Communicable Diseases:

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.

Objectives	Selected Milestones
• To reduce the incidence and prevalence of communicable diseases through the implementation of strategies outlined in many health care programs/projects, and through policy development and Health Act to facilitate implementation of public health interventions. • To maintain the high standard of provision of necessary services for visa applicants, employment recruits and food handlers at all times. • To maintain the high level of cure rates of DOTS, and to improve the detection rate (10% of current), and cure rates of pulmonary tuberculosis and screening of contacts. • To improve surveillance of all communicable diseases but especially those that are prone to outbreaks such as dengue, typhoid and influenza like illnesses. • To ascertain proper management of all patients admitted to the Isolation Ward and those that have been discharged but needs to be followed up at home. • To ensure that the capacity of staff at this section is developed appropriately and to ensure a user- friendly working environment, both for staff and users of our services. • To collaborate more effectively with all stakeholders that provide services for STI including HIV/AIDS, in planning, implementation and monitoring of all strategies developed so far, and in accordance with the National Strategic Plan to Respond to STI including HIV/AIDS.	• Dr. Louise Fonua returned to the unit with a Master of International Public Health from the University of Sydney. • Under the Response Funds, the unit conducted STI management training for health care workers at Vaiola Hospital, Prince Ngu Hospital, Niu'ui Hospital and Niu'eiki Hospital. • Dr. Louise Fonua carried out the first STI and HIV Monitoring and Evaluation visit to the outer island hospitals. • The Unit collaborated with the health informatics unit to implement syndrome surveillance, revive the notifiable disease form and to develop the appropriate database for this. • The National TB program conducted TB screening amongst 94 prisoners throughout Tonga. • Tonga submitting the Country Progress Report to the United Nations General Assembly Special Session. (UNGASS)

Statistical Information:

Tuberculosis

Table 2: Tuberculosis notifications by age group, gender and disease classification

Age Group	Gender			Disease Classification			Total
				Pulmonary		Extra- Pulmonary	
	Male	Female	Total	Sputum +ve	Sputum -ve		
0-10	0	0	0	0	0	0	0
11-20	0	0	0	0	0	0	0
21-30	1	0	1	0	0	1	1
31-40	0	1	1	1	0	0	1
41-50	2	0	2	2	0	0	2
51-60	0	2	2	2	0	0	2
61-70	0	2	2	1	1	0	2
70 +	0	0	0	0	0	0	0
Total	3	5	8	6	1	1	8

Source: TB Register/Laboratory Register

There were a total of eleven TB cases registered at the National TB centre for the year 2010. Six of the cases were sputum positives, three were sputum negatives and two were extra-pulmonary TB. One of the cases was transfer

from New Zealand, one registered in Ha'apai, two in Vava'u and the rest were all in Tongatapu. Sixty four percent were males and thirty six were females. 82% of all TB notifications were Pulmonary TB and the rest were sputum positive and the rest were sputum negative.

Meningococcal Meningitis

Table 3: Confirmed Meningococcal meningitis by age Group and gender

Age Group	Gender		Total
	Female	Male	
0-5	1	3	4
6-10	0	0	0
11-15	0	1	1
16-20	1	0	1
21+	0	0	0
Total	2	4	6

Source: Communicable Disease Register/Laboratory Register

Five cases of meningococcal meningitis were diagnosed reported from the paediatric ward.This section was then responsible for contact tracing and the administration of prophylactic antibiotics. A total of 114 contacts for all six index cases were traced and either administered prophylactic rifampicin or ciprofloxacin. Unfortunately there was one death as a result of meningococcemia and this was a five month old male baby.

Dengue Fever

Table 4: Cases of Dengue Fever by age group and gender

Age Group	Gender		Total
	Male	Female	
0-10	38	28	66
11-20	41	37	78
21-30	37	37	74
31-40	5	4	9
41-50	6	9	15
51-60	4	5	9
61-70	4	3	7
71+	1	0	1
Total	136	123	259

Source: Communicable Disease Register/Laboratory Register

From the above table, only six out of thirty cases were confirmed using the Pan Bio kit and the rest were clinically suspected cases. The dengue serotype is unknown and appropriate insecticide spraying and health education activities were carried out by the environmental unit. The distribution of all cases were widespread in Tongatapu with 13% occurring in the Western District, 27% in the Central District, 17% in the Eastern District and 23% in Nuku'alofa. The outer islands were not spared with 7% cases in Ha'apai and 10% in Vava'u and 3% with no documented addresses. There were no reported deaths attributed to dengue for the year.

STIs including HIV:

There was one new cases of HIV detected in 2010.This brings the total number of HIV cases in Tonga since the first recorded case in 1987 to 18.This person has since been returned to country of origin and appropriate contact tracing carried out. Currently, no one is on anti-retro viral therapy. (ARVs)

Other STIs seen were mostly Chlamydia and Gonorrhoea. This year the communicable disease unit not only catered to outpatient STI cases but antenatal mothers and their contacts as well. Cases referred were offered counseling in addition to the drug management for both index cases and contacts alike.

Table 5: Curable STIs by Age Group, Gender and Type

Age Group	Gonorrhoea		Chlamydia		Both		Total
	Male	Female	Male	Female	Male	Female	
0-15	0	0	0	0	0	0	0
16-20	22	1	1	30	1	9	64
21-25	20	1	1	58	7	0	87
26-30	9	1	6	31	1	1	49
31-35	8	1	3	15	0	0	27
36-40	2	0	2	3	1	0	8
41-45	0	0	0	1	0	0	1
46-50	0	0	0	0	0	0	0
51-55	1	0	0	0	0	0	1
56+	0	0	0	0	0	0	0
Total	62	4	13	138	10	10	237

Source: Communicable Disease Register/Laboratory Register

Tonga is now able to test for chlamydia in the laboratory at Vaiola Hospital whereas the practice beforehand was to offer presumptive treatment for chlamydia or treat chlamydia using syndromic management. There is also a remarkable increase in the numbers of women seen at this unit for STIs as a result of increasing referral from the ante-natal clinic of positive cases for management. The ante-natal clinic are now routinely screening for chlamydia and gonorrhea in addition to all the other usual bloods taken at pregnancy.

From the above table, 61% of all Chlamydia and gonorrhea infections were amongst females From all cases were tested positive, 56% were cases of Chlamydia, 34% were cases of gonorrhea and 10% were those that had both Chlamydia and gonorrhea co-infection.

The data clearly shows that STIs are more common amongst the young people with 82% of cases occurring in the 16-30 age groups. More health education targeting behavior change amongst the adolescents and young people to reduce risk behavior is needed. Even though HIV numbers in Tonga is considered low compared to other more prevalent countries, however the high numbers of other STI are worrying as STIs can facilitate the acquisition and transmission of HIV.

Other Services:

Table 6: Health Certificates for Shop-keepers, Food handlers, Visa, Employment and Missionary purposes by quarters

Quarter	Shop keeper	Food handler	Visa	Employment	Missionary
1	656	524	80	95	37
2	98	132	72	49	18
3	59	49	70	42	14
4	66	27	52	33	9
Total	879	732	274	219	78

Source: Communicable Disease Register

Health certificates are issued for various reasons such as for shop keepers, food handlers, visa purposes, employment and for missionary duties. From the table above, a total of 4694 health certificates were issued for the year with the majority amongst the shop keepers and food handlers.

7.1.2 Health Promotion:

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

Objectives	Selected Milestones
• To identify at risk persons/groups within Vaiola Hospital and the broader Community;	• **Mini STEPS surveys / Weight reduction competition:** • The Unit conducted a Mini STEPS survey of the staff of the Ministry of Health in February using the WHO protocol to record health profiles and identify at risk individuals to NCDs. As a result a weight reduction competition also started in July. Walks for Health and aerobics exercises were also conducted for the staff to take and lead by example. • **Community Health Promotion:** • The Unit continued to work and co-operate with Salvation Army on addressing healthy initiative at the Kinder-garden health program at Sopu and Kolovai as was the case in the previous years. • For the community at large, talks on healthy lifestyles issues were also provided on topics such as physical activity, alcohol misuse, tobacco control, healthy eating and other health related topics. • The Unit played an important role in the dissemination of information (pamphlets and media) about the national H1N1 immunization programme. • A new program focusing on bicycle usage named "pasikala Nuku'alofa" was included as one of the interventions to promote physical activity for the community. The Unit was heavily involved in starting and driving this programme. Interventions implemented are attached.
• To provide health information and propose strategies to at risk persons/groups.	• **Health Promoting Churches** • WHO has given its full support to running the program through support given from the Working Committee within the Taskforce. The year started with the addressing of the basic initiatives that HPC aimed for and informing of the local churches about the need to give moral support and working hand in hand to tackle the burden of lifestyle diseases and other health problems. The details of this programme and awareness outreach are attached. • **Health Promoting Schools Project:**

Objectives	Selected Milestones
	• We were able to conduct the health behavior WHO / CDC endorsed surveys known as Global Youth Tobacco Survey (GYTS) and Global School Health Survey (GSHS) in August. The surveys answer sheets are currently being analysed by CDC in Atlanta. There were 15 schools in Tongatapu, 4 in Vava'u, 3 in Ha'apai and 2 in 'Eua. • **Health Promoting Workplaces:** • Fiefia Tonga Sports was an ongoing event conducted annually and the Unit has played vital role in assisting to make it happen. It was another successful year with 20 ministries, departments and companies participating. Another milestone was the nomination of Lord Vaea to be the chairman of Fiefia Sports after the sad passing of the former chairman, Lord Kalaniuvalu. • Airport staff and Treasury Department implemented their own healthy programs such as weight reduction and physical activity initiatives. • The joint venture with other sections within the Ministry and JICA for the Ministry of Health 'Fun Day' to mark the friendship that has established by Japanese Volunteer and Government of Japan through building of New Hospital. The much enjoyed 'Fun Day' was held on the 18th of September. • The Unit helped facilitate the first ever meeting if the Ministry's Social Committee.
• To work together with the National NCD subcommittee on Physical Activity, Healthy Eating, Tobacco Control;	• **National NCD and Sub-Committee on Healthy Eating, Physical Activity and Tobacco:** • NCD/HPU actively supported and followed the work of the Sub-Committees. Some of the activities carried out were as follows; • Review workshop on National NCD Strategy workshop in February 2010. Members and stakeholders of NCD Sub Committees participated in the workshop. • One day NCD Strategy workshop on each component with stakeholders to finalize the respective activities prior to finalization of Strategy. • Official launching of the National NCD Strategy to Prevent and Control NCDs in Tonga named the 'HALAFONONGA ki ha TONGA MO'UI LELEI' as one of the major commemorative programmes of World Health Day on the 7th April. • World No Tobacco on 31st May, 2010 themed "Gender and Tobacco Emphasis on Marketing to Women". A symposium set up by the committee to mark the day. Report of overall program is attached. • The Strategic Health Communication workshop on NCD Strategy was conducted in August about planning health communication for Physical Activity, Alcohol Misuse, Tobacco Control and Healthy Eating. • The Sub Committees conducted meetings regarding prioritization and implementation of actions to be carried out. • Fiefia Tonga Sports was an ongoing programme and commenced in September with 20 ministries / departments / companies participating. Games included touch rugby, volleyball and netball. As has been the case for the past few years, the Secretariat of the Pacific Community (SPC) has been the main financial partner. • Tobacco Sub Committee conducted a survey to collect information about compliance of retailer shops with the Tobacco Act. The survey was carried out between September and November. Attached herewith is information about the survey results.
• To collect statistics on risk factors for NCDs;	• **Healthy Promoting Workplace:** • Some workplaces are running their own weight screening assisted by the staff such as Ministry of Finance and National Planning (MoFNP), Airport Services and National Reserve Bank. • MoFNP has completed doing their Mini STEPS survey in looking to have a base line and health profile of their staff. • The GYTS and GSHS surveys on were carried out from September for 24 schools and for students between the ages of 13 – 15. The results will help in planning of appropriate interventions to address issues identified. • **Health Promoting School (HPS):**

Objectives	Selected Milestones
	• The GYTS and GSHS surveys on were carried out from September for 24 schools and for students between the ages of 13 – 15. The results will help in planning of appropriate interventions to address issues identified. • **Confiscation of non compliant cigarettes**: • 305 ½ kg of Tobacco from the warehouse at the Small Industries confiscated.
• To identify and address staff training needs;	• **Local training:** • In-service training on health promotion related topics was conducted every Wednesday Naomi Fakauka and Adelle Purbick. • The cooking demonstration of local and healthy recipes by the staff and MAFFF were conducted every Wednesday. • The staff attended the Strategic Health Communication workshop. • Elizabeth Palu & Palei Vaha'I attended the Documentary Training. • 'Eva Mafi conducted the Health Promotion aspect on the training of Public Health Inspector trainees and Naomi Fakauka for the Nurse trainees. • **Overseas workshops and training:** • 'Eva Mafi attended the training on Global School Health Survey in Auckland, NZ. • **Overseas Fellowship:** • Lesieli Vanisi completed her Diploma in Nutrition from FSM, Fiji. • **Human Resources:** • Aya Fukuda the Japanese Overseas Counterpart Volunteer replaced Nana Nomura in March and she will be here for a period of 2 years. • Adelle Purbick (nutritionist) from the Australia Youth Ambasador for Development (AYAD) completed her one year term in August. Her replacement; Jess Beamie commenced in October for a year. • Recruitment of Vaisiola Havea Tu'ionetoa primarily to focus on HPCP. Luseane Liongitau and Palei Vaha'I recruited as Health Promotion Officer Gr II. Elizabeth Palu was recruited as a graphic designer. • Our colleague Sione Vanisi sadly passed away and has affected our implementation of our Tobacco Control programme as he was the Officer solely responsible for this. He will be sorely missed and will not be forgotten.

Statistical Information

Table 7: Radio Broadcast statistics

No	Broadcast Topic	No. prog's
1	Communicable Diseases (Dengue Fever Outbreak, Typhoid, TB, HIV/AIDS, STI)	20
2	Live Talk Show (Dengue Fever Outbreak, Infant Diarrhea, Rheumatic Fever, Diabetes, Foot Sepsis, Tobacco, Drugs, Alcohol, STI&HIV&AIDS, Climate Change, Hospital Cost & Policy)	10
3	Mental Health (Mental preparation for any disaster, common mental problem)	4
	Total	34

Source: Health Promotion Section

Table 8: Television Broadcast Statistics

No.	Broadcast Topic	No. prog's
1	Communicable Diseases (Dengue Fever Outbreak, Typhoid, TB, HIV/AIDS, STI)	20
2	General Health Promotion (Nutrition, climate change, physical activity, tobacco control, X-mas Greeting)	15
3	Infant Health (Meningitis, Rheumatic Heart, Diarrhea)	2
4	Non Communicable Disease (Diabetes, risk factors)	4
5	Mental Health (Mental preparation for any disaster, common mental problem)	4
	TOTAL	45
	Broadcasting Topic (Advertisement)	
1	Diabetes	4
2	Tobacco awareness on Show the Truth	4
3	N1N1 Pandemic (Swine Flu)	4
4	Oral Health	1
	Total	13

Source: Health Promotion Section

7.1.3 Environmental Health:

Environmental Health Section is responsible for providing environmental health services for the community, upgrade and maintain the village water supply system, oversee and control of hospital waste management.

Objectives	Selected Milestones
• To protect our borders from introduction of Communicable Diseases.	• The public health inspector joined customs clearance team clearing international vessels.
• To ensure good quality and quantity rural water supply is available for the different communities.	• Commenced collaboration with the Tonga Water Board Project funded by WHO.
• To upgrade the knowledge and skills of the staff by providing necessary training opportunities.	• Five public health inspectors training two years training completed on September 2010.
• To respond effectively to natural disasters to mitigate the environmental health impacts.	• Niu Fakakovikaetau and Uatesoni Tu'angalu visited Niutoputapu on October 2010 to re-survey the situation of village related to health impact on natural disaster.
• To ensure proper segregation, collection and disposal of clinical waste.	• Conduction of awareness program to Public Health Inspector staffs on infectious disease during their duties of collecting and disposal of clinical waste.

7.1.4 Community Health:

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.

Objectives	Selected Milestones
• To reduce number of patients referral to Vaiola Hospital.	• Vaini Health Centre and Mu'a Health Centre projects completed.
• To reduce incidence rate of non – communicable disease.	• Follow up diabetic patients from Houma to Vaiola Diabetic Clinic. • Organized and do a screening program throughout Houma District. • Working together with the Health Promotion Team running aerobics and walk for health program in focusing on BMI control.
• To promote the environment cleanliness.	• Conducted village inspection on a monthly basis focusing on safety water supply, environmental cleanliness, home vegetables and etc.
• To develop shared functions between health officer (HO) and public health nurse (PHN)	• The Health Officer and Public Health Nurse have jointly delivered the Home Visit and School Visit services. • Health talks have been done in different areas such as primary school, village meeting, youth group and NCD clinic.
• To include dental services in team approach • To provide in-service training for H/O's to go to remote health centres	• Continued with the five days Dental Clinic a week at Nukunuku Health Centre.

7.1.5 Reproductive Health:

Reproductive Health section is responsible for providing reproductive health care services to women of child bearing age, family planning, immunization services, antenatal and post natal care.

Objectives	Selected Milestones
• To develop skilled and committed staff to meet the evolving roles of the reproductive health nurses. • To improve and upgrade staff performances. • To improve communication, teamwork and cooperation, and reduce conflicts and misunderstanding among health workers. • To provide effective and quality reproductive health services to women of child bearing age. • To promote safe motherhood with continuing lows mortality rates and high coverage levels of all services. • To ensure and monitor good health and normal development among infants and under five years old children through good immunization coverage, good nutrition and good care management of childhood illnesses in the community. • To promote and improve the rate of exclusive breast feeding babies at four months and six months. • To maintain and equip the reproductive health clinics and health centre with necessary services and adequate equipment. • To upgrade public health nurses in public speaking and computer literacy skills. • Conduct regular meetings, liaise with other community programs and conduct regular island visits. • Conduct awareness programs through radio and	• CNO Sr. Sela Paasi in her capacity as the National Immunization Services Coordinator attended JPIPs closing seminar on 11-15th January 2010 in Suva, Fiji. • SNMW 'Onita Sila and SNMW 'Amelia Fusi attended Nurse Practitioner Training in Suva, Fiji. • In her capacity as the National Reproductive Coordinator, Sr. Sela Paasi attended the Regional Training on Procurement, forecasting and logistics of Reproductive and essential Health Commodities on 21st August 2010. • Fifita Fili attended training on Reproductive Health for 3 months in Suva, Fiji. • SPHN 'Ana Vaka'uta is currently studying for her Diploma in Public Health in Suva, Fiji. • Sr. Sele Paasi in her capacity as a National Immunization Services Coordinator attended the Pacific Immunization Strengthening (PIPS) in suva, Fiji on the 25th September 2010. • SPHN 'Ana Taufa, SPHN Sivihiva Latu, PHN Maleta Mata'uvave are studying for Advance Diploma in Midwifery. • SPHS 'Alisi Fifita attended the Child Health Indicators Meeting in July at Apia, Samoa. • In October 2010, RHCS Training for PHNs and

Television. • To assist in developing an occupational health standard for all public health staff.	Pharmacy Staff was held in Nuku'alofa. • In November 2010, Sr. Sela Paasi, Afu Tei, 'Alisi Fifita, Taufa Mone, Sanitima Makaafi, Kafo'atu Tupou, 'Ilaisaane Fahamoekioa attended the South Pacific Nurses Forum in Auckland, New Zealand. • Continued with the supervisory visits to the outer islands.

8 CURATIVE HEALTH SERVICES

8.1 CLINICAL SERVICES

8.1.1 Paediatric Ward:

Paediatric Ward is responsible for providing health care services for children aged 0 to 14 years including special care for premature babies.

Objectives	Selected Milestones
• Provide the best care available for all sick children. • Reduce overall inpatient care fatality to "bare minimum". • Enhance "quality" of child survival in Tonga. • Cultivate an environment that is conducive to continuing medical and nursing education. • Satisfied customers. • Part of the solution to reducing key indicators like infant mortality and perinatal mortality.	• Better Medical Staffing: • Statistical Outcome of Child Health • Continuing medical education. • Continuing perinatal lunch meeting. • High immunization coverage. • Reduction on neonatal sepsis. • Conducted special clinic for disabled children. • Availability of chemotherapy ALL. • Improved Care for Children. • Operation Open Heart (OOH) 2010. • Rheumatic Heart Screening • Improved Infrastructure: • Continuous Supply of Oxygen & Power

Statistical Information:

Paediatric Demographic Data

Paediatric Population

The Paediatric Service provides service to children from age 0 – 14 years; total of 38,831, 38 % of the population of Tonga. They provide inpatients and curative services mainly to the population of Tongatapu, receive referral from other island hospitals and also provide consultation services to any part of Tonga.

In addition we provide preventive, health promotion and research activities which involve both medical and nursing staff not only in Tongatapu but also in the other islands.

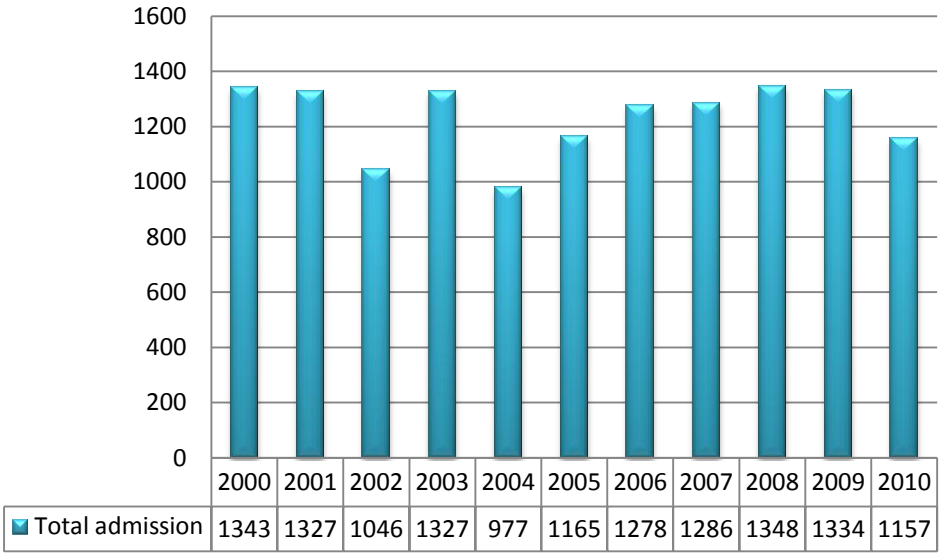
Age and Gender distributions

Age distribution resulted in a wide base graph with children age 14 years old or less consistently composed of around 38% in the last 7 years. The age breakdown of Paediatric population again had remained constant in the last 7 year, similarly to the number of boys and girls per age category.

Paediatric Admissions

Paediatric admission averages about 100 patients per month with 2010 admissions being the highest in the last 10 years with 1157 for the year.

Figure 1: Annual Pediatric Admissions, 2000-2010



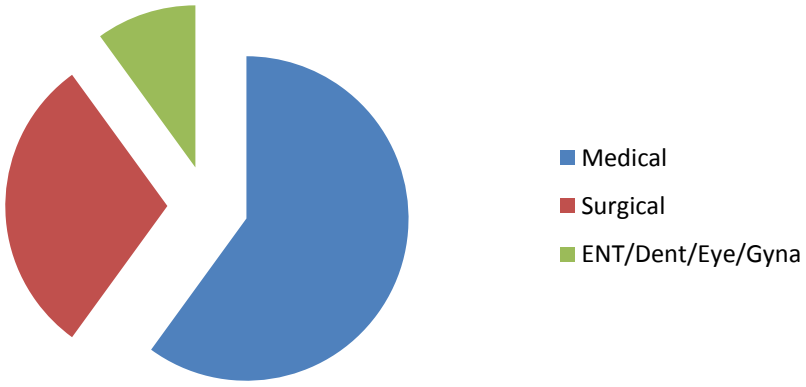
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total admission	1343	1327	1046	1327	977	1165	1278	1286	1348	1334	1157

Source: Paediatric Ward

Admissions by Team

In 2010 medical admissions contributed 60% and surgical admissions being an all time low with only 30% and the remaining 10% are made up to ENT, Dental and Eye Cases.

Figure 2: Admissions by Team, 2010

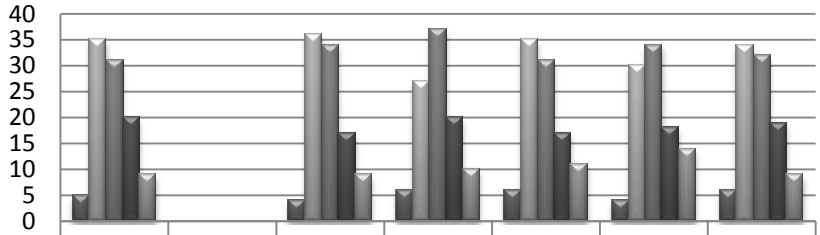


Source: Paediatric Ward

Admissions by age group

Infants always dominate the number of admissions except for 2007 and 2009, there were more under 5 years (>1-<5yrs) than infant children being admitted to the Paediatric ward.

Figure 3: Annual Percentage of total Admissions by age, 2004-2010



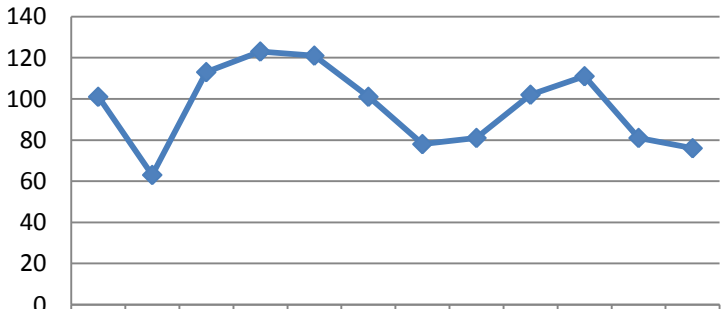
	2004	2005	2006	2007	2008	2009	2010
0-4wks	5		4	6	6	4	6
4wks-1yr	35		36	27	35	30	34
>1yr-<5yrs	31		34	37	31	34	32
5-10yrs	20		17	20	17	18	19
>10yrs	9		9	10	11	14	9

Source: Paediatric Ward

Monthly Admissions 2010

Monthly admissions often reflect special events or epidemics during the year. Peaks in 2010 were in the months of January, which reflected the influx of admissions due to Dengue Fever in the rainy season. In March came an increase in Bronchiolitis cases, perhaps related to seasonal weather changes.

Figure 4: Monthly Admissions 2010



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Total Admissions	101	63	113	123	121	101	78	81	102	111	81	76

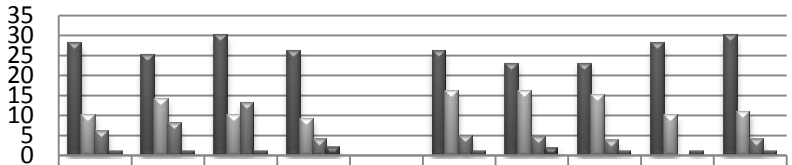
Source: Paediatric Ward

Causes of Admissions

Acute Respiratory Infection (ARI) continued to be the most common cause of admission among the Paediatric population contributing 30% of admissions. Acute Gastroenteritis followed with 12%, a decrease from the previous 3 years with averaged of 10%.

Other causes of admissions for 2010 were mainly surgical. Injuries included fractures, wounds etc. Surgical infections consisted of cellulitis, pyomyositis and infected wounds. There were also 5 cases of septic arthritis and 6 cases of osteomyelitis in the Ward.

Figure 5: Major Causes of Paediatric admissions, 2001-2010



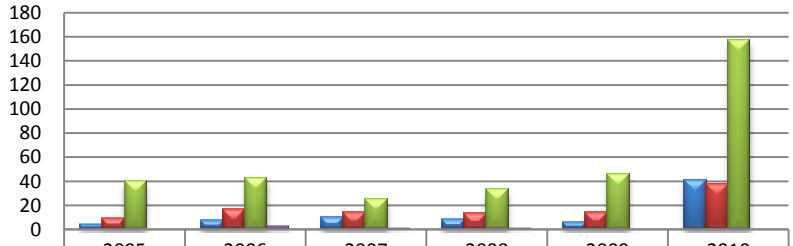
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ARI	28	25	30	26		26	23	23	28	30
AGE	10	14	10	9		16	16	15	10	11
Inv Infec	6	8	13	4		5	4.7	3.6		4
CVD	1	1	1	2		1	1.9	1	1	1

Source: Paediatric Ward

Acute Respiratory Infection (ARI)

Pneumonia followed by Bronchiolitis dominated the causes of ARI compared to previous years. There was an increase in admissions for community acquired pneumonia in the 8 – 12 year old age range.

Figure 6: Breakdown of Respiratory Conditions, 2005-2010



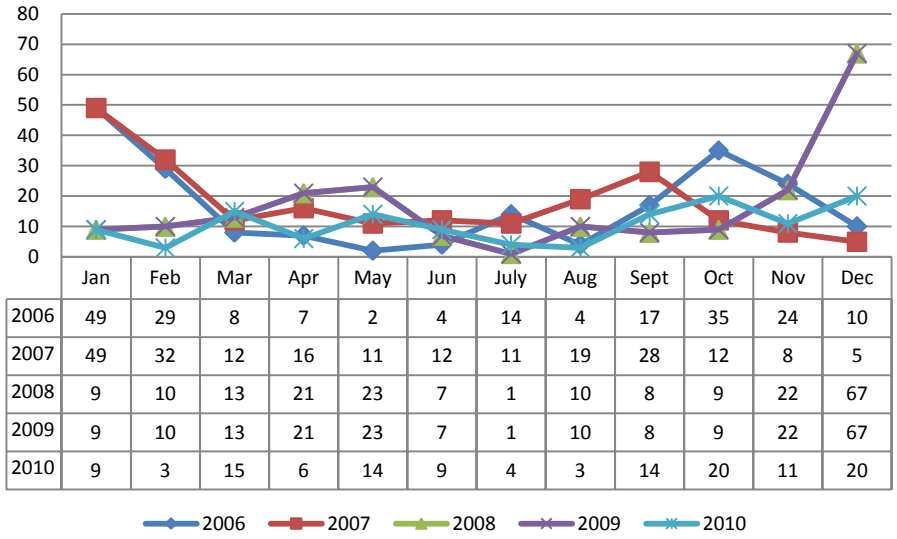
	2005	2006	2007	2008	2009	2010
URTI	4	7.3	10	8	6	41
Asthma	9	16.3	14	13	14	38
Pnmonia	40	42.6	25	33	46	157
CLD	0	2.7	1	1		

Source: Paediatric Ward

Acute gastroenteritis (AGE)

Acute Gastroenteritis contributed 10% to the annual Paediatric admission. It was most common in December with 68 cases which is the highest cases per month in the last 6 years. AGE claimed 4 deaths in the ward.

Figure 7: Gastroenteritis per month, 2006–2010



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2006	49	29	8	7	2	4	14	4	17	35	24	10
2007	49	32	12	16	11	12	11	19	28	12	8	5
2008	9	10	13	21	23	7	1	10	8	9	22	67
2009	9	10	13	21	23	7	1	10	8	9	22	67
2010	9	3	15	6	14	9	4	3	14	20	11	20

Source: Paediatric Ward

Cardiovascular Disease

Congenital and RHDs drain a significant portion of Ministry's budget as most cases require overseas cardiac surgery. Operation Open Heart (OOH) team to Tonga provided their support with 17 patients including 10 paediatric cases were operated with no complications.

Cardiovascular Deaths:

- Although, cardiovascular problems account for a small percentage of admissions it is a major cause of morbidity and mortality.
- Of the total paediatric deaths for 2010, cardiovascular disease accounted for 10% of the deaths. These consisted of 4 deaths; 2 Rheumatic Heart Diseases, 1 Presumed Cardiomyopathy with severe cardiac failure and the last one with a complex congenital heart disease.

Rheumatic Heart Screening:

From 2008 a comprehensive screening program was approved by the Ministry where it is aimed to auscultate every Class 1 and ECHO every class 6 student before they leave Primary School. This provides an aggressive screening program targeting every child in Tonga at Primary School and improves Secondary prophylaxis.

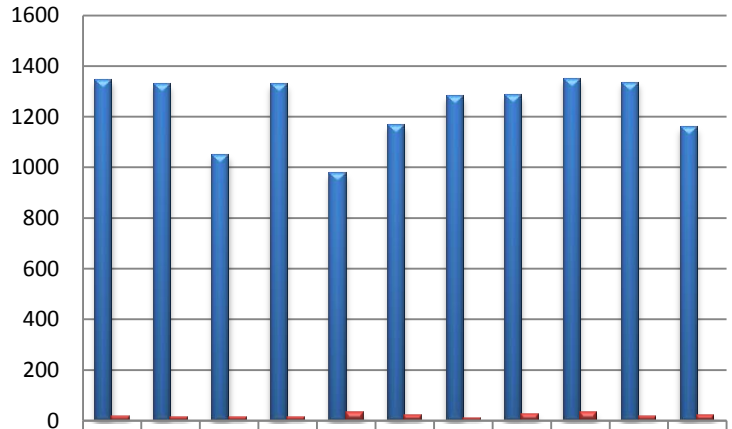
Paediatric Malignancies

In 2010, only one case came through the Ward with some sort of malignancy.

Other Paediatric Conditions:

- Motor Vehicle Accidents resulted in 19 admissions but fortunately no fatalities as compared to 2008 where there 10 admissions due to MVA and one death.
- There were 13 burns cases but again no deaths.
- Interesting cases included 1 new case of Congenital Adrenal Hyperplasia, 1 with Primary Hypoaldosteronism, a 3 year old with Guillain Barre Syndrome and an infant with both Hydrocephalus and Omphalocele who lived until he was 4 months of age. This was the first case in whom a VP shunt procedure was performed locally.

Figure 8: Total admissions and deaths, 2000-2010



	2000	2001	2002	2003	2004	2005	2006	207	2008	2009	2010
Tot Admissions	1343	1327	1046	1327	977	1165	1278	1286	1348	1334	1158
Tot Ward Admissions	16	13	14	14	30	20	10	25	32	15	20

Source: Paediatric Ward

Since 2005 we attempt to record all deaths among children here in Tongatapu as well as the rest of the nation in order to improve validity of child health indicators for the country. Consequently, since 2005 all deaths analysis in the annual report included all deaths inside and outside hospital to determine causes, age at deaths and places of deaths.

Deaths in Tongatapu by age group and Gender

Majority of deaths were under 1 year old followed by the under 5 years old age group. Overall there were fewer deaths in Tongatapu in 2010 compared to the last 2 years.

Causes of Deaths

Infectious diseases had always been the major cause of deaths among Paediatric patients, outweighing all the other causes as shown by Table 10 below.

Table 9: Causes of Deaths among Paediatric patients, 2005-2010

Causes	2005	2006	2007	2008	2009	2010
Infection	15	13	18	18	6	10
Perintal Cause		3				
Congenital	4	1	6	4	2	1
Drown		1				
Surgical	1	1	4	9		
SIDS		2				
Malignancies	1	6	4	5	5	1
Unknown		1	3	2		
Tonga Medicine			3	1		
FTT			3	1		
Cardiac			1	1		
Suicide			2			
Aplastic Anemia				1		
Others					2	3
Total	21	28	44	42	15	15

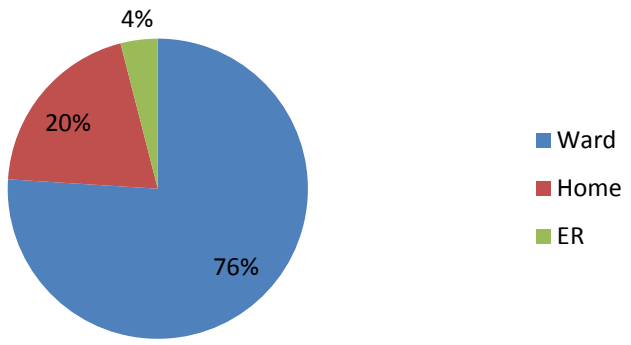
Source: Paediatric Ward

In the year 2010, Infectious accounted for 10 deaths. Sepsis accounted for 2 deaths, respiratory related illnesses resulted in 3 deaths and 1 case was due to Acute Gastroenteritis.

The first ever non-accidental injury (NAI) case that resulted in death occurred in September 2009. Four cardiac cases, 2 RHD, 1 congenital heart disease and the last death was severe cardiac failure secondary to cardiomyopathy. Mortality cases that had surgical input included the NAI case and the infant with Omphalocele/Hydrocephalus for which a VP shunt was inserted and omphalocele repaired locally. Of the 5 malignancies, 2 were under the Surgical Team and 2 MVA cases in ED.

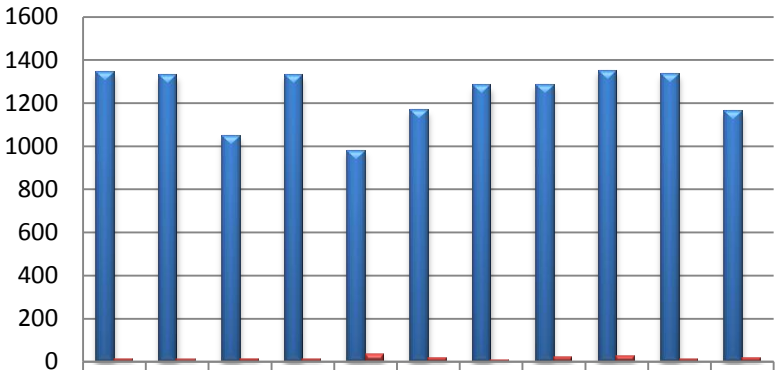
Places of Deaths for Paediatric Population, Tongatapu 2010

Figure 9: Places of Deaths for Paediatric Population, Tongatapu 2010



In 2010, deaths occurred in the ward increased but as for the Emergency Department, deaths declined to less than half of deaths in comparison to last year.

Figure 10: Case Fatalities rate among Paediatric Patients, 2000-2010



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tot Admissions	1343	1327	1046	1327	977	1165	1278	1286	1348	1334	1158
CDR per 1000 admission	12	10	13	11	31	17	8	19	24	11	17

Source: Paediatric Ward

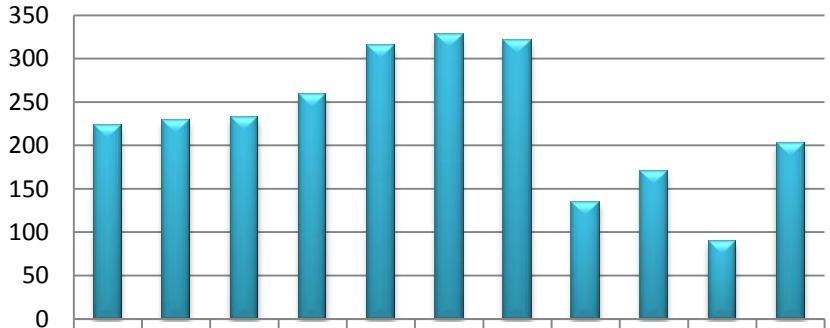
With the 20 deaths that occurred inside the hospital inclusive of both Pediatric and ICU wards; the Case Fatality Rate (CFR) for 2009 Pediatrics Inpatients is 17 per 1000. This is increases the fatality rate in 2009.

8.1.2 Special Care Nursery (SCN)

Special Care Nursery Admission

There were 164 admissions to the Special Care Nursery with 50/50 male and female. There is a significant decrease in number of admissions to SCN since 2005. This is due to the decrease in number of neonatal jaundice cases over the years. Better breastfeeding practice can be attributed to this decline in admission.

Figure 11: Special Care Nursery Admission, 2000-2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Admissions	223	229	232	258	315	328	321	135	170	89	202

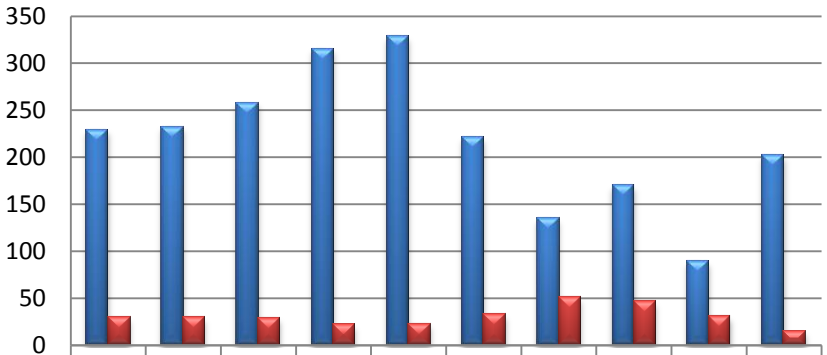
Source: Paediatric Ward

Prematurity:

Prematurity is accountable for about 20% of all SCN admissions per year with babies ranging from 23 weeks to 36 weeks gestational age and birth weight as small as 600 grams. The prevalence of Prematurity is 22 per every 1000 births taking the average for the last 8 years

Low Birth Weights (LBW) babies:

Figure 12: LBW admission to SCN, 2001-2010

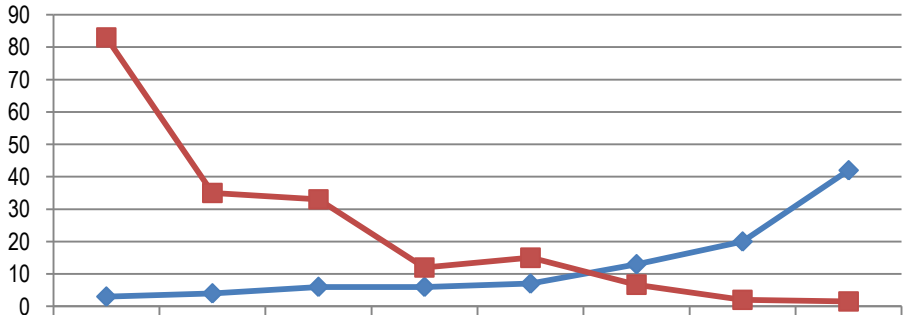


	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Admissions	229	232	258	315	328	221	135	170	89	202
%	30	30	29	22	23	33	51	46	31	15

Source: Paediatric Ward

The third most common cause was Low Birth Weight alone which contributed 20% (32 cases) of admissions compared to 16% (22 cases) last year. There were 72 low birth weights Premature babies accounts for more than half of admission to SCN in 2009. The prevalence rate of LBW at Tongatapu is 3.6% compared to 4% in 2008 and it is estimated to be 2.8% for the whole nation.

Figure 13: Prevalence and Mortality of LBW babies at Vaiola SCN, 2002-2010

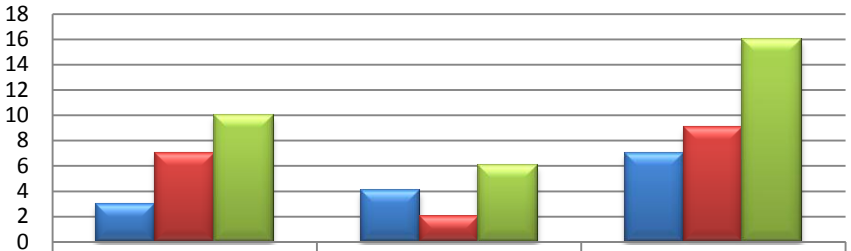


	<1	1<1.2	1.2<1.4	1.4<1.6	1.6<1.8	1.8<2	2<2.2	>2.2
LBW%	3	4	6	6	7	13	20	42
Dths %	83	35	33	12	15	6.7	2	1.5

Source: Paediatric Ward

Case Fatalities in the SCN, 2010:-

Figure 14: Total Deaths at SCN for 2010



	M	F	Total
Term	3	4	7
Preterm	7	2	9
Total	10	6	16

Source: Paediatric Ward

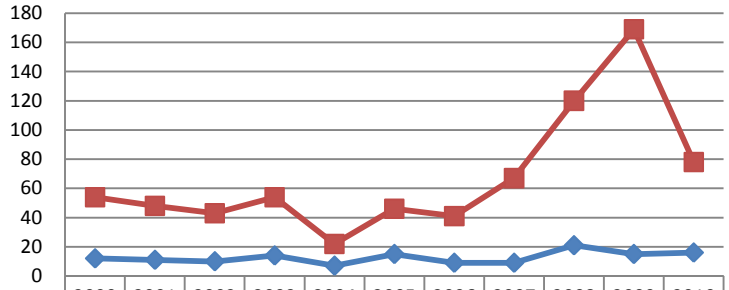
2010 had 16 deaths altogether compared to 15 deaths in the previous year. There were 50/50 male and female deaths for the year 2010.

Prematurity and congenital abnormalities are the two most common causes of deaths in SCN every year. In 2009 however, neonatal sepsis was the second most common cause of death in SCN occurring together with premature cases or in Term babies. In the year 2007 to 2009, prematurity alone caused more than half of the deaths.

Five Term babies died at SCN, 1 from NEC, 1 from gastroschisis that was beyond operable, 1 with a complex congenital cardiac condition, 1 neonatal sepsis and 1 pneumomediastinum.

Case Fatality among SCN patients, Vaiola 2000/10

Figure 15: Case Fatality rate in Vaiola SCN, 2000-2010



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Death	12	11	10	14	7	15	9	9	21	15	16
CFR per 1000 SCN Admissions	54	48	43	54	22	46	41	67	120	169	78

Source: Paediatric Ward

PERINATAL, INFANT & U5 MORTALITY RATE, 2009

Lots of efforts were made to identify all deaths in the Kingdom both in hospitals and communities from all sources (health information, Paediatric Services and Reproductive Health) in order to work out the most accurate Child Health indicators. Therefore, figures found for the whole Kingdom were as follow:-

- Total SB after 28 weeks 20
- Total ENND 16 PNMR = 13.5
- Total NND 27 NNMR = 10.4
- Total U5 Deaths 58 U5MR = 22.4

8.1.3 Surgical Ward:

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

Objectives	Selected Milestones
• Delivering quality surgical services to our population with the best possible outcomes within the Ministry of Health's available resources at all times. • Provide safe, efficient, effective and timely pre-operative services for those undergoing surgery for patients above the age of 12 (in the Surgical Ward) and under the age of 12 (in the Paediatric Ward)	• Two full time general surgeons for most of the year and one part time. • Teams visited the surgical ward: • Two full time general surgeons for most of the year and one part time. • Teams visited the surgical ward: • Dr. Geremy Gummet and the Urology Team • Dr.Reese and the Plastic Team • Dr.Andrew and the Club Foot Surgery Team
• Delivering services with respect for the patient's wishes, providing explanation about their condition and their treatment, and ensuring that informed consent is obtained.	• Special effort made these issues, with more to be done, including patient rights to confidentiality.
• Ensuring that most surgical patients are provided with health education.	• We are trying with the Diabetic Clinic staff to implement regular health education talks in the ward.
• Valuing surgical staff sense of pride and commitment through ongoing training, flexibility and innovative practice in all levels of services.	• Some lectures given by doctors to the nuring staff and regular section meetings held every Friday morning.
• Practicing good communication skills through revising staff job descriptions according to each staff roles and responsibilities.	• Section meetings held weekly, staff meetings monthly.
• Ensuring full surgical patient care by providing ongoing Special Outpatient Clinics.	• Two (sometimes 3) clinics a week conducted throughout the year.

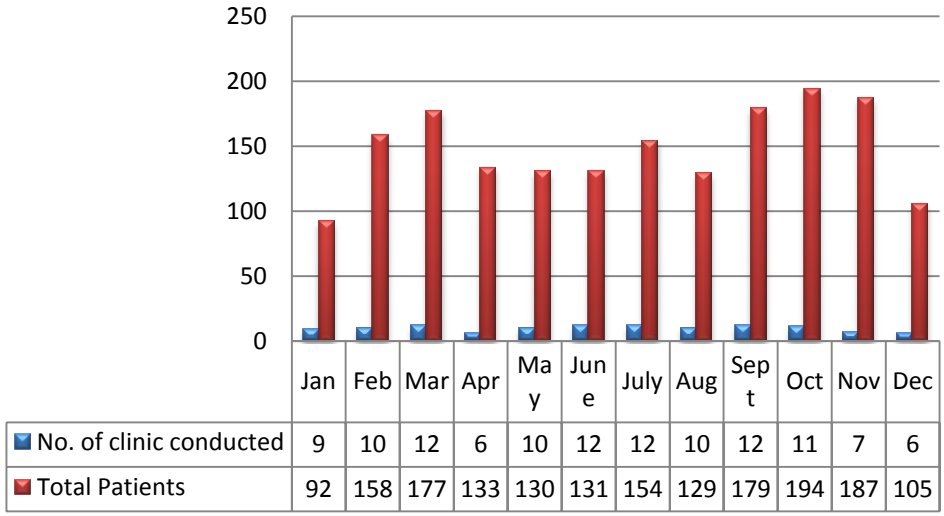
Specialist visits provide surgical services not normally performed in Tonga. It is important to stress the value of these visits for patients who, under normal circumstances would have required expensive transfers overseas and were instead evaluated and/ or operated on in Tonga close to family and friends.

Statistical Information:

Table 10: Surgical Outpatient Clinic Consultations by month, 2010 (old and new cases)

Month	Number of Clinics Conducted	Total Outpatients seen
January	9	92
February	10	158
March	12	177
April	6	133
May	10	130
June	12	131
July	12	154
August	10	129
September	12	179
October	11	194
November	7	187
December	6	105
Total	117	1769
Average/Month	10	147
Average Patient/clinic	15	

Figure 16: Surgical Outpatient Clinic Consultations by month, 2010 (old and new cases)



Source: Surgical Ward

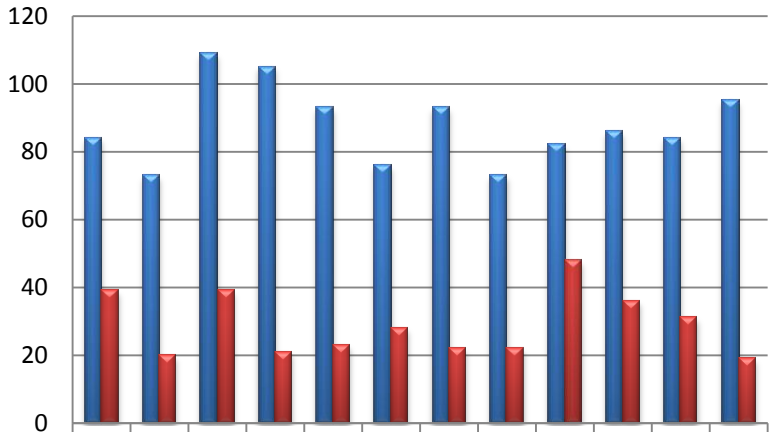
There were 125 surgical clinics conducted in 2010 with an average of 10 clinics and 147 patients per month. This equate to an average of 15 patients per clinic.

15% more patients were seen at the surgical clinic in 2010, an increase from the 1,498 in 2009.

Table 11: Surgical admissions by month, 2010

	Diabetic Related Admission	MVA	Acute Abdominal Pain	Trauma	Others	Surgical Ward General Surgery Admission	Surgical Admission Paediatric Ward
January	14	1	26	17	26	84	39
February	8	3	14	19	29	73	20
March	22	2	23	11	51	109	39
April	21	5	29	18	32	105	21
May	6	2	25	23	36	93	23
June	4	0	25	15	32	76	28
July	17	0	25	17	34	93	22
August	11	1	30	18	13	73	22
September	7	1	16	16	42	82	48
October	14	0	20	18	34	86	36
November	16	0	24	16	28	84	31
December	19	0	28	34	14	95	19
Total	159	15	285	222	371	1053	348

Figure 17: Surgical Admissions by month, 2010



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
General Surgical Admissions	84	73	109	105	93	76	93	73	82	86	84	95
Paediatric	39	20	39	21	23	28	22	22	48	36	31	19

Source: Surgical Ward

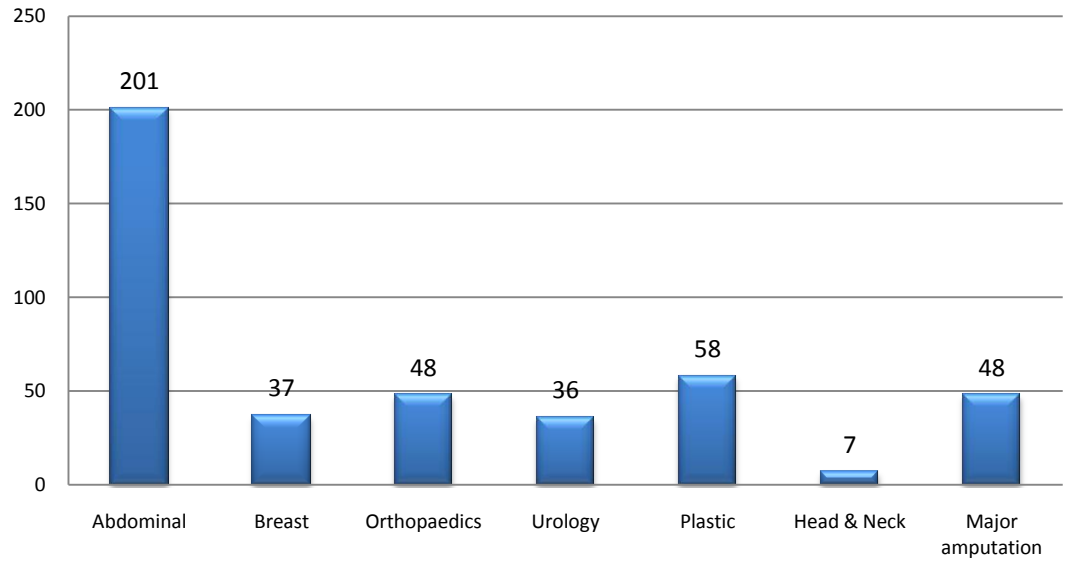
The admission statistics below does not include patients admitted to the surgical ward for gynecology, ENT or maxillofacial problems that are looked after by different teams. There has been a 5% increase in the total number of 1401 surgical admissions compared with the 1332 surgical admissions reported in 2009.

- Major Surgery is surgery that requires surgical expertise, justifying the need for a trained surgeon. This category includes any surgical operation from and above the scale of a hernia repair.

- Abdominal: any major intra-abdominal procedure, open or laparoscopic, hernias excluded
- Orthopaedics: open reductions and internal fixations, external fixations, tendon and nerve repairs, sequestrectomies for chronic osteomyelitis.
- Hernias: of any kind (inguinal, femoral, incisional)
- Breast: breast lump excisions, mastectomies (not breast abscess or simple biopsies).
- Amputations: major amputations only (not fingers, toes or forefoot amputations).
- : Minor amputation (toe, finger and forefoot)
- Urology: prostatectomies, nephrectomies, vesicolithotomies, cure of hydrocele, scrotal explorations, and operations on kidney or uretuer (not circumcisions).
- Head-neck: burr-holes, craniectomies, thyroidectomies, thyroglossal cysts, etc.
- Minor Surgery – any surgical operation below the scale of a hernia repair, done under local or general anesthesia:
- : This includes manipulation under anesthesia, Plaster of Paris cast for fractures, skeletal traction.
- : Debridement of wound, diabetic ulcers or burns, compound fractures, sutures of minor wounds.

  : Excision of small lumps, skin graft, incision and drainage of abscess, circumcision.

Figure 18: Major Surgery per Category of Surgery, 2010



Source: Surgical Ward

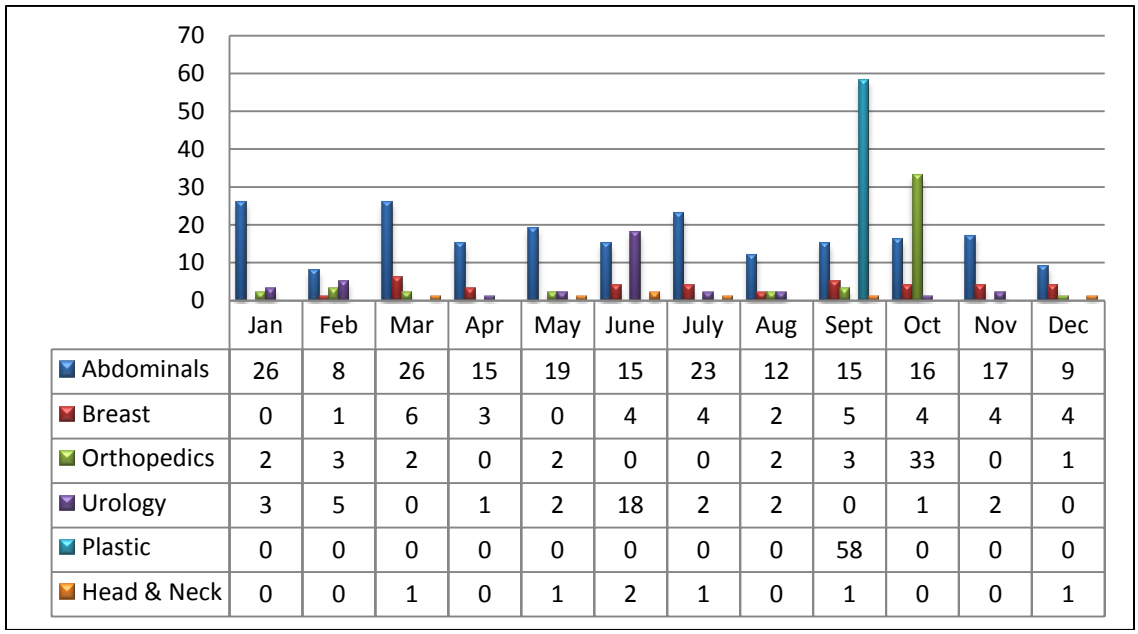
Major Emergency Surgery

Major Emergency Surgery is performed to save a life or a limb or to prevent severe disability or complication; it is a good indicator of the health impact of surgical activities. With 435 cases, it accounted for 46% of major surgery in 2010. The most common major emergency was abdominal; 201 cases a year (46% of all major emergencies), including appendicectomies and laparotomies (peritonitis, intestinal obstruction or trauma). Second most common (48 cases) was orthopaedics and amputation in diabetic patients.

Table 12: Surgery by month, 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
AbdominalsAppendicectomy	3	1	3	2	5	5	5	2	7	4	5	3	45
Hernia Repair	15	6	9	8	6	5	14	9	6	3	10	4	95
Orchiopexy	5	1	10	4	4	5	2	1	2	8	0	1	43
Cholecystectomy	0	0	4	0	0	0	0	0	0	1	1	0	6
	3	0	0	1	4	0	2	0	0	0	1	1	12
Breast Mastectomy	0	0	2	2	0	0	0	0	2	1	1	1	10
Lumpectomy	0	1	4	1	0	4	4	2	3	2	3	3	27
Orthopedics	2	3	2	0	2	0	0	2	3	33	0	1	48
Urology	3	5	0	1	2	18	2	2	0	1	2	0	36
Plastic	0	0	0	0	0	0	0	0	58	0	0	0	58
Head& Neck	0	0	1	0	1	2	1	0	1	0	0	1	7
Diabetic Major amputation	5	1	2	7	3	0	0	4	9	7	6	4	48
Diabetic Minor amputation	6	3	12	5	8	4	5	12	8	9	11	6	89
Minor surgery	105	55	77	62	63	48	75	69	72	69	77	104	87
Total	147	76	126	93	98	91	110	103	171	139	117	129	14

Figure 19: Surgery by month, 2010



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Abdominals	26	8	26	15	19	15	23	12	15	16	17	9
Breast	0	1	6	3	0	4	4	2	5	4	4	4
Orthopedics	2	3	2	0	2	0	0	2	3	33	0	1
Urology	3	5	0	1	2	18	2	2	0	1	2	0
Plastic	0	0	0	0	0	0	0	0	58	0	0	0
Head & Neck	0	0	1	0	1	2	1	0	1	0	0	1

Source: Surgical Ward

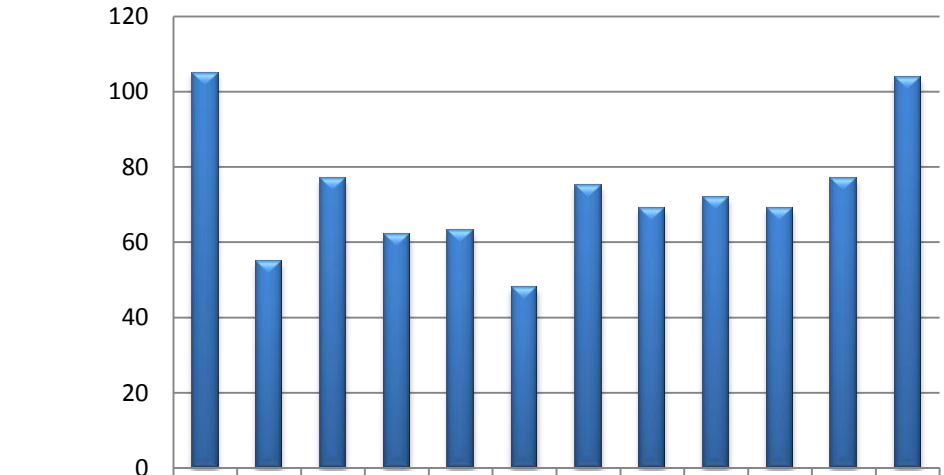
159 admissions (15% of surgical admissions) were for diabetic related complications of diabetes mellitus. This figure, increases from 2009 (130 diabetic – related diabetic admissions or 2%) does really reflect the work load related to those patients, who spend a long time in the ward and require many dressings and surgical procedures.

In 2010, 46 patients underwent 48 major (below or above-knee) amputations. 44 of them (95%) were suffering from diabetic sepsis. The other two were post traumatic, 1 MVA, 1 compound fracture secondary to a fall. (Psychiatric patient underwent BKA on one limb and BKA of the other limp one month later for severe bed sore.)

Major amputations for diabetics have been classified as 'emergencies' although most of them are 'semi-emergencies', not immediately life-threatening, but not elective procedures either. 43 diabetic patients underwent 45 major amputations (2 below – knee amputations were converted to above – knee, one patient had a below – knee amputation on one side, then an above – knee amputation on the opposite side).

Minor Surgery

Figure 20: Minor Surgery by month, 2010



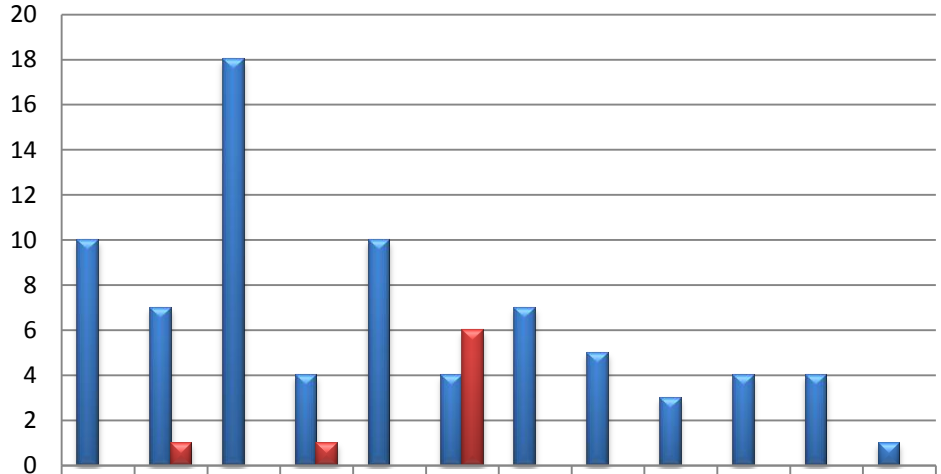
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Minor Surgery	105	55	77	62	63	48	75	69	72	69	77	104

Source: Surgical Ward

Definition for minor surgery is any surgical operation below the scale of a hernia repair, done under local or general anaesthesia, Includes manipulation under anaesthesia and Plaster of Paris cast for fractures, skeletal traction, debridement of wounds, diabetic ulcers or burns (except major wounds and compound fractures), suture of minor wounds, excision of small lumps, skin grafts, incision and drainage of abscess, circumcisions, toes, fingers and fore-foot amputations.

Most of the minor surgery is performed by the registrar and the interns.

Figure 21: Endoscopic Procedures (rigid sigmoidoscopies, upper gastrointestinal endoscopies, cystoscopies, arthroscopies)



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Gastroscopy	10	7	18	4	10	4	7	5	3	4	4	1
Cytoscopy	0	1	0	1	0	6	0	0	0	0	0	0

Source: Surgical Ward

To account for possible variations in case definition, especially since 2007, we have put together major surgeries (435) and minor surgeries (965) which are a total of 1400 procedures for 2010. This compares with 1355 in 2009 and 1492 in 2008.

Table 13: Audit of Outcome: 2010 Surgical Mortality

Month	Surgical deaths	ICU Admissions	ICU Deaths
Jan	2	-	-
Feb	-	2	-
Mar	2	3	1
Apr	-	1	-
May	-	4	-
Jun	-	4	2
Jul	2	1	-
Aug	-	2	1
Sep	2	1	-
Oct	2	3	1
Nov	-	6	1
Dec	1	-	-
Total	11	21	6

Source: Surgical Ward

Surgical deaths are defined as deaths occurring in the surgical and paediatric ward and ICU of patients admitted under the surgical department, whatever the cause of admission and the cause of death and regardless of whether surgery was performed.

Intra and post – operative deaths include all hospital deaths occurring within 30 days of a surgical operation, whatever the cause of death; patients who died postoperatively in the Intensive Care Unit are included; the 17 surgical deaths are a 23% drop on 2009 (22 deaths).

The most common causes of surgical deaths have been:

- Diabetic related – 4
- Trauma related – 4
- Cancer related – 5

Operative mortality:

- Overall operative mortality rate (4 operative deaths/435 major operations)1%
- Emergency surgical mortality – 2.6%
- Elective surgery mortality – 0%

Of the 4 patients who died following a surgical operation:

- 2 died after an emergency laparatomy: 1 for perforated meckel's diverticulum, 1 for severe ulcerative colitis with multiple bowel perforations.
- 2 died after an elective surgery, 1 for Tracheal esophageal fistula post-op complications and 1 for pyelo-lithotomy with chronic renal failure.

The emergency surgery mortality may reflect the quality of the global surgical care, the quality of the Intensive Care or the severity of the cases.

Elective surgery has been remarkably safe in 2010, reflecting perhaps the level of patient selection and the safety of anesthesia and preoperative cares.

8.1.4 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).

Objectives	Selected Milestones
• To teach medical staff the ethical standard of integrity and professionalism viewed as the traditional hallmarks of the physician.	• Dr. Sione Latu returned from his cardiology attachment in New Zealand.
• To emphasize the principles of evidence-based medical treatment, discussed in the context of cost effective, outcomes oriented care.	•
• To provide ongoing educational opportunities of the highest caliber to practitioners.	• Staff improvements for there were 2 consultants, 2 registrars and an intern.
• To review and develop programs that will answer the needs of health care reform and better train medical staff in the environments of the future.	•

• To adhere to the Standard Treatment Guidelines as Treatment Protocols for management of internal medicine cases. • To reduce morbidity and mortality related to NCDs and related complicated through a concerted primary care approach and risk factor management on a secondary prevention level. • To send another RMO for postgraduate training at the Masters level and another at the Fellowship level.	• Addition of extra office for other clinicians in addition to the Head of Unit Office for the physician specialist. •

Statistical Information:

Outpatient Services

The five Medical Outpatient Clinics operated out of Vaiola Hospital, continued as usual with the Echo Lab (with HP Echocardiography machine in Radiology Department for both out and inpatient cases and the Cypress Acuson portable machine in the ward mainly for inpatient cases) that was set-up by anesthetist, Dr R. Ama and also the Home Visit Clinic. Dr. Sione Latu later returned in September and all echo cases were done in the ward through direct referrals or to the Medical Outpatient Clinics for initial assessment and screening. This was boosted by the arrival of the donated second-hand Acuson machine from Australia. The portable Cypress machine was used with increasing frequency by the Primary School RHD/ARF Screening Team.

Upon the return of Dr. Sione Latu, the upper GI endoscopies previously handled by the General Surgery were returned to the General Medical for our patients there. Due to technical difficulties and deficiencies, no bronchoscope cases were done although there are a multitude of cases that would certainly benefit from this diagnostic aid.

Mr. Simi Lolohea, surgeon from Dunedin, New Zealand, is planning on setting up a colonoscopy service locally and was looking into improving the local capacity of nurses and the endoscopists. There is a plan to donate a flexible colonoscopy and he would visit again in early 2011 to undertake an endoscopy clinic.

IT through HIS introduced electronic patient data/clinical information registry for outpatient clinics and this proved very useful for easy information access and retrieval especially in the context of our very unreliable Medical Records Department. Better coordination and streamlining of the clinics is achieved through electronic monitoring and booking of clinic appointments.

The Clinics continue to be congested as we have not done a proper clinical audit and statistical review of the clinics as we look to decentralize the service especially for very stable patients who unnecessarily take up the valuable time of clinician.

There is a plan for an AusAID funded by NCD/Community Care Project to start early in 2011 that will hopefully address this. It will coincide with the opening of the Mu'a and Vaini Clinics funded by the China Government manned by medical officers and should offload some of these outpatient clinics. It will also look to improve clinical capability of health officers and modeled on the current Diabetes Community Clinics to cater for this type of stable chronic medical patients.

We now have a Community Care MO under the auspice of Public Health and there should be stronger collaboration to enhance her role in delivering both primary and secondary services at the community level.

Table 14: Medical Ward Outpatients Clinics

Days	AM	PM
Monday	Endoscopy/Bronchoscopy	Echo
Tuesday	General	Cardiac (INR)
Wednesday	Endoscopy/Bronchoscopy	Chest- Vaiola General- Mu'a/Kolovai Echo
Thursday	Cardiac	Hypertension
Friday		

Source: Medical Ward Registration

Medical Ward Inpatient Services

The total admissions to Medical Ward for 2010, was 1,317 with an average of 100 admissions per month. The average occupancy rate was just under 50% with an average duration of stay of 4.5 days. Although it can be seen that the beds are underutilized, this is best appropriate for the level of nursing staffing allocation given to general medicine as we are seeing an ever increasing transfer rate from the Surgical/ Gynecology/ ENT Ward as there are both logistical and technical problems related to this.

Table 15: Number of Monthly admission to Medical Ward 2010

Month	AD	T/I	T/O	DEA
January	106	7	3	13
February	97	4	7	7
March	123	2	7	14
April	118	-	-	4
May	133	15	3	12
June	95	4	7	8
July	127	9	3	9
August	83	2	4	7
September	101	8	3	8
October	114	1	1	7
November	114	19	8	12
December	106	7	3	9
Total	1,317	-	-	110

Source: Medical Ward Registration

KEY:
AD – Admission patients
T/I – Transfer in
DISC – Discharge patients
T/O – Transfer out
DEA – Death

Majority of the admissions were sepsis related with respiratory which is pneumonia focus foremost followed by unknown focus, GI and then GU. Sepsis was followed closely by NCDs and related complications like unstable

diabetes, hypertension, heart failure and stroke. Diabetes accounted for sepsis cases was 60%.

Malignancies and chronic kidney related to diabetes is ever increasing and accounts for about 40% of deaths. At the moment we are not offering renal replacement therapy such as dialysis options for CKDs due to costs involved and the emphasis is more focused on primary and secondary levels in line with our National NCDs Strategies as these are more cost-effective in the long-term and are within the budgetary constraints. The crude mortality rate was around 8%.

We still have diagnostic difficulties and deficiencies partly as a reflection of our laboratory service and partly due to the largely palliative intent we have due to limited oncology service that is being provided. This is due to a mixture of late presentation with often metastatic disease on first presentation and general exclusion of these patients for overseas referral for further treatment modalities like chemotherapy and/or radiotherapy.

For better resource allocation we must exhibit due diligence with our OPD assessment so that only those requiring admission are processed likewise. This minimizes time wastage of everyone and including very small and finite resources. Efforts should be made to improve the clinical capacity and capability of OPD for better admission triaging.

8.1.5 Obstetrics and Gynecology Ward:

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

Objectives	Selected Milestones
• Staff Training and Development: • Postgraduate training for career doctors in Diploma in Obstetrics and Gynecology as required. • Local midwifery training course to cater for the needs of the whole health service.	• Continuing Education was carried out throughout the year : • Perinatal Meeting held in a fortnightly basis. • Continued with the ward's monthly meeting. • Doctor's lunch hour meeting continued every Wednesday.
• Improved facilities and equipments: • Obtain mobile ultrasound machine for emergency use in the Obstetric Ward.	• STI Screening of pregnant women including HIV, RPR, Chlamydia and Gonorrhea (Antenatal STI Surveillance) included the outer islands in September.
• Provide good quality service: • Introduce Antenatal STI Surveillance in Vaiola Hospital.	• Routine OGTT Screening of pregnant mothers with high risk factors for Diabetes is still continued with diagnosis of GDM and its proper care.
• Increased Public Awareness/Safe Motherhood Package: • Information leaflets and media production.	• According to Annual Management Plan for the year 2010. Budget Performance Measures have been achieved but further improvement is still required. • Maternal Mortality Ratio < 78 per 100,000 live births • Perinatal Mortality Rate < 15 per 1,000 live births.
• GYNECOLOGY • Improved Gynecological Services: • Pep Smear Screening for Cervical Cancer in Gynecology outpatient clinic.	• Dr. Ma'ake Tupou completed his 12months attachment from Australia.
• Increased staff skills: • Clinical attachment of nursing staff to an overseas hospital.	• Dr. 'Ela Fakauka is still on his training for his Masters in Obstetrics and Gynecology in Fiji (2nd year).
• Increased awareness of Gynecological Issues in the community: • Information leaflets and media production.	• Midwifery Training Programme commenced and it is anticipated to be completed October 2011. • UNFPA approved funding medical equipments for the Ward.

	• The Antenatal Charts have been reviewed by the Ministry of Health Staff and approved for printing and distribution.

8.1.6 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.

Objectives	Selected Milestones
• To ensure the continuity of skilled and committed staff. • To promote knowledge in Mental Health and Dissolve Misconceptions, Stigmatization, Ignorance and Discriminations. • To develop network among stakeholders. • To improve the quality follow-up of psychiatric patients, for example, the establishment of a HALF-WAY HOUSE, is a need indeed. • To develop mental health services in outer-islands. A strong room for Ngu and Niu'ui Hospitals. Also a Mental Health Welfare Officer for Vava'u. • To implement legislation especially the provisions of the current Mental Health Act No. 8, 2001 and the formulation of a Mental Health Plaicy, Plans and Programme. • To improve the Interdisciplinary Management of Psychiatric In-Patients. • To purchase appropriate equipment for Management of Psychiatric In-Patients. • To establish a Non-Governmental community Based Mental Health foundation to provide Mental Health Promotion and Primary Prevention for the Public. • To work closely with Hu'atolitoli Prison thorugh the Hospital in Hu'atolitoli by providing appropriate patients care to forensic cases.	• Psychiatric Social Worker, Mrs. Mele Lupe Fohe attended the Pacific Mental Association Annual Conference in Rarotonga, where she presented an excellent report about Mental Health in Tonga. • As always, the Psychiatric Unit is continued to be blessed with donations of food and goods from the public during the festive season particularly the patients of the Unit. The "Toakase" (Seventh Day Adventist Women's Group), Fekau'aki 'A Fefine (Catholic Womens Group), Salvation Army, Digicel Tonga and the annual Fofo'anga Christmas party and of course Mr and Mrs Luna Mafi of the Malapo Quarry are an annual event that our patients look forward to. • This is the 5th year in a row that the component of Mental Health has been incorporated into the Sia'atoutai Theological College curriculum. • Establishment of the Tonga Health and Disabilities donations as the first NGO in Tonga specifically for Mental Health. • Mental Health Consultancy on a regional level in the Republic of Nauru for the Authorized Psychiatrist. • Dr. Yang Yanping, a Chinese Psychiatrist, now works in the Psychiatric Unit for 2 years contract under the Republic of China Aid. • The Accomplishment of Psychiatric Unit Plantation to supplement the food for the Psychiatric inpatients and the same time to provide occupational therapied for inpatients. • Active Individuals in the community who are now providing Advocacy for the psychiatric patients and the psychiatric service.

8.1.7 Anaesthesia and ICU:

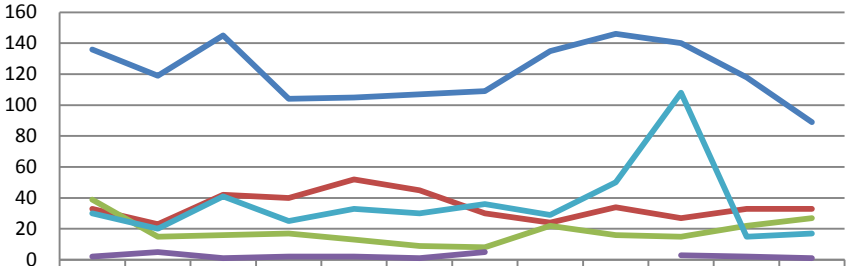
Anaesthesia and ICU is responsible for providing anaesthetic services including managing of Intensive Care Unit.

Objectives	Selected Milestones
• To ensure a continuous level of high standard of anaesthetic services. • To assist as much as possible with	• Overseas operating teams visited Vaiola Hospital during the year. • Dr. Bernard Tu'inukuafe attended a one week seminar of the Pacific Society of Anaesthetists held in Labasa, Fiji in late September.

intensive care management. • Be involved in the continuing education and training of ICU and anaesthetic staff. • Maintain a high quality level of equipments drugs and facilities.	• Dr. Ma'ata Sikalu contracted for 14 weeks funded by the Tonga Health System Support Program. • Dr. Selesia Fifita awarded with a 3 years AusAID scholarship to do her Masters in Anesthesia. • Mr. 'Asipeli Mafi awarded with a WHO Fellowship to do a Diploma in Anesthesia in Papua New Guinea.

Statistical Information:

Figure 22: Monthly distribution of Anaesthesia by types, 2010



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
GA	136	119	145	104	105	107	109	135	146	140	118	89
Spinal	33	23	42	40	52	45	30	24	34	27	33	33
A/ Block	39	15	16	17	13	9	8	22	16	15	22	27
Sedation	2	5	1	2	2	1	5			3	2	1
Local	30	20	41	25	33	30	36	29	50	108	15	17

Source: Anaesthesia & ICU Registration

8.1.8 National Centre for Diabetes and Cardiovascular Diseases:

National Centre for Diabetes and Cardiovascular diseases is responsible for delivering health services and outreach programme for all inpatients and outpatients patients suffering from diabetes and/or cardiovascular diseases.

Objectives	Selected Milestones
• To develop and implement integrated strategies for the prevention of diabetes and CVD with emphasis on primary prevention and promotion of healthy lifestyles through participation and membership in the National NCD Committee and the Healthy Eating Sub-committee. • To increase community-based prevention and control of CVD and Diabetes Such as Health centre clinics and World Bank community diabetes care and Management project. • To strengthen the management of CVD and diabetes and their complications (Tertiary prevention).	• **Capacity and Team Building:** Training for the NCD Team (Diabetes Centre), Eye Unit and Health Promotion Unit were conducted on 12 to 14th January using the IDF Diabetes Education Modules. • **Attendance of conference and workshop:** • The staff joined the workshop to review and develop the NCD Strategy 2010 – 2015, held in February, 16-17th. • Attendance at the second Pacific Non-Communicable Disease Forum, 21-23rd June. This was organized by WHO and SPC as part of their joint approach to NCD and representatives fro the 22 Pacific Island countries and territories and organizations were called to attend. • **Objectives of the meeting were:** • To provide the latest updates on evidence based practice in integrated, non-communicable disease prevention and control. • To discuss and share progress in implementation of the 2-1-22

Objectives	Selected Milestones
• To participate and support the establishment of National policies for the integrated prevention and control of diabetes and CVD. • To develop and update a National Diabetes Treatment Guideline for in Tonga. The Diabetes Centre currently adopts the Global Guideline developed by the International Diabetes Federation. • To establish and strengthen appropriate epidemiological surveillance and Monitoring of CVD and Diabetes and their risk factors. • To further strengthen the development of human resources research for the Prevention and control of diabetes and CVD.	Pacific NCD Programme at National and Regional Level. • To build capacity in monitoring and evaluating of NCD interventions. • To provide an opportunity for network building, information sharing and collaboration within Pacific Island countries and territories. • The team from Tonga presented the characteristics of the Heilala flower as representation of NCD work planned and implemented in Tonga. The selling products from Tonga were: • The newly launched NCD Strategy, 2010 – 2015 – Tonga being the first to launch the second NCD Strategy. • TongaHealth and its progress. • Nutrition education package. • 'Elisiva Na'ati and Iemaima Havea, CEO TongaHealth were the representatives from Tonga. • Combined Annual Duty visit by the Diabetes and Eye team to the island hospitals 26th – 30th July. This was funded by the WDF project. • Staff participated in the Strategic Health Communications workshop, facilitated by WHO, August, 16 – 20th. • Sr. Seilini Soakai was selected by the Nursing Division to join a workshop on Hospital Administration and Health Services Management in Tokyo, Japan, 19th August – 26th September. • The staff co-joined in the organization of the first Friendship and Fun Sports Day for the Ministry of Health and the volunteers from Japan as well as the Japanese Embassy which was held at the Vaiola Hospital ground on Saturday, 18th September.

Statistical Information:

Table 16: Attendance at the National Diabetes Centre, 2010

Month	Clinic	Rebook	Dental	Screen	New Cases		HbA1c	GTT	GDM
					IFG	DM			
Jan	344	35	18	41	8	3	38	67	7
Feb	679	43	21	46	6	17	137	57	6
Mar	597	44	27	41	5	12	52	45	3
Apr	593	41	11	375	5	9	84	47	4
May	680	50	8	45	7	7	69	57	6
Jun	611	35	14	49	5	14	94	38	6
Jul	404	55	12	21	1	8	60	50	6
Aug	184	44	16	43	6	11	69	37	5
Sep	736	36	14	29	9	9	29	46	12
Oct	686	36	16	36	5	12	61	69	9
Nov	580	28	21	42	14	14	61	42	16
Dec	454	20	18	23	5	9	0	54	10
Total	6548	467	196	438	76	125	754	609	90

Source: National Diabetes Centre, 2010

- The total register at the Diabetes Centre: 4,007
- Number of known deaths in people with diabetes in 2010: 59

Clinic consultation

Clinic consultations are conducted on Monday through to Thursday mornings with number of patients seen ranging from 30 to 50 per day. Dr. Vivili is at the Diabetes Centre on Tuesday, Wednesday and Thursday mornings to assist Dr. Palu with the consultations. When both doctors are away, the staff will carry out the clinic as scheduled.

Fewer patients are scheduled for Tuesday and Thursday clinics so that some of the staff are available for the community outreach programs including home visits and health centre visits.

Due to the increasing number of diabetic population, restricting the number of patients to 25 to 30 would mean that some of the patients will be seen in 4 to 6 months. Adding to the booking are those that need to be reviewed early after being discharged from the wards or referred from other clinics.

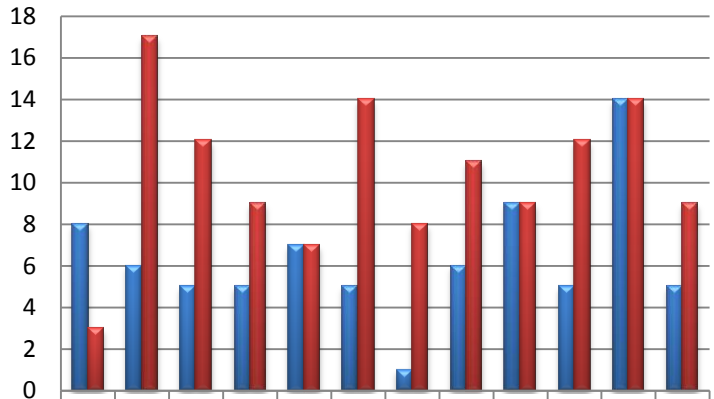
Rebook of appointment/Refill of medication

Patients who failed to attend their scheduled clinic appointments visit the Diabetes Centre for rebook of clinic appointments and an update of medication card.

Dental clarification

Patients requiring clarification of fitness for dental treatment are seen for a test of blood glucose and blood pressure and a note to notify fitness by the doctor or staff.

Figure 23: Screening for diabetes



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Impaired Fasting Glucose	8	6	5	5	7	5	1	6	9	5	14	5
Confirmed diabetic	3	17	12	9	7	14	8	11	9	12	14	9

Source: National Diabetes Centre, 2010

Of the total number of people who visited the Diabetes Centre for screening, 46% had some degree of glucose intolerance. There is a 5% increase from 2009. This high prevalence of newly diagnosed patients with diabetes shows that those coming for screening are those who are already symptomatic or have some of the risk factors for diabetes.

Table 17: Wound dressing and diabetic sepsis

Month	No. of dressings	Admission from	Amputation	
		NDC	BKA	AKA
Jan	324	4	4	1
Feb	307	1	1	0
Mar	378	5	1	1
Apr	313	7	3	2
May	312	0	1	3
Jun	244	3	0	0
Jul	278	5	0	0
Aug	227	8	2	3
Sep	155	2	7	2
Oct	164	5	4	2
Nov	178	2	3	3
Dec	290	2	3	0
TOTAL	3170	44	29	17

Source: National Diabetes Centre, 2010

Admissions from the Diabetes Centre for diabetic sepsis accounts for 34% of the total admission for diabetic sepsis in Surgical Ward. Out of the 43 patients who had amputation, 13 of them were admitted from the Diabetes Centre. Amputation related to diabetes has increased by 3-fold in the last 5 years.

Screening for GDM

In 2010, out of 609 tested, 90 had GMD, which is an increase from 14% in 2009 to 14.7% in 2010.

Community Outreach

Home visit is done quarterly where patients are seen at home due to immobility or difficulty of access to the Diabetes Centre or a Health centre.

Clinics to Health centres are also part of the community outreach and the annual visit to the outer islands hospitals. Niuatoputapu was included for the first time where Health Officer Savelina Veamatahau and Sr. Seilini Soakai visited for 1 week and conducted clinic consultations, screening programs as well as carrying out visual acuity for diabetic patients and school children.

8.1.9 Emergency and Outpatients:

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

Objectives	Selected Milestones
• To improve and provide the best services possible with the available	• Successful continued using the Tonga Health Information System (THIS) was introduced into the Department after completed specialist training on the how to use the system.

resources. • To promote and enable continuing education for all staff members. • To achieve and maintain high-quality working relationships within the department. • To achieve and maintain high-quality working relationships with other hospital departments.	• Up skilling drivers and staff nurses to Ambulance Officers and Nurse Paramedics through two training programmes. • The first ambulance services monthly drill was conducted on December 10th. The following is taken from the report prepared by ambulance project team member Ms. Catherine Vaka, a Sister Graduate Tutor from the Queen Salote School of Nursing. • Launched the first "Report of the first Ambulance Services Monthly drill on the 10th December 2010. • An emergency medicine team from New Zealand consisting of three emergency physicians and one emergency nurse carried out both theoretical and practical training sessions in the department over the course two weeks in October. They encouraged further education sessions and the use of protocols, especially for nurses to allow them more scope for clinical decision making. This would help the service delivery to patients be timelier. Pain management, chest pain, and asthma protocols were the main ones targeted to begin with.

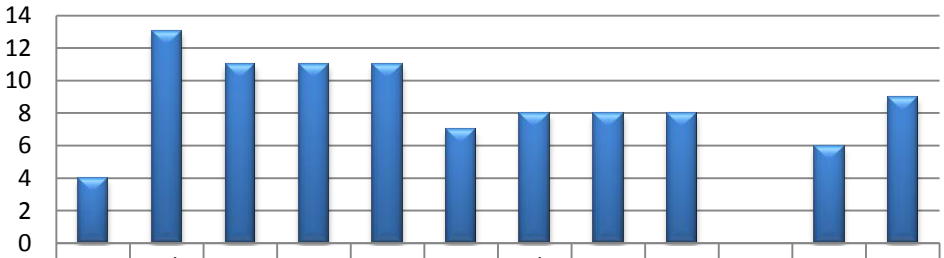
Statistical Information:

Pre-hospital Emergency Ambulance Services

There are two ambulance vehicles available to attend to those requesting emergency assistance at their home (or workplace, school, et cetera). Occasionally patients who cannot walk or be carried, or cannot find timely transportation also use this service, as well as patients transferred from outer island centres arriving at the wharf or airport. The ambulance team also provides onsite standby service at sporting and large social events, usually in conjunction with Tonga Red Cross volunteers. A Nurse/Paramedic and Ambulance Officer team provides this assistance. The Ambulance Officer drives and assists the Nurse Paramedic who provides the medical treatment. The purpose of the ambulance service is not to simply rush patients to the hospital, but to provide safe transportation and a work environment to commence treatment prior to arrival.

There have been two training programmes to enable drivers who man the ambulance to become Ambulance Officers. They have learned how to safely transport patients in various situations together with the Police, Fire Departments, and Tonga Red Cross Society. Such situations include correct lifting and carrying techniques into and out of the ambulance, up or down stairs, and from vehicles involved in accidents, as well as basic CPR. The first programme in March was conducted with local trainers. The second programme in October was conducted by the South Australia Ambulance Service team—Mr. Keith Driscoll, the Executive Director Metropolitan Patient Services for the South Australia Ambulance Service and his team. This has led to an improvement in services this year, but Ambulance Officers still have routine driving duties.

Figure 24: Pre-hospital emergency ambulance services by month, 2010



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
No.	4	13	11	11	11	7	8	8	8	0	6	9

Source: Emergency and Outpatient Registration

In-hospital Emergency and Out-patient Services

Patients are initially seen at the front triage room window. An abbreviated history and personal details are obtained. Any patient with a triage score of 4 or 5 (non-urgent cases) are asked to get their charts from the records. Patient with triage score of 3 may be either transferred directly to the emergency room, or to the observation bed.

Emergency cases (triage score of 1 or 2) are taken immediately to the Emergency Room (ER), or transferred there if arriving by the non-emergency entrance. Some cases initially brought to the emergency room may be transferred to the other observation/consultation room if found to be triage 4 and 5. The Australian Triage is currently used as follows:

Table 18: Australian Triage Score

Category	Waiting Time
1	None
2	10 minutes
3	30 minutes
4	1 hour
5	2 hours

Table 19: Emergency Room Statistics by Month for 2010

Months	Admission	DOA	Deaths in ER	Sent Home	Others	Total
Jan	32	5	2	8	1	48
Feb	38	6	1	10	2	57
Mar	49	8	0	10	2	69
Apr	52	6	1	28	2	69
May	69	5	2	19	1	96
Jun	47	2	2	16	2	69
Jul	62	4	2	7	0	75
Aug	41	7	4	15	1	68
Sep	57	4	2	17	3	83
Oct	59	4	1	13	0	77
Nov	35	3	1	9	1	49
Dec	47	0	1	7	1	56
Total	588	54	19	159	16	825

Source: Emergency and Outpatient Registration

From the table it is shown that 71% of all emergency room cases were admitted. This is the same percentage as in 2009 although the absolute numbers are less (825 cases this year compared with 969 cases last year). A total of 19% of cases were sent home, 7% were dead on arrival, 2% died in the department, and 1% had incomplete records. These percentages are similar to the previous year. Males accounted for 56.5% (332) of admissions while females made up the remaining 43.5% (256).

About 71% of all ER cases were admitted, 19% were sent home, and 7% died on arrival or Emergency deaths. Of the total admissions from Emergency Room, 43.% went to the medical ward, 31% went to the surgical ward, 22% went to the paediatric ward, 1% went to the obstetric ward, 2% (12 patients) went to the ICU, and there were no admission to the psychiatric ward.

Table 20: Emergency Room (ER) trauma statistics for 2010

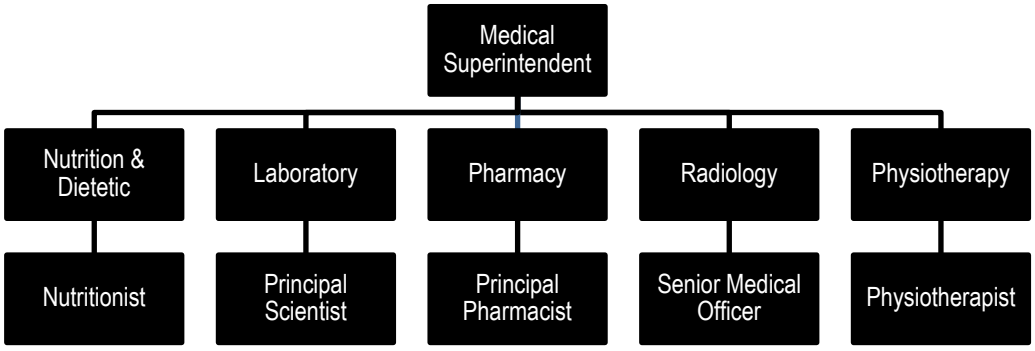
	MVA	Assult	Falls	Wounds	Spinal/Head Injury	Electric Shock	Suicide	Sports	Others	Death	Admission
Jan	1	1	1	2	0	1	0	0	0	0	0
Feb	1	0	3	2	0	2	0	0	1	0	0
Mar	3	1	0	0	3	1	0	0	1	0	0
Apr	11	1	0	0	3	0	2	1	1	0	0
May	3	4	1	2	1	0	0	3	1	0	0
Jun	6	0	5	3	1	0	0	0	1	0	0
Jul	3	2	0	2	2	0	0	1	1	0	0
Aug	5	1	0	0	0	0	0	0	0	0	0
Sep	1	2	1	0	2	0	0	0	1	0	0
Oct	5	3	1	0	0	0	0	0	0	0	0
Nov	1	3	1	1	1	0	0	0	0	0	0
Dec	4	1	0	1	1	0	0	0	0	0	0
Total	44	19	13	13	14	4	2	5	6	0	100

Source: Emergency and Outpatient Registration

The majority of trauma is from motor vehicle accidents, some accidents accounting for multiple patients. From the total of 122 emergency room trauma cases (15% of all emergency room cases):

- 82% were admitted
- 5% died
- 13% were sent home
- 20% were females
- 80% were males

8.2 CLINICAL SUPPORT SERVICES



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Nutrition & Dietetic	Ms. 'Esiteli Pasikala	1	189,000

Laboratory	Mrs. Ane Ika	28	46,100
Pharmacy	Mrs. Melenaite Mahe	26	1,552,114
Radiology	Dr. 'Ana 'Akau'ola	6	45,500
Physiotherapy	Sione Po'uliva'ati	0	0
Total staff and financial resources	5	61	$ 1,645,114

8.2.1 Nutrition and Dietetic Unit:

Nutrition and Dietetic is responsible for providing health services for all inpatients and outpatients patients with diet related problems.

Objectives	Selected Milestones
• To improve quality of foods intake among Inpatients and to ensure each patients must have enough Calorie Intake according to each body's need.	• Nutrition Details: • Hospitals' Meals were calculated based on SPC's RDI. The table below shows the RDI and average daily nutrient details of all diets provided in our catering services. Hospitals' menus were arranged based on Patient's Clinical Condition, Available Fund and Foods Availability. This was practiced since 2008.

	RDI	Normal Diets	Diabetic Diets
Energy	2550kcal	1600kcal	1200kcal
Protein	55g	55g	50g
Fat	20-25%	20%	15%
Carbohydrate	55-60%	55%	50%
Cholesterol	300g	160g	140g
Iron	12mg	13mg	10mg
Dietary Fibre	30g	21g	16g
Vitamin C	30g	200g	150g
Calcium	300mg	400g	250g
Sodium	2300mg	1075mg	744mg

- Monday:
- Breakfast; toast, milk
- Lunch; taro, ika lolo'i
- Dinner; kumala, chicken, vegetables



- Tuesday:
- Breakfast; chicken sandwich, cocoa
- Lunch; kumala, kapisi kapapulu
- Dinner; talo, pele ika



• Wednesday: • Breakfast; bread, egg, cocoa • Lunch; talo, 'ota ika, sausage • Dinner; kumala, chicken, vegetables • • Thursday: • Breakfast; Weet-Bix, milk • Lunch; kumala, beef vegetables • Dinner; talo, pele moa • Friday: • Breakfast; cracker, egg, cocoa • Lunch; kumala, lu pulu • Dinner; talo, pele kapaika • Saturday: • Breakfast; fish sandwich, cocoa • Lunch; talo, beef vegetables • Dinner; kumala, fried fish & vegetables. • Sunday: • Breakfast; rice, corn beef, vegetables • Lunch; kumala, beef chop suye • Dinner; talo, 'ota ika	     
• To upgrade the standard of our catering service.	• Catering Manual • Draft of the Catering Manual to be completed and published by the end of 2011. • Hygiene • Regular medical health checkup for all staffs since 2008. • Neat completed uniform must wear during work hours. Proper uniform is white but due to shortage of fund white shirt and black pants or skirts were accepted. • Only authorized staffs are allowed in the kitchen.

	• Kitchen environment must be kept clean. • Purchase Ordering System • Importe goods from shops are on monthly basis and is delivered by the supplier to the hospital kitchen every 1st week of the month. Eggs also on monthly basis but the weekly needed quantities are delivered every Mondays. This is to provide fresh eggs. • Meat, fish and food crops are on weekly basis. • Fruit and vegetables are delivered by each fixed suppliers to our catering servce twice a week, which is Monday andThursday before 11:00 am. • All fod stuffs delivered to our catering service are checked by Procurement Officer to make sure requesed quantities are supplied and to see if price is good, and with the company of the catering supervsor. • Stock Taking done by Procurement Officer, Catering Supervisor and Accountant. • Data/ Statistics & Information • Financal Details were documented by the Procurement Officer. • Catering Staff meeting held every fortnight. • Nutritionist and Catering Supervisor attend in fortninght meeting of all Non Clinical Supporting Services' Supervisors. • Catering Staff Performance • Dismiss of 2 Assistant Cook Staffs • Recruit of 2 daily paid Assistant Cook.
• To upgrade the standard of technical equipment.	• New Oven installed in the kitchen, which was donated from Vaiola Board. Unfortunately, it was broken towards the end of the year. • New Stock of cooking facilities for the kitchen as a replacement of the broken cooking facilities. • New stock of white beautiful dinning facilities such as plates, tea cups & saucer, forks, spoons, tea spoons, cereal bowls; donated from Siaola Congregation, New Town, Sydney Australia.
• To upgrade knowledge and skills of the staffs.	• Overseas Training on Catering Management hosted by Samoa, funded by Aus Aid is proposing to commence in January 2011. This study period is 6 months and each staff will go each time.

8.2.2 Laboratory:

Laboratory is responsible for providing laboratory services for Vaiola Hospital and the entire nation.

Objectives	Selected Milestones
• To upgrade staff knowledge and skills through continuous training programs.	• Four staff graduated with Diploma in Medical Laboratory Technology from the Pacific Paramedical Training Centre (PPTC), New Zealand. They were 'E. Vaka, T. 'Ete'aki, S. 'Isoa and V. Soakai. • Two Lab Technicians awarded with scholarships to study at the Fiji National

Objectives	Selected Milestones
	University (formarley FSM). Senisaleti Pasikala to do a BMLS and Sione 'Inia to pursue Bachelor degree in Radiology. • Telesia 'Apikotoa, Medical Scientist, attended a 1-month course on "Blood Cell Morphology" at PPTC, NZ. She returned and started staff training sessions to upgrade their skills in blood film reporting. • All staff participated in 1-day workshops on TB and safety issues conducted by Sitani Hoko and funded by the Global / TB Dots Program. Under this program, Sitani visited the peripheral laboratories and conducted TB training and needs-assessment review. • Overseas workshops attendees during the year: • F. Fili, LTG2, Lab. Based Surveillance of Influenza-Sub regional training and updates for Polynesian Countries, Wellington NZ, 1 week. • S. 'Isoa, LTG2, STI Lab. Training on BD Probe Tec Chlamydia / Gonorrhea testing, Western Samoa, 1 week. • S. Hoko, Senior Medical Scientist, TB Meeting, Suva Fiji, 1 week. • S. Hoko, Influenza Enhancement Training, Melbourne Australia, 1 week. • A. Ika, Principal Medical Scientist, Meeting for Pacific IHR National Focal Points & PPHSN-EpiNet Representatives on Syndrome Surveillance, Auckland NZ, 1 week. • L. Soakai, Senior Medical Scientist, Regional Workshop on the Implementation of the "Asia Pacific Strategy for Stregthening Health Laboratory Services (2010-2015) in the Pacific Island Countries", Suva Fiji, 1 week.
• To ensure sufficient stock is available for the continuous provision of key services.	• Donors continued donating supplies enabling the section to meet this target (KRA1 & KRA2). • HIV test kits, some RPR test kits and all supplies for testing Chlamydia / Gonorrhea were supplied by SPC under the HIV/STI Program. This enabled routine screening for pregnant women for HIV, syphilis, Chlamydia and Gonorrhea. • The purchase of HBsAg test kits through WHO was less costly than through the usual supplier. This alternative method can be used for purchasing other test kits in future. It will also enable the routine screening of pregnant women for HBsAg when sufficient kits are obtained. • AusAid supplies most of the reagents for the Cobas C111 ensuring sufficient stock to the end of the financial year.
• To increase the communication and capacity of laboratory services in outer islands.	• Digicel donated a cordless phone with a $20 monthly credit for direct communication to staff mobile phones or to peripheral hospitals, and to clinics outside Vaiola Hospital. • The availability of internet services in the outer island hospitals in addition to the fax machines has further improved communication.
• To regularly review maintenance schedules of essential equipments.	• Some of the equipments in the peripheral labs broke down and were replaced with either new ones (if available at Vaiola) or with secondhand ones in good condition. • Niu'ui Hospital- haemofuge and water bath. • Niu'eiki Hospital- haemofuge and refrigerator. • Prince Ngu- haemofuge.
• To promote customer satisfaction.	• The introduction of the new leave policies considerably decreased staff absenteeism and ensured that service delivery was maintained at a satisfactory standard. • An internal customer satisfaction survey was conducted to guide senior staff in the management of their sub-units.
• To purchase quality equipments to upgrade	• The purchase of two new chemistry analyzers, Cobas C111 in August was a turning point for the Laboratory.

Objectives	Selected Milestones
performance standards and increase capacity of services provided.	• Significant improvements which strengthened the responsiveness to KRA1 and KRA2 included: • Better quality results were produced. • Shorter turnaround time. • Increased revenue collection. • Decreased specimen referral to New Zealand. • New chemistry tests were introduced – HbAIc, Magnesium, HDL, LDL and Phosphate. • A new electrolyte analyzer enabled testing of *Lithium* levels for the first time, thereby, meeting a longstanding and increasing demand for this service from the Psychiatric ward. • *Anti-HCV* testing was also introduced. • Other new equipments were a blood gas analyzer and a refrigerator (for Microbiology). • Except for the refrigerator all were funded by AusAid. The refrigerator was bought under the Global Funds / TB Dots Program.

Statistical Information

Specimens received increased by 2.6%

The total number of specimens received by all laboratories was 50,994, a decrease of 13.55% from the previous year due to availability of private laboratory in town. As usual, most of the specimens received were blood (86%) of which the majority (40%) went to the Haematology unit.

Table 21: Number of specimens received by each laboratory in 2010

Unit	Total Specimens	%	Vaiola	Ngu	Niu'ui	Niu'eiki
Haematology	20226	39.66%	17155	2062	500	509
Blood Transfusion	10473	20.54%	9770	491	90	122
Biochemistry	11819	23.18%	10700	1119	0	0
Microbiology & TB	7656	15.01%	7328	191	67	70
Histology & Cytology	820	1.61%	820	0	0	0
Medical Legal	0	0.00%	0	0	0	0
Total	50944	100%	45773	3863	657	701

Source: Laboratory Registration

Decrease Workload

A Total of 250,176 tests were performed by all units in 2010, a decrease of 3.43% from the previous year.
This decrease was due to the breakdown of the Echo analyzers and the subsequent decrease in number of specimens sent to the laboratory.

Table 22: Distribution of tests performed by Unit

Unit	Total Laboratory Test	%
Haematology	151875	60.73%
Blood Transfusion	36697	14.67%

Biochemistry	42304	16.92%
Microbiology & TB	18386	7.35%
Histology & Cytology	820	0.33%
Total	250082	100.00%

Source: **Laboratory Registration**

Blood transfusion and Microbiology shows a decrease in tests done which probably reflects the loss of service to the private laboratory. Tests such as HIV, HBsAg, RPR and urinalysis are common requirements for visa applicants and other health check.

All serological tests (HIV, HBsAg, RPR) decreased by 10% compared to the previous year. This is attributed to the availability of these services in the private laboratory. The number of tests referred overseas decrease by 21.% mainly due to the breakdown of the availability of private laboratory and the new Cobas C111 chemistry analyzer that was installed in August 2010..

8.2.3 Radiology

Radiology is responsible for providing quality radiological service to all requiring radiology services with the available modality at all time.

Activities:

- The Radiological services available in Tonga are: X-Ray services, Fluroscopy (Special X-Rays), and Ultrasound Services.
- The X-Rays are performed by the Radiographers and reported by the Senior Medical Officer in Charge. Over the years, the number of X-rays performed in this section has not greatly increased. Recent events such as sending of seasonal workers to New Zealand and Australia will increase the number of x-rays performed per year.
- The Ultrasound services, has been of great help to the clinical doctors. Obstetric ultrasound at 20 weeks is offered as routine scan for all mothers.
- Antenatal Diagnosis of Low Lying Placenta (Placenta Previa), and confirmation of foetal presentation has greatly helped the obstetrician's management of pregnant mothers.
- Diagnosis of diseases such as neoplasms in different parts of the body has made this an invaluable sub-specialty in our patient management.

Training:

- Assistant Radiographer Grade II, Mr. Leonaitasi Mahe is currently trained to perform Ultrasounds.
- The formal Training of Radiographer Trainees started in September 2010. This training is conducted by Mr. Lopeti Heimuli, former Radiology Technologist, now retired. If all goes well, we hope they graduate to become assistant Radiographers by the end of June 2011. Mr. Lei'aloha Makaafi and Sione 'Inia are currently pursuing their Bachelor of Science Imaging at the Fiji School of Medicine funding by the WHO Fellowship Program.

8.2.4 Pharmacy:

Pharmacy is responsible for providing pharmaceutical services for Vaiola Hospital and the entire nation.

Objectives	Selected Milestones
• To provide quality, safe, effective and affordable essential drugs and standard medical supplies at all times to all the people of Tonga and ensure its rational use.	• Revised Medicinal Drugs List for use in the Public Sector.
• To ensure that the best procurement practice is used.	• Public tender opening. • Contracts with supplier. • Bond Securities rose with suppliers.
• To ensure the appropriate conditions.	• New pallets were used to raise goods of the floor to avoid moisture getting into cartons.
• To ensure good distribution process in place.	• Prince Ngu Hospital to distribute to Health Centers and RH centers in Vava'u. Orders to be done according to timetables set out and agreed with requisitioning centers.
• To ensure legislative framework is operational.	• Regulations for Pharmacy Act have been approved by Cabinet. Two officers nominated from the private sector and four pharmacists from the Ministry for the Pharmacy Act.
• Rational use	• Continual radio programmes and patient counseling.
• To ensure that the best pharmacy practice is used.	• Leva'itai 'Asaeli attended two months attachment to one of the Hospitals in New Zealand. One year recruitment of AYAD pharmacists to work in the hospital and to assist with training of trainees as well as 1 VIDA pharmacist who helped to ensure that the best pharmacy practice is used.
• To ensure that adequate manpower is properly trained.	• Commenced training of the six trainees for one year.
• Overseas short training, workshops and meetings.	• Melenaite Mahe attended 3 days workshop on EC / ACP Project Evaluation in Suva Fiji in June, two weeks training in RHCS in Suva in October and International Drug Regulatory Authorities (ICDRA) in Singapore in December. Siutaka Siua attended a 2 weeks training for editors and pharmacists conducted by Therapeutic Guidelines Limited, Melbourne Australia in September and WHO workshop for Pharmaceutical Framework which was held in the Philippines in October.

Statistical Information

The Central Pharmacy and Medical Supplies (CPMS) is divided into five different units. The Administration Unit, Manufacturing Unit, Regulatory/Training Unit, Stores and Distribution Unit, and Dispensing Unit.

Administration

The Principal Pharmacist supervises the Administration Unit which deals with human resource issues as well as taking care of the financial matters relating to the Pharmaceutical Section. Mrs. Silia Muna updates our vote book manually and reconcile with the accounts at Vaiola. She also process vouchers for payment of all expenditures related to our votes and advises all leave for this section.

Manufacturing Unit

Manufacturing Unit is organized and run by the Assistant Pharmacist Grade I Mr. Sakea Fusitu'a. Other staff assisting him are Store Assistant Mr. Samuela Fifita and Assistant Pharmacist Grade II Mr. Siakumi Tu'iniua.

The list of oral preparations currently prepared locally includes the followings:

- Paracetamol 120mg/5ml elixir for children
- Promethazine 5mg/ml elixir for children
- Magnesium Trisilicate Mixture
- Ammonia and Ipecacuanha Mixture
- Pholcodine Linctus Adult 5mg/5ml
- Pholcodine Linctus Infant 2.5mg 5cc

Table 23: Summary of production output for Manufacturing Unit 2010

No.	Production	No. of Batches	Total Volume	Costing
1	Oral Preparation	115	24990L	248921.48
2	Dermatological Preparation	111	1246L & 191.54 Kg	24382.86
3	Extemporaneous Preparations	84	20.99L	356.35
4	Total	350 Batches	26256.99L 191.54kg	$273660.69

Source: Pharmacy Registration

Regulatory/Training Unit

The Regulatory/Training Unit looks after the Regulatory Affairs as well as the implementation of the Pharmacy and Therapeutics Act. Senior Pharmacist Mr. Siutaka Siua with the help of our Australian Youth Ambassador for Development runs this Unit. The Modules of the Assistant Pharmacist Training was reviewed and updated ready for the commencement of the training next year. The Regulations for the Pharmacy and Therapeutic Goods Act are under review and should be resubmitted again early next year.

Store and Distribution Unit

Staff of this unit are responsible for receiving all incoming goods, check, record, store and distribute upon receipt of requisitions from each requisitioning stations throughout Tonga. They serve 4 hospitals, 14 health centres, 34 Reproductive Health Clinics, and some village health workers throughout Tonga.

The total value of goods issued from CPMS as TOP$2,280,404.43 and this included medical drugs and supplies.

Vaiola Hospital Pharmacy

Pharmacist Graduates Mrs. Leva'itai 'Asaeli is the officer in charge of Vaiola Hospital Pharmacy with 9 supporting staff. The main function of this Unit is to provide in-patient and outpatient pharmacy care which include replenishing ward stock, providing drug information for patients and other health workers, counseling and working closely with patients to ensure correct usage of their medication.
The Pharmacy now has an Inpatient Pharmacy and an Outpatient Pharmacy. This separation is to ensure that both inpatient and outpatient have the same quality care. The outpatient also opens from 8.30am till 4.30pm

during weekdays and from 8.30am to 12.30pm and 4:00pm to 12 midnight during the weekends and public holidays. There is one outpatient pharmacy for the outpatient clinic as well as normal consultation.

The pharmacy staff also participates in monthly visits to Mu'a and Kolovai Health Centres together with the clinicians to replenish patient's medication, which are not available at the centres.

Table 24: Prescription Record for Vaiola Pharmacy Inpatient by month, 2010

Months	Number of Discharging		Value/Cost	No. of Imprest Items to the wards	Value of items/Costs
	Prescription	Items			
Jan	251	569	1379.48	1380	36386.42
Feb	178	398	1003.99	1369	40761.86
Mar	213	443	1624.3	1524	54006.23
Apr	269	600	1787.63	1294	36229.22
May	160	407	3224.86	1412	41324.49
Jun	298	641	7906.87	1305	37077.05
Jul	214	435	2646.45	1525	46361.41
Aug	159	356	2177.12	1343	31540.23
Sep	179	421	2184.67	1340	37957.55
Oct	217	473	5728.59	1003	29502.17
Nov	214	426	1732.35	1095	33198.25
Dec	143	336	1276.28	1215	45322.83
Total	2495	5505	32672.59	15805	469667.71

Source: Pharmacy Registration

Clinic Pharmacy

Two Officers manage the Clinic Pharmacy which opens on normal working days for patients who attended Special Clinics for refilling their medication. These patients have a medication card for their record of prescriptions and medication dispensed. Average item per prescription is about three.

Table 25: Vaiola Clinic Pharmacy Records by month, 2009

Months	Prescription	Items	Value/Cost
Jan	2176	6010	30122.57
Feb	2385	6847	23061.39
Mar	2704	7649	28170.21
Apr	2564	7193	24150.10
May	2636	7429	21962.45
Jun	2562	7160	23361.95
Jul	2696	7588	22640.84
Aug	2440	7113	21587.54
Sep	2713	8030	25125.08
Oct	2549	7588	24016.57

Nov	2562	7759	23721.90
Dec	2529	7724	27700.75
Total	30516	88090	295621

Source: **Pharmacy Registration**

During the year 800,526 prescriptions were dispensed from the outpatient pharmacy and the total cost was $541,877.90, compared to the inpatient was $506,179.02. Overall total cost for Vaiola Pharmacy in 2010 was $1,048,056.91 of which 51.7% for outpatient and 48.3% for inpatient cost.

Table 26: Outpatient Pharmacy Records by month, 2009

Months	AM Shift		PM Shirt		Value/Cost	Outpatient Department		
	Pres.	Items	Pres.	Items		Pres.	Items	Value/Cost
Jan	6025	10433	2525	4872	$28,115.04	253	419	$545.92
Feb	6681	11175	3187	5091	$20,043.14	211	379	$867.82
Mar	6698	11149	2949	4575	$21,484.72	287	500	$607.95
Apr	6263	10518	3798	6577	$21,755.14	279	454	$532.73
May	6318	9027	2872	4693	$18338.30	297	473	$1034.98
Jun	5492	9027	2872	4693	18338.30	290	473	$1155.54
Jul	5383	9114	3090	5024	$21744.10	267	426	$979.79
Aug	5564	9455	2887	5606	$16500.35	256	398	$825.85
Sep	5581	9545	2544	4608	$17721.41	213	375	$1109.83
Oct	5301	9052	2938	5068	$16742.86	246	405	$835.56
Nov	5678	8942	2734	4799	$17407.43	229	394	$688.62
Dec	5502	9386	2215	3653	$15856.15	255	412	$672.60
Total	70486	118140	35345	60612	$236711	3083	5050	$9184.59

8.2.5 Physiotherapy:

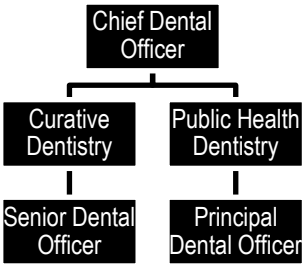
Physiotherapy is responsible for providing appropriate physiotherapeutic treatment for both inpatients and outpatients patients.

Objectives	Selected Milestones
• Maintain current level of service to both hospital inpatient and outpatient.	• Permanent building for Physiotherapy commenced renovating. • Mr. Andrew Leicester from the Aussie team together with a clubfoot team revisited the Unit in October.
• Make services available to sporting teams upon request, as a representative of Vaiola Hospital.	• Well supervision of four Physiotherapy Year 2 students from the Newcastle University, Australia. Each had 1 month of stay. • The success of a designated physiotherapy for the local sporting tournament.

9 DENTAL SERVICES

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.



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Curative Dentistry	Dr. 'Amanaki Fakakovikaetau	36	102,000
Public Health Dentistry	Dr. Salise Faiva'ilo	5	0
Total staff and financial resources		41	$102,000

9.1.1 Curative Dentistry:

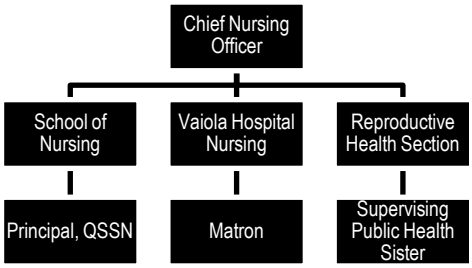
Curative Dentistry section is responsible for providing oral/dental services in the Hospital Setting.

Objectives	Selected Milestones
• To reduce other oral/dental health problem.	• Malimali Project approved funding for another two years with the JICA. • A Japanese volunteer assigned to work in Prince Ngu Hospital to support the sustainability of the Malimali Programme. • One Dental Therapist posted to permanently run the Dental Clinic in Niuafo'ou.
• To create and maintain a working environment that is safe and productive to maintain the interest and motivation of staff.	• Dr. Fusi Fifita completed her Phd in Oral Pathology from Japan. • Dr. 'Afa Taulangovaka completed his Masters in Dental Public Health from Perth, Australia. • 2 Dental Technicians completed local training program. • 4 Dental Therapist Trainees completed their first year of training.

10 NURSING SERVICES:

Mission Statement:

To provide quality nursing service for the entire country.



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
School of Nursing	Mrs. Tilema Cama	6	3,800
Vaiola Hospital Nursing	Sr. 'Ofa Takulua	182	16,000
Reproductive Health Nurse	Mrs. 'Atalua Afu Tei	48	84,100
Total staff and financial resources	3	236	103,900

10.1.1 School of Nursing:

School of Nursing is responsible for training of student and staff nurse for the nursing services in Tonga.

Objectives	Selected Milestones
• To provide a continuous process of curriculum development / review based on evidence – base practice and assessment of its effectiveness in the preparation of students for nursing practice.	• Update of the Nursing Practice Standards. • Establishment of a Database of all students entering QSSN in the last 20 years. • Commencing a Tracer Study of QSSN Graduates. • Registration of QSSN as training provider with TNQA. • Commencement of the Post-basic Midwifery Training.
• To develop the full potential of the nursing student to enable him/her to apply the knowledge and skills in various health care setting. • To direct educational programme to utilize physical, medical and social sciences and humanities as foundation for learning the art and science of nursing. • To develop appropriate instructional strategies to cope with individual differences of the learner. • To render student-based training to nursing students. • To utilize other health professionals in the training of nursing students. • To effectively manage all post-basic nursing training to meet the needs of the Ministry. • To provide a forum where others can contribute to the preparation of future nurses. • To upgrade all staff of QSSN with appropriate qualification for implementation of diploma level training and post-basic nursing trainings	• Developed learning objectives, worksheets to assist students with their learning while in clinical practice. • Hosting 3 visiting student groups; one from Canada and two from the USA, whose stay varied from 2 – 4 weeks. • All teaching staff has a workstation computer (to enable the tutors with development of teaching materials, resources and ease of communication). • Establish electronic communication among the staff for the ease of transfer of documents. • Successfully held the Nightingale week (English week). • All the Teaching Staff and Student of QSSN attended the first Tongan Nurses International Conference, Nuku'alofa, Tonga from the 11 -12 March 2010. • Sr. Folole Suliafu attended 6 months Clinical Training in Nursing, China from the 26 November 2009 to 3 May 2010. • Sr. Catherine Vaka attended the Emergency Training Workshop, Nuku'alofa from the 25 – 26 March 2010. • Sr. Tilema Cama, 'Akesa Halatanu, 'Ana Fevaleaki, Matangisinga Taufa, and Lower Mafi attended two days inservice training, Nuku'alofa from the 20 – 21 April 2010. • Sr. Tilema Cama attended five days workshop on Reproductive Health Review, Nuku'alofa from the 10 -14 May

Objectives	Selected Milestones
for nurses. • To collaborate with Hospital Nursing Section in supporting students to meet learning needs when learning needs when in the wards. • To upgrade and maintain the physical facilities at QSSN to sufficiently accommodate staff offices, a nursing science laboratory, and common room facilities.	2010. • Sr. Lower Mafi attended in service workshop, Nuku'alofa from the 26 – 27 May 2010. • Sr. Tilema Cama, Sr. Mele'ana Ta'ai, Sr. Catherine Vaka, Sr. Lower Mafi, Sr. 'Ana Fevaleaki attended the Clinical Mentoring Workshop, Nuku'alofa from the 9 – 11 August 2010. • Sr. Mele'ana Ta'ai attended a STI Workshop, Nuku'alofa from the 12 – 13 August 2010. • Sr. Tilema Cama participated at the Coordinating Staff Development Workshop for Nursing of Vaiola, Nuku'alofa from the 27 September to 1 October 2010. • Sr. Mele'ana Ta'ai, Sr. Cathy Vaka, Sr. Mele 'Atuekaho, Sr. 'Ana Fevaleaki, Sr. Lower Mafi attended a Staff Development Workshop, Nuku'alofa from the 27 September to 1 October 2010. • Sr. 'Ana Fevaleaki attended the STI and Tuberculosos Policy Worksho, Nuku'alofa from 12 – 14 October 2010, and also a HIV/AIDS Workshop, Nuku'alofa, 16 November 2010. • Sr. Cathy Vaka and Sr. Lower Mafi attended the South Pacific Nurses Forum, at New Zealand from the 4 – 15 November 2010. • Sr. Tilema Cama attended the Data Analysis Workshop, Nuku'alofa, from the 25 October to 18 November 2010.

10.1.2 Reproductive Health Section:

Reproductive Health section is responsible for providing effective and quality services to mothers, infants, children and adolescents and others through reproductive health strategic approaches throughout the country.

Objectives	Selected Milestones
• To develop skilled and committed staff to meet the evolving roles of the reproductive health nurses. • To improve and upgrade staff performances. • To improve communication, teamwork and cooperation, and reduce conflicts and misunderstanding among health workers. • To provide effective and quality reproductive health services to women of child bearing age. • To promote safe motherhood with continuing lows mortality rates and high coverage levels of all services. • To ensure and monitor good health and normal development among infants and under five years old children through good immunization coverage, good nutrition and good care management of childhood illnesses in the community.	• Sr. Sela Paasi in her capacity ad the National Immunization Services Coordinator attended the JPIPs closing Seminar from 11-15 January 2010, Suva Fiji. • SNMW 'Onita Sila and SNMW 'Amelia Fusi commenced their one year Nurse Practitioner Training in Suva Fiji in August 2010. • Sr. Sela Paasi attended the Regional Training on Procurement, forecasting and logistics of Reproductive and Essential Health Commodities on 21 August 2010. • PHN Fifita Fili attended training on Reproductive Health for 3 months in Suva, Fiji. • SPHN 'Ana Vaka'uta is currently studying for her Diploma in Public Health in Suva Fiji. • Sr. Sela Paasi attended the Pacific Immunization Strengthening (PIPS) in Suva Fiji on the 25 September 2010. • SPHN 'Ana Taufa, SPHN Sivihiva Latu, PHN Maleta Mata'uvave currently studying for Advance Diploma in Midwifery.

• To promote and improve the rate of exclusive breast feeding babies at four months and six months. • To maintain and equip the reproductive health clinics and health centre with necessary services and adequate equipment. • To upgrade public health nurses in public speaking and computer literacy skills. • Conduct regular meetings, liaise with other community programs and conduct regular island visits. • Conduct awareness programs through radio and Television. • To assist in developing an occupational health standard for all public health staff.	• SPHS 'Alisi Fifita attended the Child Health Indicators Meeting in July at Apia Samoa. • In October 2010, RHCS Training for PHNs and Pharmacy Staff was held in Nuku'alofa. • In November 2010, Sr. Sela Paasi, Afu Tei, 'Alisi Fifita, Taufa Mone, Sanitina Makaafi, Kafo'atu Tupou, 'Ilaisaane Fahamoekioa attended the South Pacific Nurses Forum in Auckland, New Zealand. • Supervisory visits to the outer island are done.

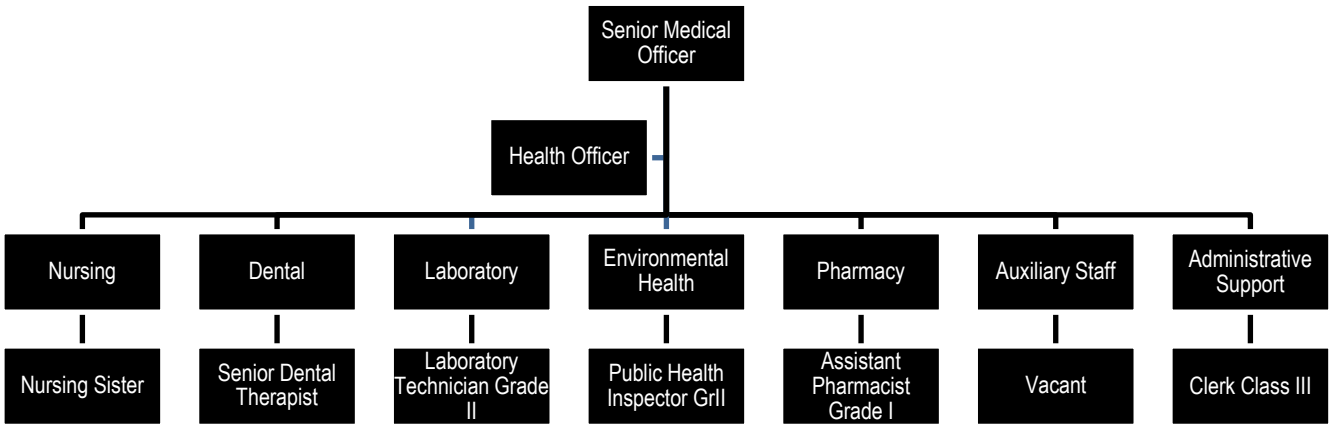
10.1.3 Hospital Nursing:

Vaiola Hospital Nursing section is responsible for providing nursing services at hospital setting including clinics and other allied health services in Vaiola Hospital.

Objectives	Selected Milestones
• To facilitate the implementation of activities that contributes to the achievement of the ministry's vision and mission. • To uphold and maintain the standard of care demanded by our Code of Ethics. • To encourage the spirit of team work amongst all health workers delivery patient care within the clinical setting. • To ensure a happy, safe and healthy environment for patients, families and staff. • To always provide the best possible care to the patients and families.	• Congratulations to: • Nursing Sister Graduate Mele 'Atuekaho who graduated from Fiji School of Nursing with a Bachelor of Nursing Science Degree. • Staff Nurse Diplomat Elizabeth Irene Niulala who graduated from Pacific Eye institute in Fiji with a Post Graduate Certificate in Diabetes Eye Care. • Staff Nurse Diplomat Mele Inu Filise awarded with a Scholarship to pursue further study for a Bachelor of Nursing Science at the Fiji School of Nursing, Suva. • Nursing Midwives promoted to senior Nurse Midwives: • Mafi 'Ealelei • Tilisa Falase • Taina Palaki • Lata Ma'u • Matelita Holani • Misty Fifita • ICU Staff Nurses promoted to Senior Staff Nurses: • Kakala Kiteau • Milika Kailea • 'Ofa Vea • Kataki Latu • Malanata Fevaleaki

11 ISLAND HEALTH DISTRICTS

11.1 'EUA



Staffing and financial information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Dr. Sengili Moala	1	47,482.54
Nursing	Mele Kapani	11	19,458.66
Dental	Penisimani Taufa	1	43,643.86
Laboratory	Mele Vea Fonua	0	15,577
Environmental Health	'Amelia Vea	0	42,462.40
Pharmacy	'Eneasi Palanite	0	22,409.92
Auxiliary	Dr. Sengili Moala	10	45,897.06
Administrative Support	Lute 'Eli	1	8,368.10
Medical Records	Puataukanave Mala'efo'ou	0	5,555.10
Total staff and financial resources	8	24	$ 250,864.54

Objectives	Selected Milestones
• To provide an adequate clean water supply for 'Eua District.	• Collaboration with TWB and EWCC to monitor and improve the water supply.
• To improve the staff performances.	• Regular staff meetings to enhance performances on a monthly basis. • Encourage further training opportunities overseas and locally. • Upgrading staff posting to encourage staff in performing their duties well.
• To reduce the morbidity and mortality from non-communicable diseases.	• Continuation of the outreach village clinics and home visits for non-ambulant cases. • Health education sessions for clinic patients and community groups.
• To improve the financial management systems.	• Reduction of unnecessary expenditures. • Improve revenue collection. • Improve inventory and recordings.
• To cater for the health needs	• Better communication and referral system with Vaiola Hospital.

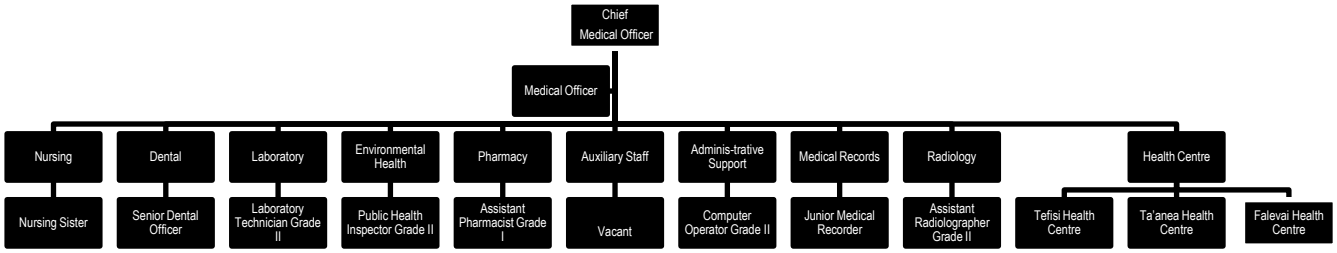
of the people of 'Eua Island by improving the standard of health care services.	• Encourage regular clinical meetings and training workshops.

Table 27: Demographic Summary of 'Eua Island Group for 2010

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	78	62	140	2.9
1 – 4 years	247	230	447	9.7
5 – 9 years	269	292	561	11.4
10 – 14 years	319	281	600	12.2
15 – 19 years	281	282	563	11.5
20 – 24 years	227	215	442	9.5
25 – 29 years	214	204	418	8.5
30 – 39 years	256	256	512	10.4
40 – 49 years	241	255	496	10.1
50 –59 years	152	156	308	6.3
60 – 69 years	114	113	227	4.6
70 + years	81	77	158	3.2
TOTAL POPN – this period	2479	2423	4902	
TOTAL POPN – last period	2451	2321	4772	
	Male	Female	Total	
Migration out > 6/12	74	63	137	
Migration in > 6/12	92	62	134	
Total Deaths	13	14	27	
Natural Population Growth 1.4 %	$= \frac{(Births - Deaths)}{Total\ Population} \times 100$ = 2.02%			
Net Population Growth - 11.3%	$= \frac{(Births - Deaths) + (Migration\,in - Migration out)}{Total\ Population} \times 100$ = 1.9%			

Source: Reproductive Health Section

11.2 VAVA'U



Staffing and financial information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Dr. Edgar 'Akau'ola	2	
Nursing	Meliame Tupou	27	
Dental	Sitaniselao Kisina	0	
Laboratory	Epitani Vaka	1	
Environmental Health	Manase Malua	5	
Pharmacy	Mosese 'Ilangana	2	
Auxiliary	Vuna Kupu	18	
Administrative Support	Manavahe Ata	1	
Medical Records	Leonia Finau	1	
Total staff and financial resources			$

Objectives	Selected Milestones
• To fight and reduce the incidence of NCD and Communicable Diseases by using effective preventative health measures. • To improve the efficiency and effectiveness of our curative health service delivery, using the available resources and current staff. • To establish good relationship and good communication with the people of Vava'u, other ministries and organization, Hospital Board and etc.	• Staff: • Senior Sr. Incharge -1 • Nursing Sister -1 • Nurse Practitioner (Fiji) -1 • Staff Nurse in Vaiola Midwife Course -2 • Staff Nurse return to Vaiola -1 • Staff Nurse from Vaiola to Vava'u -2 • Lab Technician to Vaiola (Tavite)-1 • Lab Technician to Vava'u ('Aiona) -1

Statistical Information:

The Vava'u Group is consisted of 10 minor subgroups which is the main island known as 'Uta Vava'u and nine smaller islands known as Vahe Motu. There are one main Hospital which is located at Neiafu and four Health Centers in Ta'anea, Falevai, Tefisi and Hunga.

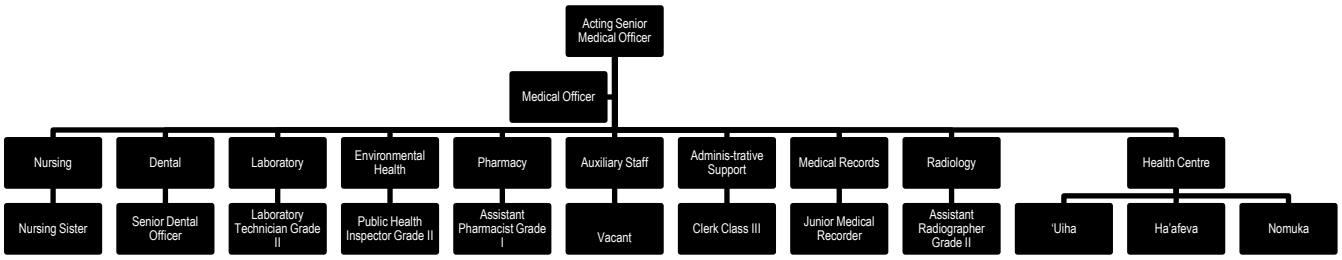
Table 28: Demographic Summary of Vava'u Island Group for 2010

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	228	175	403	2.6
1 – 4 years	761	693	1454	9.5
5 – 9 years	1043	888	1931	12.7
10 – 14 years	1022	872	1894	12.4
15 – 19 years	819	816	1635	10.7

20 – 24 years	608	556	1164	7.6
25 – 29 years	457	519	976	6.4
30 – 39 years	810	824	1634	10.7
40 – 49 years	755	795	1550	10.2
50 –59 years	509	549	1058	6.9
60 – 69 years	386	391	777	
70 + years	329	355	684	
TOTAL POPN – this period	7727	7433	15160	
TOTAL POPN – last period	7734	7543	15277	
	Male	Female	Total	
Migration out > 6/12	566	562	1128	
Migration in > 6/12	348	357	705	
Total Deaths	53	44	97	
Natural Popn Growth 1.8 %	$= \frac{(Births - Deaths)}{Total\,Population} \times 100$			
Net Population Growth - 0.9%	$= \frac{(Births - Deaths) + (Migration\,in - Migration out)}{Total\,Population} \times 100$			

Source: **Reproductive Health Section**

11.3 HA'APAI



Staffing and financial information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Tevita Vakasiuola	1	150,255
Nursing	Kalisi Finau	17	256,541
Dental	Vacant	2	32,458
Laboratory	Sione 'Isoa	0	0

Environmental Health	Mosese Fifita	0	37.677
Pharmacy	Manase Tongia	0	0
Auxiliary	Vacant	10	0
Administrative Support	Hisipanio Iketau	0	10,471
Medical Records	Lesieli 'Ali	0	6,710
'Uiha	Saane Fangaloka	0	0
Ha'afeva	Fusi Kaho	1	0
Nomuka	Tupou Taufa	1	0
Total staff and financial resources	11	32	$494,112.00

Objectives	Selected Milestones
• To improve medical services in the Ha'apai Island Group. • Conducted one island tour • Provision of special clinic • Improved the dental services to Ha'apai District. • To improve working environment • To improve the public health • Reproductive Public Health: • Provide antenatal care to all pregnant mothers. • Provide post natal care to all mothers and babies. • Keep immunization coverage >95% • Environmental Health: • Improve Services. • Oversee and control Niu'ui Hospital Waste Management.	• Conducted one island tour to the outer island and delivered special clinics, consultations, dental services, school visits, H1N1 mass vaccination and immunization, reproductive health services and health inspection on homes and shops. • Conducted TB public awareness screening. • Dr. Toakase Fakakovikaetau and the ECHO Team conducted screening at the primary schools at Foa, 'Uiha and Kauvai. • Mineral Water Tonga donated $10,000. • LDS Church donated new washing machines and dryer. • Staff of Niu'ui Hospital attended and participated at various local and overseas training on various areas. • Reviewed the antenatal and postnatal care, family planning practice, pregnancy outcomes, STI, HIV and AIDS, immunization services to children and pregnant mothers, morbidity and mortality indicators, reproductive health commodity security and services provision. • Pacific Medical Team visited the Hospital and delivered dental services. • Hematology services available full time at Niu'ui Hosptial. • mSupply system is now available at the Dispensary reduced the waiting times. • Conducted an awareness program to communities on solid waste management. • Established and recruited one officer to provide and deliver services on health promotion and health education. • Conducted a school survey on Global School Health Survey (GSHS) and Global Youth Tobacco Survey (SYTS).

Statistical Information:

The Ha'apai Group is consisted of 6 minor subgroups which is Lifuka, Foa, Kauvai, 'Uiha, Lulunga and 'Otu Mu'omu'a. there are one main sub Hospital which is located at Lifuka and two Health Centers in Nomuka and Ha'afeva. There are also three nurses clinic located at Lotofoa, Fakakakai, and 'Uiha.

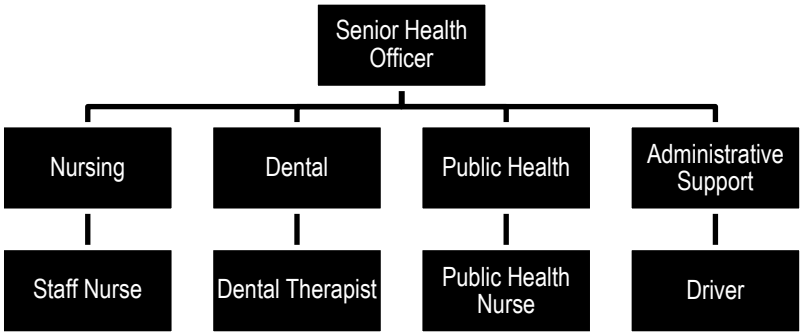
The population of Ha'apai is about 7369 with the majority residing in Lifuka and Foa. There are two Medical Officers stationed at Niu'ui Hospital with a Health Officer at Nomuka and a Nurse Practitioner at Ha'afeva.

Table 29: Demographic Summary of Ha'apai Island Group for 2010

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	78	84	162	2.4
1 – 4 years	330	319	649	9.6
5 – 9 years	432	385	817	12.1
10 – 14 years	404	388	792	11.7
15 – 19 years	400	355	755	11.2
20 – 24 years	309	294	603	8.9
25 – 29 years	235	234	469	6.9
30 – 39 years	371	383	754	11.1
40 – 49 years	315	319	634	9.4
50 –59 years	213	224	437	6.4
60 – 69 years	171	200	371	5.5
70 + years	153	170	323	4.8
TOTAL POPN – this period	3411	3355	6766	
TOTAL POPN – last period	3535	3474	7009	
	Male	Female	Total	
Migration out > 6/12	326	262	588	
Migration in > 6/12	138	116	253	
Total Deaths	22	30	52	
Natural Population Growth 1.3 %	$= \frac{(Births - Deaths)}{Total\ Population} \times 100$			
Net Population Growth 3.6 %	$= \frac{(Births - Deaths) + (Migration\,in - Migration out)}{Total\ Population} \times 100$			

Source: Reproductive Health Section

11.4 NIUAFO'OU



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Viliami Falevai	0	3,652
Nursing	Telesia Tu'itupou	0	0
Dental	Lu'isa Salt	0	0
Public Health	Fifita Hafoka	0	0
Administrative Support	Vacant	0	9,391
Total staff and financial resources	4	0	$ 13,043

Objectives	Selected Milestones
• To work together as a team in the Health Centre and the Public through outreached programme to achieved all our respective sectional goals.	• Continued with the outreach program to reach all level within the community. With the new vehicle from Vaiola Hospital the program has been conducting well. The community health awareness program has been operating well with conducting speeches in group activities regarding healthiness.

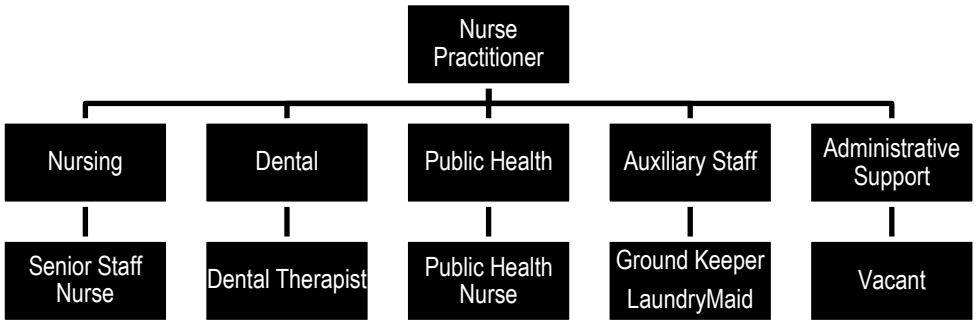
Statistical Information:

Table 30: Demographic Summary of Niuafo'ou Island Group for 2010

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	3	5	8	1.5
1 – 4 years	39	22	61	11.1
5 – 9 years	30	27	57	10.3
10 – 14 years	34	30	64	11.6
15 – 19 years	25	24	49	8.9
20 – 24 years	15	12	27	4.9
30 – 39 years	32	40	72	13.1
40 – 49 years	31	25	56	10.2
50 –59 years	16	14	30	5.4
60 – 69 years	19	16	35	6.4
70 + years	9	8	17	3.1
TOTAL POPN – this period	292	259	551	
TOTAL POPN – last period	288	248	536	
	Male	Female	Total	
Migration out > 6/12	7	5	12	
Migration in > 6/12	12	11	23	
Total Deaths	3		3	
Natural Popn Growth 0.9%	$= \frac{(Births - Deaths)}{Total\,Population} \times 100$			
Net Population Growth - 2.7%	$= \frac{(Births - Deaths) + (Migration\,in - Migration\,out)}{Total\,Population} \times 100$			

Source: Reproductive Health Section

11.5 NIUATOPUTAPU



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Paea 'I Moana Fifita	0	
Nursing	Monika 'Onesi 'Uvea	1	0
Dental	Luisa Salt	0	
Public Health	Vacant	0	0
Administrative Support	Vacant	0	
Auxiliary	Leo 'Onesi	2	0
Total staff and financial resources	4	3	$

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	• December 2010 the hospital new temporary location is Falehau Primary School. •
• To treat sickness, restore and maintain the health of the population of Niuatoputapu	• Twenty four hours (24hrs) consultation, dressing, injection, suture • Weekly shift clinic for other two villages (Vaipoa / Falehau)
• To help the financial situation of the Ministry by increasing the revenue collection and decrease our financial expenses without affecting the quality of health care we provide	• Achieved 80 – 90% of targeted revenue collection mainly for yacht clearances. • The hospital week of 2010 collected $10,187 and this fund supported the patients referring to Vaiola Hospital.
• To make sure that the message of the Ministry of Health reaches the people of Niuatoputapu	• 3 – 4 monthly visit to Tafahi for clinic/consultation and village inspection • Minimum of one monthly home visit to elderly people and patients that cannot come to the Hospital. • WHO funded health promotion activities such as inter-village sport competitions, village inspections and reproductive sessions on how vital breast feeding is.

Table 31: Demographic Summary of Niuatoputapu Island Group for 2010

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	7	5	12	1.4
1 – 4 years	35	38	73	8.4
5 – 9 years	43	48	91	10.5
10 – 14 years	52	44	96	11.1
15 – 19 years	54	47	101	11.7
20 – 24 years	30	33	63	7.3
25 – 29 years	33	23	56	6.5
30 – 39 years	41	44	85	9.8
40 –49 years	38	55	93	10.8
50 – 59 years	52	43	95	11.0
60 – 69 years	35	23	58	6.7
70 years+	24	18	42	4.9
TOTAL POPN – this period	444	421	865	
TOTAL POPN – last period	464	440	904	
	Male	Female	Total	
Migration out > 6/12	88	82	170	
Migration in > 6/12	75	57	132	
Total Deaths	5	5	10	
Natural Popn Growth 11%	$= \frac{(Births - Deaths)}{Total\,Population} \times 100$			
Net Population Growth 4.5%	$= \frac{(Births - Deaths) + (Migration\,in - Migration out)}{Total\,Population} \times 100$			

Source: Reproductive Health Section

12 APPENDIX

Appendix 1: Officials and Personnel of the Ministry of Health by Posts, 2006-2010

POST	2010		2009		2008		2007		2006	
	ESTTT POST	POST FILLED	EST POST	POST FILLED	EST POST	POST FILLED	EST POST	POST FILLED	EST POST	POST FILLED
MINISTER FOR HEALTH	**1**	**1**	1	1	1	1	1	1	1	1
ADMINISTRATION	**8**	**6**	**8**	**7**	8	7	8	8	10	5
Director of Health	1	1	1	1	1	1	1	1	1	1
Principal Health Planning Officer	1	1	1	1	1	1	1	1	1	1
Principal Health Administrator	1	1	1	1	1	1	1	1	1	1
Senior Health Administrator	1	0	1	1	1	1	1	1	1	0
Health Administrator	2	2	2	2	3	3	3	3	4	2
Hospital Administrator	1	1	1	1	0	0	0	0	1	0
Assistant Secretary	1	0	1	0	1	0	1	1	1	0
MEDICAL STAFF	**79**	**67**	**84**	**78**	100	81	88	81	100	80
Royal Physician	1	1	1	1	1	0	1	1	1	1
Medical Superintendent	1	1	1	1	2	1	2	1	2	2
Chief Medical Officer	3	2	3	3	3	3	3	3	5	2
Senior Medical Officer	17	9	18	17	16	16	15	14	11	9
Medical Officer Special Grade	6	6	6	6	7	4	6	6	10	9
Medical Officer	26	24	29	24	35	31	31	28	30	23
Chief Surgeon Specialist	1	0	1	1	1	1	1	1	1	1
Anaesthetist Specialist	1	1	1	1	1	1	1	1	2	1
Physician Specialist	1	1	1	1	1	1	1	1	1	0
Obstetrician Gynaecologist	0	0	0	0	0	0	0	0	1	0
Paediatric Specialist	1	1	1	1	1	1	1	1	1	1
Medical Officer Trainee	0	0	0	0	0	0	0	0	2	1
Supervising Health Officer	1	1	1	1	1	1	1	1	1	1
Senior Health Officer	6	6	6	6	6	4	4	4	5	5
Health Training Co-ordinator	0	0	0	0	0	0	0	0	1	0
Health Officer	14	14	14	14	17	16	13	12	16	14
Health Officer Trainee	0	0	1	1	8	1	8	7	10	10
DENTAL STAFF	**39**	**39**	**41**	**35**	46	35	40	33	52	40
Chief Dental Officer	1	1	1	1	1	1	1	1	1	0
Oral Pathologist Specialist	1	1	1	1	0	0	0	0	0	0
Principal Dental Officer	2	2	2	2	2	2	2	1	2	2
Senior Dental Officer	3	3	3	3	4	3	4	4	5	4
Dental Officers	3	3	4	4	6	4	7	3	7	4
Senior Dental Therapist	3	3	3	3	3	2	2	2	5	3
Dental Therapist	16	16	17	17	19	12	13	12	13	13
Senior Dental Technician	0	0	0	0	0	0	0	0	1	1
Dental Prosthodontist	1	1	1	1	1	1	1	1	1	1
Dental Technician	0	0	0	0	2	2	2	1	2	2
Dental Receptionist	1	1	1	1	1	1	1	1	1	1
Dental Therapist Trainee	6	6	6	0	6	6	0	0	5	0
Dental Technician Trainee	2	2	2	2	2	1	0	0	0	0
Dental Chairside Assistant	0	0	0	0	0	0	6	6	8	8
NURSING STAFF	**416**	**406**	**390**	**355**	424	346	378	350	425	325
Chief Nursing Officer	1	1	1	1	1	1	1	1	1	0
Matron	1	1	1	1	1	1	1	1	1	0
Assistant Matron	0	0	0	0	0	0	0	0	1	0
Supervising Public Health Sister	1	1	1	1	1	1	1	1	1	1
Senior Nursing Sister	6	6	3	3	3	3	2	2	3	2
Nursing Sister	13	13	13	13	13	13	13	11	14	12
Senior Staff Nurse	26	26	22	22	24	23	24	21	26	24
Assistant Senior Nursing Sister	1	1	1	1	1	1	1	0	1	1
Staff and Student Nurse	189	185	172	144	221	159	211	198	235	188
Staff Nurse Diplomate	107	104	112	106	89	86	50	50	51	41
Principal Q.S.S.N	1	1	1	1	1	1	1	1	1	1
Nursing Sister Graduate	4	4	4	4	5	2	5	3	8	5
Senior Tutor Sister	3	3	2	2	2	2	1	1	2	1
Senior Nurse Midwife	13	10	10	10	7	7	9	9	7	7
Public Health Sister	1	1	1	1	1	1	1	1	1	1
Public Health Sister Graduate	1	1	1	1	2	1	2	2	3	2

Officials and Personnel of the Ministry of Health by Posts, 2006-2010

POST	2010		2009		2008		2007		2006	
	EST POST	EST FILLED	EST POST	EST FILLE	EST POS	EST FILLE	EST POST	EST FILLE	EST POST	POST FILLE
Public Health Nurse	11	11	12	12	9	6	12	10	22	9
Public Health Nurse Midwife	1	1	1	1	2	1	2	2	3	2
Nurse Midwife	10	10	7	6	10	8	12	10	10	2
Senior Public Health Sister	3	3	2	2	1	1	0	0	1	0
Tutor Sister (Graduate)	0	0	1	1	2	2	2	2	4	3
Clinical Nurse Tutor	0	0	0	0	1	1	1	1	1	0
Clinical Nurse Tutor (Graduate)	1	1	1	1	1	0	1	1	1	0
Senior Public Health Nurse	16	16	15	15	16	15	18	15	17	13
Librarian	1	1	1	1	1	1	1	1	1	1
Nurse Practitioner	4	4	4	4	4	4	4	4	2	2
Senior Public Health Nurse Midwife	1	1	1	1	5	5	2	2	7	7
TECHNICAL STAFF	**130**	**125**	**1359**	**1229**	158	110	121	110	162	115
Senior Health Promotion Officer	1	1	1	1	1	1	0	0	1	0
Health Promotion Officer	0	0	0	0	0	0	0	0	1	0
Health Promotion Officer Graduate	0	0	0	0	1	0	1	1	1	1
Health Promotion Officer (Education)	0	0	0	0	1	0	3	1	1	0
Health Promotion Assistant Grade II	0	0	0	0	2	0	2	2	2	2
Senior Health Education Technician	0	0	0	0	0	0	0	0	1	0
Senior Health Education Assistant	0	0	0	0	0	0	0	0	1	0
Health Promotion Officer Grade I	3	2	3	2	3	3	2	1	2	1
Health Promotion Officer Grade II	7	6	8	4	4	4	3	1	3	1
Health Promotion Officer (Technician)	1	1	1	1	1	1	1	1	1	1
Health Promotion Technician Trainee	0	0	0	0	1	0	1	1	1	1
Supervising Public Health Inspector	1	0	1	1	1	1	1	0	1	1
Senior Public Health Inspector	1	1	1	1	2	1	2	2	2	2
Public Health Inspector Graduate	0	0	0	0	1	0	1	1	1	1
Public Health Inspector	1	0	0	0	0	0	0	0	1	0
Public Health Inspector Grade I	2	2	2	2	2	0	2	2	1	1
Public Health Inspector Grade II	8	7	8	8	9	9	9	9	14	10
Public Health Inspector Trainee	0	0	5	5	0	0	0	0	0	0
Public Facilities Attendant	0	0	0	0	0	0	0	0	1	0
Sanitation Officer	3	3	3	3	4	4	4	4	5	4
Water Maintenance Officer	3	3	3	2	3	3	3	3	3	3
Public Health Assistant Grade I	3	2	3	3	3	3	3	3	3	2
Public Health Assistant Grade II	4	4	0	0	1	0	1	1	1	2
Principal Pharmacist	1	1	1	1	1	1	1	1	1	1
Senior Pharmacist Graduate	1	1	1	1	1	1	1	1	1	1
Pharmacist Graduate	2	2	2	2	2	2	2	2	1	0
Senior Pharmaceutical Technologist	0	0	0	0	0	0	0	0	1	1
Assistant Pharmacist Grade I	6	6	6	6	6	5	3	2	3	3
Assistant Pharmacist Grade II	11	11	11	11	12	12	15	15	17	17
Assistant Pharmacist Trainee	6	6	6	6	1	0	0	0	6	0
Procurement Officer	2	2	2	2	2	2	1	1	1	1
Stock Control Officer	0	0	0	0	0	0	0	0	1	0
Eye Care Practitioner	2	2	2	2	0	0	0	0	0	0
Principal Medical Scientist	1	1	1	1	1	1	1	1	1	1
Senior Medical Scientist	3	3	3	3	3	2	3	3	3	3
Medical Scientist	4	4	4	4	4	4	4	4	4	4
Senior Laboratory Technician	1	1	1	0	1	0	1	1	1	1
Laboratory Technician Grade I	2	2	3	3	3	3	3	3	4	4
Laboratory Technician Grade II	14	14	14	14	15	14	15	14	18	16
Assistant Laboratory Technician Grade	0	0	0	0	0	0	0	0	1	0
Senior Radiology Technologist	0	0	0	0	0	0	0	0	1	0
Radiographer	0	0	0	0	0	0	0	0	1	0
Senior Ultrasonographer	0	0	0	0	0	0	0	0	1	0
Radiographer Graduate	0	0	0	0	0	0	0	0	1	0
Assistant Radiographer Grade I	2	2	2	2	2	2	2	2	5	2
Assistant Radiographer Grade II	4	3	5	5	5	5	4	4	7	5
Radiology Technologist	0	0	0	0	1	0	1	0	1	1
Assistant Radiographer Trainee	0	0	0	0	0	0	0	0	3	0
Assistant Radiographer Grade II Trainee	3	3	3	3	30	0	0	0	1	0
Psychiatric Assistant Grade I	0	0	0	0	0	0	0	0	2	1

Officials and Personnel of the Ministry of Health by Posts, 2006-2010

POST			2009		2008		2007		2006	
	EST POST	EST FILLED	EST POST	POST FILLE	EST POS	POST FILLE	EST POST	POST FILLE	EST POST	POST FILLE
Senior Nutritionist	1	1	1	1	1	1	1	1	1	1
Clinical Psychologist	0	0	1	0	1	1	0	0	0	0
Psychiatric Assistant Grade II	4	4	4	3	5	4	5	3	7	5
Mental Health Welfare Officer	1	1	1	1	1	1	1	1	2	1
Psychiatric Social Worker	1	1	1	1	1	1	1	1	1	1
Nutritionist	1	1	2	1	2	2	2	2	2	2
Physiotherapist	1	1	1	1	1	1	0	0	0	0
Assistant Physiotherapist	0	0	0	0	0	0	1	1	1	0
Occupational Therapist	0	0	0	0	0	0	0	0	1	0
Senior Health Informatics Officer	1	1	1	1						
Health Statistics Officer	0	0	0	0	1	1	1	1	1	1
Computer Programmer	1	1	1	1	1	1	1	1	1	1
Computer Operator Grade I	6	6	5	5	5	5	4	4	1	1
Senior Medical Record Officer	1	1	1	0	1	1	1	1	1	1
Senior Health Project Officer	1	1	1	1	0	0	0	0	0	0
Health Project Officer	0	0	0	0	1	1	1	1	1	1
Senior Health Planning Officer	1	1	1	1	0	0	0	0	0	0
Health Planning Officer	0	0	0	0	1	1	1	1	1	1
Senior Sterile Supply Assistant	0	0	0	0	1	1	0	0	1	1
Sterile Supply Supervisor	1	1	1	1	1	1	0	0	1	0
Sterile Supply Assistant	4	4	5	5	5	4	6	6	4	4
Asset Manager	1	1	1	0	0	0	0	0	0	0
Hospital Estate Officer	1	1	1	0	0	0	0	0	0	0
ACCOUNTING AND CLERICAL	**49**	**46**	**55**	**50**	56	51	44	41	58	42
Senior Accountant	1	1	1	1	1	1	0	0	1	1
Principal Accounting Officer	1	1	1	1	1	1	1	1	1	1
Accounting Officer	2	2	2	2	2	2	2	2	2	2
Senior Hospital Executive Officer	1	1	1	1	1	1	1	1	1	1
Clerk Class I	1	1	2	2	2	2	2	2	3	2
Clerk Class II	2	2	2	2	2	2	3	3	3	3
Medical Record Officer	0	0	0	0	0	0	0	0	1	0
Senior Medical Recorder	0	0	0	0	0	0	0	0	1	0
Medical Recorder	1	1	2	1	2	2	2	2	3	2
Junior Medical Recorder	12	10	13	13	13	13	10	8	10	9
Typist Clerk Grade III	0	0	0	0	0	0	1	1	1	1
Computer Operator Grade II	5	5	5	5	5	2	2	2	3	1
Computer Operator Grade III	4	4	5	5	5	5	5	5	7	3
Computer Assistant	11	11	13	10	14	13	9	9	10	7
Registry Clerk	1	1	1	1	1	1	0	0	0	0
Health Registry Recorder	0	0	0	0	0	0	1	1	2	2
Financial Analyst	1	1	1	1	1	1	1	1	1	0
Accounting Officer Diplomate	2	1	2	2	2	2	2	2	2	2
Clerk Class III	4	4	4	3	4	3	2	1	6	5
SUPERVISORY AND DOMESTIC	**113**	**109**	**117**	**112**	138	123	125	110	174	132
Medical Storeman	1	1	1	1	1	1	1	1	1	1
Assistant Medical Storeman	1	1	1	1	1	1	1	1	1	1
Storeman Clerk	0	0	0	0	1	0	1	1	1	1
Store Assistant	3	3	3	3	3	3	3	3	4	3
Catering supervisor	1	1	1	1	1	1	0	0	0	0
Chief Cook	1	1	1	1	1	1	1	1	2	0
Assistant Cook	14	13	13	12	13	11	12	11	14	13
Seamstress Supervisor	0	0	0	0	0	0	0	0	1	0
Seamstress	0	0	0	0	0	0	0	0	1	0
Domestic Supervisor	2	2	2	2	2	2	2	1	1	0
Laundry Supervisor	1	1	1	1	1	1	1	1	1	1
Laundryman	4	4	4	4	4	4	4	4	5	4
Laundry Maid	7	7	7	7	11	9	11	9	13	11
Male Orderlies	9	8	9	9	10	10	10	9	18	10
Wardmaids	13	13	15	14	18	16	18	15	23	18
Laboratory Maid	3	3	3	3	11	9	4	3	5	4
Dental Maid	1	1	1	1	1	1	1	0	1	0
Transport Supervisor	1	1	1	1	1	1	0	0	1	1
Senior VIP Driver	1	1	1	1	1	1	1	1	1	1
VIP Driver	1	1	1	0	1	1	1	1	1	1
Driver	24	24	25	24	25	25	24	23	27	25
Senior Driver	0	0	0	0	0	0	0	0	1	1
Mechanic	0	0	0	0	0	0	0	0	1	1
House Keeper	2	2	2	2	2	2	2	2	2	2
Groundskeeper	3	3	3	3	4	3	4	3	7	4
Caretakers	1	1	2	1	2	1	2	1	2	2

Officials and Personnel of the Ministry of Health by Posts, 2006-2010

POST	2010		2009		2008		2007		2006	
	EST POST	EST FILLED	EST POST	POST FILLE	EST POS	POST FILLE	EST POST	POST FILLE	EST POST	POST FILLE
Building Tradesman Leading Hand	1	1	1	1	1	1	1	1	1	1
Steam Maintenance Fitter	0	0	0	0	1	0	1	1	1	1
Boilerman	2	2	2	2	2	2	2	2	2	2
Refrigeration Mechanic	1	1	1	1	1	1	1	1	1	1
Leading Hand Electrician	1	1	1	1	1	1	1	1	1	1
Master	0	0	0	0	0	0	0	0	1	0
Oxygen Plant Operator	0	0	1	1	1	1	1	1	1	1
Engineer	0	0	0	0	0	0	0	0	1	1
Senior Telephone Operator	1	1	1	1	1	1	1	1	1	1
Telephone Operator	3	2	3	3	5	3	2	2	4	4
Painter	0	0	0	0	0	0	0	0	1	1
Senior Hospital Engineer Graduate	0	0	0	0	1	0	1	1	1	1
Plumber	1	1	1	1	1	1	1	1	2	1
Kitchen Hand	1	1	1	1	1	1	1	0	2	0
Plumber Tradesman Leading hand	1	1	1	1	1	1	1	1	1	1
Sewage Plant Operator	0	0	0	0	0	0	0	0	1	0
Hospital Fitter Electrician	1	1	1	1	1	1	1	1	1	1
Hospital Service Foreman	0	0	0	0	0	0	0	0	1	0
Hospital Maintenance Electrician	1	0	1	1	1	1	1	1	1	1
Technician Electromedical	1	1	1	1	1	1	1	1	1	1
Mechanical Supervisor	1	1	1	1	1	1	1	1	1	1
Handyman	1	1	1	1	1	1	1	1	1	1
Hospital Security Officer	1	1	2	2	1	1	1	1	6	3
Security Officer	1	1	0	0	1	1	1	0	1	1
Garbage Removal Supervisor	0	0	0	0	0	0	0	0	1	1
Garbage Remover	0	0	0	0	0	0	0	0	3	0
GRAND TOTAL	**835**	**799**	830	758	931	754	805	734	982	740

Source: Human Resource Section, Ministry of Health

Description: This table presents the staff establishment of the Ministry of Health from 2006 to 2010.

.

Appendix 2: Estimates of Health Expenditure and Revenue Government of Tonga, Fiscal Years 2003/2004-2010/2011

FISCAL YEAR	MINISTRY OF HEALTH GROSS RECURRENT EXPENDITURE	MINISTRY OF HEALTH TOTAL REVENUE	MINISTRY OF HEALTH NET RECURRENT EXPENDITURE	PROJECTED POPULATION OF TONGA	MINISTRY OF HEALTH GROSS RECURRENT EXPENDITURE PER HEAD
2010/2011(App Bud)	22,500,000	1,000,000	21,500,000	103641	217
2009/2010 (App Bud)	21,375,000	1,000,000	21,375,000	103,185	207
2008/2009 (App Bud)	21,580,000	506,000	21,074,000	102,724	210
2007/2008 (App Bud)	17,760,981	506,353	17,254,628	102,259	174
2006/2007 (App Bud)	20,170,094	330,544	19,839,550	102,907	196
2005/2006 (Prov)	17,442,899	338,056	17,104,843	102,369	170
2004/2005 (Prov)	13,520,930	371,126	13,149,804	101,865	133
2003/2004 (Act)	11,765,173	336,136	11,429,037	101,404	116

Source: Program Budget Estimate of the Government of Tonga
Tonga Population Census 1996 Demographic Analysis, Statistics Department
Tonga Government Gazette, 27th June 2005
Ministry of Finance

Description: This table contains data of financial resources allocated from the Government of Tonga to the Ministry of Health. It also shows the revenue generated from services delivered by the Ministry of Health and deposited with the Ministry of Finance. The Net Recurrent Expenditure column is derived as the difference between Gross Recurrent Expenditure and Total Revenue. The Gross Recurrent Expenditure per head is derived by dividing Gross Recurrent Expenditure by Projected Population Column.

App Bud- Approved Budget
(Act) - Official amount that has been Gazetted.
(Prov) - Provisional amount provided by Ministry of Finance but has been not Gazetted
(Est) - Estimated Amount from the Budget Estimate of the Government of Tonga for the Current Financial Year.

Note: All data in this table have been revised from the Annual Report 2005 except Projected Population. This revision was based on the adjustment of the Gross Recurrent Expenditure and Ministry of Heath's Total Revenue column from Estimated to Actual and Provisional Amounts.

Appendix 3: Ministry of Health Recurrent Expenditure and Government Recurrent Expenditures: Government of Tonga, 2005/2006 - 2010/2011

FISCAL YEAR	HEALTH SERVICES EXPENDITURE	TOTAL GOVERNMENTS RECURRENT EXPENDITURE	% OF TOTAL GOVERNMENT EXPENDITURE
2010-2011 (Est)	22,500,000	222,064,744	10.1%
2009-2010 (Est)	21,375,000	182,596,569	11.7%
2008-2009 (Est)	21,580,000	215,639,239	10.0%
2006-2007(Est)	17,760,981	235,608,737	7.5%
2005-2006 (Est)	14,845,304	167,333,724	10.4%

Source: Program Budget Estimate of the Government of Tonga
Tonga Population Census 1996 Demographic Analysis, Statistics Department
Tonga Government Gazette, 27th June 2005
Ministry of Finance

Description: This table contains the Gross Recurrent Expenditure of the Ministry of Health and the Government of Tonga. The percentage of Total Government Expenditure is derived from the Ministry and the Government's Recurrent Expenditure.

Appendix 4: Population by Sex, 2001 – 2010

YEARS	BOTH	MALE	FEMALE
2010	103641	52,575	51,067
2009	103185	52351	50834
2008	102730	52127	50603
2007	102259	51898	50361
2006	102907	52561	50346
2005	102369	52260	50109
2004	101865	51975	49890
2003	101404	51711	49693
2002	101002	51473	49529
2001	100673	51273	49400

Source: Tonga Population Census 2006 Demographic Analysis, Statistics Department

Description: This data was extracted from the Tonga Population Census 2006 to project the estimated population for 2010. Note that there are slight differences between this table and the Tonga Population Census 2006 but this is attributed to decimal point rounding.

Appendix 5: Population Break Down by Sex and Age Group, 2010

AGE GROUPS	TOTAL	ACCUMULATE %	MALE	FEMALE
ALL AGES	103641	100%	52575	51067
0 - 4	13597	13%	7055	6543
5 - 9	13139	13%	6906	6234
10 - 14	12208	12%	6393	5815
15 - 19	10904	11%	5638	5266
20 - 24	8551	8%	4429	4122
25 - 29	7734	7%	3850	3884
30 - 34	6332	6%	3109	3223
35 - 39	5885	6%	2915	2970
40 - 44	5778	6%	2919	2860
45 - 49	4500	4%	2310	2190
50 - 54	3598	3%	1736	1862
55 - 59	3038	3%	1446	1592
60 - 64	2441	2%	1166	1275
65 - 69	2054	2%	974	1080
70 - 74	1696	2%	826	870
75 - 79	1131	1%	511	620
80+	1054	1%	392	662

Source: Tonga Population Census 2006 Demographic Analysis, Statistics Department

Description: The above data was extracted from the Tonga Population Census 2006 to show the estimated population and age group for 2010 and age group. Please note that there are slight differences between this table and the Tonga Population Census 2006 but this is attributed to decimal point rounding.

Appendix 6: Reported Livebirths, Total Deaths and Infant Deaths Under 1 Year, 2005 – 2010

YEARS	LIVEBIRTHS		DEATHS		INFANT DEATHS	
	TOTAL	CRUDE BIRTH RATE*	TOTAL	CRUDE DEATH RATE *	TOTAL	INFANT MORTALITY RATE **
2010	2695	26.0	553	5.3	45	16.7
2009	2623	25.4	571	5.5	38	14.5
2008	2746	26.7	520	5.1	45	16.4
2007	2738	26.8	541	5.3	32	11.7
2006	2716	26.5	514	5.0	29	10.7
2005	2634	25.7	543	5.3	31	11.8

* Rate per 1,000 population
** Rate per 1,000 livebirths

Source: Death Database, Health Information Section
Livebirth Database, Health Information Section
Vaiola Hospital Mortuary Registration Book
Admission and Discharge Database, Health Information and Medical Records Section

Description: The table reflects the absolute number and rate of livebirths, deaths and infant deaths for the whole of Tonga.

Appendix 7: Reported Livebirths by Age of Mother and District, 2010

Age Group	Female	Male	Total	%	Tongatapu	Vava'u	Ha'apai	Eua	Ntt
<15	1	2	3	0%	3	0	0	0	0
15-19	74	72	146	5%	138	6	1	1	0
20-24	317	383	700	26%	630	44	16	9	1
25-29	400	411	811	30%	707	61	27	16	0
30-34	270	301	572	21%	513	34	14	10	0
35-39	163	184	347	13%	305	33	6	2	0
40-44	53	59	111	4%	99	9	1	2	0
45 – 49	2	3	5	0%	5	0	0	0	0
Total	**1280**	**1415**	**2695**	**100%**	**2401**	**188**	**65**	**40**	**1**

Source: Livebirth Certificates issued by the Ministry of Health.

Description: This table captures the distribution of livebirths by age of mother and by district. The primary data source of this database is the duplicate copies of the Certificate of livebirth which are issued by staff of the Ministry of Health for livebirths occurring in hospitals, health centres and the community.

Limitations: There is a small percentage of livebirths that may not be captured in the Ministry's livebirth process. A validation process is taking place between the Health Information Database, Reproductive Health Section and Obstetric Wards data to improve reporting. The discrepancies between these sources are now less than 3%.

Appendix 8: Reported Deaths By Age and District, 2009

Age Group	Place of Death				Place of Death				
	F	M	BOTH	Accum%	Vaiola	Ngu	Niu'ui	Niu'eiki	Others
<1	29	30	58	11%	39	1	0	0	18
'1-4	3	6	9	2%	6	0	0	0	3
'5-14	0	4	4	1%	2	0	0	0	2
'15-24	3	6	9	2%	6	1	0	0	2
'25-34	2	13	15	3%	8	2	1	0	4
'35-44	14	22	36	6%	10	1	0	0	25
'45-54	22	30	52	9%	27	1	0	0	25
'55-64	45	46	91	17%	35	8	2	2	44
'65-74	46	68	114	21%	51	2	1	1	59
'75+	71	92	163	29%	51	9	1	0	103
Grand Total	**235**	**318**	**553**	**100%**	**235**	**25**	**5**	**3**	**285**

Source: Medical Records Inpatient Death Database
Death Certificates issued by the Ministry of Health

Description: This table reflects the pattern of mortality by age group, sex and districts irrespective of cause of death.

Limitation: It is acknowledge that there may be cases of unreported deaths especially those who die in the community and the isolated islands. Further work is being undertaken to validate community deaths.

Appendix 9: Health Facilities by District, 2010

DISTRICT	LOCATION	ESTIMATED POPULATION	AVAILABLE HEALTH FACILITY		
			HOSPITAL	HEALTH CENTRE	MCH CLINIC
TONGATAPU	Tofoa	71029	1	0	19
	Kolonga	5065	0	1	0
	Mu'a	5734	0	1	0
	Fua'amotu	4107	0	1	0
	Vaini	6366	0	1	0
	Houma	4369	0	1	0
	Nukunuku	3178	0	1	0
	Kolovai	3596	0	1	0
VAVA'U	Neiafu	16665	1	0	5
	Ta'anea	2430	0	1	0
	Falevai	1339	0	1	0
	Tefisi	2518	0	1	0
HA'APAI	Hihifo	8628	1	0	5
	Nomuka	779	0	1	0
	Ha'afeva	1358	0	1	0
'EUA	Niu'eiki	5232	1	0	3
NIUA'S	Niuatoputapu	1360	0	1	1
	Niuafo'ou	779	0	1	1

Source: Estimated Population based on Statistics Department projections.

Description: This is a list of health facilities (Hospital, Health Centre and MCH Clinic), their location and the estimated population living in these area served by the respective health facility.

Assumption: Due to a lack of precise indicators to measure the population mobility and the variance of natural increase, the Ministry assumes that the proportion of the population living in each place remains the same over time.

Appendix 10: Laboratory Tests Referred and Performed in the Hospital Laboratories, 2006-2010

TYPE OF TEST	2010	2009	2008	2007	2006	%	TT	VV	HP	'EUA
Blood	23347	52871	234314	45016	164218	**93.36%**	209795	17846	3235	2601
Urine	10602	1970	8204	2269	3783	**4.24%**	8702	1271	442	187
Stool and Rectal swabs	851	462	50	1078	997	**0.34%**	819	22	8	2
Sputum	434	505	30	487	268	**0.17%**	425	0	0	9
Cerebro-Spinal Fluids	56	40	281	68	561	**0.02%**	56	0	0	0
Pleural & Other body fluids	130	0	0	35	561	**0.05%**	130	0	0	0
Skin Scrapping	7	8	8	23	49	**0.00%**	6	1	0	0
Water	32	197	0	56	748	**0.01%**	32	0	0	0
Leprosy skin biopsy	0	0	0	0	0	**0.00%**	0	0	0	0
Medico - legal Test	0	0	0	4	2	**0.00%**	0	0	0	0
Semen	27	5	5	9	0	**0.01%**	27	0	0	0
Pus & Other swab	1406	668	1667	395	520	**0.56%**	1394	4	2	6
Bone Marrow	0	0	0	0	0	**0.00%**	0	0	0	0
Cytology	108	99	119	106	106	**0.04%**	108	0	0	0
Histology	712	716	517	711	642	**0.28%**	712	0	0	0
Food	0	0	0	0	0	**0.00%**	0	0	0	0
Tissues	0	0	0	0	0	**0.00%**	0	0	0	0
TOTAL	**250082**	**57541**	**245195**	**50257**	**169187**	**100.00%**	**224446**	**19144**	**3687**	**2805**
Specimens for oversease tests:										
Blood	1729	0	2084	1087	1418	**97.74%**	**1729**	0	0	0
Sputum / TB Sensitivity	0	0	0	0	0	**0.00%**	**0**	0	0	0
Body Fluid	6	0	0	0	0	**0.34%**	**6**	0	0	0
Bone Marrow	3	0	0	0	0	**0.17%**	**3**	0	0	0
Histology	15	0	0	0	1	**0.85%**	**15**	0	0	0
Culture – Salmonella Typing	0	0	0	0	0	**0.00%**	**0**	0	0	0
Urine	16	7	12	0	6	**0.90%**	**0**	0	0	0
Miscellaneous	0	0	0	0	0	**0.00%**	**0**	0	0	0
TOTAL	**1769**	**7**	**2096**	**1087**	**1425**	**100.00%**	**1769**	**0**	**0**	**0**

Source: Laboratory Manual Registration

Description: This table contains the types of tests referred and preformed in the hospitals laboratories in 2010 and the previous four years.

Appendix 11: Radiological Services Monthly Report, 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CHEST RADIOGRAPHY: Investigation for Diseases	283	293	333	357	328	271	316	222	182	279	253	177
Investigation for Injuries	15	9	24	19	15	11	13	16	5	12	4	17
HEALTH REQUIREMENTS FOR: Civil Services	2	1	3	1	6	1	5	1		4	2	1
Other Services	25	48	17	20	42	22	40	25	80	43	46	30
Visas	333	231	161	119	82	58	37	79	166	232	186	104
ABDOMEN RADIOGRAPHY: General Abdomen	33	21	35	35	37	51	29	31	24	42	28	25
Ba Meal	6	2	6	4	4	4	3	1		1	3	2
Ba Enema	0	1	2	3	3	2	1	2	1	3	1	1
Urography	3	2	5	3	3	3			2	3	3	
BONE RADIOGRAPHY: Extremeties	149	200	160	114	147	125	150	117	89	131	142	123
Cervical Spine	23	13	15	27	18	15	17	17	11	25	13	17
Thoracic Spine	6	3	3	2	7	7	3	4	4	6	6	2
Lumbosacral Spine	23	14	28	23	30	30	27	34	27	32	31	25
Skull & Facial Bones	60	64	78	88	79	17	63	64	57	58	58	56
OPG												
Pelvis & Hips	20	15	17	20	21	17	19	14	20	18	11	9
SCREENING PROGRAMME MISCELLANEOUS: Myelogram	3		1			1		2	2	1	2	
Venogram (holecysgram)	1											
Silalogram				1		1	1					
MCU				1						9		
Foreign Body	O	2	2	7	3	6	5	16	6	9	10	5
TOTAL	**985**	**919**	**890**	**844**	**825**	**642**	**729**	**645**	**676**	**908**	**799**	**594**

Source: Radiology Manual Registration

Description: This table contains the types of radiological services performed in Vaiola hospital in 2010.

Appendix 12: Psychiatric Ward Admissions, 2005-2009

CAUSES	2010	2009	2008	2007	2006	2005
Schizophrenia	105	80	104	44	49	30
Schizoaffective disorder	5	13	3	2	2	0
Bipolar mood disorder	47	55	45	43	36	23
Acute and transient psychotic disorder	5	15	0	2	0	2
Personality and behavioural disorder due to brain disease, damage and dysfunction	8	2	1	0	1	3
Other Non-Organic psychosis	3	2	0	6	3	3
Delusional disorder	2	3	4	2	1	1
Other anxiety disorder	0	0	0	0	0	0
Other non-organic psychotic disorder and panic disorder	0	0	0	0	0	0
Dementia	2	7	3	2	4	3
Other mental disorder due to brain damage, and dysfunction and physical disease	2	4	1	0	2	2
Mental retardation	5	1	9	4	7	1
Mental and behavioural disorders due to use of alcohol	3	3	4	2	1	0
Mental and behavioural disorders due to use of cannabinoids	0	1	3	0	4	0
Conduct disorder	0	0	2	0		1
Mental and behavioural disorder due to psychoactive substance use	6	3	1	7	3	4
Non-organic sleep disorder, unspecified	0	0	0	0	0	0
Dissociative (conversion) disorder	0	0	2	3	1	0
Borderline Personality disorder	1	0	0	0	0	0
Other schizophrenic-like disorder	0	0	0	0	0	0

Source: Mental Health Ward Manual Registration

Description: Statistics on the causes of admission to the Psychiatric Ward for 2010 and the previous five years

Appendix 13: Queen Salote School of Nursing Student Roll, 2006-2010

Class	No.of Student 1/1/09	No. of student 31/12/09	Graduated	Resigned	Terminated	Defer
2006	27		27			
2008	33	29			4	
2009		33			0	
2010	29	29			0	
Total	**89**	**91**	**27**		**4**	

Source: Queen Salote School of Nursing Student Roll

Description: Total number of new nursing students recruited at the beginning of each training program since 2006. This also indicates the number of students that successfully completed the training program, and those who left without completing.

Appendix 14: Ante Natal Clinic Attendance (New) by Trimester and District, 2010

TRIMESTER	TONGA		TT		VV		HP		'EUA		NIUA'S	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Early (12 weeks)	167	6.5%	96	5.0%	21	5.4%	26	19.8%	19	15.2%	5	27.8%
1 (13-20 weeks)	602	23.5%	386	20.3%	117	30.3%	44	33.6%	48	38.4%	7	38.9%
II (21-32 weeks)	1268	49.4%	966	50.7%	197	51.0%	54	41.2%	46	36.8%	5	27.8%
III (33+)	476	18.6%	414	21.7%	45	11.7%	5	3.8%	11	8.8%	1	5.6%
No Booking	53	2.1%	***44***	2.3%	6	1.6%	2	1.5%	1	0.8%	0	0.0%
TOTAL	**2566**	100.0%	**1906**	100.0%	**386**	100.0%	**131**	100.0%	**125**	100.0%	**18**	100.0%

No Booking: No ante natal care

Source: Reproductive Health Section

Description: This table provides the number of mothers attending the Ante Natal Clinic by the stages of pregnancy by District for 2010.

Appendix 15: Immunization Programme Coverage, 2010

Immunization		Tonga			Tongatapu		Vava'u		Ha'apai		'Eua		Niua's	
		Tot	Imm.	%	Tot	Imm.	Tot	Imm.	Tot	Imm.	Tot	Imm.	Tot	Imm.
BCG	1	2908	2894	99.5%	2207	2199	403	398	152	151	126	126	20	20
POLIO	1	2760	2760	100.0%	2080	2080	379	379	145	145	133	133	23	23
	2	2666	2662	99.8%	2020	2018	349	348	139	139	135	135	23	22
	3	2517	2505	99.5%	1941	1932	296	294	131	131	128	128	21	20
HEP B	1	2901	2901	100.0%	2200	2200	403	403	152	152	126	126	20	20
DPT/HepB./HIB	1	2760	2760	100.0%	2080	2080	379	379	145	145	133	133	23	23
DPT/HIB	2	2663	2659	99.8%	2017	2015	349	348	139	139	135	135	23	22
DPT/HIB	3	2517	2505	99.5%	1941	1932	296	294	131	131	128	128	21	20
MR	1	2560	2540	99.2%	1937	1923	355	354	152	151	96	92	20	20
	2	2229	2192	98.3%	1753	1721	270	269	103	99	92	92	11	11
DPT	4	2243	2209	98.5%	1767	1738	270	269	103	99	92	92	11	11
TOTAL		28724	28587	99.5%	21943	21838	3749	3735	1492	1482	1324	1320	216	212

Source: Reproductive Health Manual Registration

Description: This table shows the type immunization provided by Public Health Nurses, the coverage rate of immunization for 2010.

Appendix 16: Infant Nutritional Mode, 2010

Nutritional Mode	TONGA		Tongatapu		Vava'u		Ha'apai		'Eua		Niua's	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
A. Exclusive Breast Feeding:												
(4 - 12 months)	2816	63.2%	1846	58.3%	500	122.5%	238	81.5%	197	71.4%	35	87.5%
B. No Breast Feeding:												
(4 - 12 months)	158	3.5%	130	4.1%	15	3.7%	11	3.8%	0	0.0%	2	5.0%
C. Breast Feeding with Supplement:												
(4 - 12 months)	49	1.1%	331	10.5%	74	18.1%	10	3.4%	31	11.2%	3	7.5%
Total No.of Mother's interviewed	4459		3164		408		292		276		40	

Source: Reproductive Health Manual Registration

Description: This table shows the number and rates of the different types of infant feeding for the main island of Tonga as reported by mothers who were interviewed for 2010.

Appendix 17: Number of New Acceptors by Method, 2010

DISTRICT	IUD	PILL		CONDOM		RHYTHM	LAM	TUB	DEPO	OTHERS	TOTAL
Tongatapu	93	109	146	508	0	0	4	123	496	0	**1479**
Vava'u	14	9	66	37	1	0	1	22	91	0	**241**
Ha'apai	20	6	11	34	1	0	0	11	41	0	**124**
Eua	3	2	4	8	0	0	0	3	28	0	**48**
Niua's	0	1	1	4	0	0	0	2	0	0	**8**
TFH	73	87	9	420					69		**658**
Total	**203**	**214**	**237**	**1011**	**2**	**0**	**5**	**161**	**725**	**0**	**2558**
%	7.9%	8.4%	9.3%	39.5%	0.1%	0.0%	0.2%	6.3%	28.3%	0.0%	100.0%

Source: Reproductive Health Manual Registration

Description: This table shows the number of new users of contraceptives by method for the main islands of Tonga in 2010.

Appendix 18: Total Contraceptive Users by Method and Age, (Method Mix), 2010

AGE GROUP	IUD	PILL		CONDOM		TL	Other	VAS	NATURAL METHOD	DEPO	TOTAL
		C	M								
Below 20	9	3	10	24	1	0		0	3	27	**77**
20 - 24	52	70	93	123	0	6		0	30	331	**705**
25 - 29	152	143	133	194	0	51		3	55	615	**1346**
30 - 34	172	153	135	175	1	233		2	80	663	**1614**
35 - 39	189	105	66	137	2	394	1	5	92	485	**1476**
40 - 44	148	57	29	70	0	513		15	65	298	**1195**
45 +	69	16	3	21	0	333		2	46	116	**606**
TFHA	73	87	9	420	0	0		0	0	69	**658**
TOTAL	**864**	**634**	**478**	**1164**	**4**	**1530**	**1**	**27**	**371**	**2604**	**7677**

C:- Combined
M:- Mini-pill

Source: Reproductive Health Manual Registration

Description: This table shows the contraceptive users by method and age group for 2009.

Appendix 19: Medically Certified Causes of In-Patient and Out-Patient Deaths by Age Group, 2010

Causes of Death	TOTAL			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+		Unkno	
	BO	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Diseases of the circulatory system	**160**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**8**	**3**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**0**	**5**
Acute myocardial infarction, unspecified	**43**	**1**	**3**		1										4	1	3	3	8	2	8	7	4		2
Acute rheumatic heart disease, unspecified	**1**	**0**	**1**										1												
Acute subendocardial myocardial infarction	**2**	**0**	**2**														1				1				
Acute transmural myocardial infarction of anterior wall	**1**	**0**	**1**														1								
Acute transmural myocardial infarction of inferior wall	**2**	**1**	**1**													1							1		
Acute transmural myocardial infarction of other sites	**2**	**0**	**2**																		2				
Aortic (valve) stenosis	**1**	**1**	**0**															1							
Atrial fibrillation and flutter	**1**	**0**	**1**																		1				
Cardiac arrest, unspecified	**25**	**1**	**1**							1		1	1		2		1	1	5	2	3	5	2		1
Cardiac arrhythmia, unspecified	**1**	**0**	**1**																1						
Cardiomyopathy, unspecified	**3**	**1**	**2**																		1	1	1		
Cardiovascular disease, unspecified	**5**	**0**	**5**												1		1		1		1				1
Cerebral infarction, unspecified	**1**	**1**	**0**																			1			
Chronic ischaemic heart disease, unspecified	**4**	**2**	**2**															2	1		1				
Congestive heart failure	**11**	**5**	**6**														1	2	1	2		1	4		
Disease of pulmonary vessels, unspecified	**1**	**1**	**0**															1							
Essential (primary) hypertension	**9**	**3**	**6**												1		2			1	3	2			
Generalised and unspecified atherosclerosis	**2**	**0**	**2**																		2				
Heart disease, unspecified	**2**	**1**	**1**																	1			1		
Heart failure, unspecified	**11**	**5**	**6**								1					1		2	2	1	2	1	1		
Hypertensive heart disease	**1**	**0**	**1**																				1		
Hypertensive renal disease without renal failure	**1**	**0**	**1**																						1
Intracerebral haemorrhage in cerebellum	**1**	**0**	**1**														1								
Intracerebral haemorrhage, unspecified	**6**	**3**	**3**															1		1	2	1	1		
Intracranial haemorrhage (nontraumatic), unspecified	**3**	**2**	**1**															2	1						
Left ventricular failure	**1**	**0**	**1**																1						
Occlusion and stenosis of unspecified cerebral artery	**1**	**1**	**0**											1											
Other forms of acute ischaemic heart disease	**1**	**0**	**1**																1						
Pulmonary embolism without mention of acute cor pulmonale	**1**	**0**	**1**																				1		
Pulmonary heart disease, unspecified	**1**	**0**	**1**																1						
Rheumatic heart disease, unspecified	**1**	**0**	**1**								1														
Sequelae of stroke, not specified as haemorrhage or infarction	**1**	**0**	**1**																				1		
Stroke, not specified as haemorrhage or infarction	**13**	**5**	**8**														1	2		1	1	2	6		
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	**102**	**52**	**50**	**5**	**4**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**6**	**4**	**1**	**4**	**2**	**6**	**4**	**27**	**28**	**3**	**2**
Abnormal findings on diagnostic imaging of lung	**1**	**1**	**0**			1																			
Asphyxia	**2**	**0**	**2**												1				1						
Haemorrhage, not elsewhere classified	**3**	**2**	**1**													1				1			1		
Instantaneous death	**3**	**1**	**2**												1				1			1			
Other and unspecified abdominal pain	**2**	**1**	**1**	1																			1		

Causes of Death	TOTAL			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+		Unkno	
	BO	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Diseases of the circulatory system	**160**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**8**	**3**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**0**	**5**
Other and unspecified convulsions	**1**	**0**	**1**																				1		
Other ill-defined and unspecified causes of mortality	**4**	**3**	**1**															1				2	1		
Respiratory arrest	**1**	**0**	**1**																				1		
Senility	**36**	**2**	**1**															1		3		1	1		
Unknown and unspecified causes of morbidity	**49**	**2**	**2**	4	4		1				1		1	2	4	3	1	2		2	4	6	9	3	2
Neoplasms	**83**	**3**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**3**	**1**	**8**	**8**	**8**	**1**	**1**	**3**	**1**	**0**	**2**
Acute myeloid leukaemia, without mention of remission	**1**	**0**	**1**														1								
Leukaemia, unspecified	**1**	**0**	**1**																1						
Leukaemia, unspecified, without mention of remission	**2**	**2**	**0**													2									
Liver cell carcinoma	**1**	**0**	**1**												1										
Lymphoid leukaemia	**1**	**1**	**0**																	1					
Malignant neoplasm of brain, unspecified	**1**	**0**	**1**						1																
Malignant neoplasm of breast, unspecified part	**11**	**1**	**1**											1		3		4		2			1		
Malignant neoplasm of bronchus or lung, unspecified	**11**	**3**	**8**													2	2		3		1	1	1		1
Malignant neoplasm of caecum	**1**	**1**	**0**																			1			
Malignant neoplasm of cervix uteri, unspecified	**3**	**3**	**0**											2		1									
Malignant neoplasm of colon, unspecified part	**1**	**1**	**0**																	1					
Malignant neoplasm of gallbladder	**1**	**1**	**0**																	1					
Malignant neoplasm of ill-defined sites within the digestive system	**1**	**1**	**0**																	1					
Malignant neoplasm of larynx, unspecified	**1**	**0**	**1**																		1				
Malignant neoplasm of liver, unspecified	**13**	**4**	**9**												1	3	2			1	4		2		
Malignant neoplasm of pancreas, part unspecified	**1**	**1**	**0**																	1					
Malignant neoplasm of pelvis	**1**	**0**	**1**																		1				
Malignant neoplasm of prostate	**7**	**0**	**7**																		3		4		
Malignant neoplasm of stomach, unspecified	**7**	**4**	**3**													1			1	2		1	2		
Malignant neoplasm of thyroid gland	**1**	**0**	**1**																1						
Malignant neoplasm of tongue, unspecified	**1**	**0**	**1**														1								
Malignant neoplasm of upper limb	**1**	**0**	**1**																1						
Malignant neoplasm of uterus, part unspecified	**1**	**1**	**0**															1							
Malignant neoplasm without specification of site	**10**	**4**	**6**												1		2	3		1	1		1		1
Multiple myeloma	**1**	**0**	**1**																		1				
Secondary malignant neoplasm of lung	**1**	**0**	**1**																1						
Secondary malignant neoplasm of other and unspecified digestive organs	**1**	**1**	**0**																	1					
Diseases of the respiratory system	**50**	**2**	**2**	**5**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**2**	**0**	**1**	**1**	**1**	**2**	**1**	**6**	**1**	**1**	**0**	**0**
Asthma, unspecified	**1**	**0**	**1**																		1				
Bronchiectasis	**1**	**1**	**0**													1									
Bronchopneumonia, unspecified	**1**	**1**	**0**																			1			
Chronic obstructive pulmonary disease, unspecified	**5**	**0**	**5**																		2		3		
Hypostatic pneumonia, unspecified	**12**	**7**	**5**															1				6	5		
Other disorders of lung	**3**	**1**	**2**																1			1	1		
Pneumonia, unspecified	**11**	**5**	**6**	2	1	1											1			1	1	1	3		
Pneumonitis due to food and vomit	**6**	**4**	**2**	3										1					1				1		
Pneumothorax, unspecified	**2**	**0**	**2**		1								1												

Causes of Death	TOTAL			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+		Unkno	
	BO	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Diseases of the circulatory system	**160**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**8**	**3**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**0**	**5**
Pulmonary oedema	**1**	**0**	**1**										1												
Respiratory failure, unspecified	**3**	**2**	**1**									1		1											
Status asthmaticus	**2**	**0**	**2**																		2				
Unspecified acute lower respiratory infection	**2**	**2**	**0**																			2			
Endocrine, nutritional and metabolic diseases	**33**	**1**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**1**	**5**	**1**	**4**	**7**	**3**	**3**	**3**	**0**
Hyperosmolality and hypernatraemia	**1**	**0**	**1**												1										
Metabolic disorder, unspecified	**1**	**1**	**0**	1																					
Type 2 diabetes mellitus with advanced renal disease	**2**	**0**	**2**																		2				
Type 2 diabetes mellitus with features of insulin resistance	**1**	**1**	**0**															1							
Type 2 diabetes mellitus with hyperosmolarity with coma	**1**	**1**	**0**																			1			
Type 2 diabetes mellitus with poor control	**5**	**3**	**2**															1		1	1	1	1		
Type 2 diabetes mellitus without complication	**3**	**1**	**2**																		1	1	1		
Unspecified diabetes mellitus with features of insulin resistance	**4**	**2**	**2**												1	1				1	1				
Unspecified diabetes mellitus with foot ulcer due to multiple causes	**5**	**4**	**1**															1		1	1			2	
Unspecified diabetes mellitus without complication	**8**	**5**	**3**											1				2	1	1	1		1	1	
Vitamin A deficiency, unspecified	**1**	**0**	**1**														1								
Volume depletion	**1**	**1**	**0**	1																					
Certain infectious and parasitic diseases	**31**	**1**	**1**	**2**	**4**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**2**	**1**	**2**	**5**	**5**	**4**	**0**	**0**
Acute hepatitis B without delta-agent and without hepatic coma	**1**	**1**	**0**															1							
Amoebic brain abscess	**1**	**0**	**1**																1						
Bartonellosis, unspecified	**2**	**1**	**1**																			1	1		
Brucellosis, unspecified	**1**	**1**	**0**																	1					
Chronic viral hepatitis C	**1**	**0**	**1**										1												
Meningococcaemia, unspecified	**1**	**0**	**1**		1																				
Other and unspecified infectious diseases	**1**	**0**	**1**																				1		
Sepsis due to unspecified staphylococcus	**1**	**0**	**1**										1												
Sepsis, unspecified	**20**	**8**	**1**	1	3		1							1			1	1		1	5	4	2		
Staphylococcus aureus as the cause of diseases classified to other	**1**	**0**	**1**						1																
Whooping cough due to Bordetella pertussis	**1**	**1**	**0**	1																					
Diseases of the digestive system	**21**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**2**	**2**	**3**	**2**	**2**	**2**	**3**	**0**	**1**
Duodenal ulcer, unspecified as acute or chronic, without haemorrhage or	**1**	**1**	**0**																	1					
Gastrointestinal haemorrhage, unspecified	**5**	**0**	**5**														1		2				1		1
Hepatic failure, unspecified	**2**	**1**	**1**														1	1							
Intestinal adhesions [bands] with obstruction	**1**	**1**	**0**																			1			
Liver disease, unspecified	**1**	**0**	**1**																1						
Other and unspecified cirrhosis of liver	**9**	**4**	**5**										1	2	1			1			1	1	2		
Peptic ulcer, acute with haemorrhage	**1**	**0**	**1**																		1				
Perforation of intestine (nontraumatic)	**1**	**1**	**0**																	1					
Injury, poisoning and certain other consequences of external causes	**18**	**1**	**1**	**0**	**2**	**0**	**0**	**0**	**2**	**1**	**2**	**0**	**4**	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**0**
Anaphylactic shock due to serum	**1**	**0**	**1**		1																				
Asphyxiation	**1**	**0**	**1**												1										
Dislocation of C3/C4 cervical vertebrae	**1**	**0**	**1**										1												
Drowning and nonfatal submersion	**1**	**0**	**1**										1												

Causes of Death	TOTAL			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+		Unkno	
	BO	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Diseases of the circulatory system	**160**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**8**	**3**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**0**	**5**
Effects of electric current	**1**	**0**	**1**														1								
Flail chest	**1**	**0**	**1**										1												
Foreign body in respiratory tract, part unspecified	**1**	**0**	**1**		1																				
Fracture of skull and facial bones, part unspecified	**1**	**0**	**1**						1																
Injury, unspecified	**3**	**1**	**2**						1	1			1												
Toxic effect of unspecified substance	**2**	**0**	**2**								2														
Traumatic shock	**1**	**0**	**1**																		1				
Unspecified injury of ankle and foot	**1**	**0**	**1**																1						
Unspecified injury of head	**3**	**0**	**3**																2		1				
Diseases of the genitourinary system	**18**	**1**	**8**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	**5**	**2**	**4**	**1**	**0**	**1**	**0**	**0**
Acute renal failure, unspecified	**2**	**1**	**1**														1			1					
End-stage renal disease	**5**	**2**	**3**												1	1			1	1	1				
Unspecified chronic renal failure	**5**	**4**	**1**														1	2		2					
Unspecified renal failure	**6**	**3**	**3**						1									3	1				1		
Certain conditions originating in the perinatal period	**11**	**6**	**5**	**6**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Bacterial sepsis of newborn, unspecified	**2**	**2**	**0**	2																					
Dehydration of newborn	**3**	**1**	**2**	1	2																				
Extreme immaturity, 24 or more completed weeks but less than 28	**2**	**0**	**2**		2																				
Fetal death of unspecified cause	**1**	**0**	**1**		1																				
Neonatal aspiration of amniotic fluid and mucus	**1**	**1**	**0**	1																					
Neonatal aspiration of meconium	**1**	**1**	**0**	1																					
Unspecified pulmonary haemorrhage originating in the perinatal period	**1**	**1**	**0**	1																					
Congenital malformations, deformations and chromosomal	**9**	**3**	**6**	**3**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**
Congenital malformation of heart, unspecified	**4**	**0**	**4**		1		2																		1
Congenital malformation, unspecified	**1**	**0**	**1**		1																				
Meckel's diverticulum	**1**	**1**	**0**	1																					
Neurofibromatosis (nonmalignant)	**1**	**0**	**1**																		1				
Other congenital malformations of pulmonary artery	**1**	**1**	**0**	1																					
Pierre Robin sequence	**1**	**1**	**0**	1																					
Diseases of the nervous system	**7**	**3**	**4**	**0**	**1**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
Alzheimer's disease, unspecified	**1**	**0**	**1**																				1		
Encephalopathy, unspecified	**1**	**0**	**1**		1																				
Epilepsy, unspecified, without mention of intractable epilepsy	**1**	**0**	**1**				1																		
Meningitis, unspecified	**2**	**2**	**0**							1								1							
Other postprocedural disorders of nervous system	**1**	**0**	**1**				1																		
Status epilepticus	**1**	**1**	**0**																	1					
External Causes of Morbidity and Mortality	**4**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
Fall from, out of or through building or structure	**1**	**0**	**1**																						1
Intentional self-poisoning by and exposure to pesticides	**2**	**0**	**2**								1		1												
Unspecified drowning and submersion	**1**	**1**	**0**			1																			
Diseases of the blood and blood-forming organs and certain	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Anaemia, unspecified	**1**	**1**	**0**											1											
Nutritional anaemia, unspecified	**1**	**1**	**0**																	1					

Causes of Death	TOTAL			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+		Unkno	
	BO	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Diseases of the circulatory system	**160**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**8**	**3**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**0**	**5**
Diseases of the ear and mastoid process	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
Chronic mastoiditis	**1**	**0**	**1**																				1		
Diseases of the skin and subcutaneous tissue	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Decubitus [pressure] ulcer, unspecified	**1**	**1**	**0**																	1					
Mental and behavioural disorders	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Bipolar affective disorder, unspecified	**1**	**0**	**1**												1										
Diseases of the musculoskeletal system and connective tissue	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
Arthritis, unspecified, site unspecified	**1**	**0**	**1**																1						
Grand Total	**553**	**2**	**3**	**2**	**2**	**3**	**6**		**5**	**3**	**6**	**2**	**1**	**1**	**2**	**2**	**2**	**4**	**4**	**4**	**6**	**7**	**9**	**6**	**1**

Source: Medical Records Inpatient Death Database.
Vaiola Hospital Mortuary Registration Book
Death Certificates issued by the Ministry of Health

Description: This table displays the statistics of specific causes of deaths by sex and age group for 2010.