



GOVERNMENT OF TONGA



REPORT

of the

MINISTER

for

Health

for the year

2007



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1 OVERVIEW OF THE NATIONAL STRATEGIC DEVELOPMENT PLAN EIGHT 2006/07-2008/09

1.1 Introduction

The Strategic Development Plan VIII, *Looking to the Future, Building on the Past*, for the Kingdom of Tonga for the period 2006-2009 is the second development plan formulated with the strategic approach to economic and social development planning. It is the eighth development plan to be formulated by the Government through lengthy and extensive consultative process.

1.2 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.

1.3 National Objectives SDP8, 2006/2007 – 2008/2009

The priority objectives for SDP8 are to:

- Guide the formulation of the public sector's corporate and management plans and the annual budgets through which resources are allocated
- Inform the private sector and civil society of Government's policy intentions
- Provide the foundation on which Government can develop its external economic relations and aid donors can construct their country strategies and assistance programs
- Provide indicators by which Government's progress in policy/strategy implementation can be monitored and measured.

1.4 National Goals

The national goals that will be pursued by SDP8 will be as follows:

- Goal 1: Create a better governance environment
- Goal 2: Ensure macroeconomic stability
- Goal 3: Promote sustained private sector-led economic growth
- Goal 4: Ensure equitable distribution of the benefits of growth
- Goal 5: Improve education standards
- Goal 6: Improve health standards
- Goal 7: Ensure environmental sustainability and disaster risk reduction
- Goal 8: Maintain social cohesion and cultural identity

1.5 Health Strategies

Under Goal 6, health strategies that will be implemented during the SDP8 period are as follows with corresponding progress report as of May 2008:

SDP8 Progress Report

Goal 6: Improve health standards	Progress Report
1. Continue to implement the National Strategy on Non-Communicable Diseases.	<ul style="list-style-type: none"> ▪ Ongoing. The three Sub Committees (Physical Activity, Tobacco and Healthy Eating) continue to meet and report to the National NCD Committee. Highlights from 2008 1st quarter. Healthy Eating Sub-Committee distributed the School Food Policy to all schools. Tobacco Sub-committee completed putting up 'No Smoking' signs in schools. Physical Activity Sub-Committee reviewed its membership to better suit its roles. A big boost to the implementation of the Strategy is the formation of the Tonga Health Promotion Foundation (Tonga Health) which will provide funding from government and donors to assist with projects addressing Physical Activity, Tobacco and Healthy Eating. Tonga Health is expected to be fully operational soon. ▪ There is a Food Policy for Schools that has been implemented in 2007 and the progress is currently monitored.
2. Redirect the health budget toward primary & preventative services, ensuring service provision at rural & regional health centres is protected.	<ul style="list-style-type: none"> ▪ Great proportion of WHO technical and financial supports are invested on Health Promotion and preventative program. ▪ Health Promotion Foundation has been established with a Trust fund for NCD Health Promotion and preventative program. ▪ Infrastructure Development for new Health Centre including Vaini and Super centre for Mu'a with \$150,000 allocated in the New Financial Year 2008/2009 as government contribution towards the ground (preparation) work expenditures. ▪ Allocation through EU project at Vava'u for the renovation of Falevai/Tefisi/Taanea Health Centre (both Clinic and Staff Quarters) and to be fully operation for rural & regional services needs by the end of 2008 and to be manned by the H/O trainees after being graduated in December. ▪ Has completed the renovation works for staff at Houma & Kolonga Health Center(s) and are now occupied by relevant staff servicing the communities need during and after hours.
3. Formulated standard protocols for the management of all communicable diseases & ensure adequate testing facilities & personnel are available to monitor the prevalence of communicable diseases.	<ul style="list-style-type: none"> ▪ The first round of second generation surveillance to determine the STI/HIV prevalence in antenatal mothers has been completed. Currently the second round of the second generation surveillance is under way. So far, only the STI/HIV surveillance in antenatal mothers has started and is progressing very well. When this is completed, a behavioral surveillance amongst Youths (15-24 yrs old) will be conducted before moving on to a STI/HIV Surveillance amongst MSM (men having sex with men). Hopefully this round of surveillance will be completed before July 2008.
4. Develop a protocol & undertake a survey to establish the prevalence of sexually transmitted infections.	<ul style="list-style-type: none"> ▪ A National Treatment guideline on the management of STI has been developed and this has been done after the review of the Standard treatment guideline and essential drug list documents as well as the Reproductive Health Manual. This guideline includes syndromic management and it is awaiting printing and dissemination.
5. Improve curative service deliver by completing the infrastructure redevelopment of Vaiola hospital.	<ul style="list-style-type: none"> ▪ With reference to the Vaiola Hospital Master Plan, to date we have completed Package A (Mental Health, Future Kitchen), B1 (Obstetric, Surgical, Operating Theatre, ICU, Radiology, Laboratory, CSSD) and B2 (Paediatric, Isolation and Medical Ward, Hospital Chapel). ▪ The remaining Packages C, D, E and F, the Government (Ministry of Health) is still negotiating with the Japanese Government. ▪ The entire inpatient setting including critical clinical support services has

	<p>been housed in the completed packages. The remaining clinical and non clinical services are mostly operating at the old infrastructure waiting for the next infrastructural development.</p> <ul style="list-style-type: none"> ▪ Ministry of Health delivers similar health services as in the old infrastructure but the public users received it in extraordinary quality (improved customer satisfaction according to ongoing hospital surveys) such as the quality of wards room and hospital meals. ▪ Since inpatients setting are well covered in the completed phases, we noted some improvement (Unplanned readmission to hospital within 1 calendar month <5%, Perinatal Mortality Rate per 1000 live births <15, No maternal death during Q3 (Jan-Mar 08), Reduce obstetric complication, introduce of new initiatives such as establishment of Vaiola Hospital Cancer Committee and planned implementation of cardiac surgery) in curative services as a result of this infrastructural development. ▪ The major challenge of the new infrastructure is the higher operating cost.
6. Review health sector financing with a view to introducing (1) user fees, while ensuring exemption for the poor, & (2) voluntary health insurance schemes.	<ul style="list-style-type: none"> ▪ The Ministry of Health has revised the existing fee Schedule Plus costing of the services. The planning now is to submit to Cabinet for approval and to enforce the new fees schedule within the beginning of the new financial year 2008/2009. ▪ The charge for Outpatient Consultation at Vaiola Hospital will be enforced when the new Outpatient Department (OPD) is completed. ▪ The existing exemption for Hospitalization will be continued as follows. ▪ Mental & Infectious cases; children under 14 years old and Hospitalization for more than 14 days. A Safety Net mechanism will be enforced once the Consultation fee is introduced to coincide with the commissioning of the new OPD for Vaiola Hospital. ▪ As a long term strategy (after the User Fee being enforced) the Ministry is now working on a feasibility study on the SHI with WHO Technical Support.

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 Strategic Directions

The Ministry's VISION for the future is "MAKING A DIFFERENCE" and "CORE PURPOSE is,

To respond effectively to the health needs of the Tongan people by providing the appropriate range and level of high quality health services and being accountable for the outcomes of these services.

The Ministry's CORE VALUES are,

- Commitment to quality care
- Professionalism and accountability
- Care and compassion
- Commitment to education and training

The Ministry's DARING GOAL is,

To be the healthiest nation in the Pacific Rim as judged by international standards and determinants

2.2 Strategic Key Result Areas and Goals

2.2.1 Healthy Communities and Populations through improved services

- Prevent or delay the onset of cardiovascular disease and diabetes, and to reduce complications and improve the quality of life through health promotion and improved management.
- Improve mental health services by improving the management of chronic psychiatric patients in the community and decrease the number of re-admissions.
- Decrease motor vehicle injuries and emergencies in Tonga and improve the services available to manage them.
- Improve the health of the Tongan people by ensuring equitable access to, and rational use of, safe and effective drugs of good quality.
- Reduce the incidence of dental decay in Tonga.
- Clearly identify existing cancer cases and increase the early detection of cancer in Tonga.
- Extend and develop general and specialised health promotion services.
- Develop strategies to prevent substance abuse.
- Support child and adolescent health and development.
- Combat communicable diseases with a focus on HIV/AIDS, Tuberculosis, and Filariasis.
- Develop community health services by gaining community support for the health centres and developing a team approach.
- Support services development in the island hospitals.

- Develop clinical services through improved clinical care and staffing.

2.2.2 Health Sector Development

- Significantly improve the efficiency and effectiveness of management systems and processes.
- Provide the Tonga health system with an efficient and effective financial management system.
- Provide the Tongan health system with improved facilities and equipment and to maintain these well.
- Strengthen informed decision making within the Ministry of Health through the provision of appropriate information management.

2.2.3 Staff Training and Development

- Improve and strengthen workforce management and development.
- Continue to organise formal education, and in service training programs for staff.
- Prioritise training needs.
- Develop workforce planning processes.

2.2.4 Service Partnerships

- Work with Non Government Organisations, communities, other Government departments and donor organisations to implement these priorities.

2.3 Programme Objectives and Mission Statement

Operationally the Ministry mirrors the budget structure to facilitate programme evaluation and consists of six sub-programmes,

1. Leadership, policy advice and programme administration
2. Preventative health care services
3. Curative health care services
4. Dental services
5. Nursing services
6. Health planning and information services

2.3.1 Sub-Programme 1: Leadership, policy advice and programme administration

Programme Objectives and Mission Statement: To provide efficient and effective support services to the Ministry and all health districts with regard to administration, human resources and financial management, transport and communication services.

2.3.2 Sub-Programme 2: Preventative Health Services

Programme Objectives and Mission Statement: To help the people in Tonga to achieve the highest attainable level of health as defined by World Health Organisation's constitution as "a state of complete physical, mental and social well-being and not merely the absence of infirmity", by:

- Significantly reduce morbidity and mortality due to infectious diseases.
- Provide environmental health services which result in a healthier community due to improved regulation, monitoring and health promotion activities.
- Assisting all health providers in the promotion of health through their respective areas of care and to empower the public at large in looking after their own health.
- Providing effective services to the health of mothers, children and others through a reproductive health strategic approach extending community health services to the people who need our services the most.

2.3.3 Sub-Programme 3: Curative Health Services

Programme Objectives and Mission Statement: To be able to provide the best possible care for patients, to prioritise areas that need change and to use the available resources in the most appropriate and effective way.

2.3.4 Sub-Programme 4: Dental Services

Programme Objectives and Mission Statement: To respond effectively to the oral health needs of the people of Tonga by providing preventive and curative oral health programmes, information and services and be responsible for its outcomes.

2.3.5 Sub-Programme 5: Nursing Services

Programme Objectives and Mission Statement: To contribute to the health of the nation through the provision of the best possible nursing care services.

2.3.6 Sub-Programme 6: Health Planning and Information Services

Programme Objectives and 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.

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

- Garbage Act 1945
- Health Services Act 1991
- Public Health Act 1992
- Mental Health Act 2001
- Pharmacy Act 2001
- Therapeutic Goods Act 2001
- Health Practitioners Review Act 2001
- Medical and Dental Practice Bill 2001

- Nurse Act 2001
- Tobacco Act 2001/Tobacco Control (Amendment) Act 2004
- Health Promotion Foundation Act 2007

3 HEALTH ADMINISTRATION AND MANAGEMENT

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

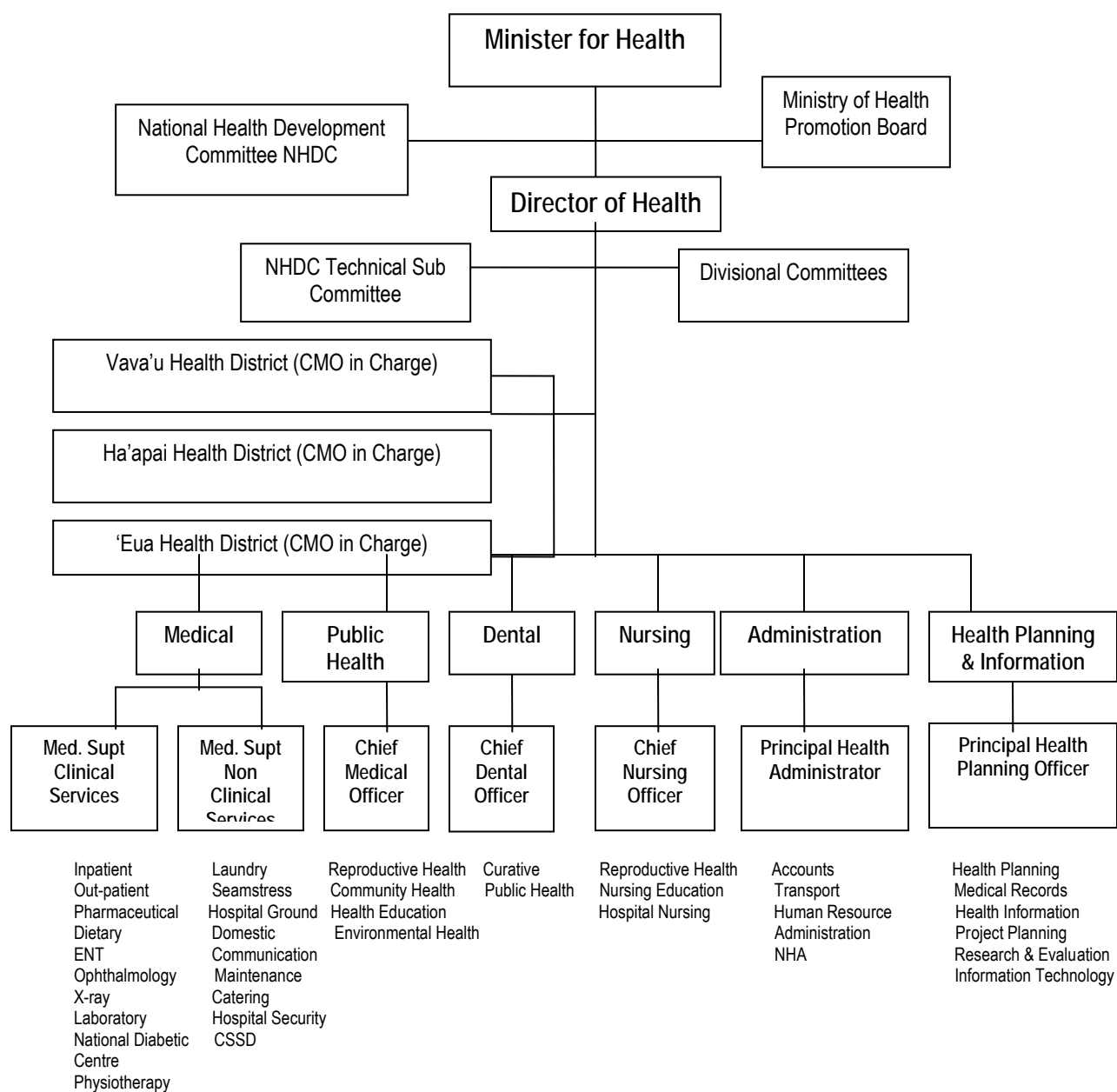
Divisional heads are responsible to the Director of Health for the implementation of each Division's services.

3.1 Ministry of Health Executive

As of 31 December 2007 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 Litili 'Ofanoa Director of Health
Administration	Mr Tu'akoi 'Ahio Principal Health Administrator
Dental	Dr Sililo Tomiki Chief Dental Officer
Health Planning and Information	Mr Taniela Sunia Soakai Principal Health Planning Officer
Clinical Services	Dr Siale 'Akau'ola Medical Superintendent, Clinical Services
Non Clinical Support Services	Dr 'Akanesi Makakaufaki Medical Superintendent, Support Services
Nursing	Mrs. 'Ana Kavaefiafi Chief Nursing Officer
Public Health	Dr Malakai 'Ake Chief Medical Officer, Public Health

3.2 Organization Structure



3.3 District Hospitals

As of 31 December 2007 the following officers were responsible for the management of the outer island health districts.

Prince Ngu Hospital
Vava'u Health District

Dr 'Alani Tangitau
Chief Medical Officer

Niu'ui Hospital
Ha'apai Health District

Dr Tevita Vakasiuola
Acting Chief Medical Officer

Niu'eiki Hospital
'Eua Health District

Simione Tei
Acting Chief Medical Officer

3.4 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 2003 – 2007

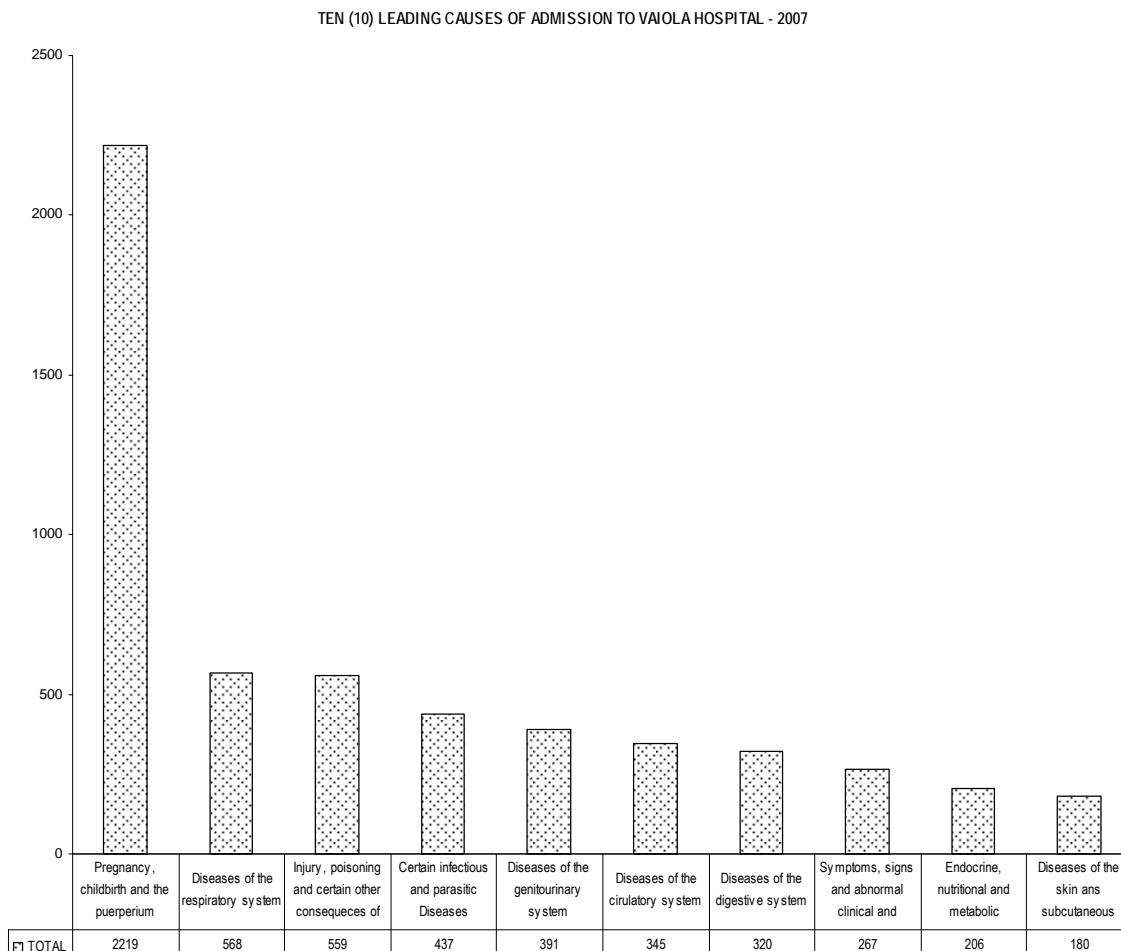
INDICATOR		2007	2006	2005	2004	2003
1	Estimated Population ('000)	103.3	102.4	102.3	101.8	101.4
2	Annual Population growth	0.3	0.3	0.3	0.3	0.3
3	Percentage of Population less than 14 years	35**	35**	35**	36**	36**
	Percentage of population 65 years and over	6**	6**	6**	6**	5.9**
4	Percentage of urban population	36	36	36	36	36
5	Rate of natural increase	21.3	21.5	20.4	17.7	20.2
6	Crude Birth Rate	26.5	26.5	25.7	23.8	26.2
7	Crude Death Rate	5.2	5.0	5.3	6.1	5.8
8	Maternal Mortality Rate (per 100,000)	36.5	110.5	227.8	82.3*	0
9	Life Expectancy at Birth (combined)					
	Life Expectancy (Male)	70	70	70	70	70
	Life Expectancy (Female)	72	72	72	72	72
10	Infant Mortality Rate	11.7	10.7	11.8	15.7	12.8
11	Perinatal Mortality Rate (per 1,000 live births)	13.0	13.1	10.8	10.3	13.2
12	Total Health expenditure ('000)	17761	20170	17021	13521	11765
	Per Capita	172	196	170***	133***	116***
	As a percentage of total recurrent budget	7.5	10.4***	11.6***	10.2***	10.3***
13	Health workforce					
	Medical Officers at post	58	57	45	41	42
	Health Officers at post	17	20***	21	20	21
	Nursing and Midwifery at post	302	325***	362***	315***	342***
14	Percentage of population with safe water supply	98	97.5	97	94	97
15	Percentage of household with adequate sanitary facilities	99.6	97.2	97	90	94
16	Immunization coverage	99.6	99.1	99.5	99.6	98.5
17	Percentage of pregnant women immunized with tetanus toxoid 2	97.6	97.2	95.7	92	93
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	27.7	23.9	19.7	23	22.1
21	Percentage of pregnant women attending ante natal care	98.7	99	99	99	98.7
22	Percentage of deliveries conducted by trained personnel	98	98	96.1	98	97
23	Total Fertility Rate	3.7	4.1	3.4	3.8	3.4

* 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.

Morbidity



Source: Vaiola Hospital Admission and Discharge Database

Pregnancy and pregnancy related issues are the leading cause of admission to Vaiola Hospital. This category also includes a small proportion of patients who have some type of complication which is associated with pregnancy. The WHO Country Health Information Profile reports by WHO, the birth rate for Tonga as (26) which is lower than other Pacific Island countries such as Samoa (CBR=29) and Tuvalu (CBR=27). There are some concerns in relation to the increased maternal death rate which are being managed by improved screening of maternal risk factors (heart disease and hypertension).

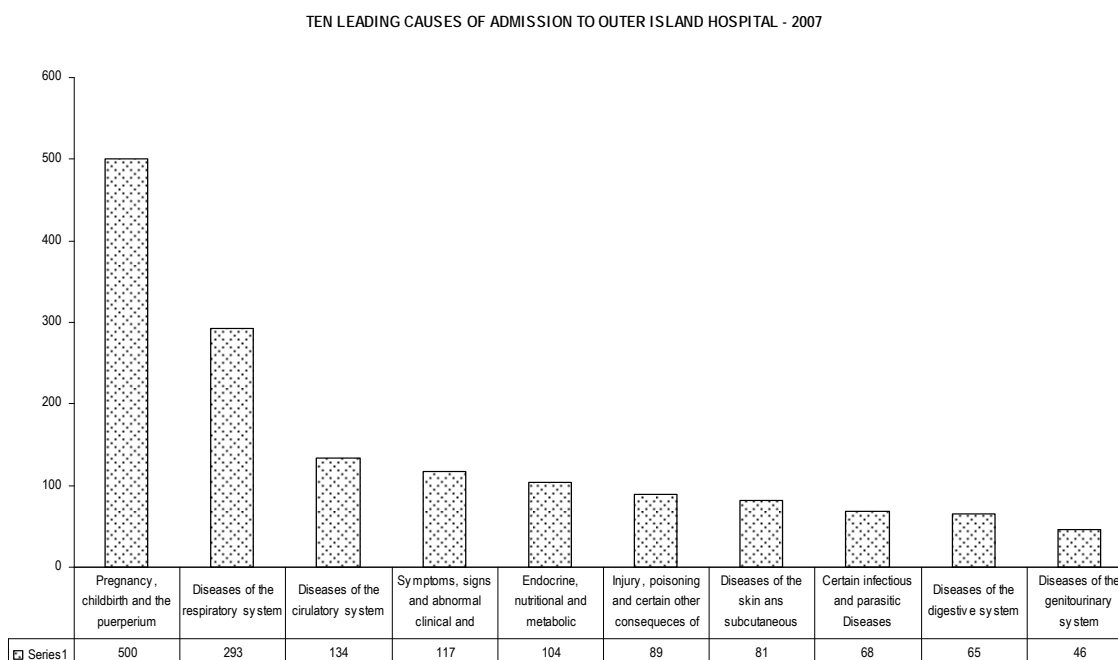
The second leading cause of admissions is diseases of the respiratory system with a high proportion in the 0-13 age group. While prevalence rates are high, mortality in this age group is low and reflects the excellent services rendered by the Paediatric ward and clinical support services.

Injury and poisoning are the third major cause for admission. The majority of these patients are males with head injuries. The cause of the head injuries vary and include motor vehicle accidents and assault. Most of the injuries in this category are preventable and require education and legislation to reduce the incidence.

More than 50% of the patients admitted with diseases related to digestive system are aged 1-12. The majority of these patients suffered from gastroenteritis. The Paediatrician Specialist presented in her report that there was an epidemic of gastroenteritis in August to December 2005, August to January 2006 and the same in the 2007

resulting in fourteen (14) deaths (2005-2007). This descriptive statistics suggested that this medical problem is strongly associated with the summer season.

In summary, women and children are the groups represented in the five leading causes for admission, however this does not mean they are in poor health. Women and children have a high incidence of admission but a low mortality rate. The highest mortality is in the fifth to tenth leading causes of admission and are related to lifestyle disease (diabetes and heart disease).



Source: Outer Island Hospital Admission and Discharge Database

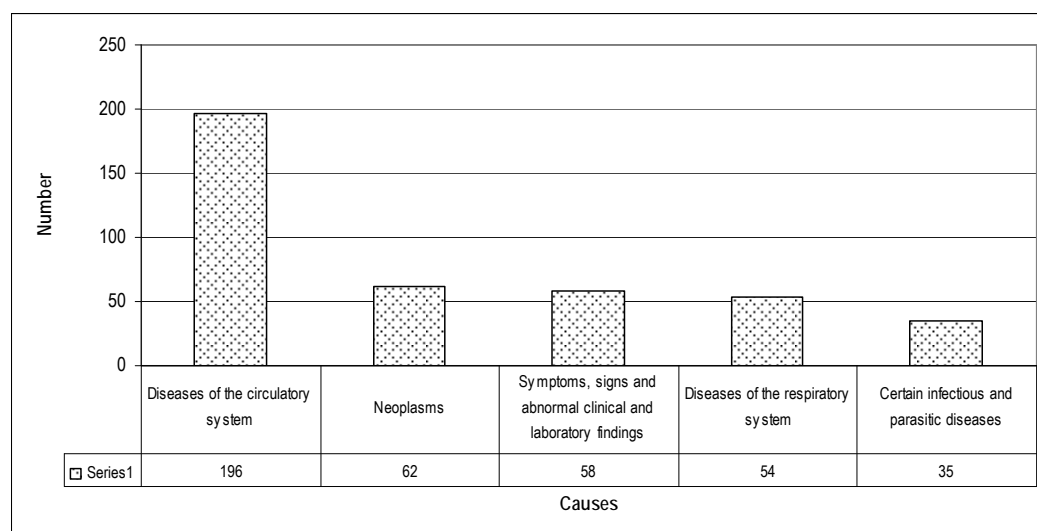
The profile for leading cause of admission for the Outer Islands Hospitals is similar to Vaiola Hospital; the main reason for admission is pregnancy childbirth and the puerperium followed by respiratory diseases. These two categories consist mainly of women and children with a small proportion of adult males with chronic obstructive airway disease.

Circulatory disease is ranked third in the outer island hospitals compared to sixth for Vaiola Hospital. In general, there are older people accessing health services in the outer islands than Tongatapu and this may influence circulatory disease figures.

The disease of the circulatory system is relatively high in the outer island (3rd category) compared to admission to Vaiola (6th category) Hospital. This is the leading causes of death for the whole country where 28% of the total death of this category came from the outer island district which is the 43% of their overall reported death.

The cause of admission is generally similar in both the main hospital and outer island district hospitals except the emergence of diseases of the circulatory system. The public health preventative measures are getting more crucial now since it is amongst the common cause of morbidity and mortality.

Five Leading causes of mortality, 2007



Source: Ministry of Health Mortality Database
Vaiola & Outer Island Hospital Admission and Discharge Database

Diseases of the Circulatory System are the leading cause of death in Tonga. This has been the trend over the last decade. The alignment of this pattern with neighbouring Pacific countries gives testimony to repeated documentation of cardiovascular disease and other non communicable disease as an established epidemic in the region calling for extreme measures to combat this epidemiological transition.

More than 50% of all deaths among this category are due to cardiac arrest/infarct alone and a disproportionate number of males dying compared to females at a ratio of 1 to 2 (approximately). It is true that the majority of these deaths are among the 65 plus year olds. There are increasing cardiac deaths occurring in 2007 and in recent years among a younger age group such as those events occurring among 35 to the mid 50 year olds and as young as 2 years old.

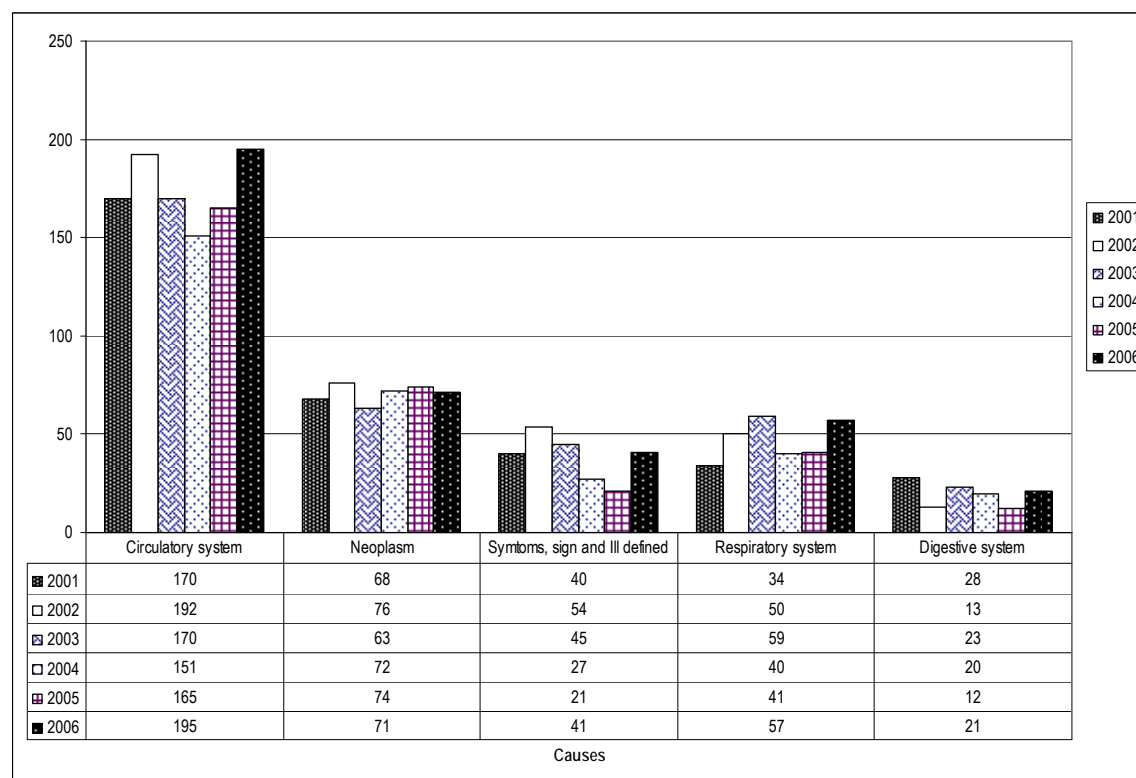
Cancer continued to be a major concern for health of the Tongan population. According to the Tonga Cancer Registry, breast cancer is the most common type of cancer followed by lung, stomach, liver, prostate and uterus as from 2000-2007. The statistics of 2007 alone shows relatively the same pattern. It is noted that some cancer deaths were unable to confirm at time of deaths. The Ministry is aware of this problem and it's taking corrective appropriate measures.

Senility became the most common death of the third category. The positive impact of introducing the new Policy and Procedure for Death Certification and Notification has now partially experienced by completely removing unknown cause of death. We still strive to demonstrate significant improvement in determining the most appropriate cause of death. Ideally, there will be a reduction on reported deaths under senility category in the coming years.

While respiratory infectious diseases remain the leading Notifiable Diseases the number of people dying from cancer (62) still outweighs those dying from diseases of the respiratory system (54). The predominance of respiratory infections is in line with recent decades and neighboring countries' patterns.

The last category frequently belongs to the five leading causes of deaths in the last five years. The absolute number looks insignificant but relatively high in light given the annual small total number.

Five Leading causes of mortality, 2001 - 2005



Source: Ministry of Health Mortality Database
Vaiola & Outer Island Hospital Admission and Discharge Database

The major causes of mortality for Tonga have remained the same over recent years. As illustrated in the above graph, there has been very little variation in both cause and individual conditions' contribution to Tonga's mortality burden over the five year period 2001 to 2006. This mortality pattern is duplicated in 2007 as discussed under the leading causes of mortality for 2007. As Tonga's population gets older we expect associated age related mortality to express itself. Senility is the leading cause of death among the third leading cause of mortality in 2007. It is unlikely that the above trend would change significantly in the near future, and that circulatory diseases and cancer more than likely, remaining the major killers of Tonga's population.

In terms of control though, these two leading health categories/conditions not only share common aetiologies, be these upstream events such as socioeconomic factors or individual lifestyle causes they are similarly amendable to common control strategies such as socioeconomic environments and lifestyle approaches facilitating healthy choices and outcomes. The role of public health is both crucial and strongly advocated in this context by the Ministry, as an immediate as well as a long term strategy.

3.5 Health Resources

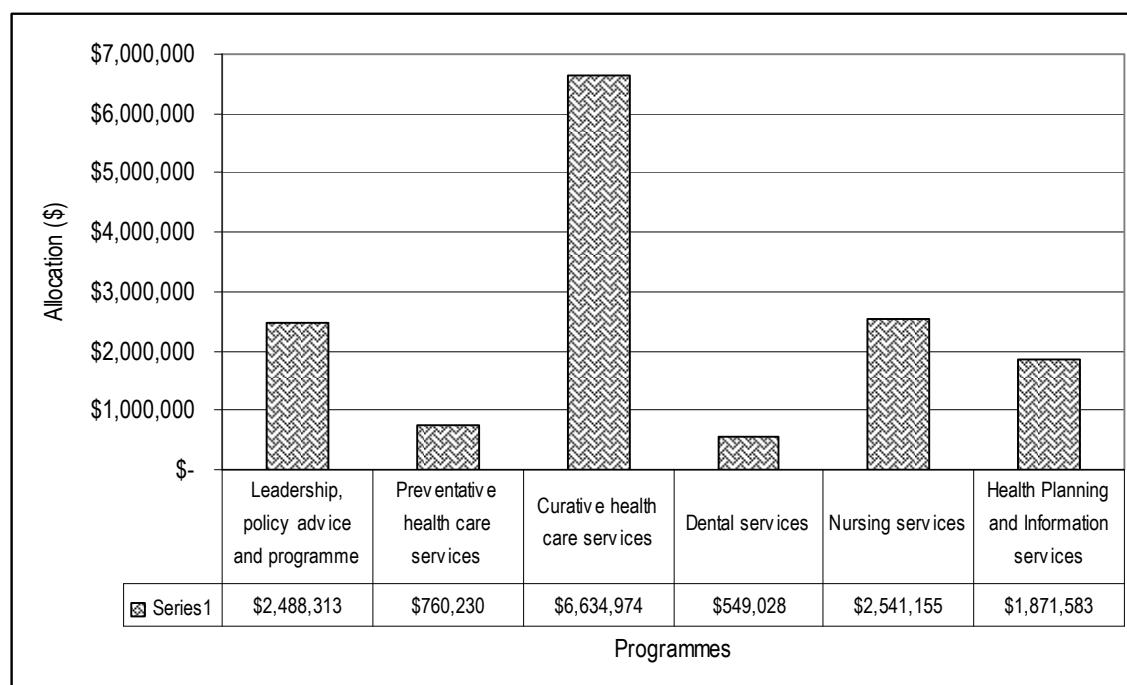
In proposing to Government the annual budget for the Ministry reports under four sub-programme areas,

- Leadership, policy advice and programme administration
- Preventative health care services
- Curative health care services
- Dental services
- Nursing services
- Health Planning and Information services

3.5.1 Financial Resources

The total recurrent allocation for the Ministry for the 2005-2006 financial year was \$14,845,283.00 with an estimated expenditure per head of \$145. The allocation for health represents 10.4 percent of government's total budget. Budget details can be found in Appendix 2 and 3.

Table 2 Ministry of Health Estimates 2007-2008



Source: Account Section
Ministry of Health

Table 3 Budget Breakdown 2007/08

Items	2007/08 Budget	%
Staff costs	\$10,090,800	57%
Operation	\$3,725,459	21%
Drugs	\$1,500,000	8%
Utilities	\$869,540	5%
Maint. Off. Bldg (DCA)	\$632,177	4%
Overseas Treatment	\$600,000	3%
Medical Supplies	\$343,005	2%
Total	\$17,760,981	

Source: Account Section
 Ministry of Health

Financial resources continue to be a challenge for delivering health care services. The above shows the distribution of financial resources (Recurrent Budget) funded by the Government. A significant amount (57%) of the budget is allocated for staffing, 21% for the operating cost and only 10% allocated for Medical Drugs and supplies. The maintenance of Hospital Building and medical referral has relatively the same share.

Table 4 Budget Breakdown by item

Item	Full Year Budget 2007/08	First Six Months 2007/08		
		Allocated	Actual	Variance
Staffing	\$10,090,800	\$5,045,400	\$4,646,946	\$398,454
Maintenance	\$632,177	\$316,089	\$366,128	(\$50,039)
Operations	\$7,038,004	\$3,519,002	\$4,568,767	(\$1,049,765)
TOTAL	\$17,760,981	\$8,880,491	\$9,581,841	(\$701,350)

Source: Account Section
 Ministry of Health

This is how our recurrent cost was spent against target in the first six months (July – December 2007). The Ministry's budget has further narrowed into three main components namely Staffing, Maintenance and Operations.

3.5.2 Human Resources for Health

Table 5 Officials and Personnel of the Ministry of Health by Post, 2003-2007

POST	2007		2006		2005		2004		2003	
	EST	POST	EST	POST	EST	POST	EST	POST	EST	POST
	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED
MINISTER FOR HEALTH	1	1	1	1	1	1	1	1	1	1
ADMINISTRATION	8	8	9	6	10	7	9	6	7	6
MEDICAL STAFF	88	81	103	80	100	75	103	80	75	66
DENTAL STAFF	40	33	53	40	52	43	53	40	43	37
NURSING STAFF	323	302	421	325	425	362	421	325	362	325
TECHNICAL STAFF	121	110	158	115	162	121	158	115	121	113
ACCOUNTING AND	44	41	57	42	58	47	57	42	47	43
SUPERVISORY AND DOMESTIC	125	110	169	137	181	154	169	137	154	122
GRAND TOTAL	749	686	971	746	989	810	971	746	810	713
GRAND TOTAL	749	685	971	746	989	810	971	746	810	713

Source: Civil List
Human Resource Section, Ministry of Health

Description: This table presents the staff establishment of the Ministry of Health from 2003 to 2007.

The Ministry had a total of 749 established posts with only 685 positions being filled in 2007. Different approaches were adopted by the Ministry to perform the duties of critical vacant posts such as merging responsibilities; employing daily paid staff; outsourcing of services such as security; and maximized utilization of available human resources.

The Ministry continues to place priority in the development of its various cadres of health personnel, through in-service, local training, overseas attachments and formal programmes at both undergraduate and postgraduate levels.

The Ministry conducted various local workshops and trainings as part of its ongoing staff development initiative. The Ministry participates in local training under the auspicious of the Civil Service Training and Community Development Training Centres. Medical and dental undergraduates continue to be trained overseas.

3.6 International Collaborations

3.6.1 International Organization

The Ministry throughout the year continued its collaboration with various international organisations in the following areas;

- The 2005-2006 WHO Detailed Programme Budget for Tonga
- The Medical Treatment Scheme under the New Zealand Governments Bilateral Aid Programme with Tonga
- The Twinning Programme with St. John of God Hospital, Ballarat, Victoria, Australia
- Diabetic Project with the Prince of Wales Hospital, New South Wales, Australia
- The World Bank Health Sector Support Project
- European Union Project
- Government of Japan Grant Aid Project for the Upgrading and Refurbishment of Vaiola Hospital

3.6.2 World Bank Health Sector Support Project

The World Bank Health Sector Support Project, effective in February 2004, is funded under a World Bank Loan, IDA Credit Number 3814 0 – TON. The project was designed for a five year time period and for a World Bank credit of approximately US\$10.94 million with US\$1.4 million counterpart funding from the Government of Tonga.

Project Objective: The objective of the project is to support health reform in Tonga within the framework of its Corporate Plan by improving the capacity of the Ministry of Health to develop and implement health policy and to improve the functional and technical quality of health facilities.

The project is comprised of the following components:

Component A: Strengthening Health Care Financing: This component focused at reviewing, developing and implementing policies which define the funding and overall allocation of resources to health services. In particular, it will strengthen the capacity of the Ministry of Health to identify approaches towards strengthening the financing of health care (including resource mobilization), improving the allocation of available resources, and developing an appropriate public-private partnership.

Component B: Improving the Health Information System: This component focused on assisting the Ministry of Health to develop capacity and establish structures for Information Management and IT Management. It is anticipated that communication and access to management information in the Ministry of Health will be improved. It will implement and establish appropriate integrated computerized information systems for patient care at Vaiola Hospital and develop a population-based information system. Capacity will be developed within the Ministry of Health to design, implement field and targeted facility based surveys and surveillance systems to collect data on a periodic and at hoc basis.

Component C: Upgrading of Health Infrastructure: The component focused on supporting the first phase of the design and implementation of rehabilitation and facilities improvement at Vaiola Hospital to overcome identified major deficiencies and to improve functional relationships and the overall operational efficiency of the hospital. These developments will be guided by the master plan for the hospital and will enhance the hospital's capacity to efficiently meet its future service obligations.

Project Status: The implementation of each component is on schedule producing outputs relevant to the project's objectives. Disbursement is also on track with US\$11.92 million from the total credit of US\$12.38 million has been committed and disbursed.

Strengthening Health Care Financing

- Two National Health Accounts (NHA) reports have been prepared and disseminated (for 2001/2002 and 2003/2004).
- A more accurate estimate of government expenditure on curative, preventive and primary health services has been prepared.
- A Policy paper on User Fees Option has been prepared and ready for submission to Government for final decision.
- Implementation of the health information component has accelerated and an "information culture" is starting to take root at the Ministry of Health and Vaiola Hospital. The Ministry has contributed significant efforts on improving data quality, information management processes and reporting procedures, and improving computer literacy of staff.

Improving the Health Information Systems

- Key achievements to date include revision of main information product of the Ministry of Health, the Annual Report, formalization of new live births certification procedures, finalized almost 200 Health Data Dictionary Terms, improvement of clinical data reporting, implementation of new databases and backup procedures
- Progress in development of ICT Infrastructure and human resources
- Development of a new Hospital Information Systems
- Development of an alternative National Communicable Disease strategy
- Improved medical records management

Upgrading of Health Infrastructure:

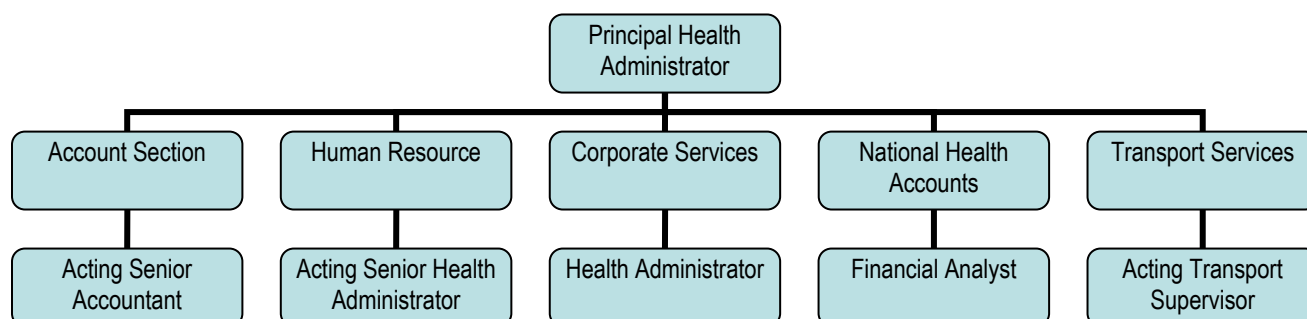
- Package A (Psychiatric Ward, Future Laundry and Kitchen) was commissioned in December 2004. Total cost for A was US\$3.623 million
- Package B1(Operating Theatres and Recovery units, CSSD, Laboratory and X-Rays, Obstetrics/Delivery Ward, Surgical Ward and Waste Treatment Plant), funded by JICA, was completed and medical equipment installed in February 2006, commissioning took place in March 2006 with a total cost for B1 of US\$9.743 million
- Package B2 (Paediatrics, Medical and Isolation Wards), funded under the IDA Credit, completed in November, 2007 and commissioned in December 2007. Total cost for B2 is US\$5.599 million
- The project has developed and implemented an Estate management policy and ongoing improvement in Hospital Management
- Implementation of a Health Care Waste Management Plan is currently ongoing.

4 LEADERSHIP, POLICY ADVICE AND PROGRAMME ADMINISTRATION

4.1 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 and financial management, transport and communication services.



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Account Section	Ms. Lasini Sinamoni	11	15,500
Human Resource	Mrs. Mafi Hufanga	2	1,000
Corporate Service	Mrs. Siale Taumoeofolau	4	0
National Health Accounts	Mrs. Mafi Hufanga	0	0
Transport Services	Mr. Sifa Kafa	16	142,240
Total staff and financial resources	4	33	\$ 158,740

4.1.1 Account Section:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> To provide a timely payment of staff salary/wasges/income tax etc. 	<ul style="list-style-type: none"> 95% achieved, shortfall due to limited budget.
<ul style="list-style-type: none"> To improve revenue collection within the Ministry of Health and 	<ul style="list-style-type: none"> Quarterly mobilization of revenue collection from businesses.
<ul style="list-style-type: none"> Achieve annual revenue target. 	<ul style="list-style-type: none"> Partly achieved, user fees yet to implement.
<ul style="list-style-type: none"> To provide an update reports on financial matter. 	<ul style="list-style-type: none"> 95% achieved.
<ul style="list-style-type: none"> To provide budget to all cost centres and monitor expenditure 	<ul style="list-style-type: none"> 95% achieved.

against the budget.	
<ul style="list-style-type: none"> To produce a realistic Draft Estimates annually. 	<ul style="list-style-type: none"> 95% achieved.
<ul style="list-style-type: none"> To broaden staff skills and applies in workplace. 	<ul style="list-style-type: none"> On-the-job training is needed.

4.1.2 Corporate Services:

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

4.1.3 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
<ul style="list-style-type: none"> Section staff has the knowledge, skills and motivation needed to provide a high quality HRM support service. 	<ul style="list-style-type: none"> New skills and knowledge training attended by Senior Health Administrator Mrs. 'Olivia Tu'ihalamaka
<ul style="list-style-type: none"> To ensure that staffing levels meet work needs 	<ul style="list-style-type: none"> Policy on annual leave has been successfully enforced with leave schedule in place. 90% of staff do not have excessive earned leave days over 180 days.
<ul style="list-style-type: none"> Maintain an accurate and up-to-date HRMIS 	<ul style="list-style-type: none"> All human resources information are regularly updated and disseminated to Head of Divisions for planning and organizing their staff.
<ul style="list-style-type: none"> Managers are provided with Accurate, Relevant and Timely Human Resource Information. 	<ul style="list-style-type: none"> Monthly circulation of updated staff leave entitlements to all Head of Divisions continues
<ul style="list-style-type: none"> To develop and introduce an induction programme suitable for all new members of staff. 	<ul style="list-style-type: none"> No new staff were recruited during the year.
<ul style="list-style-type: none"> To ensure that staffs are recruited / selected that meets the criteria for the position and fit the culture of the Ministry. 	<ul style="list-style-type: none"> All vacant positions have been openly advertised, shortlisted according to criteria / qualification / experience required by each post, interviewed, and then select the most appropriate person (s) to fill the post. 80% of staff job descriptions reviewed and updated.

4.1.4 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
<ul style="list-style-type: none"> To retain staff by ensuring the provision of sufficient staff level. 	<ul style="list-style-type: none"> Recruitment of the Financial Analyst in March 2007.

<ul style="list-style-type: none"> ▪ To provides staff with further appropriate training 	<ul style="list-style-type: none"> ▪ Financial Analyst Mafi Hufanga attended local training on business report and proposal writing skills from 11th – 14th September 2007.
<ul style="list-style-type: none"> ▪ To continuously review productivity of the individual/section against target 	<ul style="list-style-type: none"> ▪ There are two consultants who work closely with this section aiming at implementing the user fees by mid- 2008.
<ul style="list-style-type: none"> ▪ Promote international and local partnership 	<ul style="list-style-type: none"> ▪ Accounting Officer Diplomate Manavahe Ata attended the 3rd Joint OECD/Korea RCHSP-APNHAN Meeting of Regional Health Account Experts held in Seoul from 18th – 20th June 2007. ▪ Principal Health Administrator Tu'akoi 'Ahio, Financial Analyst Mafi Hufanga, Accounting Officer Diplomate Louhangale Sauaki, Statistics Officer Sione Lolohea and Accounting Officer Diplomate Manavahe Ata attended a workshop on National Health Accounts for Pacific Island Countries in Sydney, Australia from 26th – 29th November 2007
<ul style="list-style-type: none"> ▪ Identifying the sources of funding of health care in a country 	<ul style="list-style-type: none"> ▪ Undertook surveys on traditional healers in Tongatapu (120), Vava'u (80), Ha'apai (50), and 'Eua (20) from 11th – 27th September 2007.
<ul style="list-style-type: none"> ▪ Identifying resources needed for health care 	<ul style="list-style-type: none"> ▪ Consultant Osmat Azzam reviewed existing fee schedule and established new fee schedule in October 2007.
<ul style="list-style-type: none"> ▪ Reviewing the allocation of resources to health services 	<ul style="list-style-type: none"> ▪ The NHA Team is in the process of finalizing the third round of the NHA 2005/06. It is anticipated to complete in two months time.
<ul style="list-style-type: none"> ▪ Mobilizing funds and allocating them efficiently and effectively 	<ul style="list-style-type: none"> ▪ The Health Economist consultant in conjunction with the National Health Account team developed a new tool that will enable the forecasting of future expenditure and reallocate resources within the same budget ceiling.
<ul style="list-style-type: none"> ▪ Helping Policymakers visualize the public responsibilities and accountabilities for health services 	<ul style="list-style-type: none"> ▪ Undertook surveys in Tongatapu, Vava'u, Ha'apai and 'Eua to identify individuals and households for hospital services fee exemption in July 2007.
<ul style="list-style-type: none"> ▪ To ensure that National Health Account Section is equipped with necessary office supplies, equipment and other facilities it requires. 	<ul style="list-style-type: none"> ▪ National Health Account has sufficient office supplies to support the operational activities.
<ul style="list-style-type: none"> ▪ To ensure that there are sufficient resources to meet all expected expenditure of National Health Account Section. 	<ul style="list-style-type: none"> ▪ National Health Account has sufficient financial resources from Administration Division and the Health Sector Support Project to meet the expenditure of this section.

4.1.5 Transport Services:

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

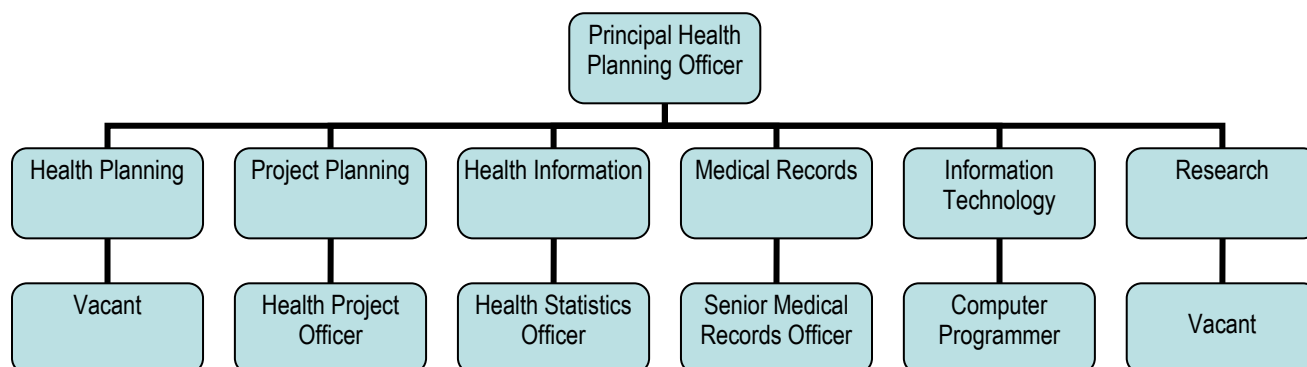
Objectives	Selected Milestones
<ul style="list-style-type: none"> ▪ To ensure the availability of transport for the efficient mobilization of Health Personal and Distribution of medical supplies and equipment throughout the district. 	<ul style="list-style-type: none"> ▪ 2 new ambulances ▪ Identify on call requirement ▪ Standby ambulance ▪ Staff roster to meet work needs ▪ Daily operation plan for each vehicle ▪ Control use of vehicles during after hours

5 HEALTH PLANNING AND INFORMATION SERVICES:

5.1 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	Vacant	1	7,000
Project Planning	Ms. Elsie Tupou	0	0
Health Information	Mr. Sione Hufanga	1	4,000
Medical Records	Mr. Sione Veilofia	13	6,150
Information Technology	Mr. Tu'amelie Paea	3	8,000
Research	Vacant	0	0
Total staff and financial resources	4	18	\$ 25,150

5.1.1 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.

5.1.2 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
<ul style="list-style-type: none"> To increase the number of projects approved and implemented. To develop plan for the Ministry's equipments/renovation and new building. 	<ul style="list-style-type: none"> China Government funded projects (Mu'a Super Health Centre, Vaini Health Centre and Prince Ngu Hospital and Public Health Centre) were approved and scheduled for implementation in 2008. Estimated cost for these projects is \$2 million pa'anga. 90% of the Vava'u Social Sector Program 3 is completed. Four (4) Niu'ui Staff Quarters funded by the Government of Japan and Australia with a total cost of \$ 471,526 completed and commissioned on the 6th of August 2007. Renovation of Niu'ui Hospital was also completed and commissioned on the 16th December 2007. Annual review of Health Projects registration continues.
<ul style="list-style-type: none"> To prioritize and maintaining the Ministry's training needs. 	<ul style="list-style-type: none"> Training needs of the Ministry identified, compiled, prioritized and submitted to the Training Development Committee.
<ul style="list-style-type: none"> To provide efficient and effective secretarial tasks to the Training and Development Committee and also to the National Health Selection Committee for Training. 	<ul style="list-style-type: none"> Monthly meeting continues to hold every last Wednesday of every month.
<ul style="list-style-type: none"> To improve staff knowledge and skills by further training. 	<ul style="list-style-type: none"> Training needs identified for the Section have been revised, prioritized and submitted to the Principal Health Planning Officer to table in the Training Development Committee. Health Project Officer formal training request submitted to the Training Development Committee granted approval and funding from the AusAID for implementation in 2008. Ms Elsie Tupou attended a workshop on Professional Writing from the 10 – 14 September 2007. Ms Elsie Tupou attended 1 month training attachment at St. John of God Hospital, Ballarat, Australia from the 13 November to 15 December 2007.

5.1.3 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
<ul style="list-style-type: none"> To provide staff with further training in Health Information Management and Data Analysis (Postgraduate studies in Health Informatics, Biostatistics and Epidemiology). 	<ul style="list-style-type: none"> Ms. Nauna Paongo continued her study for a Master Degree in Health Informatics and she is expected to complete by June 2008. Health Statistics Officer also continued his study for a Master degree in Biostatistics.

<ul style="list-style-type: none"> ▪ To improve data analysis capability 	<ul style="list-style-type: none"> ▪ Health Information Section conducted huge amount of consultation in relation to Hospital Information System. This consultation covers the challenges of the current manual information flow for further improvement. Refining of the information flows, data item names and definition contribute significantly to the efficiency of data analysis.
<ul style="list-style-type: none"> ▪ To improve data quality to international standard 	<ul style="list-style-type: none"> ▪ The Computer Operator Grade 1 joined a two weeks coding training offered by the Health Information Management of Australia. This training allows Health Information staff to provide support to the morbidity coding currently undertaken by the Medical Records staff. ▪ Health Information implemented the HMN Assessment in Tongatapu in January and the outer island in Aug-Sep 2007. A report of these respective workshops has been completed but it is currently compiled as the National HMN Assessment Report.
<ul style="list-style-type: none"> ▪ To improve the reporting of clinical information 	<ul style="list-style-type: none"> ▪ Health Information launched its first Mid-term Mortality Report after the first six months of 2007. This initiative comprises of different elements that may require by managerial position for improvement of the health care services.
<ul style="list-style-type: none"> ▪ To improve report production 	<ul style="list-style-type: none"> ▪ Health Information Staff heavily support the development of the Tonga's Health 2006 through provision of appropriate information. ▪ Health Information submitted its first article for the Health Information Management Association of Australia and it was published on the 36 volume version 2. This article focused on the trends of mortality in the last ten years. This is amongst the greatest achievement that this section has achieved.

5.1.4 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
<ul style="list-style-type: none"> ▪ To improve the quality of the IT services delivered. 	<ul style="list-style-type: none"> ▪ Installed internet connection to Central Pharmacy and Medical Store. ▪ Implemented and launched new Website of the Ministry.
<ul style="list-style-type: none"> ▪ To ensure adequate staffing levels. 	<ul style="list-style-type: none"> ▪ Recruit 3 new Posts, Computer Operator Grade I.
<ul style="list-style-type: none"> ▪ To retain staff 	<ul style="list-style-type: none"> ▪ Computer Operator Grade I, Tifa 'Atuekaho achieved Web Application Certificate from Japan through 6 months JICA Training. ▪ Computer Programmer Tu'amelie Paea, Computer Operator Grade I Clifton Latu and Tifa 'Atuekaho achieved Microsoft Certificate System Administrator (MCSA) Certificate from ICOM Company in Australia funded by Health Sector and Support Project in 24 days.
<ul style="list-style-type: none"> ▪ To improve quality of LAN, WAN and internet. 	<ul style="list-style-type: none"> ▪ Implemented new IT Infrastructure in the Ministry (new servers and local area network (LAN)) ▪ Installed new Computer Network; Fibre Optics as backbone and Cat6 as backup within Vaiola Hospital and the Ministry of Health including integration of Queen Salote School of Nursing. Extended computer network connection: ▪ Administration Building, Public Health, Outpatient, Dental, Queen Salote School of Nursing Building, Psychiatric Ward Building, Diabetic Ward

	building, New Physiotherapy, Radiology & Ultrasound, Blood Bank, Pathology Laboratory, Inpatient Pharmacy, Obstetric Ward, New Nursery, Operating Theatres, ICU, Day Surgery Reception, CSSD, Surgical Ward, Medical Ward, Paediatric Ward,
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5.1.5 Research:

Promote, collaborate, and conduct appropriate and high quality health research on priority issues affecting the health of the people of Tonga and the development of national capacity to undertake health research.

5.1.6 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.

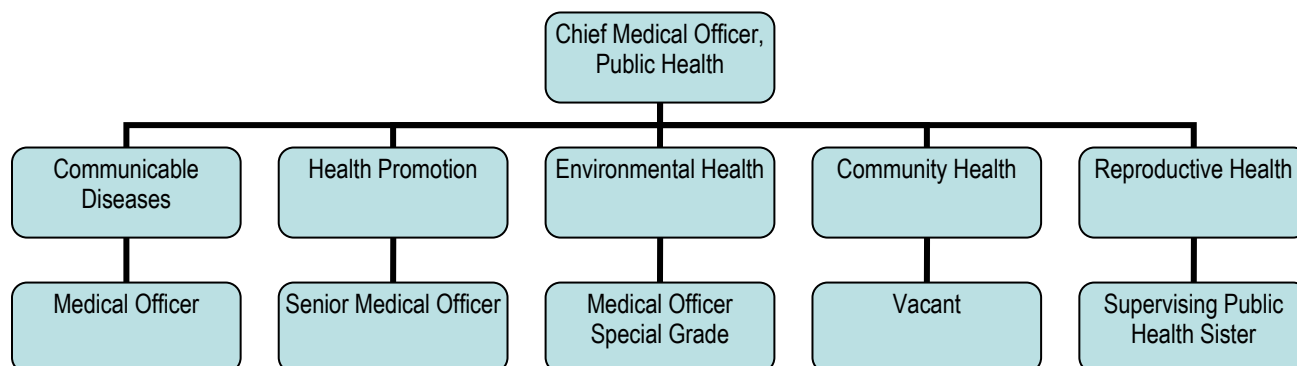
Objectives	Selected Milestones
<ul style="list-style-type: none"> <u>To continue on-the-job-training and attachments for staff</u> 	<ul style="list-style-type: none"> The establishment of Medical Records Section in-service training started in October 2007. This in-service training was seven (7) month long. PMU funded a HIMAA (Health Information Association of Australia) membership for SMRO. It is a great assistance to this section to help in improving health information management. PMU and WHO funded an outer island visit to improve medical records system in validation of quality data for 2007 Annual Report, Coding Training and HMN workshop. The Medical Recorder (Mrs 'Ofa Mafi) attended 2 weeks ICD-10AM workshop in Sydney University, Australia from the 15 – 26 October 2007. The Senior Medical Records Officer and Medical Recorder ('Ofa Mafi) completed the Management Course and achieved a Certificate in Health Management to make a difference. One staff (Ms Salote Liava'a) attended one month work experience at St. John of God Hospital in Ballarat, Australia. Reviewed Maternal Death with regards to document wrote by clinicians on Medical Records with the WHO Consultant
<ul style="list-style-type: none"> <u>To ensure staff to understand their job description</u> 	<ul style="list-style-type: none"> The Manager of Ballarat Medical Record Section visited the Medical Records Section in September for two weeks and assisted with managerial functions. Updated PMI and installed the Outpatient database, Coding database, Admission and Discharge database in Vaiola Hospital and supervised by the PMU Consultant (Dr Ion Stanciu – IT Specialist) The introduction of same medical records system to all hospitals to facilitate the in-service training and work purposes. The establishment of a quarterly report to provide statistical tables and trends to each ward Implemented new patient flow system and used triage category in Outpatient and Medical Records Implemented a sticker for Cancer (Red), Mental (Dark Green), Infectious Diseases (Yellow), Allergic (Orange) and Black for Deceased. The stickers warn the clinicians according to the current condition of patients.

6 PREVENTATIVE HEALTH SERVICES

6.1 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	4	5,969
Health Promotion	Dr. Paula Vivili	6	17,719
Environmental Health	Dr. Raynold 'Ofanoa	13	16,000
Community Health	Vacant	24	7,502
Reproductive Health	Sr. Sela Paasi	35	78,150
Total staff and financial resources	4	82	\$ 125,340

6.1.1 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
<ul style="list-style-type: none"> 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: 	<ul style="list-style-type: none"> Dr. Louise Fonua, Mr. Saia Penitani and Ms. Nukonuka Mafile'o attended and completed the first ever training in TB contact tracing held in New Caledonia.
<ul style="list-style-type: none"> To collaborate more effectively 	<ul style="list-style-type: none"> Health Officer Lineti Koloi 'Isama'u, successfully completed a certificate

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 for Response to STI including HIV/AIDS.	<p>in Supportive Communication Skills for HIV VCT/VCCT Counselors in Fiji and is now fully capable of conducting pre and post HIV counseling.</p> <ul style="list-style-type: none"> ▪ Dr. Louise Fonua attended the WHO workshops in STI and HIV for the Western Pacific held in Malaysia. ▪ The area used for medical checks and STI clinic was successfully walled off to provide more privacy for clients using these services. ▪ The opening of the new isolation ward provides better facilities to manage cases that are communicable in nature.
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Statistical Information:

STI including HIV/AIDS Program

This year the Communicable Disease unit has especially strengthen their recording and reporting processes and this has eventuated with an increase in the number of STIs seen. This unit is working in conjunction with the Tonga Family Health and the rest of the hospitals and health centres to combat and treat STIs. This year, a new HIC positive case was detected and is being followed up by this unit. This brings the total number of cases in Tonga since 1987 to 15.

Table 6 Confirmed curable sexually transmitted infections 2007

Age Group	Laboratory Confirmed		Total
	Male	Female	
10-15	0	0	0
16-20	19	0	19
21-25	48	2	50
26-30	25	1	26
31-35	12	1	13
36-40	4	1	5
41-45	3	0	3
46-50	0	0	0
51-55	1	0	1
56-60+	1	0	1
TOTAL	112	5	117

Source: Communicable Disease Section
Laboratory record
Tonga Family Health STI numbers – 75 (males: 57, females: 18)

Thirty six of the total STI cases seen in the TFHA were confirmed for gonorrhea. The rest were treated using syndromic management.

Note: This is obtained from the records of the MOH and TFH and it does not include general practitioners and private pharmacies. We hope to collect more complete data in the future, as we will reinforce the filling of the notifiable disease forms by all health practitioners.

TB-DOTS Program

There are 4 DOTS Centers nationwide with Tongatapu being the main one and Vava'u, Ha'apai and 'Eua as supportive ones. The Niua's however are under consideration to be made DOTS centers in the near future since

there have been positive cases from both Niuas over the years. The unit has established a TB coordinator for all the DOTS centers and they are mostly made up of nurses with the exception of Tongatapu.

The Project continues its management of positive cases on an outpatient basis unless the patient is very sick or there are other underlying condition(s) that warrants admission. The DOTS program is offered every day, seven days a week.

According to WHO standard, Tonga still needs to improve its detection rate while cure rate needs to be maintained at 85% and higher. The TB drugs are provided through the recurrent budget of the Ministry of Health and there was adequate supply to treat all positive cases throughout the year.

Table 7 All newly diagnosed patients treated for TB, both as sputum positive or extra pulmonary, 2007

Item	Male	Female	Total
New Pulmonary smear positive	8	6	14
Pulmonary smear negative	3	2	5
Extra-Pulmonary TB	4	0	4
Relapse	0	0	0
Treatment after default	0	0	0
Treatment after failure	0	0	0
Transfer in	0	0	0
TOTAL	15	8	23

Source: Communicable Disease Registration

Since the commencement of the DOTS program, there hasn't been a re-treated case in Tonga. This just goes to show that DOTS is very successful in our island setting. Commencing in January 2007, all TB cases detected were also checked for HIV. This is due to a reemergence of TB amongst people living HIV worldwide. Fortunately there was no case of TB/HIV co-infection

Table 8 2007 Demographic Data for Registered TB Cases

Age	Male	Female	Total
0-14	1	0	1
15-30	3	5	8
31-45	5	2	7
46-60	1	0	1
61-75	4	1	5
76-90	1	0	1
Total	15	8	23

Source: TB Register, Communicable Disease Registration

There were a total of 23 registered cases of Tuberculosis of all forms and unfortunately there was a fatality this year. However, the department has carried out various community awareness programs which includes 'Eua, Ha'apai, Vava'u and Tongatapu and has tried to maintain its Quarterly supervisory visits to the outer island DOTS centres.

The CD Section also through the assistance of Global Fund has carried out awareness programs through the media by developing clips for TB –DOTS through TV and Radio programs as well as marking of World TB day on the 24th of March.

Typhoid fever

Over the past 5 years, there has been a marked decrease in the number of cases of typhoid fever caused by salmonella typhi. One of the important findings that may be contributing to this is an improved control and prevention program of typhoid fever, which also includes identifying healthy carriers. Other contributing factors are improved sanitation and living conditions as people are becoming more aware of disease causing factors.

There were a total of seven cases of salmonella typhi for the year, one case was from Lotoha'apai Tongatapu and four from Loto Foa Ha'apai. Both carriers for the case in Loto Ha'apai and Loto Foa were also found and treated. Special recognition goes out to the CMO Ha'apai for his assistance and vigilance in finding and treating positive cases as well as finding carriers. The CD section collaborates and works closely with the Health Inspectors and laboratory services on the management of identified cases and screening for carriers or further positive cases.

Table 9 Confirmed salmonella typhi cases by age and sex, 2007.

Age group (years)	Male	Female	Total
<5	0	0	0
5-10	0	0	0
11-15	1	1	2
16-20	0	1	1
21-25	0	0	0
26-30	1	0	1
31-35	0	0	0
36-40	0	1	1
41-45	0	0	0
46-50	0	0	0
51-55	0	1	1
56-60	0	1	1
Total	2	5	7

Source: Communicable Disease Registration
Laboratory Records

Dengue Fever

The first case of dengue fever was discovered in June 2007 which proved to be fatal. Since then more cases were seen at the medical ward. By the end of the year a total of 60 cases were reported to the CD section of which 35 were males and 25 females. These cases were all located in Tongatapu. They were from 22 villages distributed throughout the central, eastern and western divisions. There are no cases reported from the outer island hospitals or health centres. The youngest case was 1 year old and the eldest 87.

Table 10 Distribution of Dengue Fever by Age Group

Age Group	Total Number
0-5	4
6-10	4
11-15	8
16-20	6
21-25	5
26-30	5
31-35	1
36-40	4
41-45	2
46-50	3
51-55	5
56-60	2
61-65	1
66-70	2
71-75	0
76-80	1
81-85	3
86-90	2
Unknown Age	2
TOTAL	60

Source: Communicable Disease Registration
Laboratory Records

Filariasis

Tonga was the first country in the Pacific to successfully complete its surgery amongst primary school children aged 5-6. This was conducted across the whole of Tonga in conjunction with the Ministry of Education. The result of this survey was very favourable as there was zero prevalence amongst the 2,429 students that were very involved in the survey. However, the results of the antibody analysis are still being determined by James Cook University and we will be notified accordingly. This D survey will be repeated in 2009 and if the result is again less than 1% prevalence then Tonga will be ready for verification by WHO to be declared free of Filariasis. This is quite an achievement for Tonga and hopefully that same favourable results is obtained in 2009.

Others:

- There were no active leprosy cases in 2007 but the unit is still attending to also carry out dressing of three former leprosy cases that have completed treatment.
- There was one case of meningococcal meningitis in the Paediatric ward which rifampicin to contacts.
- The other services provided by this Section include: issuance of medical certificates for food-handlers and shop-keeper; employment recruitment and others as in Table 11.

Table 11 Total number of people that utilized these specific services of the Communicable Disease Section

Quarters of year	Visa applicant (o/seas)	Shopkeeper	Employment	Immigration (TON)	Food handler	Missionary
First	101	522	233	17	435	37
Second	84	393	44	18	437	24
Third	89	345	91	19	366	32
Fourth	116	271	22	5	240	37
Total	390	1541	390	60	1478	130

Source: Communicable Disease Registration

From the above table, one can deduce that the number of people who utilizes the services offered by this section is high. It is of notes, that some of them especially the shopkeepers need to renew their health certificate quarterly. They are given complete screening in the first quarter, and to undergo another complete check depends on certain indicators as determined by the CD staff. There has been a decline in the numbers of potential visa applicants seen at this section as the Ministry has outsourced these services.

This section has identified a need to update the forms that they are using for their services and specially the health certificate form which is in dire need of review and hopefully this can be done in 2008.



There is still a need for more spacious working area for this Section especially if we are to be able to give our patients the very best care that they deserve and of course to be able to keep the confidentiality that the patients' expects.

The STI unit also needs to be more youth friendly seeing that majority of cases seen are between the ages of 15-30. There is also a need to increase the number of females accessing the STI clinic as majority of cases seen are males.

6.1.2 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
<ul style="list-style-type: none"> To identify at risk persons/groups within Vaiola Hospital and the broader Community; 	<p>Open Space Aerobics Sessions:</p> <ul style="list-style-type: none"> The Unit is continuously conducting open-air aerobic sessions free of charge on a daily basis (afternoons Monday to Friday) at Nuku'alofa waterfront for the general public. The total number of sessions conducted since January 2007 is 185. Attendance has been up to 40+ persons but fluctuating; average attendance has been 10 persons.
<ul style="list-style-type: none"> To provide health information and propose strategies to at risk persons/groups; 	<p>Health Promoting Schools Project:</p> <ul style="list-style-type: none"> The project proceeded on as per the plan initiated at the very first training before the start of school year. The Unit's Grade I Health Promotion Officer will be central in implementing various initiatives in the designated secondary school communities, supported by the Australian and Japanese volunteers. <p>No Smoking Signs for Schools:</p> <ul style="list-style-type: none"> The "NO SMOKING" signs for schools were donated by the New Zealand

	<p>High Commission, Tonga Development Bank and the World Health Organization. The Cessation Officer has almost completed putting up signs at the schools of Tongatapu.</p> 
<ul style="list-style-type: none"> To work together with the National NCD subcommittee on Physical Activity, Healthy Eating, Tobacco Control; 	<p>National NCD and Sub-Committee on Physical Activity and Tobacco:</p> <ul style="list-style-type: none"> The Section Head has continued participating and actively supporting the efforts of the National NCD Committee and Sub-Committees. The key activities were: <ul style="list-style-type: none"> Responsibility for the World No Tobacco Day promotional activities held at the Sia'atoutai Theological College. Responsibility for the Inter Departmental sport events. 
<ul style="list-style-type: none"> To collect statistics on risk factors for NCDs; 	<p>Elimination of Lymphatic Filariasis (ELF) Project:</p> <ul style="list-style-type: none"> The National D Survey was conducted in May 14 till 14 June, 2007 of amongst 5-6 years old children all over Tonga. Three teams started at Tongatapu primary schools and to the outer islands too. First team was led by Dr Louise Fonua, Ms Mizuki Sasano on the second and Dr. Reynold 'Ofanoa the third team. Each team consisted of four staff plus two dental officers for dental survey.
<ul style="list-style-type: none"> To identify and address staff training needs; 	<p>Local training:</p> <p>Media & Social Marketing</p> <ul style="list-style-type: none"> John Irwin of New Zealand, a short term consultant on media production conducted training for staff on production of TV program. Sara Gloede started training of staff on program research and social marketing concepts. <p>Staff Presentations</p> <ul style="list-style-type: none"> The Unit staff have been required to make 15 minute PowerPoint presentations in staff meetings (roughly one in every two months), primarily to improve their skills on information research, written and verbal communication. <p>Australian Volunteer Counterparts</p> <ul style="list-style-type: none"> With the arrival of AusAID youth ambassadors, the Unit staff will benefit from the intentional skills-sharing and capacity building by the Australians during their 12 month presence.

	<p>Overseas Training/ Workshop:</p> <ul style="list-style-type: none"> Meleane Kava Fifita completed attachment at the SPC Training Centre in Narere, Suva. The course started in March and finished in October 2007. 'Eva Mafi attended the training course of the Japan-WHO International Visitors Programme on NCD Prevention and Control from 10-17 April 2007 in Saitama, Japan. He also participated in the training on Prolead Health Promotion in Tamavua, Suva from 9-12 October, 2007 together with Talahiva Fine (MOE) and Salesi Finau (Community Reps.). Naomi Fakauka and Talahiva Fine represented Tonga to the Health Promoting School workshop in Brisbane from the 23 – 31 October, 2007. <p>Human Resources:</p> <ul style="list-style-type: none"> Two JOCV: Mr Takamasa Ichinose (Physical Instructor) until March 2008 and Ms Mizuki Sasano (Filariasis Project Officer) completed her time in September 5th 2007. Two Australian Youth Ambassadors (until September 2008): Ms Sara Gloede (Social Marketing) and Mr Dean Lawrie (Media Technician) are currently at post. Another two Australian Ambassadors completed their term and left in September 2007: Mr Owen Dowle (Graphic Designer) and Ms Nicole Butcher (Health Promotion Project Officer).
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Statistical Information

Media outreach – television and radio

Radio – programs of 10 and 15 minutes, one hour live talkback and occasional special shows. Live talk show was scheduled to be broadcasted every fortnight but due to the direction from Tonga Broadcasting Commission to withhold all live talk back shows to the public until August, HPU/NCD had an alternate weekly program of 15 and 30 minutes.

Table 12 Radio Broadcast statistics

No	Broadcast Topic	No. prog's
1	Non-Communicable Diseases (Diabetes, Foot Sepsis, Heart Diseases, Hypertension)	38
2	General Health Promotion (Community outreach, outer islands, nutrition & physical activity, health warning)	23
3	General Oral Health (outreach, health advise, education)	28
4	Live talkback (various health issues including hospital cost & policy, foot sepsis & diabetes, TB, infant health, tobacco, physical activity & nutrition, OPIC intervention, oral health, medical drugs, eye clinic, public complaints).	10
5	Communicable Diseases (AIDS, TB, Dengue & Typhoid Fever, Filariasis, STIs, Bird Flu)	37
6	Environmental Health (sanitation, water, dengue fever, typhoid)	20
7	Tobacco Control	10
8	Hospital service	1
9	Medical Drugs	1
10	Infant Health	1
	Total	169

Source: Health Promotion Section

Television – regular 15 minutes program on Monday evening plus other specials on TV Tonga. Dr Supileo Foliaki Foundation monthly programme was conducted on every 19th day the month.

Table 13 Television Broadcast Statistics

No	Broadcast Topic	No. prog's
1	Non Communicable Diseases (Diabetes, Foot care, foot sepsis)	5
2	General Health Promotion (physical activity, tobacco control, nutrition, community & outer island intervention)	27
3	Communicable Diseases (AIDS, TB, Dengue & Typhoid Fever, STIs, Bird Flu, Filariasis)	12
4	Hospital cost and user fee	1
5	Out Patient (Emergency / blood donor)	6
6	Environmental sanitation	1
7	OPIC intervention	4
8	Dental Care	2
9.	Dr Supileo Foliaki Foundation	7
	Total	65

Source: Health Promotion Section

National survey on Lymphatic Filariasis:

This was the very first time this kind of survey was conducted (blood test with special test kit) to identify any possibility of transmission of lymphatic filarial worm from parent to children. In addition, to identify the impact of the five years Mass Drug Administration (MDA) that had started in 2001. The overall test targeted every class one student at the primary level of 5&6 years old. However, the overall operation and responsibility for this project was transferred to the Communicable Diseases Section after the survey.

Open Air Aerobics

Number of sessions conducted (3/01/07-31/12/07)

Waterfront – 185

Average rate of participation: 10



6.1.3 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
<ul style="list-style-type: none"> To provide a high standard of environmental health services to the people of Tonga 	<ul style="list-style-type: none"> Fellowship: WHO has approved the funding of a health inspector to attend the BA Applied Science (Environmental Health) – Australia 2008 Approval for Recruitment of (5) Public Health Inspector Trainees – There has been ministerial approval for recruitment of (5) Public Health Inspector Trainees – 2008 Public Health Inspector – Mr Niutupuivaha Fakakovikaetau attended a meeting on Tobacco Control in New Zealand.
<ul style="list-style-type: none"> To reduce the incidence of communicable diseases in Tonga 	<ul style="list-style-type: none"> Conducted a workshop on water monitoring (point of use) to the community & other stakeholders involving Hydrogen Sulphide Specimen bottles in partnership with Tonga Trust.
<ul style="list-style-type: none"> To upgrade and maintain village water supplies 	<ul style="list-style-type: none"> Installation of new village reticulated water supplies and construction of Ferro – cement tanks for private households to ensure that >97% of the population gain access to portable water supplies
<ul style="list-style-type: none"> To oversee and control Hospital Waste Management 	<ul style="list-style-type: none"> Public Health Inspector – Mr Uepi Lea attended an attachment in Australia and a workshop in Samoa on Health care waste management Public Health Inspector – Mr Uatesoni Tu'angalu attended a workshop on health care waste in Samoa.
<ul style="list-style-type: none"> To promote and attain a high standard of health through out the population of Tonga 	<ul style="list-style-type: none"> 3 Incinerators donated by Rotary Japan for disposal of sharps including needles and syringes for Tongatapu, Vava'u and Ha'apai

6.1.4 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
<ul style="list-style-type: none"> To raise funds to support the health centres 	<ul style="list-style-type: none"> The window frames of Fua'amotu Health Centre and the fence has been painted by the Community.
<ul style="list-style-type: none"> To renovate all health centres to get health officers to stay in health centres 	<ul style="list-style-type: none"> Hon. Ma'afu Tukui'aulahi has granted a new location for the Vaini Health Centre. This is a greater piece of land and it will be accessible for staff and the public at large.
<ul style="list-style-type: none"> To revise the drugs provided to health centres 	<ul style="list-style-type: none"> Participate in a workshop on the standard drug guideline
<ul style="list-style-type: none"> To introduce diabetes care into health centres 	<ul style="list-style-type: none"> Her Royal Highness Princess Pilolevu Tuita funded a community training for the Youth of Tatakamotonga. Community walk for Health with the support of the Health Promotion Units Australia Eye Team visits our clinic in August and gave us our eye glasses

	<ul style="list-style-type: none"> National Diabetic and Medical clinics are regularly undertaken at Kolovai Health Centre.
<ul style="list-style-type: none"> To develop shared functions between health officer (HO) and public health nurse (PHN) 	<ul style="list-style-type: none"> The Health Officer and Public Health Nurse have jointly delivered the Home Visit services selected areas such as Fua'amotu.
<ul style="list-style-type: none"> To include dental services in team approach To provide in-service training for H/O's to go to remote health centres 	<ul style="list-style-type: none"> Establishment of Dental Clinic two days a week at Nukunuku Health Centre.

6.1.5 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
<ul style="list-style-type: none"> To develop skilled and committed staff to meet the evolving roles of the reproductive health nurses. 	<ul style="list-style-type: none"> Two Nurse Practitioners, 'Emeline Takai and Paea Fifita resumed duty on May 2007 after graduating with a Certificate in Nurse Practitioner from Fiji School of Medicine. SPHS Sela Paasi attended UNFPA Consultation Meeting in Suva, Fiji on 20 August 2007. SPHS Sela Paasi attended a Workshop on reviewing the implementation of the Global Reproductive Health Strategy in the Western Pacific Region from 12 – 14 November 2007 in Manila, Philippine. Sr. Sela Paasi attended the AHD, Reviewing Workshop from 26.11.2007 – 30.11.2007 in Nadi, Fiji. SN Midwife Satua Pongi attended the Reproductive Health Training Programme 2007 in Suva Fiji from 12 September to 07 December 2007. RH. Nurses, Sanitina Makaafi, Manafonu Siola'a, 'Ana Lasike, Uikelotu Filikitonga, Tapaita Lea and Mele Latavao went on 3 months attachment in New Zealand to observe how to manage diabetic cases in the community. Ministry of Education endorsed the requirement of Completed Immunization Certificate for school entry at Primary School. Reproductive Health Nurses attended various trainings, workshops, seminar meetings throughout the year.
<ul style="list-style-type: none"> To improve and upgrade staff performance 	<ul style="list-style-type: none"> Reproductive Health Section conducted five days Management, Review and Planning Workshop on the 19 – 23 November 2007. The workshop was officially opened by Dr. Salesi Katoanga, Consultant from WHO, Suva Fiji and Dr. Annette Robertson and Dr. Setareki Vatuqawa from UNFPA also attended at the Opening Ceremony.
<ul style="list-style-type: none"> To improve communication, teamwork and cooperation, and reduce conflicts and misunderstanding among health workers 	<ul style="list-style-type: none"> Good partnership and effective collaboration between the Ministry of Health, people of the community and TFHA were strengthened in working towards production of outputs in both RH and ARH programmes.
<ul style="list-style-type: none"> To provide effective and quality reproductive health services to women of child bearing age through: -easy access to reproductive health, adolescent and sexual 	<ul style="list-style-type: none"> Reproductive Health services and clinics at Ha'apai, Vava'u and 'Eua were visited once in 2007. SPHS Sela Paasi attended the Adolescent Health Development Annual Reviewing Workshop as from 12 – 16 February 2007 in Nadi, Fiji. Sr. Graduate Afu Tei attended the Maternal and Child Health Care Service

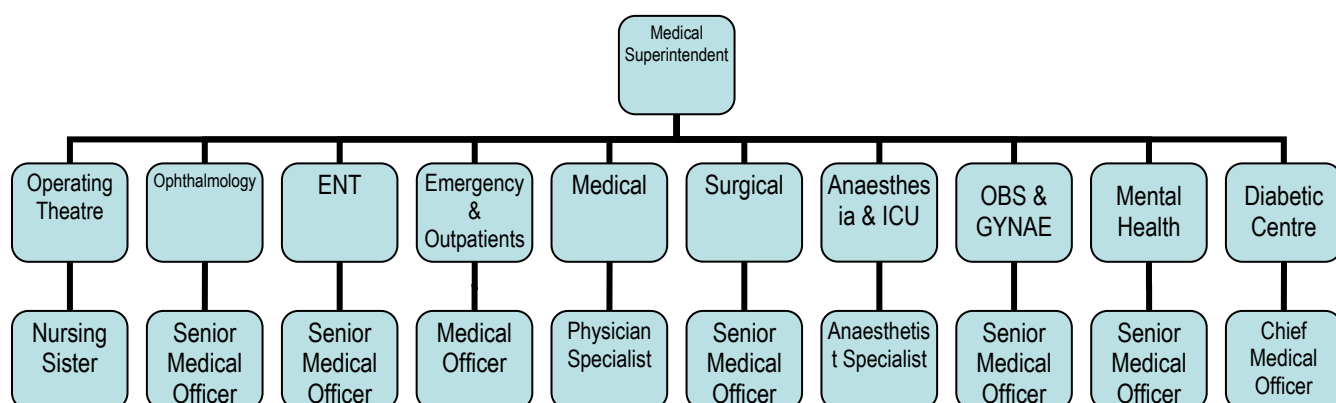
<p>health.</p> <ul style="list-style-type: none"> ▪ -maintaining high coverage of ante natal and post natal care. ▪ -Helping couples and individuals to plan their families. 	<p>Workshop in China from 28 May to 11 June 2007.</p>
<ul style="list-style-type: none"> ▪ To ensure and monitor good health and 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. 	<ul style="list-style-type: none"> ▪ SPHS Sela Paasi attended the Third Pacific Immunization Programme Strengthening (PIPS) Workshop from 7 – 8 May 2007 held in Nadi, Fiji. ▪ SN Midwife Seini Pasa attended the Third Training of Trainers on Expanded Programme on Immunization (EPI) from 19 – 23 November 2007.
<ul style="list-style-type: none"> ▪ Conduct regular meetings, liaise with other community programs and conduct regular island visits 	<ul style="list-style-type: none"> ▪ Supervisory visits to the Reproductive clinics and health centres at Tongatapu by supervisors were conducted throughout the year at regular intervals.

7 CURATIVE HEALTH SERVICES

7.1 CLINICAL SERVICES

Mission Statement:

To be able to provide the best possible care in internal medicine, to prioritize areas that need change and to use the available resources in the most appropriate and effective way.



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Operating Theatre	Seneti Fakahua	8	4,000
Ophthalmology	Dr. Paula Vivili	2	10,000
ENT	Dr. Leiukamea Saafi	1	4,000
Emergency & Outpatient	Dr. Lemisio Sa'ale	8	4,000
Paediatric Ward	Dr. Toakase Fakakovikaetau	1	4,000
Diabetic Clinic	Dr. Taniela Palu	2	3,000
Surgical Ward	Dr. Samson Mesol	2	4,000
Medical Ward	Dr. Sione Latu	2	0
Obstetric & Gynecology	Dr. Semisi Latu	2	4,000
Mental Health	Dr. Mapaha'ano Puloka	7	5,000
Anaesthesia & ICU	Dr. Bernard Tu'inukuafe	2	9,000
Total staff and financial resources	11	37	\$ 51,000

7.1.1 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
<ul style="list-style-type: none"> Reduce overall inpatients Case fatalities by 10%. 	<ul style="list-style-type: none"> A significant effort was put forward to record all details demographic and related clinical information of every death in this ward and the community so that we can design appropriate approach for reducing preventable deaths.
<ul style="list-style-type: none"> Reduce inpatients mortality from common illnesses by 10%. 	
<ul style="list-style-type: none"> Organize and run workshops (CDD & ARI) among health-workers working with children to help decrease the overall morbidity and mortality from these illnesses throughout the nation. 	<ul style="list-style-type: none"> WHO financially supported a series of workshop to combat the morbidity and mortality effect of these diseases.
<ul style="list-style-type: none"> Establish and Register Vaiola Hospital as a Baby Friendly Hospital. 	<ul style="list-style-type: none"> Paediatric Ward moved to the new ward in December 2007 as part of the Building Phase B2 of the Master Plan of Vaiola Hospital.
<ul style="list-style-type: none"> Assess the effectiveness of Hib vaccine since its introduction in May 2005. 	<ul style="list-style-type: none"> The statistics presentation showed reduction in meningitis and septicaemia as an impact of the introduction of Hib vaccine in 2005
<ul style="list-style-type: none"> Work closely with Reproductive health and Health Information to validate Child Health Indicators (Rates for Perinatal Mortality, Neonatal Mortality, Infant Mortality and U5 Mortality). 	<ul style="list-style-type: none"> Statistical report of 2007 jointly reported with Reproductive Health Section where we have the same indicators for all Child Health related indicators.
<ul style="list-style-type: none"> To establish a Rheumatic Fever / Rheumatic Heart Database for Tonga and promote the necessary preventive measures. 	<ul style="list-style-type: none"> We have taken preliminary step to establish a Rheumatic Heart Disease for Tonga. Simultaneously, we are collaborating with some international organization such as WHO to produce a comprehensive secondary prevention program for RHDs for this Country.

Statistical Information

Burden of diseases among children and quality of service provided by the department is better assessed by looking at the trend over the years provided in Annex I, II and III.

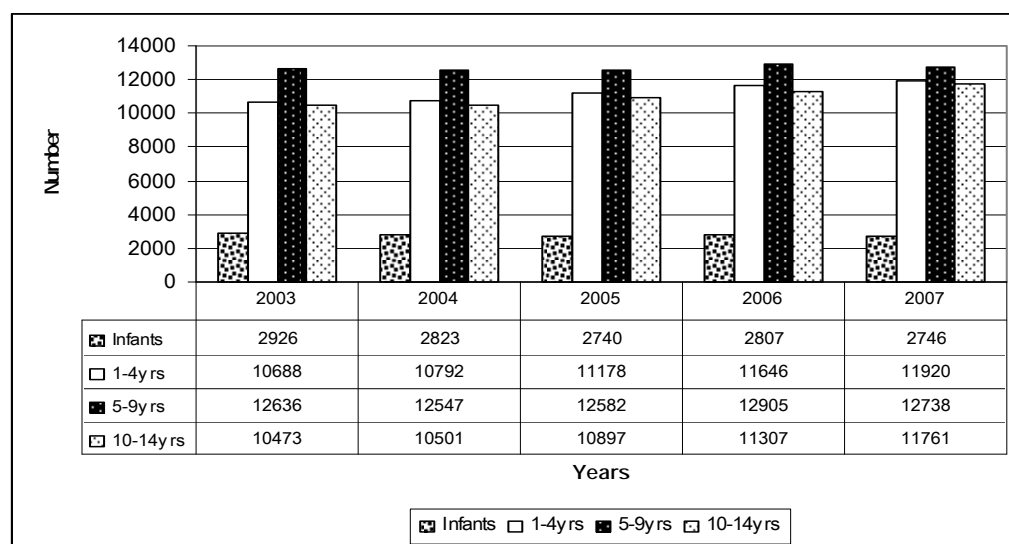
Paediatric Demographic Data

Paediatric Population

The Paediatric Ward provides services for children aged 0 – 14 years, total of 36,723 which consist 37.7 % of the population of Tonga according to Reproductive Health Section Annual Census provided in figure 1. We offer inpatients and curative services not restricted to the main island Tongatapu but also referral patients from outer island hospitals. In addition, we provide consultation services to the entire Country.

Likewise, we conducted series of preventive, health promotion and research activities which involve both medical and nursing staff of Tongatapu and outer island.

Figure1 Distribution of children aged less 14 years old by age group, 2003-2007

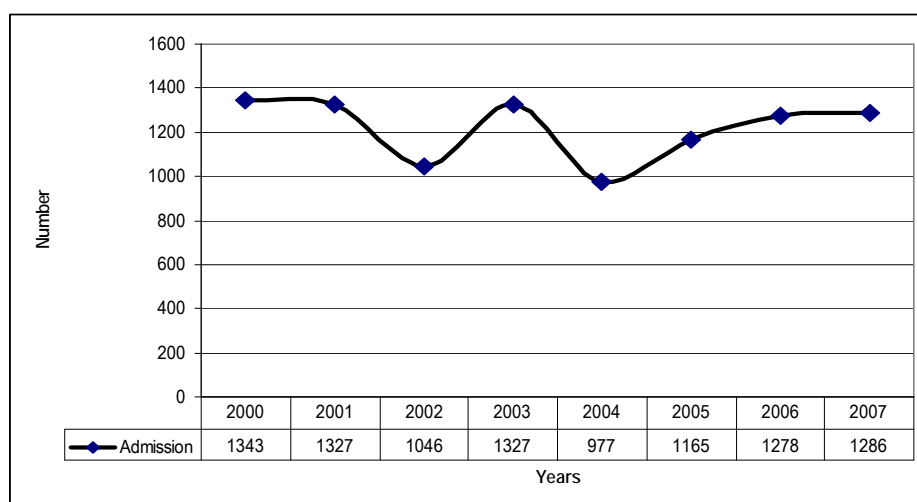


Source: Reproductive Health Section, Ministry of Health

Paediatric Admissions

Paediatric admission averages about 100 patients per month in 2007 and very similar to the average admission of 2006.

Figure 2 Annual Paediatric Admissions, 2000-2007



Source: Paediatric Ward Registration

Monthly Admissions

Monthly admissions rate in Paediatric ward often reflects special events or epidemics during the year. Although, it is not statistically shown a specific admissions in 2002, there was a serious Rubella epidemic took place with effect from July to September. In response, a Rubella vaccine campaign was introduced throughout the country. During the period of March-May 2003, a lethal dengue epidemic claims life of six children.

There was no epidemic in 2004 but from November 2005 to January 2006, a Gastroenteritis epidemic took place and claims 4 lives where two from Vava'u.

The most frequent admission (128) occurred in August 2007 where this was not associated with any outbreak. The volume of admission in January (127) indirectly increased by an unusual occurrence (39% of the total admission) of gastroenteritis admission.

In November, we had 2 overseas visiting teams, the first one from Sydney Children hospital and the other is a interplast team. The orthopedic team operated on 20 children with talipes and the Interplast operated on 5 patients with cleft lips, palates or both and 6 with other plastic procedures.

Admissions by Team

During the past 7 years, the medical admission becomes the most common admission team, followed by Surgical, ENT, Eye and Gynecology.

Table 14 Admissions by Team, 2001-2007

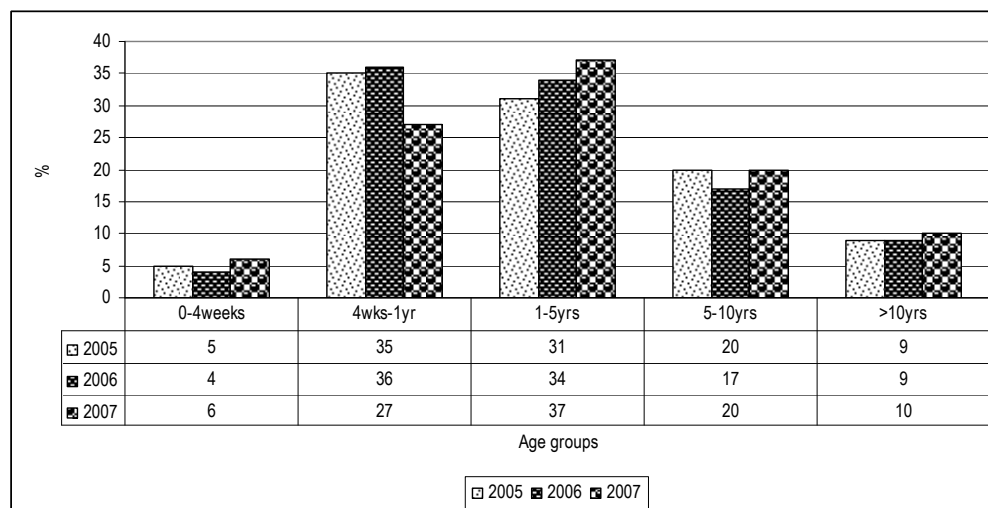
Years	Medical	Surgical	Dental	ENT	Eye	Gyne
2001	66	27	5	2	0	0
2002	66	29	2	2	1	0
2003	67	27	2	3	1	0
2004	66	30	2	2	1	0
2005	0	0	0	0	0	0
2006	69	29	1	1	0	0
2007	67	29	1	2	1	1
Ave/yr	57.3	24.4	1.9	1.7	0.6	0.1

Source: Paediatric Ward Registration

Admissions by age group

Infants always dominate the number of admissions except for 2007; there were more less than 5 years between the age of 1 and 5 than infant children less than 1 years old being admitted to the Paediatric ward.

Figure 3 Percentage of total Admissions by age for 2004, 2006 & 2007

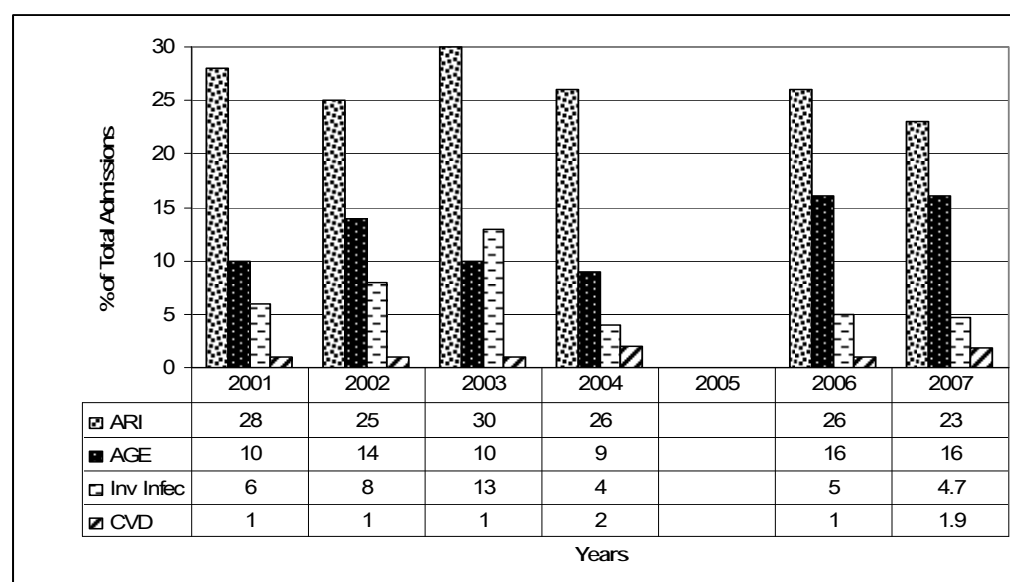


Source: Paediatric Ward Registration

Causes of Admissions

Acute Respiratory Infection (ARI) continued to be the most common cause of admission among the Paediatric population contributing 23% of the admissions. Acute Gastroenteritis followed with 16%, 4.7% from Invasive infections and almost 2 % for cardiovascular diseases, Motor vehicle accidents and for Talipes Repair. There were 4 cases of tumors this year compared to 8 in 2006.

Figure 4 Common & Serious Causes of Admissions.

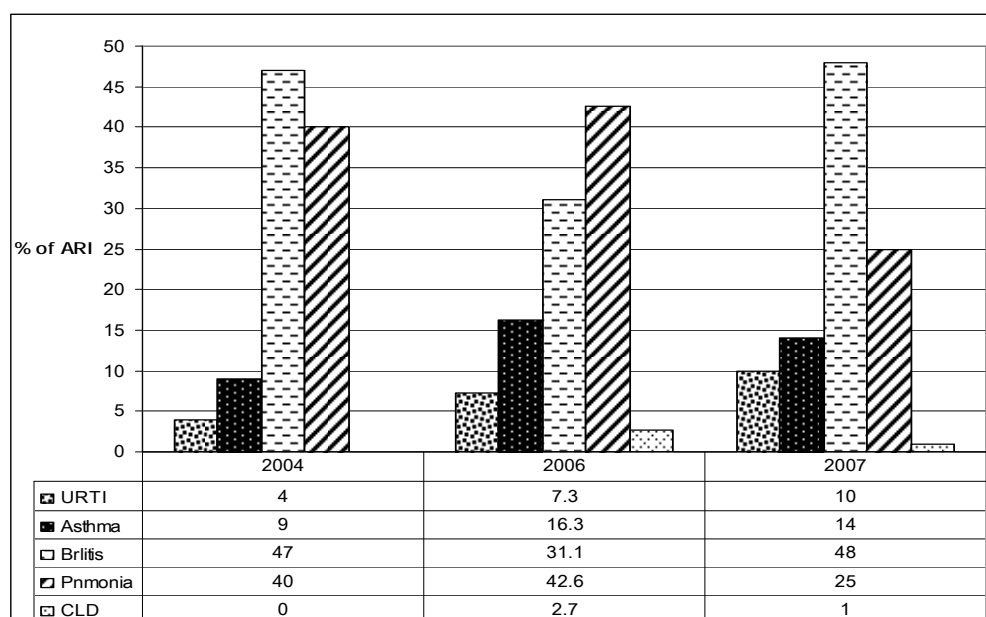


Source: Paediatric Ward Registration

Acute Respiratory Infection (ARI)

Comparing Respiratory diseases in the last 4 years (2005 data not available), Bronchiolitis dominates the respiratory condition this year with 48%. Pneumonia accounts for 25% of respiratory condition, lowest rate in last 4 years with 6 cases of Aspiration Pneumonia. Asthma accounts for 14%, very similar to last year's 16%. There were 2 cases of Chronic lung disease, one Tuberculosis and 3 Bronchiectasis.

Figure 5 Breakdown of Respiratory Conditions for 2004, 2006

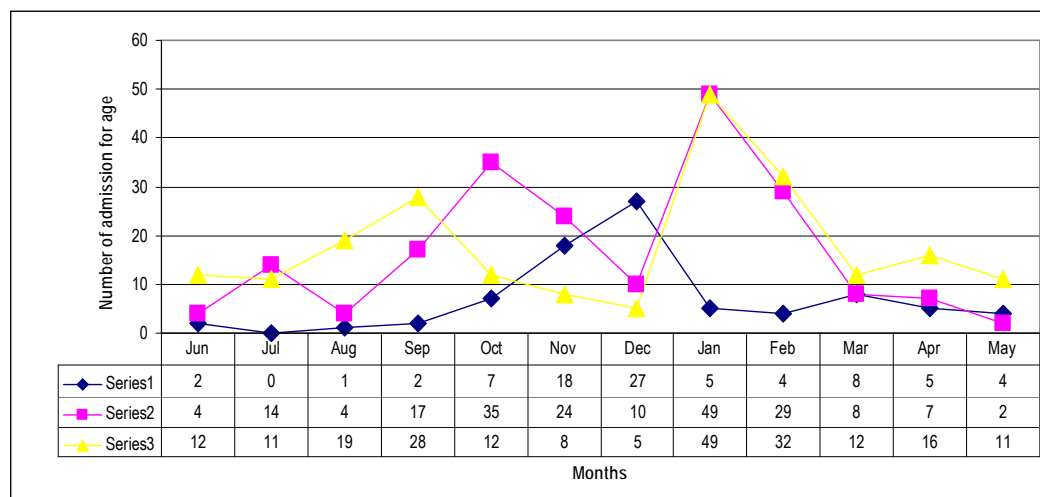


Source: Paediatric Ward Registration

Acute gastroenteritis (AGE)

Similar to 2006, Acute Gastroenteritis again contributed 16% of total Paediatric admission. (Graph 6.2.5, Annex II, Table 4) Again, January had the highest number of cases as AGE continued to peak during the summer months, Graph 6.2.7. There were not many cases of Hypernatraemic dehydration this year however AGE still claimed 2 deaths in the ward and 2 deaths on arrival. In all cases parents resort to Tongan medicine and ignored oral rehydration therapy. Details from outer islands were not ready on the submission of this report.

Figure 6 Number of Gastroenteritis per month 2005 – 2007

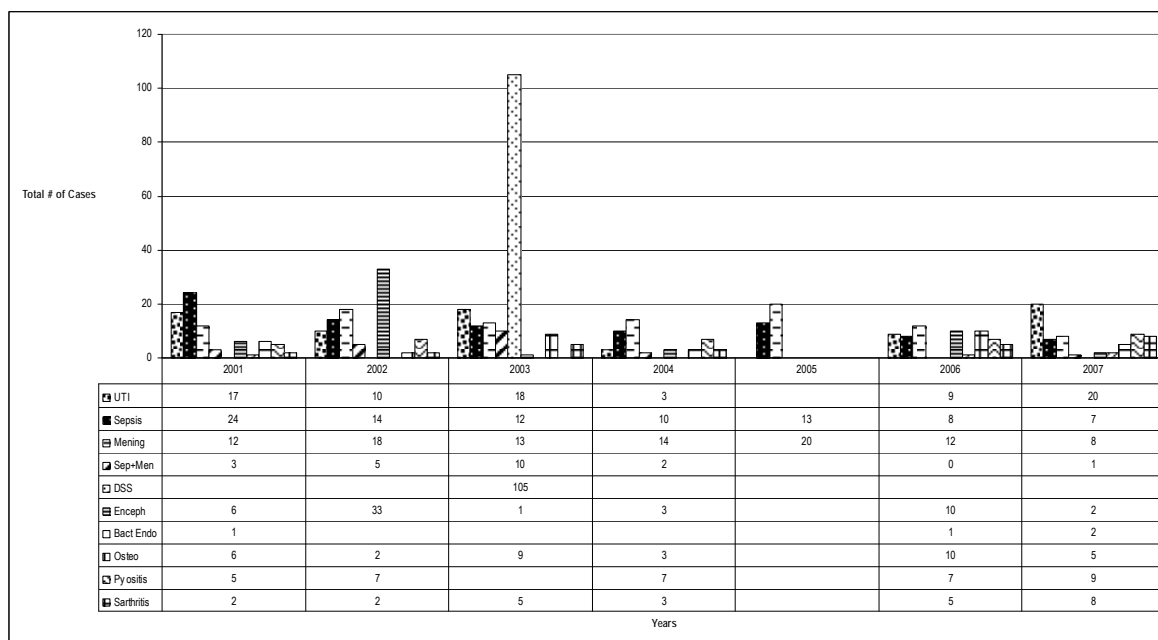


Source: Paediatric Ward Registration

Invasive Infections

Invasive Infection had always been a major cause of morbidity and mortality among Paediatric patients as reflected in figure 7. The major causes of Invasive Infections over the last 6 years are septicemia and meningitis. In 2002 Rubella epidemic causing significant number of Encephalitis and in 2003 the Dengue epidemic contributed another significant number of Dengue Shock Syndrome. Urinary Tract Infection was the leading cause of Invasive infection for 2007 followed by Pyomyositis. Septic arthritis and Meningitis were the third most common cause of Invasive Infection followed by Septicaemia,

Figure 7 Causes of Invasive Infection in the last 6 years 2001 – 2006

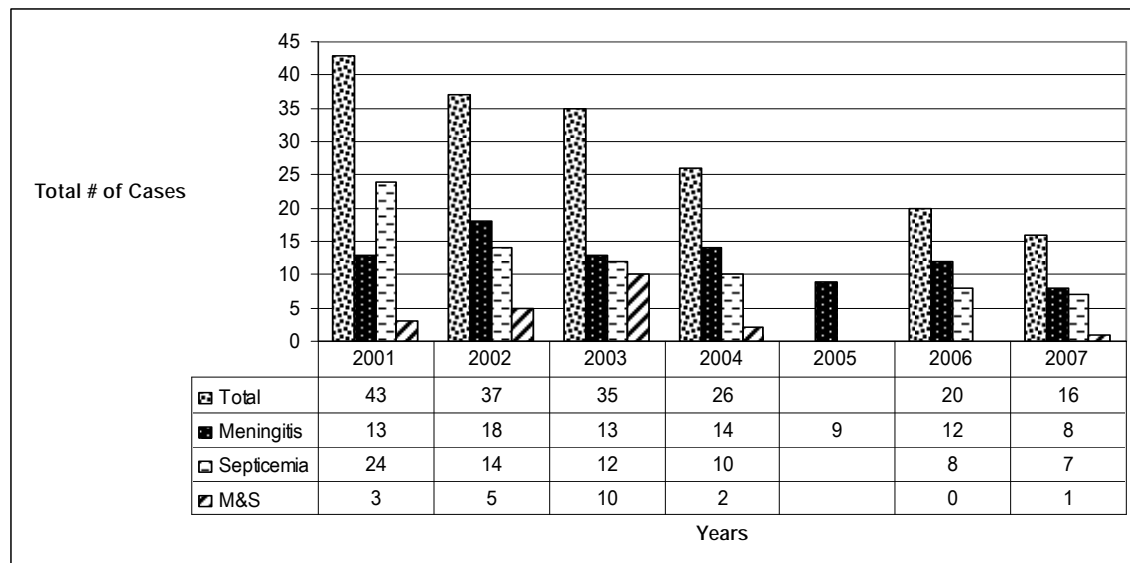


Source: Paediatric Ward Registration

Meningitis, Septicaemia

With the introduction of Haemophilus Influenzae type b (Hib) vaccine in May 2005 diseases commonly caused by this organism like Pneumonia, Meningitis and Septicaemia is expected to come down dramatically. Graph 6.2.9 below shows the trend of Meningitis, Septicaemia, Meningitis + septicaemia for the past 7 years.

Figure 8 Total cases of Meningitis, Septicaemia, M&S 2001 – 2007



Source: Paediatric Ward Registration

Overall Septicaemia has reduced by more than 60% from 2001 to 2007 as well as Meningitis by approximately 50%. Pneumonia also decreased by 15% from the last 2 previous years.

Cardiovascular Disease

Congenital and Rheumatic Heart Diseases (RHD) contributes about 2% to the annual Paediatric admissions. This does not reflect the true burden of disease as only severe cases are admitted. Congenital and RHDs consume a significant portion of Ministry's budget as most cases require overseas cardiac surgery. Rheumatic Heart Disease affect up to 4% (40 per 1000) of children age 3 – 14 years but there are some works underway to register all these patients. One of the major activities of the section is to work together with relevant stakeholders both locally and internationally (WHO, World Heart Federation - WHF) to produce a comprehensive secondary prevention program for RHDs. Current work on establishing a database is a step forward on this process.

Paediatric Cancer / Tumors

We saw a large number of Cancer patients in 2006, unlike years before with 7 cases. In 2007, although there were 9 admissions for tumors only 6 new cases were diagnosed this year. These 6 patients under age 14 years old including,

- 9 years old boy with brain tumor who died in New Zealand during referral.
- 4 months old girl with brain tumor diagnosed in February and again died in March in New Zealand.

- 12 1/2 years old girl with Lymphoma unspecified diagnosed in August but died in September.
- 7 1/2 years old boy again with brain tumor still under treatment in New Zealand.
- 9 years old boy with Chronic Myeloid Leukemia unspecified still lives to date despite no treatment.
- 8 years old girl with Wim's Tumor unspecified who is currently undergoing treatment in New Zealand.

Not included in the Paediatric population was a 15 years old girl with germinal tumor who is now cured with surgery and chemotherapy. With the population of 37, 000 under the age of 14 years, the expected annual incidence is 8 per annum. By the end of the year, 3 of these patients died with 50% mortality rate for Cancer diagnosed during 2007 only. All deaths this year from tumors either diagnosed this year or from last year are 4 deaths. The figures for this year and last year suggest that most childhood cancer cases get seen and diagnosed in Tonga. Unfortunately not all could be offered treatment.

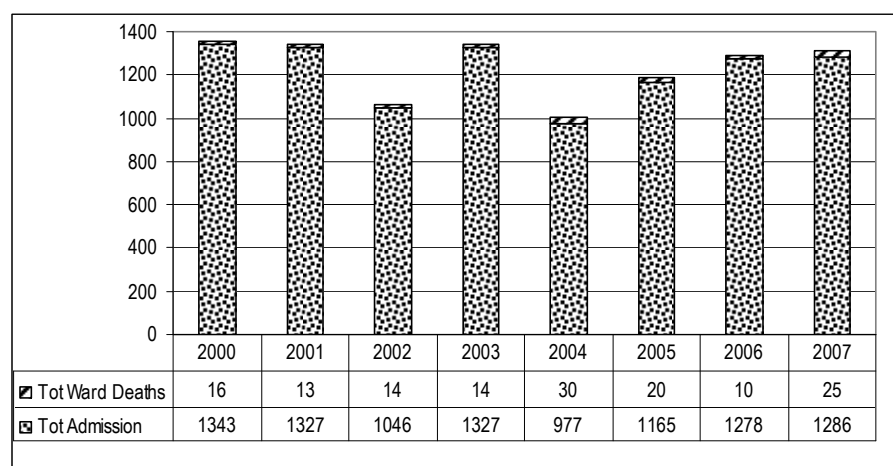
Other Paediatric Conditions

Motor Vehicle Accidents causes 22 (1.7 %) admissions and 3 deaths compared to only one death last year. There were 13 Burn cases admitted, fortunately no deaths. Dengue fever had been around the country since June but it had only caused admission to Paediatric ward in the last month of the year.

Case Fatalities

Compared to last year, not only we had more admissions we also have more mortalities. In 2007, there were 18 deaths in Paediatric ward and 7 in ICU making a total of 25 deaths in the wards. In addition, there were 4 children who died in the Emergency Department before admission. Again attempts were made 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.

Figure 9 Total Paediatric admissions and total number of deaths by year



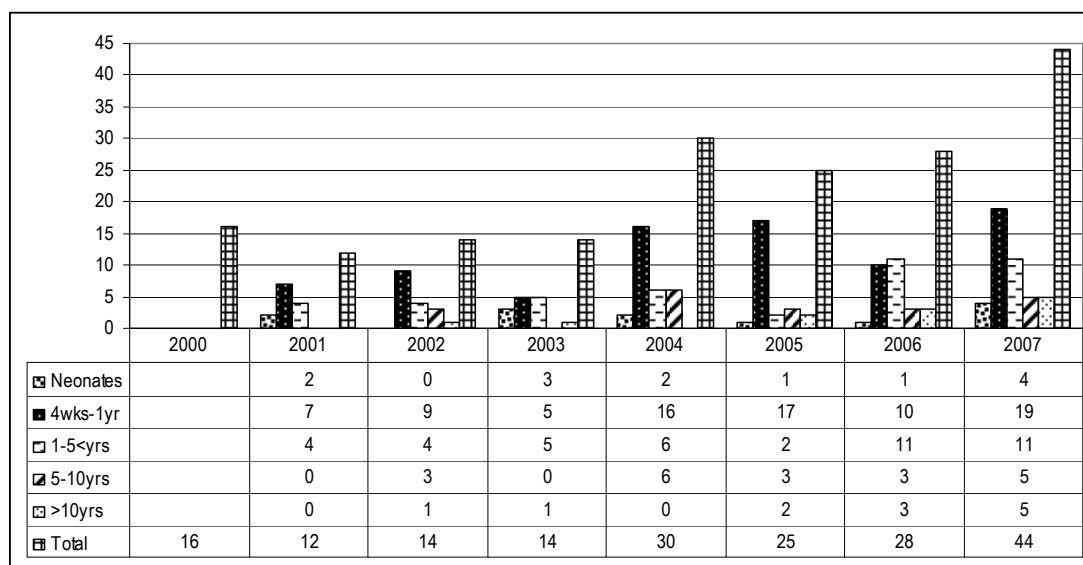
Source: Paediatric Ward Registration

In 2005 there were 20 deaths in the Paediatric ward plus 5 deaths outside the hospital in Tongatapu. In 2006 there were 28 deaths among the Paediatric population in Tongatapu inclusive of deaths outside the hospital. Consequently, 28 deaths were analyzed to determine cause, age at deaths and place of deaths. In 2007 there were altogether 44 deaths in Tongatapu among children younger than 14 years old.

Deaths in Tongatapu by age group and Gender

Again majority of deaths were under 5 years old with 34 cases (77%). Among these were 4 neonates, 19 Infants and 11 under 5 years old. Five deaths (11%) were older than 5 years but younger than 10 years and another 5 (11%) older than 10 years.

Figure 10 Case Fatalities by Age Group

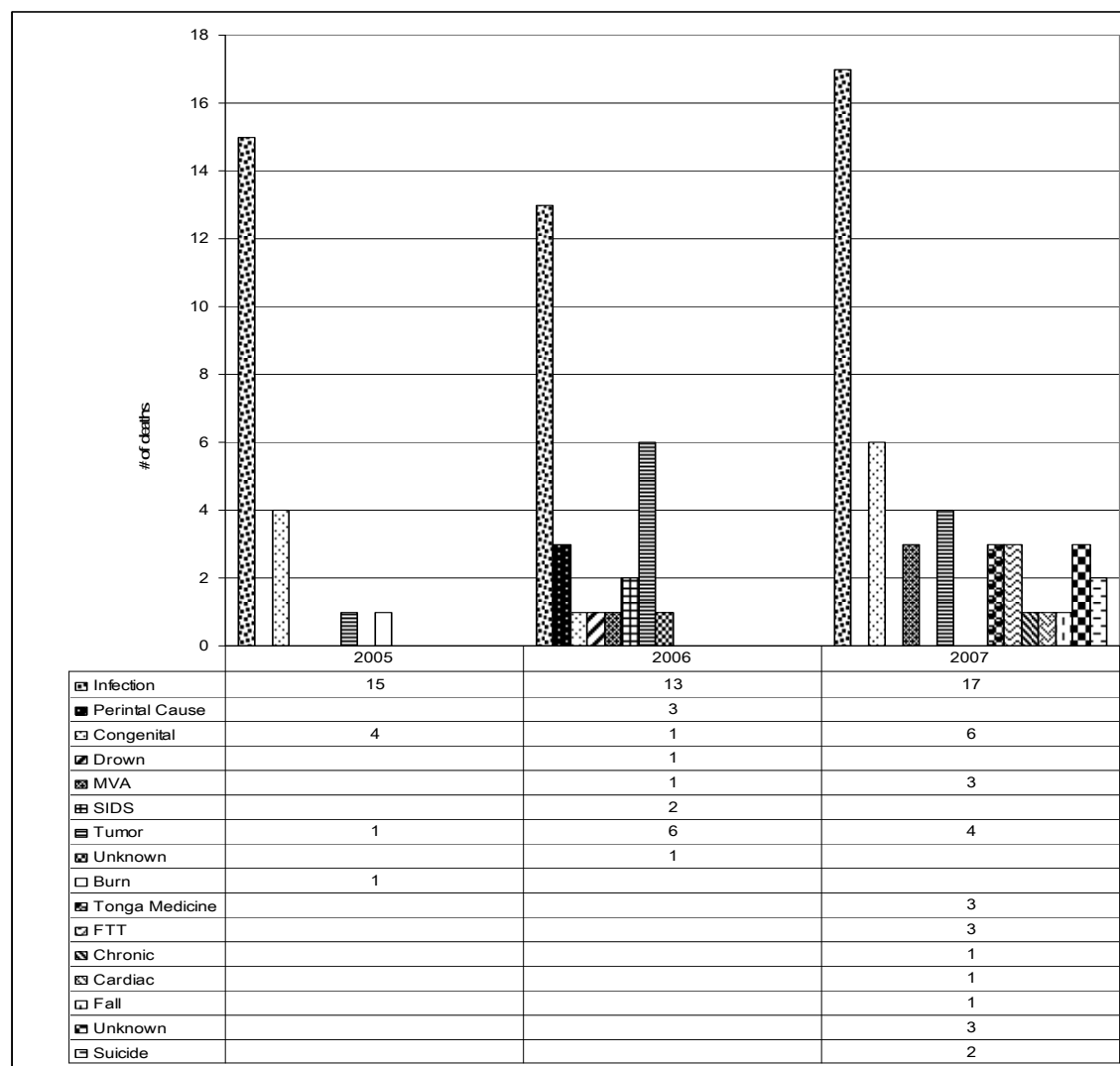


Source: Paediatric Ward Registration

Causes of Deaths / Fatalities

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

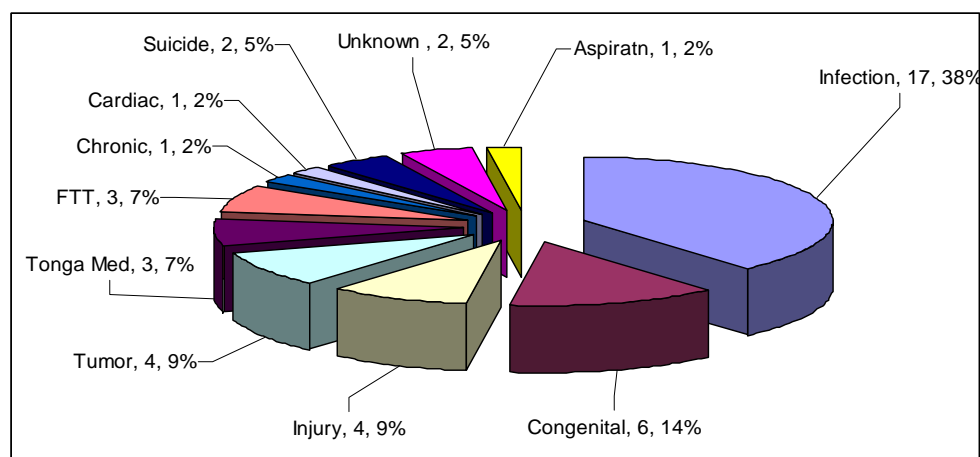
Figure 11 Causes of Deaths among Paediatric population in last 3 years.



Source: Paediatric Ward Registration

In the year 2007, Infection accounted for 17 (38%) deaths, Congenital problems accounted for 6 (14%) deaths, 4 Tumor deaths where MVA, Malnutrition and Tonga medicine claimed 3 deaths each, 2 deaths from suicide and Cardiac. Chronic condition, possible Aspiration and Head Injury from a fall caused one death each. Only 2 deaths had no clear causes / history to suggest causes of death. Both these patients were dead on arrival at the Emergency department.

Figure 12 Causes of Fatalities among Tongatapu Paediatric population, 2007



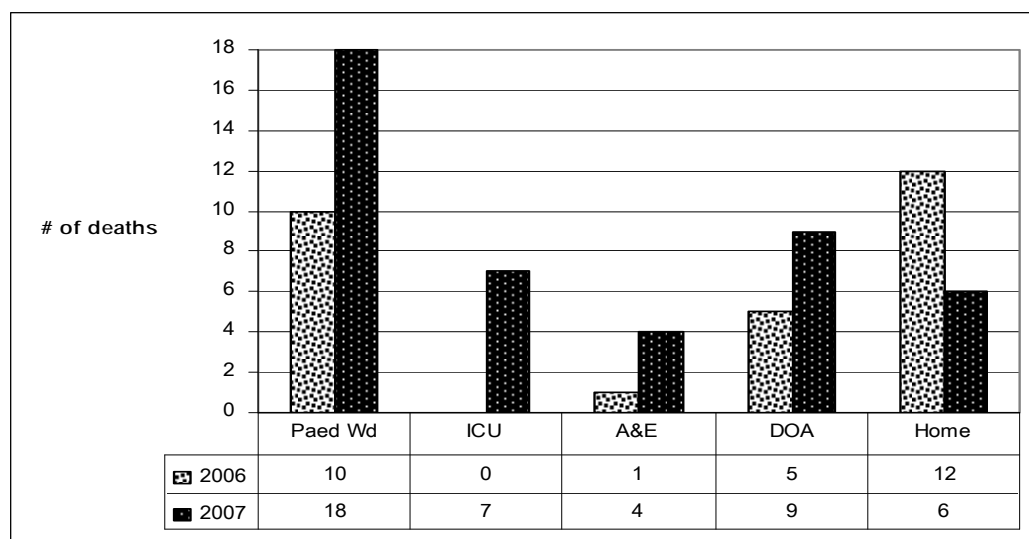
Source: Paediatric Ward Registration

Breakdown of the 17 patients who died of infectious diseases

- Septicaemia was the most common cause of fatalities from infectious diseases this year with 9 (53%) deaths. Four died in Intensive Care, three were infants – one Staph septicaemia, one also had severe hyperkalemia and the other infant also had gastroenteritis. The other child who died in ICU from sepsis was a 4 years old with disseminated
- Staphylococcal septicaemia. Five sepsis died at the Paediatric ward were 4 infants, 3 who also had gastroenteritis and the other who had Meningococcaemia died on arrival at the ward plus a 13 years old who died of possible encephalitis.
- There were 4 (24%) children died from Gastroenteritis, 2 died in the Paediatric ward and 2 died on arrival to the emergency department. These 2 patients resorted to Tonga medicine after being given advice and ORS the day before at the outpatient. Four of the 7 infants who died from sepsis also had gastroenteritis as a preceding illness or co morbidity.
- There were two deaths from Meningitis. One infant with second episodes of streptococcal meningitis within one month who died in Paediatric ward within 24 hours of second admission and a thirteen months old girl who had meningitis complicated by hypernatraemia died in ICU 4 days later. This child was also severely malnourished. Meningitis alone had become a rare cause of deaths in this country since the introduction of Hib vaccine in May 2005. Hib vaccine could also explain the decrease in fatalities from Septicaemia.
- One death from Pneumonia at home. This baby was known to have a heart murmur but not cyanotic and was later in the year found that she died in Niuatoputapu with Pneumonia like illness.
- A one week baby was admitted with congenital infection (hepato-splenomegaly) died shortly after discharge when parents requested to take her home.
- There were 6 Deaths (14 %) due to Congenital abnormalities. Three Neonates, one with Congenital Heart disease, one with Digeorge Syndrome unspecified and one with Congenital Lung mass. There were 2 Infants, one with multisystemic abnormalities born prematurely at 30 weeks and one with Congenital heart disease and another under 5 years, 15 months with hydraencephaly.

- Cancer this year caused 4 deaths (9%), 2 infants one with hepatic tumor who died at home and the other with brain tumor who died in New Zealand, A 9 years old boy with brain tumor also died in New Zealand and 12 years old girl with Hodgkin's Lymphoma died in the ward.
- There were 4 deaths from injury, 2 Motor vehicle accidents. A four and a1/2 years old at home, parent reversing onto the child and a 5 years old with hit and run, child died 2 days later at ICU with severe head injuries. A one year old fell from a table and was dead on arrival at emergency department. Another 9 years old fell from a bicycle at Vava'u, transferred to Vaiola and died 16 days later after bur holes.
- There were 3 deaths associated with Tongan medicine. Another 2 infants who were died on arrival at A&E had no clear history of significant illness but had Tonga medicine and one two and a1/2 years old who had been unwell with a febrile illness and treated at home with Tonga medicine for a week. This poor girl died within 15 minutes on arrival at A&E. Out of the 4 deaths from gastroenteritis, 2 were treated with Tongan medicine at home and one of the gastroenteritis deaths in hospital had Tongan medicine at home. Overall, at least 6 deaths in Tongatapu among the Paediatric population were associated with Tongan medicine.
- Severe Malnutrition failure to thrive was directly responsible for 3 deaths, one 15 months old admitted with gastroenteritis and sepsis died after 6 days of Refeeding unspecified syndrome, 16 months old admitted with gastroenteritis died after 4 days and a 10 years old who had past history of Tuberculosis had very severe wasting and died 6 hours after admission. The 13 months who died in ICU with Meningitis had severe malnutrition and one of the infants who died in the ward with gastroenteritis had malnutrition as well. Altogether at least 5 of the deaths were associated with malnutrition. This is the highest rate of malnutrition we had seen in the last 8 years.
- Other less common causes of deaths were 2 young teenagers (12 & 14 years old) died of suicide by hanging, one 8 years old with Cerebral Palsy came in with sepsis and died in 19 hours, one 18 months old girl with severe cardiomyopathy died in 4 days of admission. This poor toddler had 3 previous admissions with severe asthma, retrospectively this was cardiac asthma. A 41/2 years old boy died in A&E with aspiration unspecified. He was discharged the day before after being treated with Pneumonia, woke up well the next day and had breakfast. He had a breath-holding attack while crying and was pushed under water but never recovered after 45 minutes of resuscitation at the A&E department.
- There were 2 deaths could not be clearly explained either from history or examination. A 2 years old with sudden deaths at home and 7 years old who had one week of being unwell and died shortly on arrival at A&E department.

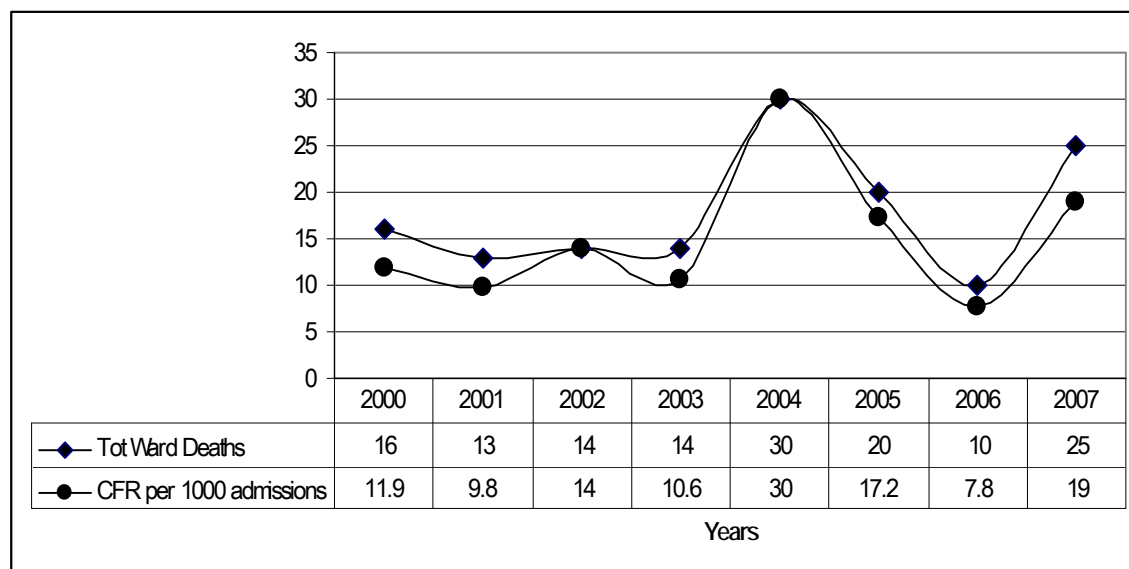
Figure 13 Place of Deaths for Tongatapu Paediatric deaths 2006, 2007.



Source: Paediatric Ward Registration

- In 2007, 57% of deaths occurred between ICU and Paediatric ward. Only 14% of deaths occurred at home compared to the 42% in 2006.
- There were 7 children died in ICU compared to zero death in 2006 suggested a more receptive approach from Intensive Care team accepting more admissions in 2007 compared to 2006. The total ICU admissions from Paediatric ward in 2007 were 9, giving a mortality rate of 78% for ICU admissions. More than half of this patient died from septicaemia, the other three died from Meningitis, MVA and head injury.
- There were 4 deaths in A&E died from different MVA causes, Tonga medicine, Aspiration and unknown cause.
- A 7 of the 9 dead on arrival (DOA) were under 5 years old. Just less than half died from Tonga medicine and gastroenteritis. Two suicides, one head injury, one congenital heart disease and one with unknown cause.
- Of those who died at home, cancer was responsible for half of these 6 deaths. Two of these actually died in New Zealand of brain tumors. Two died of Congenital anomalies and one died at Niuatoputapu with Pneumonia like illness. This infant death is also reported by Niua Annual Report.

Figure 14 Case Fatalities rate among Paediatric Patients for the year 2000 - 2007

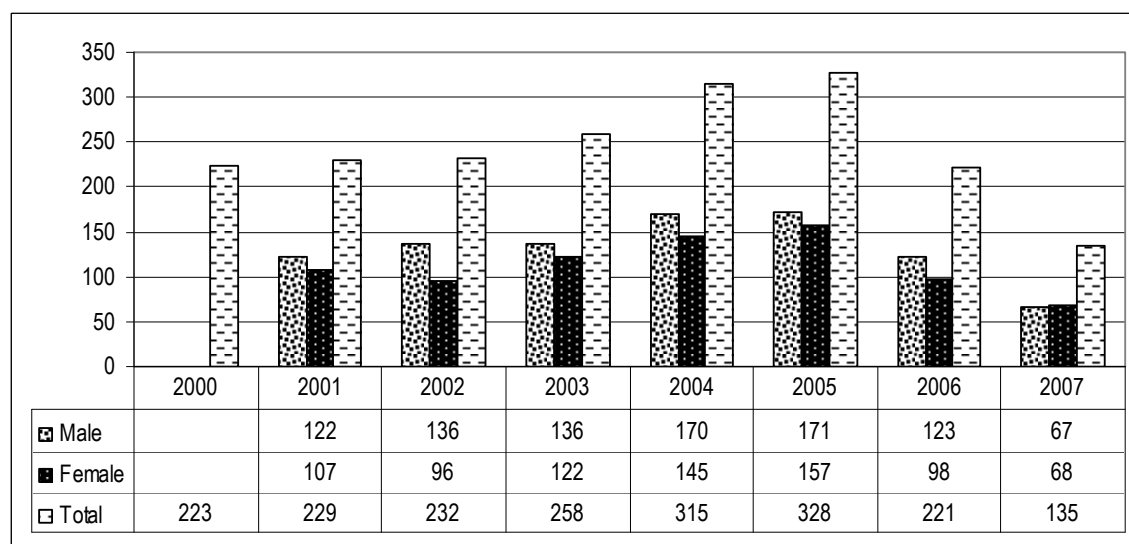


Source: Paediatric Ward Registration

With the 25 deaths that occurred inside the hospital inclusive of both Pediatric and ICU wards; the Case Fatality Rate (CFR) for 2007 is 19 per 1000 (25 out of 1286 admissions). This is more than double of the CFR for 2006, 7.8 per 1000. More accurate data collection is a major contributing factor for this high CFR.

7.1.2 Special Care Nursery

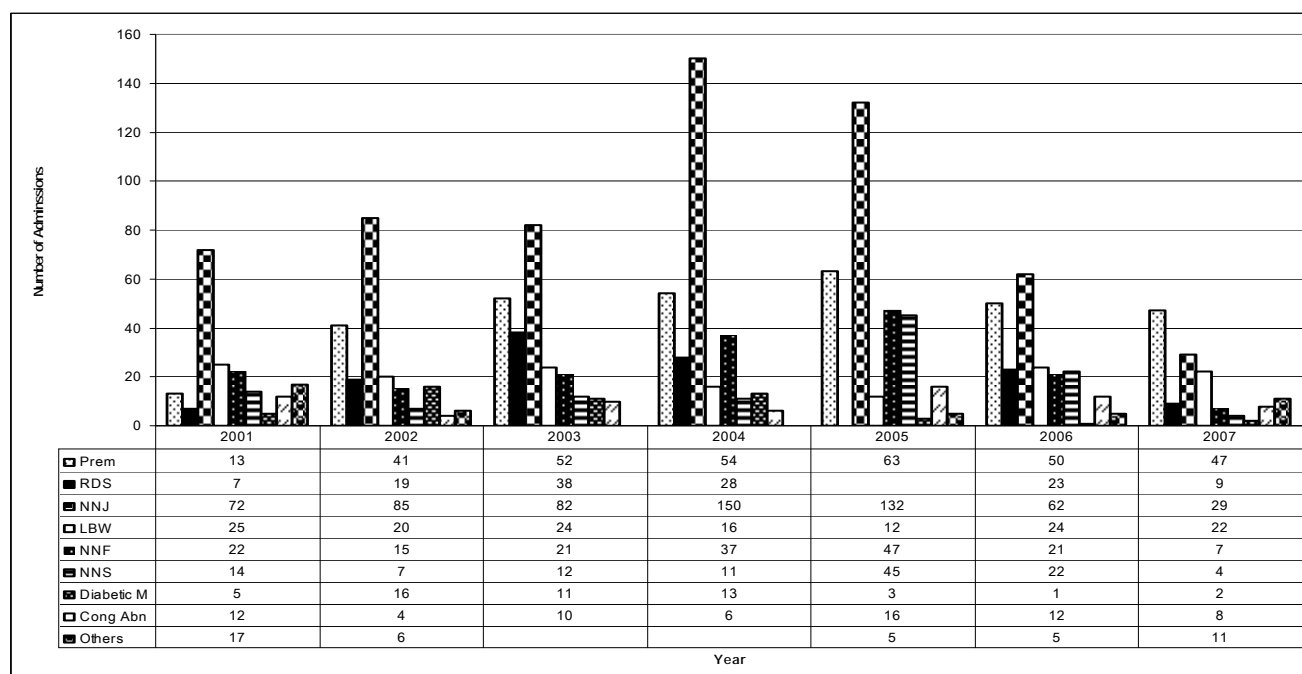
Figure 15 Admission to the SCN, 2000-2007



Source: Paediatric Ward Registration

Admissions to the Special Care Nursery continued to decline in 2007 with the lowest number of admissions in 8 years with only 135 babies with no gender difference.

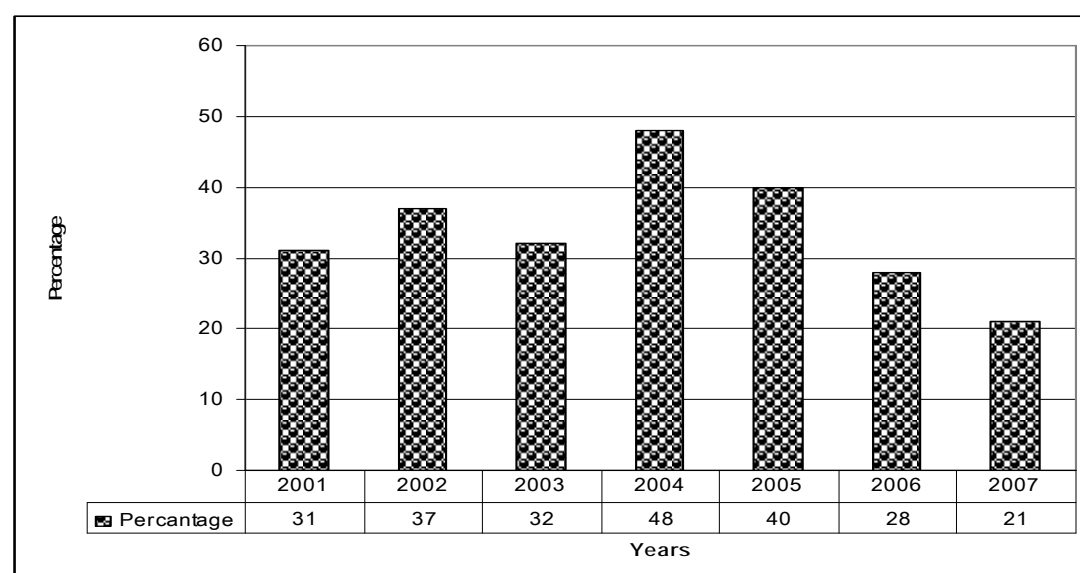
Figure 16 Causes of Admissions to SCN



Source: Paediatric Ward Registration

For the first time Prematurity had overtaken Neonatal Jaundice as the major cause of admission in the last 7 years. This provides good evidence of better breastfeeding practice in the postnatal unit.

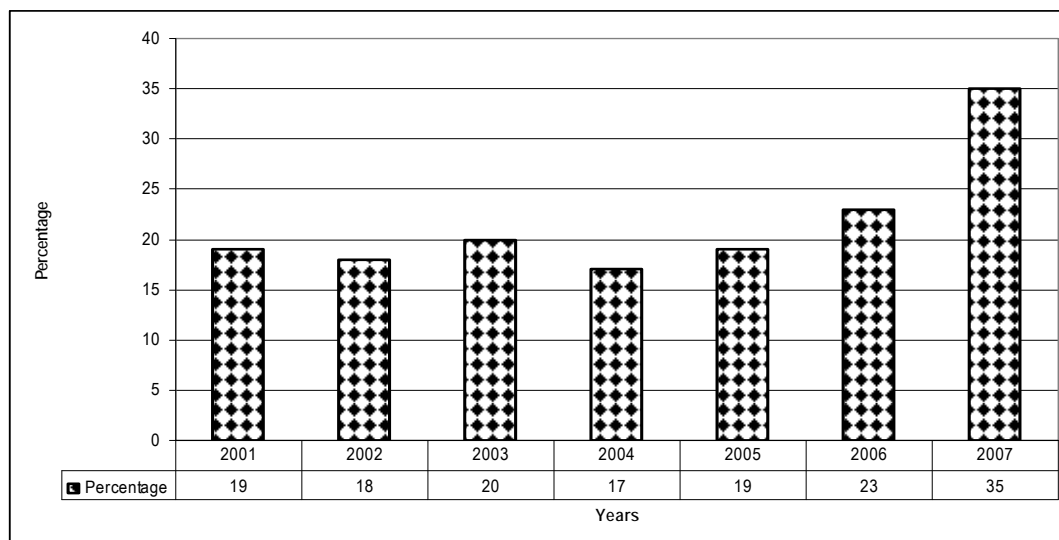
Figure 17 Trend of Neonatal Jaundice as a cause of admission to SCN



Source: Paediatric Ward Registration

Neonatal Jaundice had contributed at least 30% of admission to SCN except for 2006 and 2007. Neonatal jaundice admission of 21% became a significant milestone achieved in 2007, 62% for ABO Incompatibility and 38% for Physiological Jaundice. Again this year we were able to prevent the need for Exchange transfusion. The last time we did Exchange transfusion was in 2002 and we hope to keep that record.

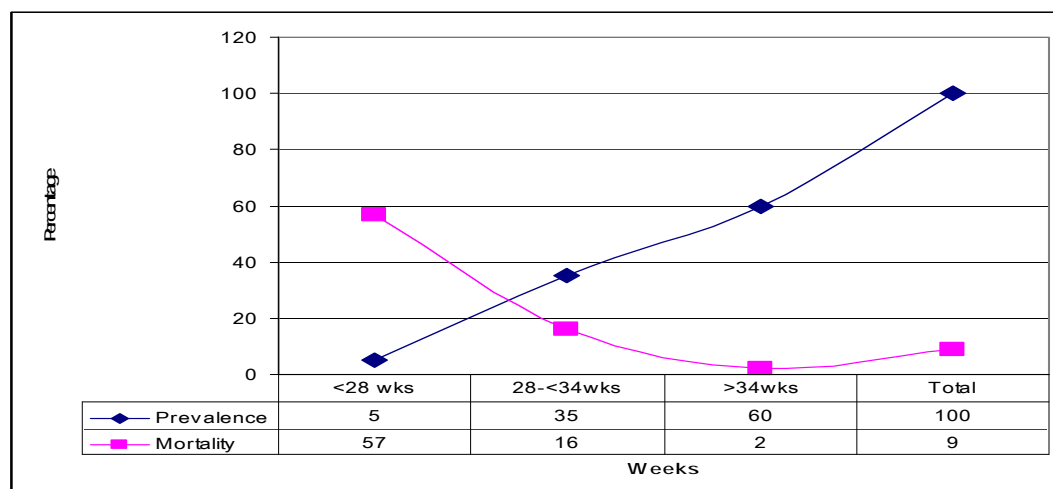
Figure 18 Prematurity admission to SCN 2001 – 2007



Source: Paediatric Ward Registration

- 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. With decreasing rate of neonatal jaundice in 2007, Prematurity was the most common cause of admissions and was accountable for 35% of admission.
- Prevalence of Prematurity among Tongatapu / Tonga live births is 2.2% or 22 per every 1000 births taking the average for the last 8 years.
- As expected, increasing in more premature baby is strongly correlated with higher mortality.

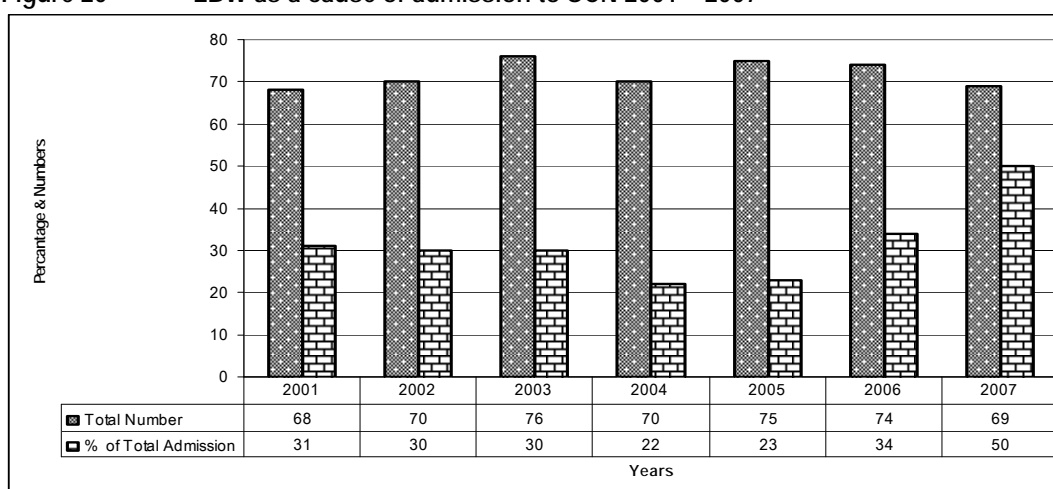
Figure 19 Prevalence and Mortality of Premature babies at Vaiola SCN, 2000 – 2007



Source: Paediatric Ward Registration

- From 2000 to 2007 there were a total of 461 premature babies born at Vaiola, 2.2% of total live births. All these babies got admitted to SCN. 5% of these babies were less than 28 weeks, and more than half (57%) of them died. 35% were between 28 and 34 weeks and 16% of them died. A 60% were above 34 weeks and only 2% of them died.
- Overall mortality for premature babies at Vaiola SCN is 9%.
- The youngest baby who survived from the unit this year was 27 weeks with birth weight of 1080 grams. The smallest to survive from Vaiola Special Care Nursery was a 27 weeks baby in 2002 with BW of 880 grams.
- The third most common cause was Low Birth Weight alone which contributed 16% (22 cases) of admissions compared to 11% (24 cases) of 2006. In addition all Premature babies had low birth weights giving a total of 69 which accounts for more than half of admission to SCN in 2007.

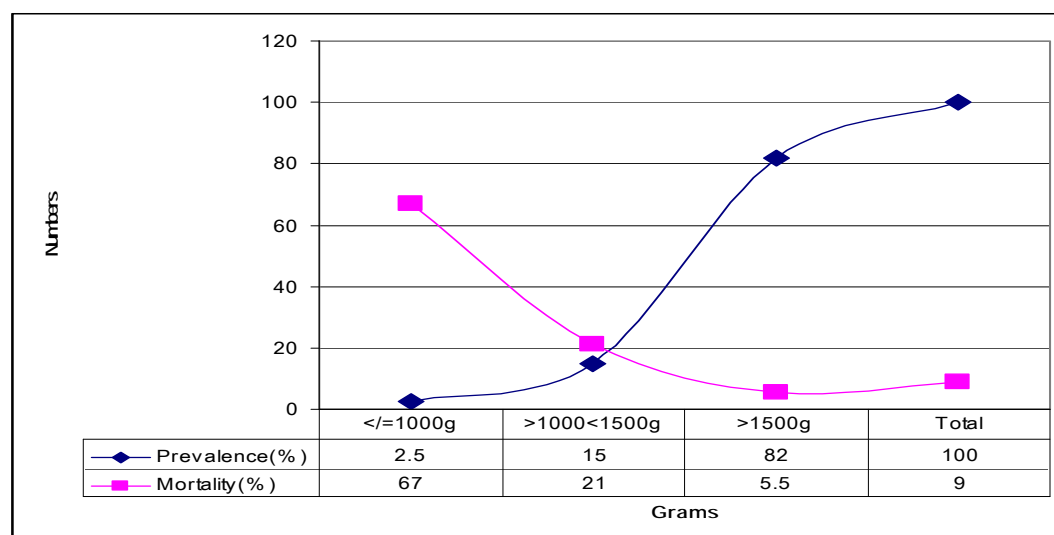
Figure 20 LBW as a cause of admission to SCN 2001 – 2007



Source: Paediatric Ward Registration

- With a total live birth of 1926 at Vaiola in 2007 the prevalence rate of LBW at Tongatapu is 3.6% compared to 3.8% in 2006 but for the entire country it is 2.5%.
- A huge effort applied to assess burden of LBW among babies born in Tonga and their outcome. For the last 8 years, 2000 – 2008 there were 482 babies born with low birth weights; most of these babies were premature. The average annual prevalence of LBW in Tonga is 2.3% or 23 per 1000 live births.
- A 2.5% of LBW babies had weights less than 1000 grams, 67% of these babies died. 15% had weights between 1000 to 1500grams; these babies had 21% mortality. Most babies (82%) had weights above 1500grams with mortality of only 5.5%. Overall the mortality of LBW babies born in Tonga is 9%.

Figure 21 Prevalence and Mortality of LBW babies at Vaiola SCN, 2000 – 2007

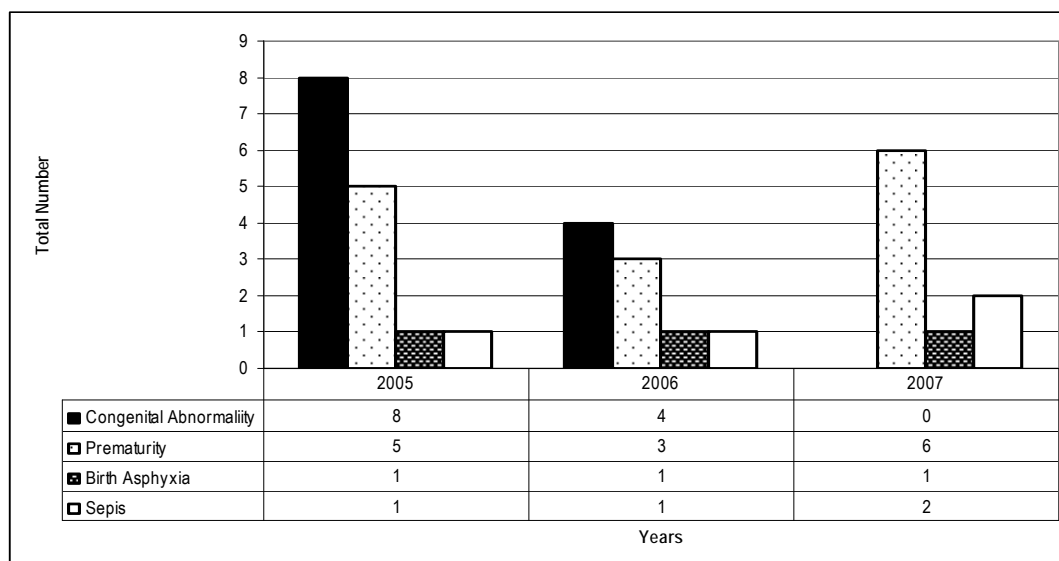


Source: Paediatric Ward Registration

- Congenital abnormalities and RDS were 4th and 5th causes contributing 6% each to the total admissions. Unlike previous years Congenital abnormalities did not contribute significantly to mortality in the SCN this year.
- Other causes of admission were uncommon especially neonatal fever and sepsis.
- The biggest baby born at Vaiola in 2007 weighed 5850 grams. This baby was born on 27th January to a gravid 7 mother. In 2005 the biggest baby born alive in Vaiola in the last 6 years weighed 6290 grams.
- There were 31 babies needed CPAP this year compared to 24 last year. A 4 instead of 3 needed ICU admissions for ventilation with 50% survival rate. One baby with Congenital Heart Disease was transferred to Australia for surgery.

Case Fatalities in the SCN, 2007:-

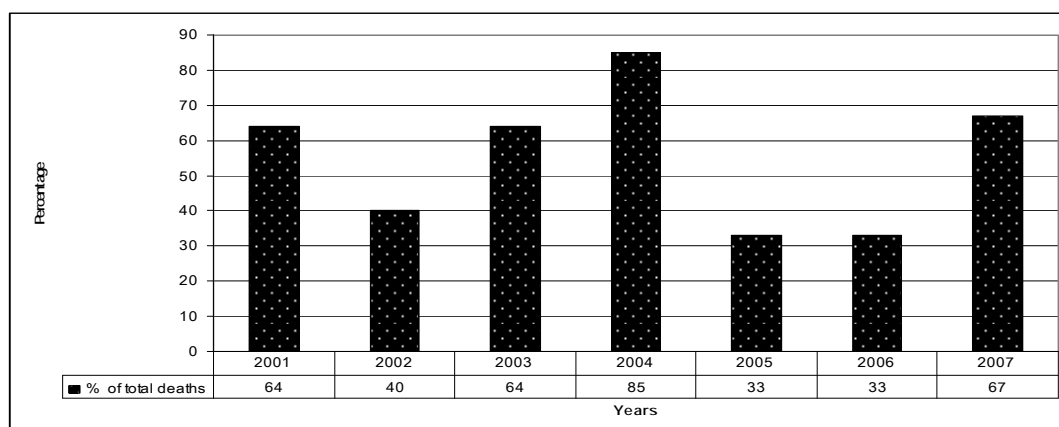
Figure 22 Causes of fatalities in SCN for 2005 - 2007



Source: Paediatric Ward Registration

- During 2007 SCN had 9 deaths, with 5 (56%) female and 4 (44%) male. Prematurity was the major cause of deaths contributing 67%. There were 2 cases of Sepsis and one case of Birth asphyxia. Congenital abnormality was not a cause of death in the SCN in the year 2007.

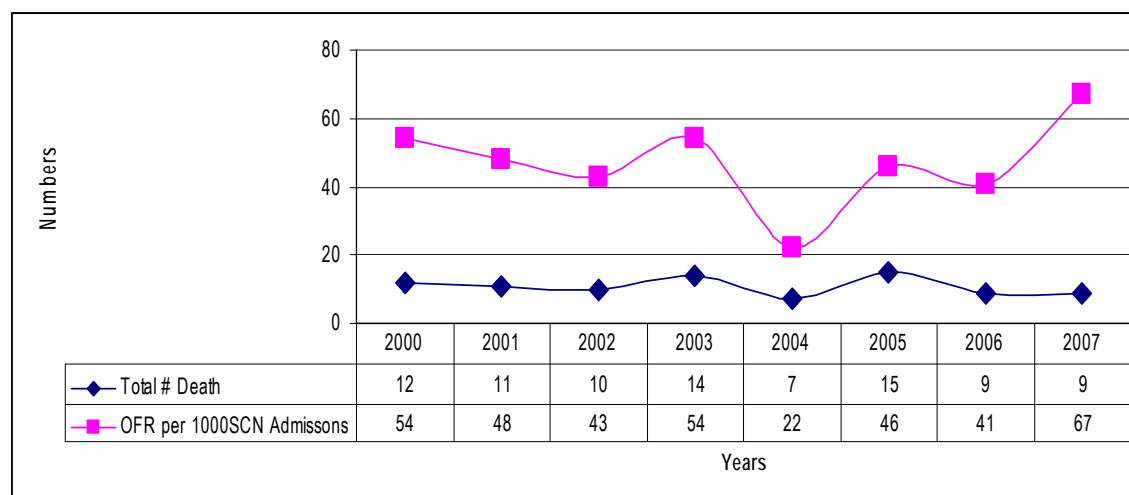
Figure 23 Prematurity as a cause of deaths in SCN, Vaiola in the year 2001 – 2007



Source: Paediatric Ward Registration

- Prematurity had been one of the two most common causes of deaths in SCN every year. Five of the six premature babies who died in 2007 were extremely premature with gestational age less than 28 weeks and birth weight less than 1000 grams.

Figure 24 Case Fatality rate in Vaiola SCN in the year 2000 -2007



Source: Paediatric Ward Registration

The Case Fatality Rate for the Special Care Nursery for the Year 2007 was 67 per 1000 compared to 41 in 2006. The number of deaths remains the same but the low rate of admission resulted in the higher fatality rate which the Paediatric Specialist believes that this is attributed to better case management and better usage of resources.

Burden of Hib disease since Hib vaccine Introduction in May 2005

- Expected outcome from the introduction of Haemophilus Influenzae typeb (Hib) vaccine with declining Hib disease continued to be seen in 2007. The significant decrease of Pneumonia cases could be again attributed to the vaccine.

Situational Analysis of Child Health in Tonga

- A situational analysis of Child Health in Tonga done by WHO Consultant Dr. Alan Ruben in conjunction with the Paediatric team was conducted at the end of 2006. Only a draft Report is available to date with the Final result yet to come.

Rheumatic Fever / Rheumatic Heart Disease

- Work had been started between the section, World Heart Federation and WHO to establish a sustainable comprehensive database for Rheumatic Heart Disease in Tonga. The work still continues but we hope to submit an updated report by middle of 2008.
- On a more positive note a visit from Starship Cardiology department spear headed by the Director himself, Dr. Tom Gentles, with the help of New Zealand Medical Treatment Scheme (NMTS) finally materialized this year. Dr. Gentles managed to see 175 cardiac patients mostly with Rheumatic heart diseases in 6 days. Patients from 'Eua came to Tongatapu and all Ha'apai and Vava'u patients were

seen in their respective islands. At least 14 patients were identified as needing immediate surgery. As a result of this visit cost of cardiac surgery in Starship was re-explored with very positive results.

Perinatal, Infant & U5 Mortality Rate, 2007

- All efforts were applied 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 as follows.
- Total SB after 28 weeks 24
- Total ENND 9 PNMR = 12.7
- Total NND 14 NNMR = 5.4
- Total Infant Deaths 37 U5MR = 18.8
- Total U5 Deaths 49

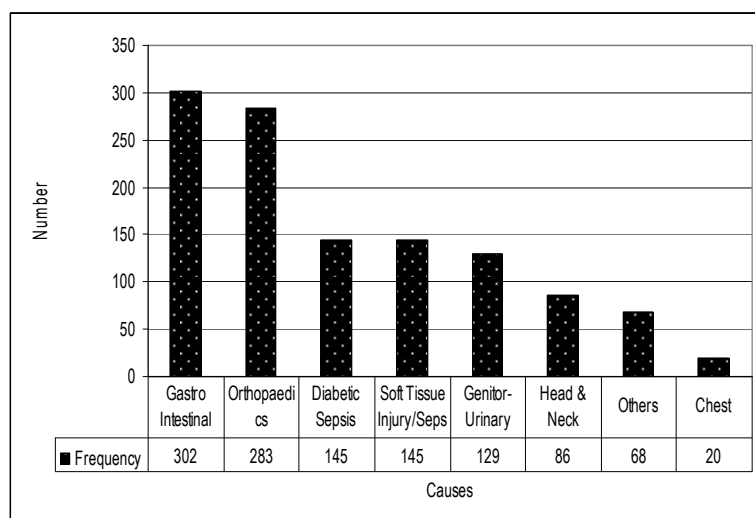
7.1.3 Surgical Ward:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> ▪ To ensure adequate number of trained medical and nursing staff in the ward at all times. 	<ul style="list-style-type: none"> ▪ Dr Veronic Laloe, Surgeon Specialist joined the surgical team in August 2007, recruited by AusAID. ▪ Two (2) operating theatre nurses were sent to Sydney for Orthopaedic equipment workshop, organised by the Orthopaedic Outreach organisation of Sydney.
<ul style="list-style-type: none"> ▪ To provide an ongoing in-service training for staff. 	<ul style="list-style-type: none"> ▪ Dr Kolini Vaea successfully passed primary surgical examination and will continue with full surgical Masters training when sponsorship is available.
<ul style="list-style-type: none"> ▪ To provide an effective and quality service to patients 	<ul style="list-style-type: none"> ▪ Two Orthopaedic Specialist team visit, by the Orthopaedic Outreach team from St. George hospital of Sydney. ▪ First elective laminectomy (6) were done in Tonga by the Orthopaedic Outreach Team saving us thousands of dollars. These patients would normally be sent to New Zealand.

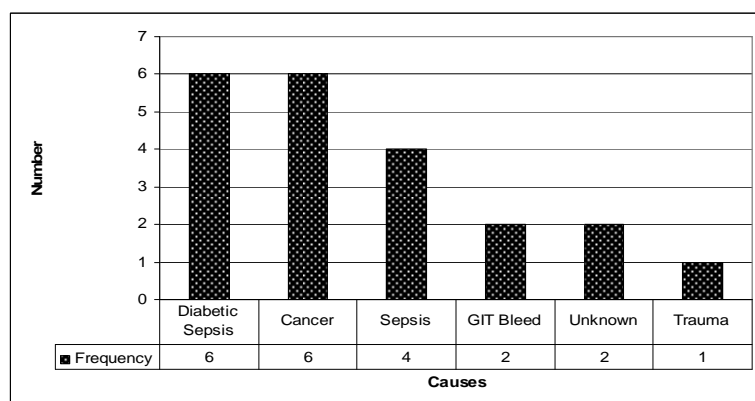
Statistical Information:

Figure 25 Surgical admission, 2007 (Excluding Paeds.)



Source: Surgical Ward

Figure 26 Surgical Mortality, 2007

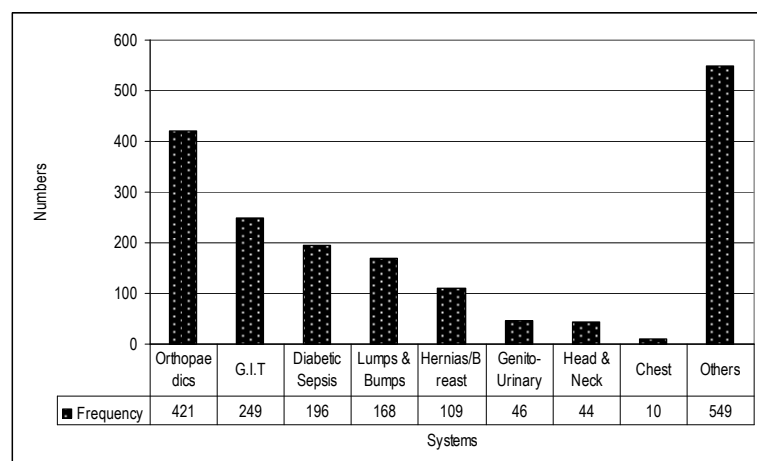


Source: Surgical Ward

As can be seen from this table, Diabetic Sepsis is still the major killer in surgical patients. Note that diabetes contributed by 12.9% of surgical admissions but accounts for 28.6% of deaths.

There were a total of 1972 operations performed by the surgical division in 2007. These include both adults and children. It includes local anaesthetic and general anaesthetic cases and both inpatient and outpatient cases. The following table shows the break down of procedures performed:

Figure 27 Surgical Procedures, 2007:



Note: Others include soft tissue sepsis, debridements, split skin grafts etc.

Source: Surgical Ward

Orthopaedic cases are much higher than the rest. This is because application, removal and reinforcement of plasters are done in the operating theatre. The other factor may be the fact that there were three (3) different specialist visits last year by specialist, orthopaedic teams. These include the club foot team and the adult orthopaedic team from Orthopaedic Outreach based in St. George Hospital in Sydney, who made two (2) very successful visits in the year 2007.

7.1.4 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
<ul style="list-style-type: none"> To teach medical staff the ethical standard of integrity and professionalism viewed as the traditional hallmarks of the physician. 	<ul style="list-style-type: none"> Dr. Veisia Matoto jointed temporarily the Unit during breaks from her postgraduate studies at FSMed.
<ul style="list-style-type: none"> To emphasize the principles of evidence-based medical treatment, discussed in the context of cost-effective, outcomes oriented care. 	<ul style="list-style-type: none"> POSC Update in Auckland, New Zealand.
<ul style="list-style-type: none"> To provide ongoing educational opportunities of the highest caliber to practitioners. 	<ul style="list-style-type: none"> Pasifika Medical Association Conference in Samoa and SMO presented on 'Chronic Diseases in Tonga'. POSC Meeting in Samoa coinciding with PMA Conference. POSC Meeting in Auckland in October.
<ul style="list-style-type: none"> To review and develop programs that will answer the needs of health care reform and better train medical staff in the environments 	<ul style="list-style-type: none"> Visit by Paediatric Cardiologist, Dr Tom Gentles, and echosonographer from Auckland City Hospital in October.

of the future.	
<ul style="list-style-type: none"> ▪ To adhere to the Standard Treatment Guidelines as Treatment Protocols for management of internal medicine cases. 	<ul style="list-style-type: none"> ▪ Opening of B2 Package containing isolation Ward, Paediatric Ward, Medical Ward, Oxygen Plant and Chapel in December. ▪ Move into new Medical Ward towards end of December.
<ul style="list-style-type: none"> ▪ 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. 	
<ul style="list-style-type: none"> ▪ To send another RMO for postgraduate training at the Masters level and another at the Fellowship level. 	

Statistical Information:

Outpatient Services

The five Medical Outpatient Clinics continued as usual and are running well. Three Procedural Clinics were added. Community Clinics to Mu'a and Kolovai continued on a 1 in 3 basis rotating with the Chest Clinic at the Vaiola Hospital. Ideally, help from physicians in administrative positions would have lightened the clinic load but this was haphazardly done and disrupted the clinics considerably so this arrangement was abandoned.

The Clinics are full (>20 patients per clinic) and ideally there should be a decentralisation of stable patients with chronic medical conditions to be followed up in peripheral clinics i.e. health centres. This would require retraining health officers and increasing their level of prescribing capabilities with periodic reviews from the central team. We do not have the set up of overseas countries where these stable patients e.g. with hypertension are followed up by general practitioners and are only referred to specialist clinics when complications arise. Ideally the clinics should only have 2 new cases and 8-10 regular patients to ensure proper assessment of clinic patients and thus improve efficacy.

An audit and review of the various clinics is long overdue but should look at issues like cost-effectiveness, compliance, admission rates, efficacy, complication prevention etc. Inpatient load was considerably heavy for echocardiography in the absence of this service from the Radiology Department. Further training is needed especially in paediatric echocardiography with emphasis on congenital cardiac anomalies. More experience is needed in rheumatic heart disease echocardiography in order to streamline prioritisation of patients for corrective cardiac surgery.

Upper GI endoscopy service for medical patients is running smoothly although a video monitor is very much appreciated for instructional purposes and to reduce strain to the eyes of the operator.

Efforts should be made to obtain a flexible colonoscope as only a rigid sigmoidoscope is currently available and with the increasing multitude of lower GI pathologies this modality of investigative technique would assist clinicians immensely in providing visual and histological diagnoses.

A proper flexible bronchoscopy protocol for anaesthetising the vocal cords is needed and proper cohesive collaboration between anaesthetists and operator needed to make this procedure workable. Also, the special

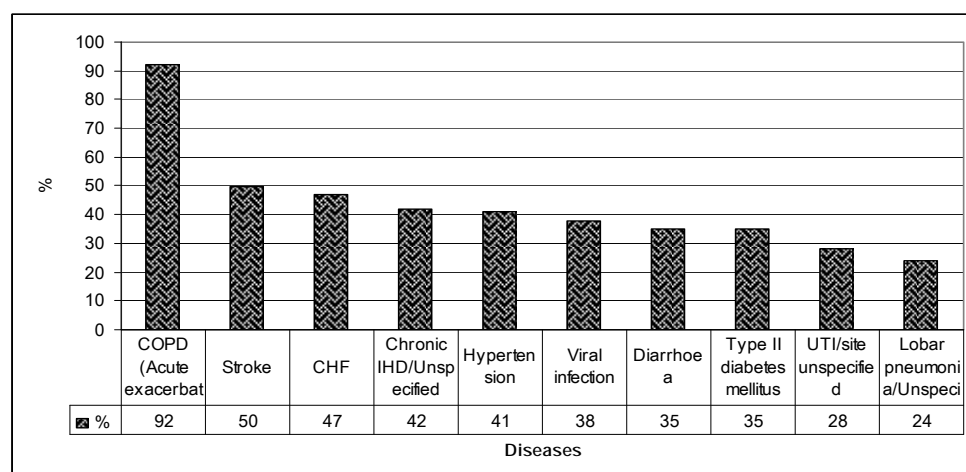
test tube required for doing bronchial washings is not available but would improve diagnostic capability considerably.

Table 15 Medical Ward Outpatients Clinics

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

Source: Medical Ward Registration

Figure 28 Medical Ward Inpatient Services



Source: Medical Ward Registration

Table 16 Number of Monthly admission to Medical Ward

Month	Medical Ward						
	R1	AD	T/I	DISC	T/O	DEA	R2
January	14	142	3	123	6	12	18
February	18	114	6	106	3	11	18
March	18	115	7	109	8	13	10
April	10	99	2	85	4	10	12
May	12	100	7	87	5	13	4
June	14	104	2	92	7	12	9
July	9	126	4	104	7	11	17
August	17	125	2	117	7	17	3
September	3	122	4	89	8	15	1
October	17	103	5	103	6	5	11
November	11	109	6	108	6	9	3
December	3	124	4	113	5	12	1
Total		1383	52	1236	72	140	

Source: Medical Ward Registration

KEY:

R1 – Remaining from the previous month

AD – Admission patients

T/I – Transfer in

DISC – Discharge patients

T/O – Transfer out

DEA – Death

R2 – Remaining at end of month

Deaths in the Medical Ward account for about 65% of all deaths in the Vaiola Hospital. NCDs and related complications are again the major causes of mortality especially cardiac related problems. Malignancy comes in second. The proportion of deaths related to malignancy would have surpassed cardiac related diagnosis considering that a significant proportion of patients chose to spend their remaining times at home with loved ones and this is a reflection of the current cultural decorum regarding the 'dying entity/process'. Sepsis only accounts for less than 15% of deaths which is a reflection of disease transition phenomenon from infectious diseases to NCDs seen globally.

The proportion of deaths due to diabetes has been diluted by the singularly-based cause of death classification. Diabetes is a disease with myriad presentations and is invariably involved in many of the deaths.

7.1.5 Obstetric and Gynaecology Ward:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> Local midwifery training course to cater for the needs of the whole health service. 	<ul style="list-style-type: none"> Antenatal Training Workshop (7-9 August 2007) was carried with the aim – to improve antenatal care services in order to reduce maternal mortality, perinatal and infant mortality. RPR and HIV Screening of all antenatal patients in Tongatapu started in July 2007 but it didn't take long before HIV reagents were out of stock. A training workshop on Neonatal Resuscitation was conducted by the Paediatric Team for Obstetric ward staff OPD ward staff OT ward staff Dr.Semisi Latu, S.Nurse Midwife Tu'utanga Tovo and N.Midwife Mafi 'Ealelei attended a PSRH meeting in Samoa, 11-14/9/07. Review planning workshop in Reproductive Health and Immunization service was held on 19-23/11/07. Check the efficiency of antenatal services based on the new Antenatal model of 2002. Achieve a minimum of 6 visits in woman without known risks in current pregnancy or previous deliveries.
<ul style="list-style-type: none"> Obtain mobile ultrasound machine for emergency use in the Obstetric Ward 	
<ul style="list-style-type: none"> Introduce Antenatal STI Surveillance in Vaiola Hospital 	
<ul style="list-style-type: none"> Information leaflets and media production. 	
<ul style="list-style-type: none"> Pep Smear Screening for Cervical Cancer in Gynaecology outpatient clinic. 	
<ul style="list-style-type: none"> Clinical attachment of nursing staff to an overseas hospital 	
<ul style="list-style-type: none"> Increased Awareness of Gynaecological Issues in the community 	

Statistical Information

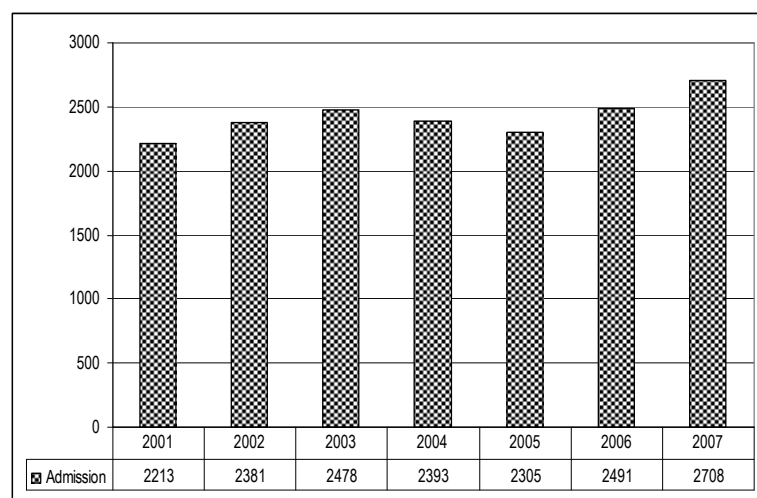
Table 17 **Summary Obstetric and Gynaecology Statistics**

No.	Item	Number
	Total Admission during the year	2,708
	Total Admission per month	225
	Total Births during the year	2242
	Total Births per month	186
	Total Vaginal Deliveries during the year	1937
	Total Abdominal Deliveries during the year	305
	Among Vaginal Deliveries	
	Total number normal (Spontaneous) Vaginal Deliveries	1850
	Total number forcep Deliveries	52
	Total number Breech Deliveries	24

Source: Obstetric Registration

Compared to the past 6 years, admission to the Obstetric Ward has been more or less static until the past 2 years.

Figure 29 **Annual Admissions to Obstetric Ward**



Source: Obstetric Registration

There were more common 'Antenatal Admission' during the year as follows

Table 18 Obstetric and Gynaecology Admission types

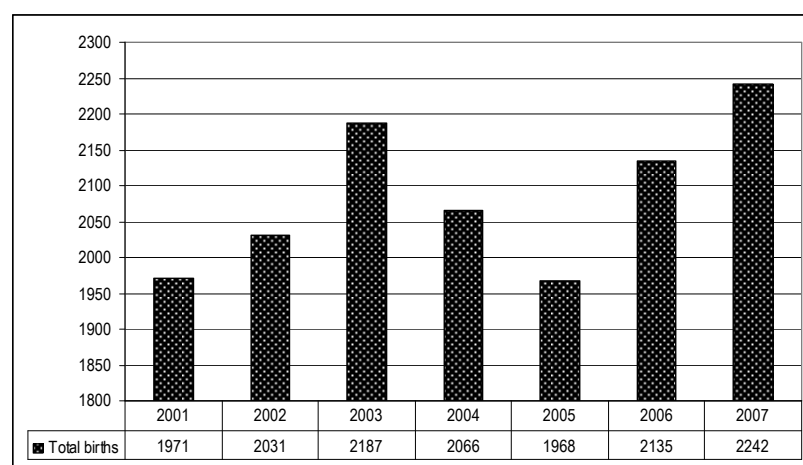
Item name	Number
Postdate Pregnancy	104
Hypertension	100
Diabetes M	84
UTIL Pylonephritis	79
Hyperemesis G	35

Source: Obstetric Registration

Great improvements have been achieved in the case of Hypertension and Diabetes M, cases although 3 of SB. during the year were related to hypertension. There were severe Pre-eclampsia cases but no Eclampsia.

Among admission during the year, ANTENAL ANAEMIA (Iron Deficiency) was present in 179 cases i.e haemoglobin of less than 11.0g dl. This is the most common type of Anaemia and occurs from an increased requirement of iron during pregnancy in combination of poor maternal reserves. Ideally this anaemia should be prevented and treated with iron supplementation (oral). All pregnant women should have oral iron tablets routinely.

Figure 30 Total Births in Vaiola Hospital, 2001-2007



Source: Obstetric Registration

This increase is expected to continue in the years to come and among the reasons for doing so is the increase cases transferred from outer islands or voluntarily of women to Tongatapu for the confinement. Due to the limited number of gynae beds in the surgical ward, more patients were admitted to Obstetric Ward. Last year (2007) there were 174 gynae admissions to Obstetric ward. This accounts for 6.4% of total Admission to Obstetrical ward.

Caesarean Section

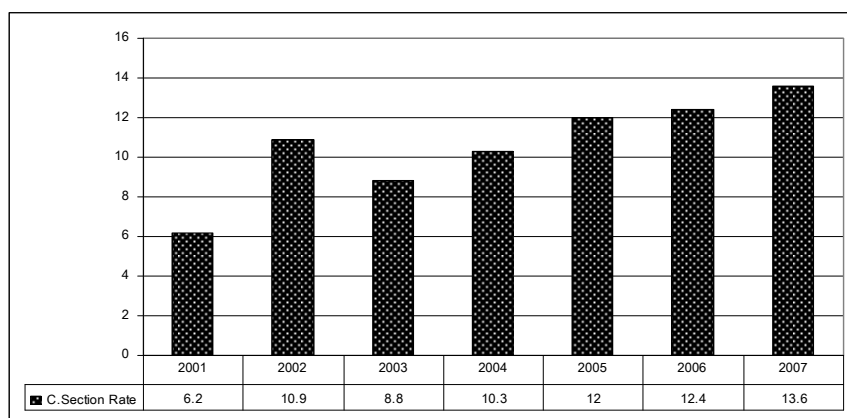
Total number during the year = 305
i.e. C.Section Rate = 13.6%

Most common indication for C.Section was Relative C.PD (or Obstructed labor,Dystoria)

- Less common indication for C.Section
- Fetal Distress
- IUGR
- Breech Presentation
- APH
 - Placenta Praevia
 - Placental Abruption
- Abnormal Lie
- 2 or more previous C.Section

Compare to previous years, C.Section continue to rise.

Figure 31 Number of C Section, 2001-2007

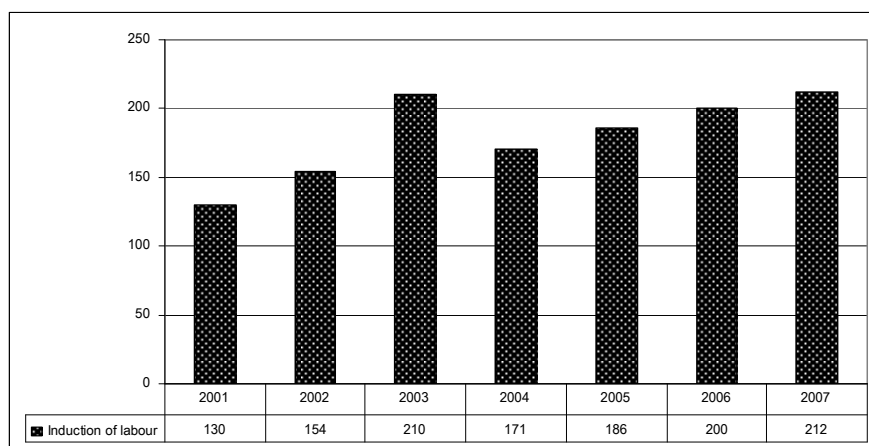


Source: Obstetric Registration

Induction in labour, 212

The trend from the past 7 years is on the increase.

Figure 32 Number of Induction in Labour, 2001-2007



Source: Obstetric Registration

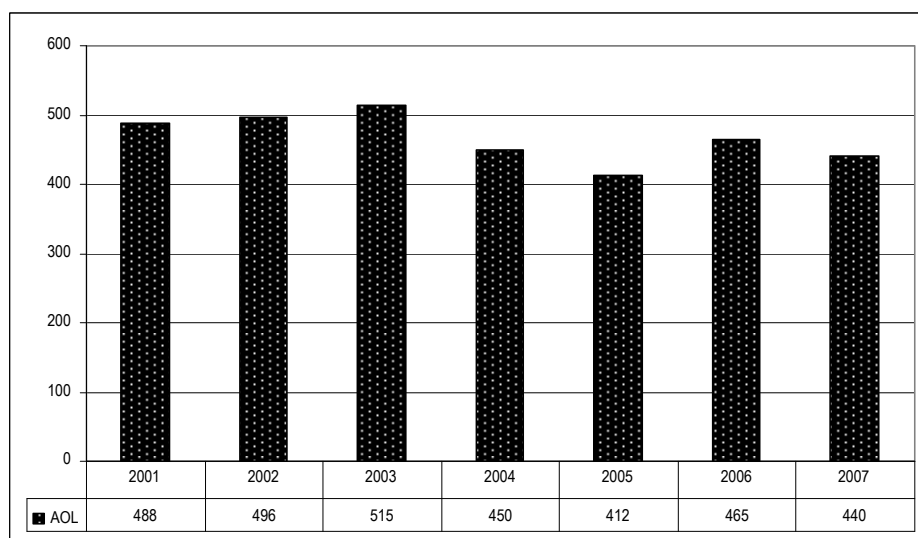
As in some developed countries, the most common indication for IOL has been prolonged pregnancy. Perhaps routine ultrasound scanning of all pregnant women in the second trimester may reduce total number of induced by excluding "WRONG DATES". Other common indications were Diabetes, Hypertension, Pre-Labor Srom and non-reassuring fetal status.

Augmentation of labour, 440

This refers to stimulation of spontaneous contraction (already occurring) that is considered inadequate because of failure of cervical dilatation or descends of fetus i.e. correcting any inadequate uterine activity.

The total number over the 7 years has been rather static.

Figure 33 Number of Augmentation of Labour, 2001-2007



Source: Obstetric Registration

Uterine Rupture = 1

This case was induced with cytotec tabs 50mg per vagina. 12 hours later she developed labour which progressed out until she had P.V.bleeding due to rupture.

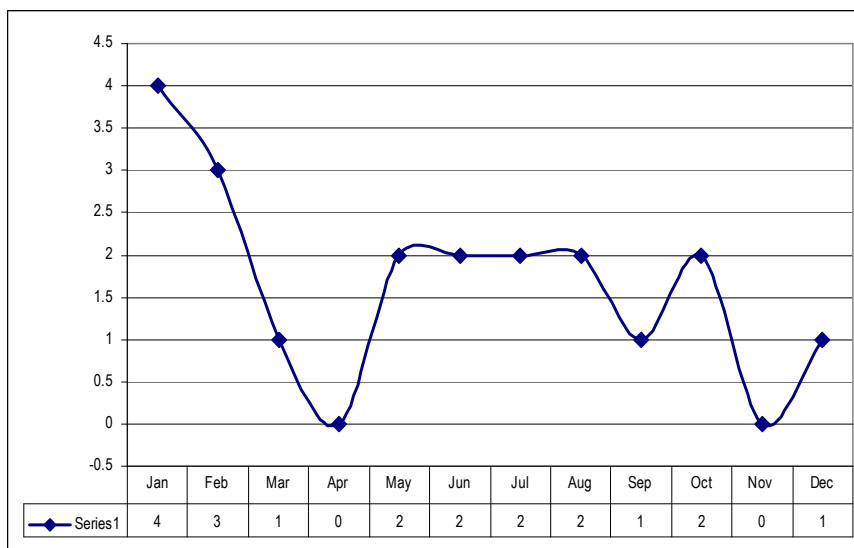
Uterine Dehiscence = 1

This case occurred following a trial of labor without augmentation and a repeat C.Section was decided due to relative CPD. Baby has good apgar score.

Stillbirth (SB) = 20

- Antepartum = 15
- Intrapartum = 5

Figure 34 Number of Uterine Dehiscence, 2001-2007

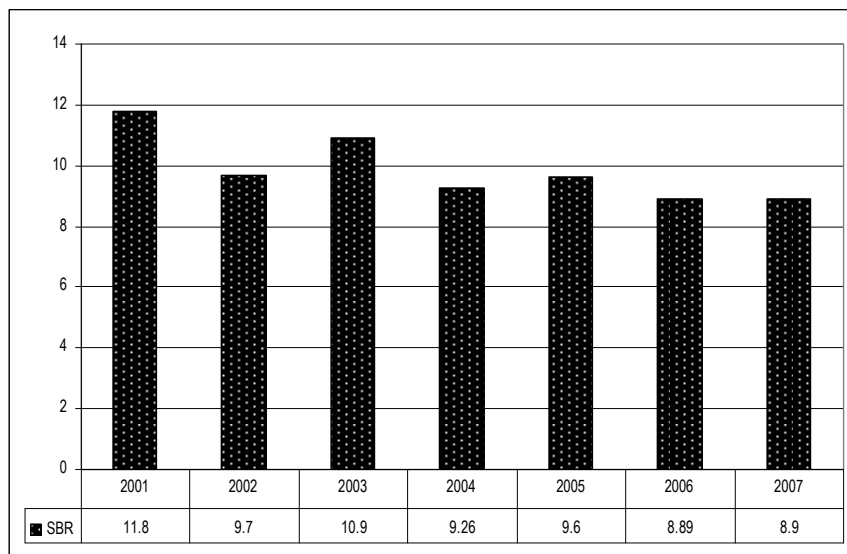


Source: Obstetric Registration

SB Rate = 8.9

Compare to the past years, the trend is on the decrease.

Figure 35 Number of SB, 2001-2007



Source: Obstetric Registration

Considering the 5 cases of Intrapartum SB

- 1 = maternal death due to Amniotic Fluid Pulmonary Embolism
- 2 = Placental abruption
- 1 = Ruptured uterus
- 1 = Cord accident

Among the 20 Antenatal SBS, the causes were :

- PET/PIV – 3 cases
- Cord accident – 1 case
- Twin Pregnancy – 2 cases (i.e one fetus macerated)
- Breech Delivery – 1 case
- Unexplained – 13 cases

There still a lot of unexplained cases, however, there is still room for further improvement of our Antenatal service. Furthermore, advances in Obstetric including clinical genetic, maternal-fetal and neonatal medicine and perinatal pathology in the future will attribute to specific causes which can improve management of subsequent pregnancies.

ENND = 9

$$\text{i.e. } PNMR = \frac{(20 + 9) * 1000}{2242} = 12.9$$

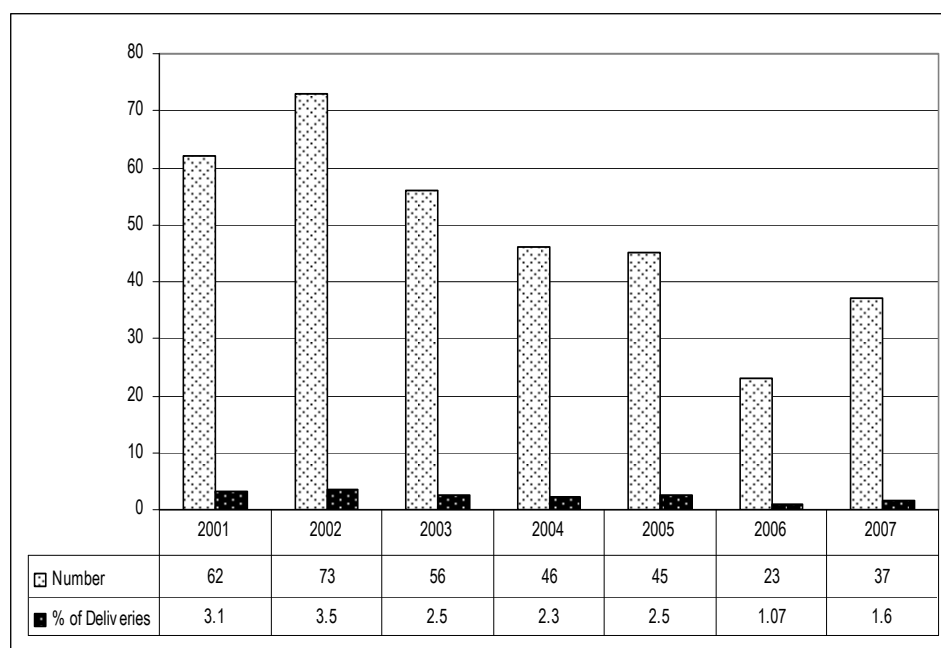
Maternal Death = 1

A P6G7, unbooked case from 'Eua Is, who came to Tongatapu with severe Hypertension (PET) and IUAD. She was admitted with established labor and had normal vaginal delivery then followed by Amniotic Fluid Pulmonary Embolism from which she died.

PPH = 37

These were all primary PPH.

Figure 36 Number of PPH, 2001-2007



Source: Obstetric Registration

High standard service during labor and delivery using protocol for immediate post delivery care is recommended to minimize PPH cases.

Gynaecological cases in Surgical Ward

Total Gyne Admission = 356

Leading Cases

- DUB – 104
- Abortion – 91
 - Threatened – 20
 - Inevitable - 71
- Ovarian Cyst – 35

- Uterus Fibroid – 23
- Endometritis /PID/Release Abscess - 22

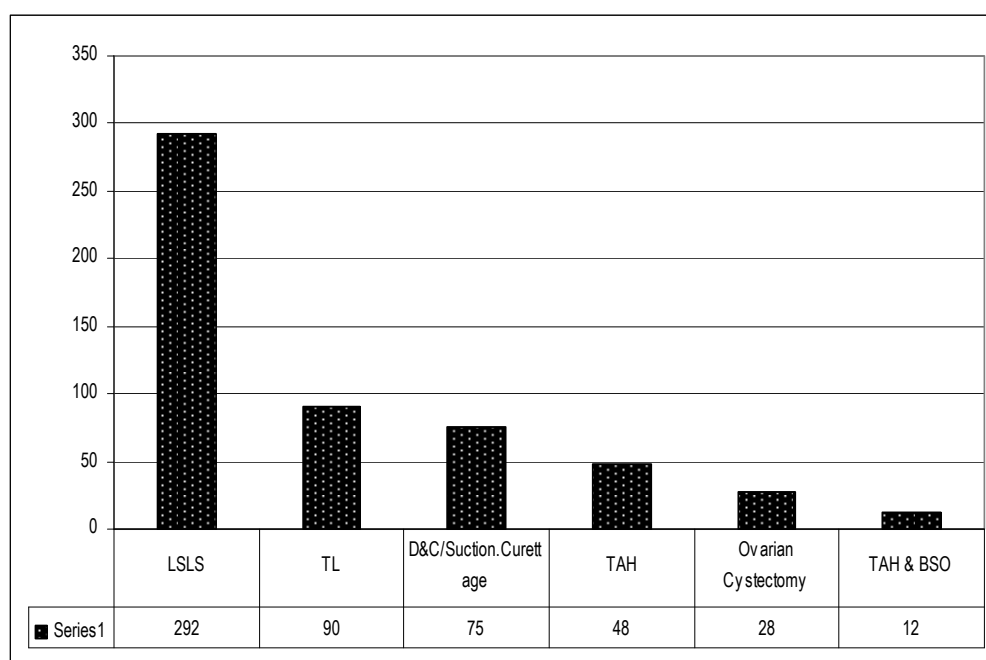
DUB is slice the most common problem we see at the gynae clinic and is the most common admissions due to her subsequent anaemia whereby they need arresting of the bleeding as well as offering blood transfusion.

With regard to the cancer cases, it accounted for about 5% of the gynae admissions, some of them were admitted more than ones. Most of our cancer cases were diagnosed at their advanced stage and can only be treated with either Radiotherapy or Chemotherapy which are not available in Tonga. Furthermore, according to the criteria for patient overseas treatment, these patients do not have opportunity.

Operation

Total Number Cases = 598

Figure 37 Operation Type, 2007



Source: Obstetric Registration

7.1.6 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
<ul style="list-style-type: none"> To ensure the continuity of skilled and committed staff. 	<p>Continuous Education</p> <ul style="list-style-type: none"> For the second year, the incorporation of the component of Mental Health into the Sia'atoutai Theological College's curriculum is continuing on. The subject is known as 'Mental Health and the local Churches'. It is the 10th year now that the subject of Abnormal Psychology is being taught at the University of 'Atenisi by the Authorized Psychiatrist, Dr Mapa H. Puloka.
<ul style="list-style-type: none"> To promote knowledge in Mental Health and Dissolve Misconceptions, Stigmatization, Ignorance and Discriminations. 	<p>Mental Health Day, 2007 (Cultural Diversity and its effect on Mental Health)</p> <ul style="list-style-type: none"> Mental Health day 2007 was commemorated with six (6) days of television and radio programmes by the Mental Health Advisory Committee members and related Non-government Organizations concerning their respective roles and their current network system with the Ministry of Health's – Psychiatric Unit. Members from Tonga Trust, Lifeline, Suicide Hotline were among those related organizations that were invited to join in the commemorative programmes not only to educate the public by increasing awareness but also advocating Mental Health related issues and highlighting the organizations that could assist should anyone have a particular problem. For example, if it is a drug and alcohol related problem, they should contact the Salvation Army Drug and Alcohol Awareness programme, if it is a social problem then they should contact lifeline and so forth. <p>Donations</p> <ul style="list-style-type: none"> As always, there are still donations of food or goods from the public during the festive season to the patients of the psychiatric ward. The "Toakase group of women, the annual Fof'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 year, Sue Gardner and her team from Air New Zealand also came bearing gifts.
<ul style="list-style-type: none"> To develop network. 	<p>Pacific Island Mental Health Network (PIMHNET)</p> <ul style="list-style-type: none"> A network system was set up within the Pacific Region to ensure that the region understands the growing trend of Mental Health related issues and to ensure that each island can work together as a region to combat this problem. Various issues are being raised and discussed in their annual meetings on how to assist each islands' demands relating mental health issues with the main object being the training of staff and advocating mental health. Emphasis is done on the correct procedures with assistance being given to those islands that have no Mental Health legislature.

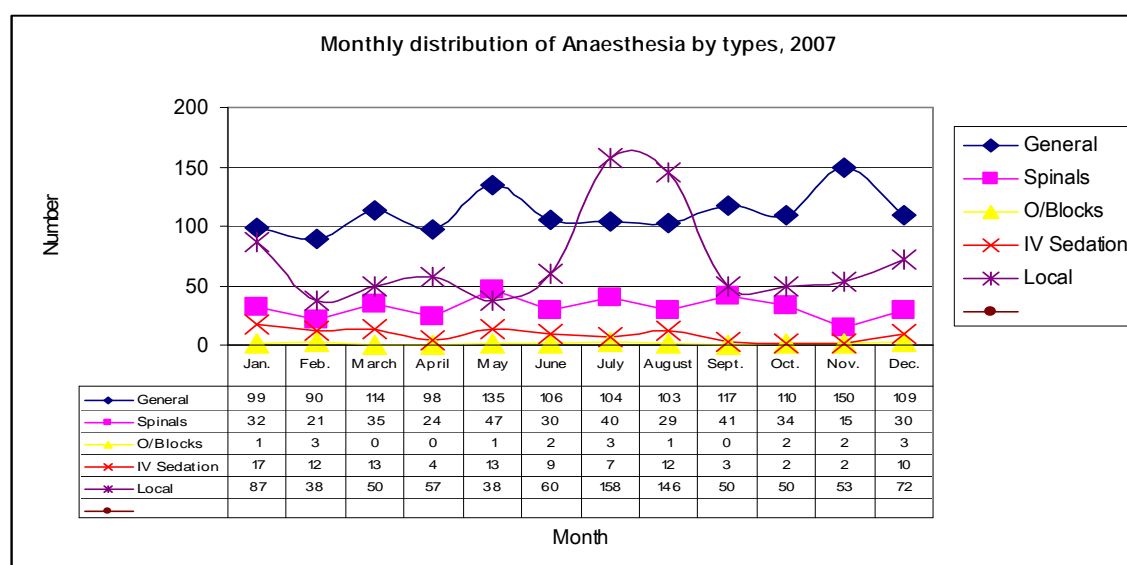
7.1.7 Anaesthesia and ICU:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> To provide staffing levels to meet services needed 	<ul style="list-style-type: none"> Three anaesthetists from Australia came to Vaiola Hospital at different times for one month voluntary work during the first 6 months of the year. This was a big help and enabled some of the staff to go on leave.
<ul style="list-style-type: none"> To provide continuing education and training for anaesthetic and ICU staff. 	<ul style="list-style-type: none"> In late September/early October SHO in Anaesthesia Talilotu To'ia and Dr. Bernard Tu'inukuafe attended a one week Refresher course in Anaesthesia in Apia, Samoa.

Statistical Information:

Figure 38 Monthly distribution of Anaesthesia by types, 2007



Source: Anaesthesia & ICU Registration

7.1.8 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
<ul style="list-style-type: none"> To develop and implement integrated strategies for the prevention of diabetes and CVD with emphasis on primary 	<ul style="list-style-type: none"> Development of education package for diabetic patients <ul style="list-style-type: none"> The package contains a collection of booklets on topics related to diabetes management. These topics include:

prevention and promotion of healthy lifestyles through participation and membership in the National NCD Committee and the Healthy Eating Sub-committee.	<ul style="list-style-type: none"> - Background information on diabetes and NCD in Tonga - Current epidemic of diabetes in Tonga - Risk factor screening and management for Diabetes and NCD - Complications of diabetes - Management of diabetes - Additional information regarding the Diabetes Centre (This pamphlet is now with the printing organization and is funded by AusAID).
<ul style="list-style-type: none"> 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. 	<p>Community Outreach programme.</p> <ul style="list-style-type: none"> The Diabetes centres conducted a quarterly home visit to diabetic patients with serious complications and disability and are unable to travel to the Diabetes Centre or the Health centres for follow up. A total of 157 patients were seen in 9 districts in Tongatapu. <p>Annual Duty visit to outer island hospitals</p> <ul style="list-style-type: none"> The annual duty visit to the outer island hospitals was conducted in October where the team visited the diabetes clinics in each respective hospital to conduct clinics as well as on the job training for the staff.
<ul style="list-style-type: none"> To strengthen the management of CVD and diabetes and their complications (Tertiary prevention) 	<p>World Bank Project.</p> <ul style="list-style-type: none"> A project proposal was put forward to be funded by the World Bank which was approved at the beginning of the year. This project was on Diabetes care in the community. The aim of this project is to improve glycaemic control and decrease incidence of complications by involving patients and their relatives and conducting intensive education to patients. Patients will be seen more regularly. Community interest groups are to be set up where the Health officers of each Health centre will be the focus person. It was decided that 3 Health centres will be used as pilot and they were Kolovai, Fua'amotu and Kolonga. These Health centres will be visited every month whereas the other 4 will be seen every 2 to 3 months. Clinical tests to be done would include a baseline HbA1c and a lipid profile in addition to the routine blood glucose levels, blood pressure, weight and waist circumference which will be done every visit. The project will run for 12 months. It is still awaiting the availability of HbA1c reagents. The project also ordered Lipex tablet for those with abnormal lipid profiles.

Source: Diabetic Centre Registration

Statistical Information:

Daily Activities of the Diabetes Centre

The Diabetes Centre operates from Monday to Friday. The common reasons for visiting the Diabetes Centre are:

- Clinic appointments
- Rebook of appointments or refill of medications
- Screening for diabetes
- Clarification for dental extraction
- Dressing of wounds and ulcers

- Offer advice on Diabetes management to community Health workers regarding diabetic patients managed at the Health centres
- Quarterly home visits to immobile diabetic patients.

The following table displays the activities conducted daily in the Diabetes Centre.

Attendance

Table 19 Monthly registration of patients attended the Diabetic Clinics

Month	Clinic	Refill/Rebook	Screening	New Cases	Dental	HbA1c	Dressing	Tota	Home visit
Jan	337	62	37	18	20	8	206	688	142
Feb	650	57	50	18	11		258	1044	
Mar	508	55	48	18	32		301	962	
Apr	503	23	29	10	9	2	275	851	119
May	635	22	30	9	22		430	1148	
Jun	468	46	13	8	20		276	831	
Jul	601	41	37	16	21		361	1077	121
Aug	469	33	41	15	20		331	909	
Sep	545	13	26	8	115		234	941	
Oct	584	45	41	25	22		347	1064	
Nov	583	45	40	18	21		268	975	106
Dec	417	60	35	13	9		252	786	
Total	6300	502	427	176	222	10	3539	11276	488

Source: Diabetic Centre Registration

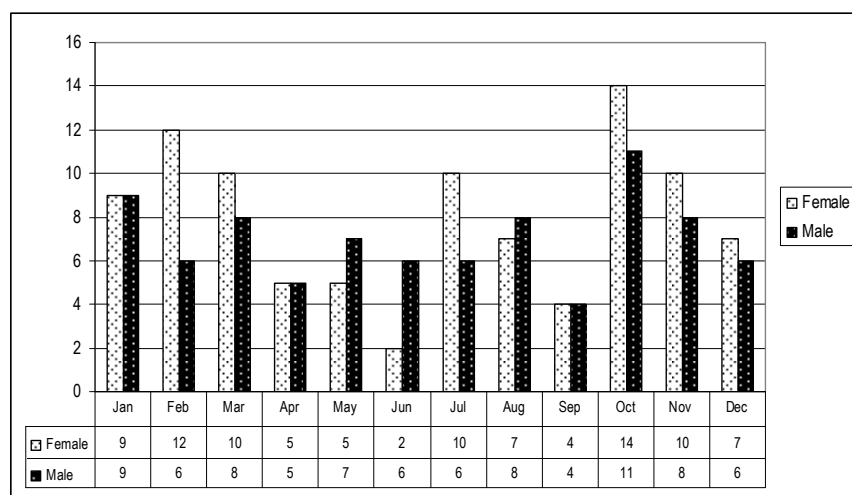
Statistics show that the 55.9% of attendance at the Diabetes Centre is for clinic consultations which means that an average of 30 patients attend clinic from Monday to Friday, 4.5% for Refill and rebook of appointments, 3.8% came for screening, 2% for dental clarification and 31.4% needed dressing of wounds and ulcers. The lowest number of patients attending clinic was in January and December because they only had 2 weeks of clinic each.

New cases of diabetes

41% of those who presented to the Diabetes Centre for screening were diagnosed to have diabetes, making a total of 176 for 2007. Clients are required to fast and to be tested before 10.00 AM. Those with fasting blood glucose of ≥ 6.1 mmol/L are being followed up.

Figure 39 shows the number of newly diagnosed diabetic patients in each month and the gender distribution. There were 52% of the new cases are females

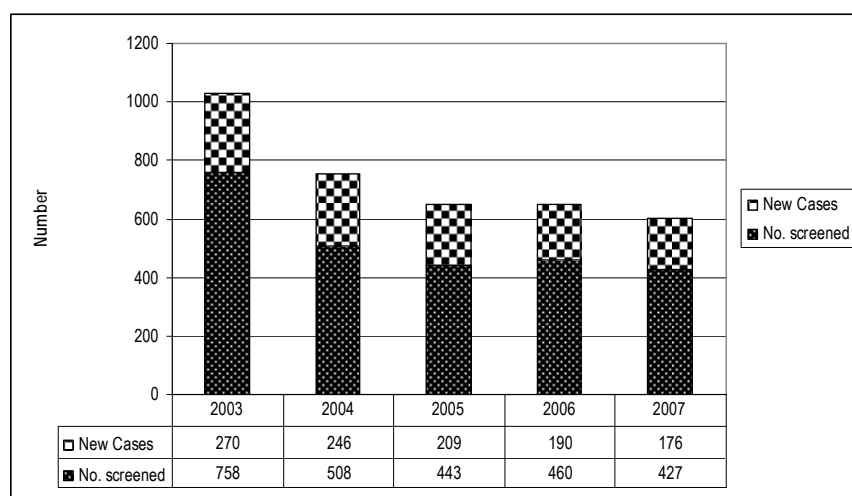
Figure 39 New Cases of diabetic patients



Source: Diabetic Centre Registration

From 2003 to 2007, about 41% of those screened would have diabetes except 2004 and 2005 which reflects the results of the National NCD and STEPS survey.

Figure 40 Screening Result of the National NCD and STEPS survey



Source: Diabetic Centre Registration

Dressing of wounds and ulcers

Dressing for diabetic patients with ulcers and wounds is routinely done on Monday, Wednesday and Friday or as required. Table 20 reports the total number of dressings done each month, the number of diabetic patients admitted for sepsis from the Diabetes Centre and the number of amputations due to diabetic sepsis. The number of admissions does not include admission from Out Patient Department for diabetic sepsis.

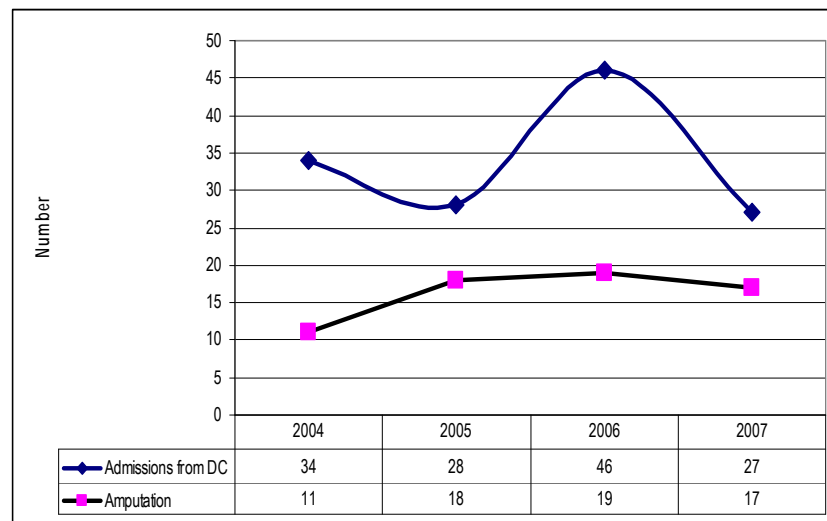
Table 20 Diabetic Sepsis

Month	No. Dressings	Admissions	Amputations
January	206	3	0
February	256	1	2
March	301	1	1
April	275	0	2
May	430	5	2
June	276	4	2
July	361	0	1
August	331	6	2
September	234	1	0
October	347	0	1
November	268	4	1
December	252	2	3
Total	3539	27	17

Source: Diabetic Centre Registration

Looking at the last 4 years, there is a big drop in the number of admissions although there seems to be no significant difference in the number of amputation. The following table shows statistics for the last 4 years.

Figure 41 Number of Diabetic related Admissions



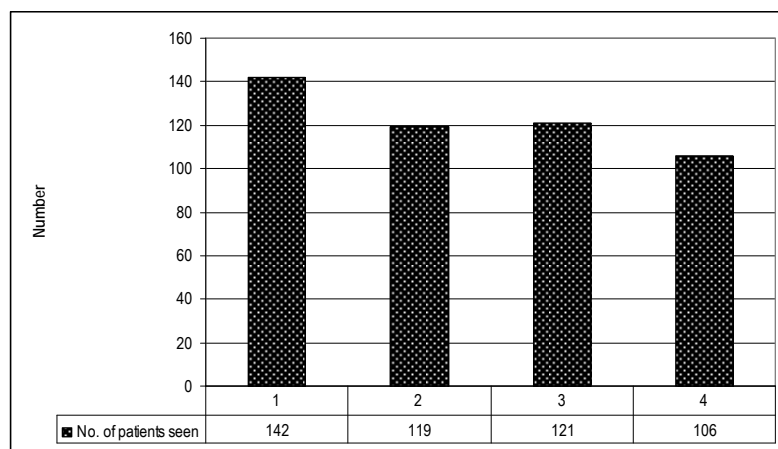
Source: Diabetic Centre Registration

Of the 17 amputations, one patient resides in New Zealand but was here for a family occasion, and two were transferred patients from the outer island hospitals which leaves 14 patients followed up in the Diabetes Centre.

Community outreach – Home visits

The quarterly home visit programme was conducted from January through to December, 2007. The first visit started off with 142 patients and in the last round there were only 106 patients. Some of these patients were well enough to travel to the Diabetes Centre or the Health Centre and others have passed away.

Figure 42 Quarterly home visit



Source: Diabetic Centre Registration

7.1.9 Ophthalmology:

Ophthalmology is responsible for delivering eye care services for inpatients and outpatient patients.

Objectives	Selected Milestones
<ul style="list-style-type: none"> To ensure that Eye care is seen as a priority area. 	<ul style="list-style-type: none"> The WDF in December approved assistance to Tonga for a diabetes project. This included funding for the procurement of a non mydriatic digital retinal camera and accessories to the value of USD\$60,000.00. An extra USD\$ 4000.00 is earmarked for training in camera use. This assistance will bring to fruition a long term dream of the Eye Clinic. It will mean that patients waiting time will be markedly reduced as patients will generally not need pupillary dilation. It also means that staff will be able to carry out more work as time spent on seeing diabetic patients will be reduced.
<ul style="list-style-type: none"> To provide appropriately trained staff to carry out primary care education of the public. 	<ul style="list-style-type: none"> Arrangements for Meleane Eke and Mele Vuki to do the nurses course at the Pacific Eye Institute has progressed well and is likely to become a reality in 2008. The course is a seven month course for experienced nurses doing what normally would be a one year course. The completion of this course will be beneficial for the patients, the Ministry and its ability to provide better services and also importantly benefit the staff with their professional development. Financial assistance from Fred Hollows Foundation NZ will enable the nurses to attend the course. Our continued close contact with overseas consultants has assisted in the management of our complicated patients. Often we utilize the internet and email photos of patients of consultations to contacts overseas mainly from doctors who have visited Tonga over the years.

<ul style="list-style-type: none"> ▪ To provide adequately equipped facilities to ensure provision of quality eye care at all hospitals. 	<ul style="list-style-type: none"> ▪ Two trips to Vava'u, one to Ha'apai and one to 'Eua were carried out during the year. Training of staff in the outer islands in Basic Eye Care is an important component in the long term sustainability of the Outreach programme.
<ul style="list-style-type: none"> ▪ To develop a system for the delivering of eye care services both centrally and also an outreach component. 	<ul style="list-style-type: none"> ▪ Over the years we acquired slit lamps for all outer islands and we are now able to take our portable laser with us to the islands. The patients technically now have two (instead of one previously) chances of getting laser in the islands – when the visiting teams come and when our own Diabetes team visits. ▪ The Section continued to benefit from services provided by visiting teams. We had teams visit through the following organizations: ▪ Pacific Island Project (AusAID, Australia) ▪ Volunteer Ophthalmic Services Overseas (NZ) ▪ The contribution of these organizations both in expertise and equipment plays an integral role in the Section's ability to provide the services that it does. ▪ In September we had the annual PIP/VOSO trip and included frequent visitors Dr. Toohey and optometrists Duncan Bush and Luke Arkapaw. First time visitors were Drs. Andrew Atkins and Tahira Malik. The team spent time in Ha'apai, Vava'u and Tongatapu. In terms of numbers of patients seen this year, the team saw the most number of patients and operated on the most number of cataract patients in addition to providing laser for many patients.

7.1.10 Emergency and Outpatients:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> ▪ To provide quality of services for patients seeking emergency and outpatient care. 	<p>Overseas training :</p> <ul style="list-style-type: none"> ▪ Sr. Langi Tupou attachment at Ballarat ▪ Dr. Moana Tupou expected to complete a 2 years Master in Emergency Medicine from Auckland University. ▪ Dr. Sione 'Akau'ola expected to attend a 1 year Post Grad Diploma in Emergency Medicine in Australia. <p>Dr. Khyan completed his term at ED. Some of his achievements for ED were:</p> <ul style="list-style-type: none"> ▪ Agreement with the Health Administration to continuously supply at least 7 doctors for ED at all times. ▪ Manage to run a first ever workshops on Emergencies run by the local staff. ▪ Teaching sessions for nurses on common emergencies ▪ Strengthening the Triage system ▪ Pamphlets in Tongan language on common diseases.
<ul style="list-style-type: none"> ▪ To provide ongoing training of staff. 	
<ul style="list-style-type: none"> ▪ To improve its management and planning. 	
<ul style="list-style-type: none"> ▪ To improve Ambulance services. 	
<ul style="list-style-type: none"> ▪ To improve relationships with other disciplines with the hospital. 	

Statistical Information:

Table 21 Main Services Provided at the Emergency and Outpatient

Services	Numbers
Emergencies	1523
Ambulance	154
Minor Ops.	408
Dressings	5,274
Injections	3,519
Nebulizations	2,088
ECG's	925

Source: Outpatient Registration and Medical Records Database

Table 22 Monthly Tally of Nursing and Medical Procedures, 2007

Mon	Wound Care	Minor Cases	Tet. Tox	Benza Inj.	Other Inj.	Neb	Total Inj.	Ecg.
Jan	358	70	124	120	41	226	285	45
Feb	438	55	128	130	88	110	346	10
Mar	425	32	159	136	22	254	317	71
Apr	506	44	155	136	33	269	324	94
May	468	40	144	134	36	127	314	90
Jun	615	38	137	128	56	130	321	54
Jul	608	23	130	122	29	236	281	57
Aug	446	35	142	120	75	166	337	120
Sep	340	12	110	114	34	259	258	89
Oct	374	13	119	109	29	178	257	226
Nov	262	26	130	126	21	145	277	101
Dec	434	20	122	122	60	118	304	57
Total	5274	408	1600	1377	542	2088	3621	925

Source: Outpatient Registration and Medical Records Database

Table 23 Emergencies by wards

Month	Medical	Surgical	Pediatric	OBS	Mental Health	ICU	SCN	Tot Admission
Jan	56	33	27	5	1			122
Feb	54	31	20	2		1		108
Mar	45	40	13	1	1			100
Apr	49	25	34	1				109
May	46	46	28	2	2	1	1	126
Jun	49	49	29	3		2		132
Jul	43	33	25	2		1		104
Aug	47	28	20	1		1		97
Sep	61	28	10	2				101
Oct	42	32	19	1	1			95
Nov	40	28	17	2				87
Dec	35	24	17	1				77
Total	567	397	259	23	5	6	1	1258

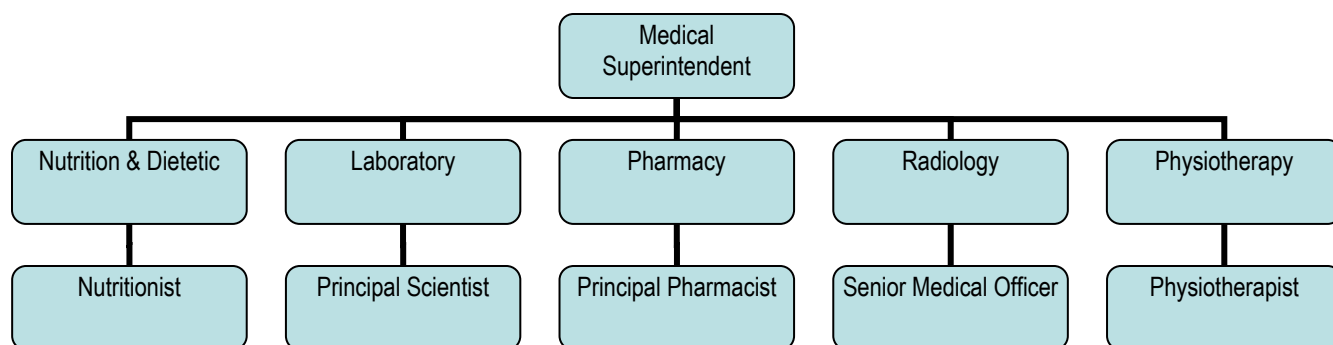
Source: Outpatient Registration and Medical Records Database

Table 24 Emergencies by outcomes

Month	Total Emer	Tot Admission	Home	ER Death	DOA	Total Deaths	Amb
Jan	140	122	9	3	6	9	6
Feb	148	108	29	4	7	11	11
Mar	120	100	11	1	8	9	8
Apr	134	109	21	Nil	4	4	13
May	145	126	16	1	2	3	11
Jun	155	132	16	2	5	7	11
Jul	120	104	10	1	5	6	18
Aug	126	97	18	3	8	11	13
Sep	119	101	15	1	2	3	10
Oct	109	95	8	1	5	6	17
Nov	98	87	9	2	Nil	2	23
Dec	102	77	10	2	13	15	13
Total	1516	1258	172	21	65	86	154

Source: Outpatient Registration and Medical Records Database

7.2 CLINICAL SUPPORT SERVICES



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Nutrition & Dietetic	Ms. Soana Muimuiheata	1	1,400
Laboratory	Mrs. Ane Ika	28	46,100
Pharmacy	Mrs. Melenaita 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

7.2.1 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
<ul style="list-style-type: none"> To develop and implement integrated strategies for the prevention of NCD with emphasis on Health Promotion and healthy lifestyles. 	<ul style="list-style-type: none"> Ms. 'Esiteli Pasikala returned with a Master in Nutrition from Japan and is now In-charge of Catering.
<ul style="list-style-type: none"> To increase community awareness of risk factors and to decrease the incidence of NCD. 	<ul style="list-style-type: none"> Printing of School Food Policy and awaiting distribution to schools Completion of development of dietary component of the Education pamphlet for diabetics.

Statistical Information:

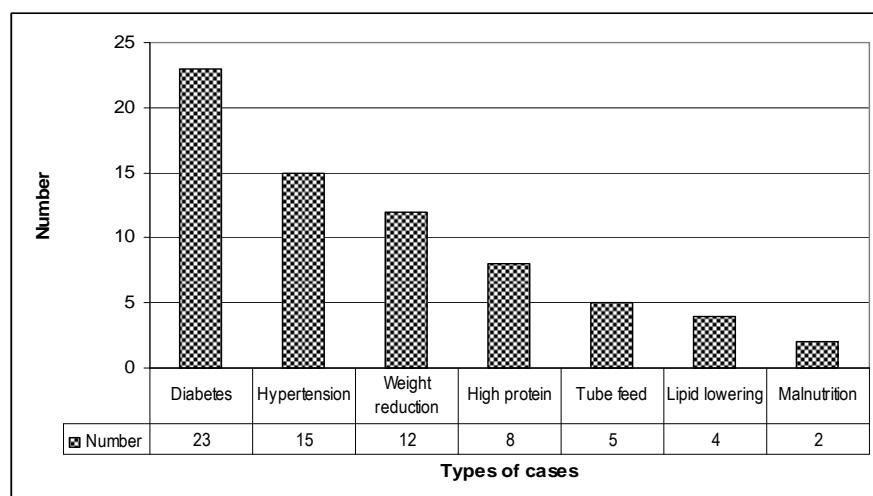
Patients are referred from the wards for dietary advise on the types of cases shown in the table below. The diabetic and hypertensive patients referred are either newly diagnosed or known cases with poor control.

Lipid lowering and weight reduction are both patients referred from the wards and from private clinics.

Malnourished cases are referrals from Paediatric ward and Medical ward. Failure to thrive is usually secondary to some other medical problem. With children, this is usually due to poor feeding practices or early weaning.

Patients requiring high protein diets are those with poor wound healing or those with medical problems that lower protein status.

Figure 43 Tube feed cases are mainly referrals from ICU and Medical Ward.



Source: Nutrition and Dietetic Registration

In the Diabetes Centre, patients are seen for dietary advise if they are newly diagnosed cases or patients with poor control.

Table 25 Patients seen for dietary advise

Month	No. of new cases	No. of known cases requiring diet advise
January	18	217
February	18	465
March	18	311
April	10	285
May	9	0
June	8	0
July	16	0
August	15	179
September	8	255
October	25	180
November	18	200
December	13	200
TOTAL	176	2292

Source: Nutrition and Dietetic Registration

Note that during the months of May to July, no patients were referred for dietary advise as the Dietitian was away from Tonga.

7.2.2 Laboratory:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> To provide quality laboratory services at all times. 	
<ul style="list-style-type: none"> To promote staff development through continuous education and training. 	<p>Training:</p> <ul style="list-style-type: none"> Francis Timani and Timote Fakasi'i'eiki, Voluntary Non-Remunerated Blood Donor Program, 23-26/1/07, Nadi funded by WHO Telesia Talia'uli Medical Scientist, Water Quality Testing, 14-18/5/07, Suva funded by WHO Latu Soakai, Senior Medical Scientist, Information Management for Emergencies, 13-16/11/07, Suva funded by Unicef Mary Fakahau, Senior Medical Scientist, Essential Drugs Management, Sept-Oct. 2007, Pacific Online Health Network, Tonga funded by WHO Mary Fakahau, Senior Medical Scientist, Latu Soakai, Medical Scientist, Fele'unga Vaka'uta, Telesia 'Apikotoa, Workshop on H2S Water Testing, 24/10/07, Vaiola Hospital funded by WHO. Sitanilei Hoko resumed duty on 2/1/07 after completing his B.Sc in Medical Laboratory Technology at Massey University, NZ. Still away on study leave overseas are Siale'uvea Finau, Senior Lab. Technician, and Taukei'aho Halauafu, Medical Scientist. John Elliot from PPTC (Pacific Paramedical Training Centre) NZ visited Laboratory in June (for 1 week) to do a follow-up evaluation to the 2006 Training in STI and HIV Laboratory Diagnostic Procedures and Laboratory Quality Management System. Several of the staff attended a one day workshop on H2S Water Testing, which was held at Vaiola Hospital on 24th Sept. 2007, and funded by SPC as part of the Influenza Pandemic Preparedness Programme for the Western Pacific, Latu Soakai and Filimone Fili were trained on preparing stained slides for fluorescence microscopy examination.
<ul style="list-style-type: none"> To provide a safe and productive working environment. 	<p>Donations</p> <ul style="list-style-type: none"> 3 adjustable office chairs and 10 stools were purchased for the laboratory staff with the \$2,000.00 donation from Westpac Bank of Tonga at the official opening of their ATM routine located in the Vaiola Hospital bus stop. Also purchased were some office supplies. A computer hard drive was obtained through the AusAid Flexible Support Fund, to assist with the continuing education of staff within the premises. A fluorescent microscope was donated to the laboratory as part of the SPC Influenza Pandemic Preparedness Project.
<ul style="list-style-type: none"> To improve communication and problem – solving skills. 	
<ul style="list-style-type: none"> To upgrade laboratory capability in Outer Island Laboratories. 	<ul style="list-style-type: none"> Through the efforts of Volunteer Sandie Sefton, a dry chemistry analyzer was obtained for Ngu Hospital. Reagents for the analyzer are supplied through various donors. However, the Laboratory Services will try to procure funds from the MOH next financial year to purchase reagents for Vava'u. Sandie's work has fulfilled one of the laboratory's

	objectives, to upgrade the laboratory capacity in the outer island laboratories. All credit for the wonderful improvement in service delivery in Ngu Hospital laboratory goes to Sandie Sefton and the Laboratory Services do acknowledge her efforts.
<ul style="list-style-type: none"> ▪ To comply with the law and statutes of the Kingdom of Tonga. 	

Statistical Information

Specimens received increased by 17%

The total number of specimens received by all laboratories was 51,196, an increase of 17% from the previous year. However, a closer scrutiny of the number of specimens received by each hospital shows that there was a 20% decrease in the number of specimens received by Niu'eiki Hospital compared to 2006, as shown by the table below.

Table 26 Number of specimens received by each laboratory in 2006 and 2007

Hospital	2007	2006	% Difference from 2006
Vaiola	47113	40726	16%
Ngu	2830	1960	44%
Niu'ui	915	585	56%
Niu'eiki	338	422	-20%
Total	51196	43693	17%

Source: Laboratory Registration

Increased Workload

A Total of 221,116 tests were performed by all units in 2007, an increase of 31% from the previous year. All 5 units had increased workload ranging from 9% increase in Histology & Cytology to 38% increase in Haematology (Annex 3).

However, distribution of tests done by each hospital shows a 29% decrease in workload in Niu'eiki Hospital. The tables below make this clearer.

Table 27 Distribution of tests performed by each hospital

Hospital	2007	2006	% Difference from 2006
Vaiola	204,578	154,447	32%
Ngu	11,588	9,518	22%
Niu'ui	3,688	2,900	27%
Niu'eiki	1,370	1,920	-29%
Total	221,224	168,785	31%

Source: Laboratory Registration

Table 28 Distribution of tests performed by each unit in Niu'eiki Hospital, 2006-2007

Unit	2007	2006	% Difference from 2006
Haematology	1,150	1,121	3%
Blood Transfusion	220	557	-61%
Biochemistry	0	0	0%
Microbiology	0	242	-100%
Histo/Cytology	0	0	0%

Source: Laboratory Registration

As mentioned above, there was a 20% decrease in the number of specimens received by Niu'eiki Hospital so it is not surprising that there was a corresponding decrease in workload. Most of the Microbiology tests done in 2006 were urinalysis. It is interesting that there were no microbiological tests done in 2007. The other point of interest is the significant decrease in Blood Transfusion services (61% decreases from 2006) and its possible implications for the future.

The overall 31% increase in workload is also significant. What boosted this increase? There are three main reasons for this:

Increased demand for non-patient services

There were 1955 non-patients requiring tests for visa, employment, routine health check and immigration purposes; an increase of 256 (15%) from the previous year. This represents about 16,000 tests where 2000 tests (14%) more than the previous year.

Table 29 Summary of non-patients services over the past 3 years:

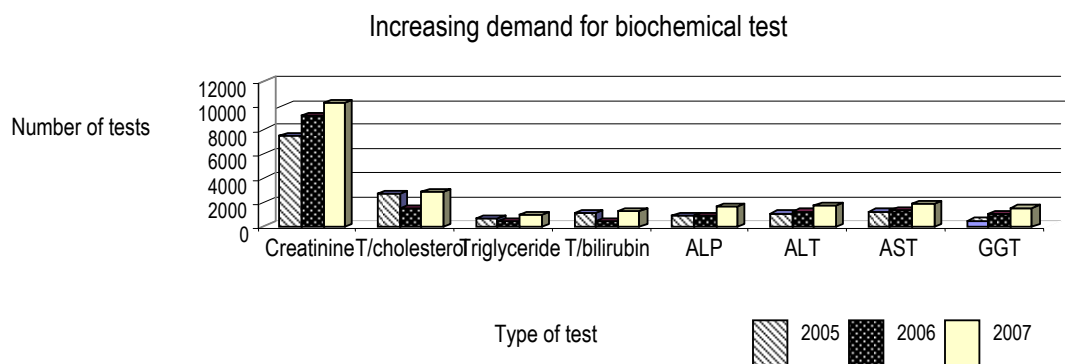
Category/year	2007	2006	2005
Visa applicants	1425	1277	1147
Employment	323	232	264
Immigration	73	130	135
Routine Check (eg. Insurance requirements)	134	60	53
Total	1955	1699	1599

Source: Laboratory Registration

Increased demand for patient services

- **Antenatal Care:** Although routine screening of pregnant women for HIV, HBsAg and RPR should be carried out, this is not always possible due to budget constraints. However, HIV (1000 tests) and RPR test kits were made available for the antenatal clinic through WHO. There was an increase of antenatal screening from 91 (2006) to 879 patients and a corresponding increase in RPR tests (from 2713 in 2006 to 4508) and HIV tests (from 3755 in 2006 to 4911). There were no HBsAg test kits for antenatal screening so this was not included.
- There were more tests were done in all units than the previous year. Figure 43 below gives an example of the increasing demand for some of the biochemistry tests.

Figure 44 Increasing demand for Biochemical test



Source: Laboratory Registration

Improved reporting system

- A review of the reporting system for the monthly statistics showed that some tests were under-reported. For example, regrouping blood before issuing was not recorded but this represents not only resources used but work done.
- The decrease in “out of stock” of reagents and the continuous operation of the laboratory analysers (no major breakdowns) meant a wider range of tests were performed.

Upgrading of Laboratory capacity in Ngu Hospital

Friends of Ngu Hospital, together with the Visiting Hospital Board in Vava'u, purchased a biochemistry analyzer late in 2006. Before this event, all biochemistry tests for Ngu Hospital were done at Vaiola Hospital.

Last year, 2984 biochemical tests were carried out at Ngu Hospital thereby fulfilling one of the laboratory's objectives to upgrade laboratory capability in the outer island hospitals.

So far, reagents for the analyzer have been obtained through donations from overseas friends of Ngu Hospital but it is getting more difficult to get more donations. It is hoped that funds from the Ministry of Health would be made available to Ngu Hospital next fiscal year in order to continue purchasing reagents for their biochemistry analyzer.

Major pathogens isolated

Table below shows that 55 *N. gonorrhea* were isolated last year, an increase of 72% from the previous year. Of these, 9 were penicillinase producing strains (PPNG), 9 Tetracycline resistant strains (TRNG), and 2 were resistant to Ceftriaxone.

There were 10 Methicillin Resistant *Staph aureus* (MRSA) isolates but these were not confirmed by MIC from NZ. Some of the media and reagents for microbiological identification were out of stock during the year so many coliforms (594) and β -haemolytic *Streptococcus* isolates (23) were not fully identified. Of the 111 tested for dengue only 8 have been confirmed to date.

Table 30 Number of Major pathogens Isolated throughout the Kingdom during the year 2007

Major pathogens	2007	%
Salmonella typhi	5	0.43
Other Salmonella	0	0
Shigella	11	0.94
Escharichia coli	NA*	NA*
Klebsiella	NA*	NA*
Proteus	46	3.93
Pseudomonas	54	4.62
Staph aureus	119	10.17
Pneumococcus	4	0.34
Haemophilis	19	1.62
B-Haemolytic Streptococcus	23	1.96
Neisseria gonorrhea	55	4.70
N. meningitides	3	0.26
M. tuberculosis	36	3.10
MRSA	10	0.85
Candida	25	2.14
Other coliforms	594	50.77
Coagulase Negative staphylococcus	160	13.67
Others	6	0.51

* NA - not available

Source: Laboratory Registration

Tests referred overseas

There was a 25% decrease in the number of specimens referred overseas compared to the previous year. In 2006, 1422 specimens were sent overseas but this dropped to 1087 last year (Annex 2). The reason for this decrease is due to the availability of the biochemistry reagents and test kits required at Vaiola Hospital throughout 2007.

However, a closer look at the individual tests show that more specimens were sent for certain tests than in 2006, such as PSA and TFT, reflecting the changing demands for Laboratory Services. The Laboratory Statistics do not include costs for these tests but it is an area to be explored for future capacity building.

Table 31 Comparison of tests referred overseas: 2006 and 2007

Type of Test	2006	2007
Alpha & feto-protein	11	28
ANA	61	95
Cardiac enzymes	29	4
HBA1C	1	22
LFT	461	147
Lipid	75	42
Thyroid Function Test	145	239
PSA	22	75
Strep antibodies	32	41
HBsAg	143	14
HIV	92	21
RPR	147	15

Source: Laboratory Registration

7.2.3 Radiology:

Radiology is responsible for providing radiological diagnostic services for Vaiola Hospital and the entire nation.

Objectives	Selected Milestones
<ul style="list-style-type: none">▪ To provide good quality x-ray and ultrasound services at all times in order to assist the clinicians at arriving at right diagnosis of patients undergoing investigation.	<ul style="list-style-type: none">▪ In the appendix statistics, we have provided the volume of works undertaken in all hospital during 2007. It appears that workload is relatively similar to previous years since we are providing the same services using the same equipment and staffing.▪ We have provided ongoing training including overseas attachment for staff.
<ul style="list-style-type: none">▪ To work well together with other medical staff so as to provide satisfactory radiological diagnostic service.	
<ul style="list-style-type: none">▪ To ensure staff knowledge and skills are up to standard by providing ongoing on the job education at all time.	

7.2.4 Pharmacy:

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

Objectives	Selected Milestones
<ul style="list-style-type: none">▪ To improve productivity and commitment of staff.▪ To improve inventory control	
<ul style="list-style-type: none">▪ To improve distribution of drugs and medical supplies	<ul style="list-style-type: none">▪ The beneficiaries of MSupply System continue to assist monitoring of medical drugs and supplies procurement, consumption and stocking.▪ Vaiola Hospital Inpatient Pharmacy and Ngu hospital now use MSupply.
<ul style="list-style-type: none">▪ To plan expand the PIMS to the Vaiola Hospital pharmacy	

Statistical Information

The Central Pharmacy and Medical Supplies (CPMS) is divided into five different units. The Administration Unit, Manufacturing Unit, Procurement /Drug Registration Unit, Stores and Distribution Unit, and Dispensing Unit. There are 13 staff working at the CPMS.

The Hospital Pharmacies look after the inpatient and outpatient needs of each hospital and therefore need to order and store their supplies for the hospital. The Vaiola Hospital Pharmacy has 11 staff working there, Ngu has 2 officers, Niu'ui and Niu'eiki Hospital each have one officer working in the pharmacy.

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 was organized and run by the late Assistant Pharmacist Grade I Mr. Tanginoa Fonua who passed away in November, 2007. Other staff assisting him are Store Assistant Mr. Samuela Fifita and Assistant Pharmacist Grade II – Mr. Manase Tongia.

Summary of production output for Manufacturing Unit 2007

Table 32 Manufacturing statistics

Item	Number of batches	Total produced
Oral preparation	325	12058L
Dermatological Preparation	120	1759L 177Kg
Extemporaneous Preparation	89	18.68L

Source: Pharmacy Registration

Table 33 Distribution of Locally Manufactured Products

Hospital	Oral Preparation	Dermatological Preparation	
Vaiola Hospital	3920L	634.5L	86.5kg
Ngu Hospital	2060L	171L	23kg
Niu'ui Hospital	1150L	180L	17kg
Niu'eiki Hospital	1470L	159L	12kg
Health Centres	Oral Preparation	Dermatological Preparation	
Tongatapu	2346L	234L	18kg
Ha'apai	375L	68L	9kg
MCH and others	341L		1.5kg
Dental Services		208.5L	

Source: Pharmacy Registration

Procurement/Registration Unit

The Procurement and Registration have been combined together to ensure that Products brought into the country by the CPMS are registered. This is to comply with the law. Assistant Pharmacist Grade II Ms. Catherine Tu'ilape updates the registered list to ensure that what is being imported is registered. Formal Registration has not been implemented pending the Gazette of the Regulation for Therapeutic Goods Act.

The Procurement Officer Miss Melesisi Finefeuiaki is responsible for procuring the drugs and medical supplies that are stored and distributed throughout the Kingdom under the guidance of the Principal Pharmacist. Drugs and Medical Supplies are procured from all over the world. A tender is put out each year for the majority of our requirements and the small items are procured direct from suppliers. Procurement are based on the approved Essential Drug List and Standard Supply List of the Ministry of Health

Store and Distribution Unit

Store and Distribution unit is supervised by Medical Storeman Mr. Mesake Tufunga. The other officers working in this area are Mr. Fe'ao Nonu- Assistant Storeman, and Store Assistant Mr. Lamisingi Niutupuivaha and Mr.

Matoto Loto'ahea. They are responsible for receiving all incoming goods, check, record, store, and distribute upon receipt of requisitions from each requisitioning stations throughout Tonga.

This unit provides services for 4 Hospitals, 14 Health Centres, 34 Reproductive Health Clinics or MCH, and some village health workers throughout Tonga.

Table 34 Requisitions issued out from CPMS during 2007.

No.	Requisitioning Station	Total Requisitions	Cost	Percentage of total cost
1	Vaiola Hospital			
	Pharmacy Vaiola	287	830275.49	
	Vaiola CSSD	42	194,448.30	
	Vaiola Operating Theatre	65	96115.18	
	Wards	47	21044.53	
	Special clinics Vaiola	68	36060.79	
		509	1177944.29	74.1
2	Prince Ngu Hospital			
	Pharmacy Ngu	45	131548.39	
	CSSD Ngu	14	35319.35	
		59	166867.74	10.5
3	Niu'ui Hospital			
	Pharmacy Niu'ui	42	49336.86	
	CSSD Niu'ui	13	13557.96	
		55	62894.82	4
4	Niu'eiki Hospital			
	Pharmacy and CSSD	28	57967.96	
		28	57967.96	3.6
5	Niuaotoputapu Health Centre	13	7214.65	0.5
6	Niuafo'ou Health Centre	11	3866.43	0.2
7	Manufacturing Unit CPMS	41	17555.07	1.1
8	Health Centres Tongatapu			
	Vaini HC	11	4629.38	
	Nukunuku HC	14	6896.85	
	Mu'a HC	48	15726.34	
	Kolovai HC	17	6215.22	
	Kolonga HC	28	8339.77	
	Houma HC	13	6902.3	
	Fua'amotu HC	22	7689.28	
		153	56399.14	3.5
9	Health Centres - Ha'apai			
	Nomuka HC	14	4990.9	
	Ha'afeva HC	9	10952.19	
		23	15943.09	1
10	Health Centres - Vava'u			
	Ta'anea HC	nil		
	Tefisi HC	nil		
	Falevai HC	nil		

11	Antenatal and all MCH clinics	69	19201.37	1.2
12	Others	7	3330.07	0.2
	Total	968	1589184.63	99.9

Source: Pharmacy Registration

There were 968 requisitions or transactions carried out from the store during 2007. The cost for all the requisitions was \$1,589,184.63. About three quarter of the total value of pharmaceuticals and medical supplies was used in Tongatapu alone and the remaining quarter to the outer islands.

The unit through teamwork effort managed to table a timetable for each customer to ensure there is timely distribution and to be able to plan their work schedule on a weekly basis. This has worked well for the Health Centres in Tongatapu. The Vaiola Pharmacy, CSSD and Vaiola Operating Theatre are still not tuned into the idea of sending their requisitions in the set time.

Vaiola Hospital Pharmacy

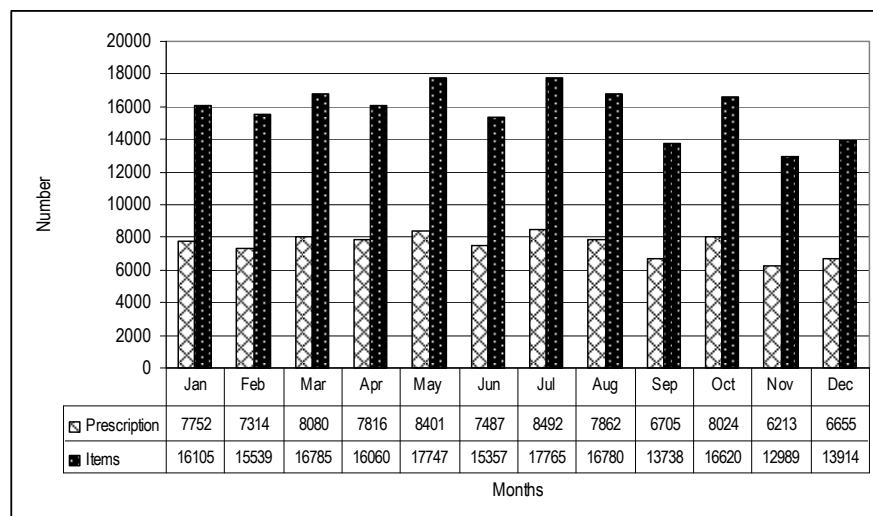
Mr. Siutaka Siua is the officer in charge of Vaiola Hospital Pharmacy. There are also two Assistant Pharmacist Grade I and seven Assistant Pharmacist Grade II who work at Vaiola Hospital Pharmacy.

The main function of the Vaiola Hospital Pharmacy is to provide in-patient and outpatient pharmacy care. This include replenishing ward stock, providing drug information to patients and other health workers, counselling 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 8.30 till 12.00 during the weekdays and from 8.30 to 12.30 and 4 to 12 midnight during the weekends and public holidays.

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.

Figure 45 Prescription Record for Vaiola Pharmacy Outpatient for normal shift only



Source: Pharmacy Registration

Some of the problems that were encountered were the legal requirement for the prescriptions were not always adhered. The writing was difficult to read in some cases and patients not keeping their appointments but requesting refills for their medication.

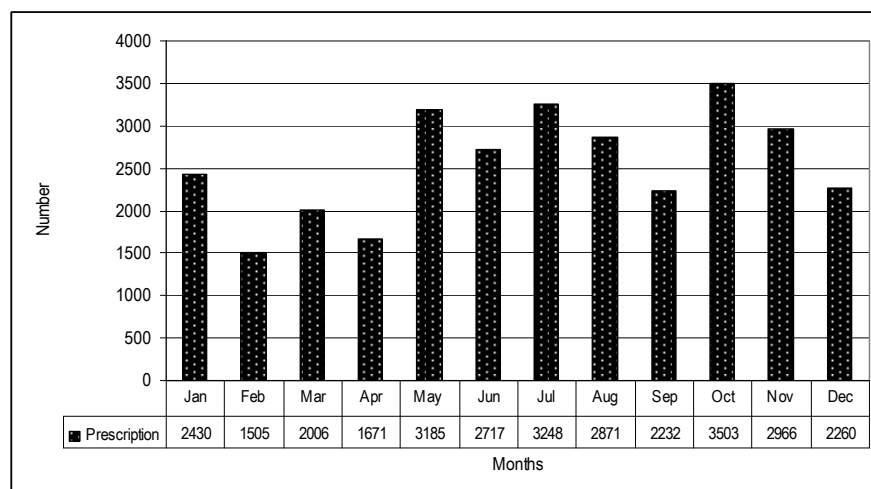
The air condition in the inpatient and outpatient was broken and had been very hot in the rooms which did not help the workers nor the medicines due to high humidity and heat.

Prince Ngu Pharmacy

In 2007, there were only two Assistant Pharmacists Grade II, Ma'u Tu'ineau and Polonitina Tai who worked at the Prince Ngu Pharmacy. Their working hours are 8.30 to 4.30 and 6.00pm to 10pm from Monday to Friday. During the weekends and public holidays they are on call during the morning and open only from 6.00 to 10.00pm in the evening. The mSupply is still working well but the air condition in the room has broken down. The distilling unit is working and there is no need for the water filter.

The officers are also involved in the visits to the health centres and clinics like Ta'anea, Leimatu'a, Pangaimotu and Longomapu and home visits. One island tour was done during the year. The Ngu Hospital have set up their own Drug Committee which met once last year but hopefully would be more active in the coming year. The members are the CMO, sister in charge, representatives from OT, Dental, Ward, OPD and pharmacy. The pharmacy staff is hoping to use imprest ward supply system to help improve the stock supply to the wards.

Figure 46 Prescription Records for Prince Ngu Hospital Pharmacy, 2007



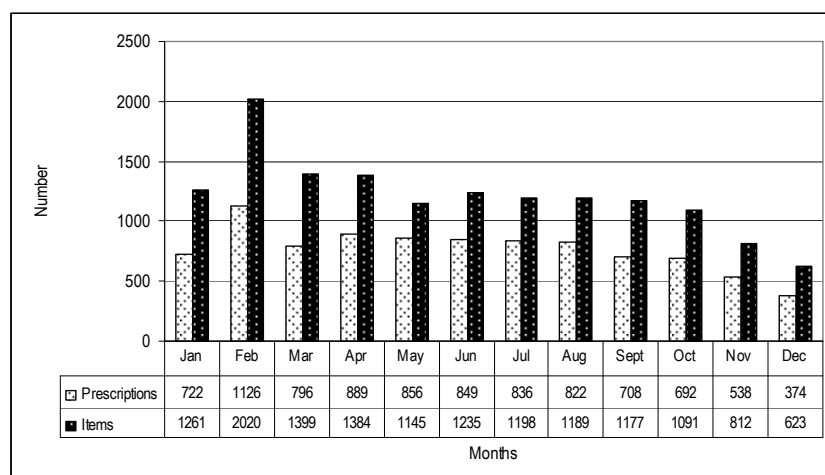
Source: Pharmacy Registration

The total number of transactions per user is as follows. Polonitina Tai did 8622 transactions which include 12577 lines whilst Ma'u Tu'ineau did 22510 covering 36373 lines. The total amount of drugs received from Central Pharmacy and Medical Store valued at \$131,548.38.

Niu'ui Hospital Pharmacy

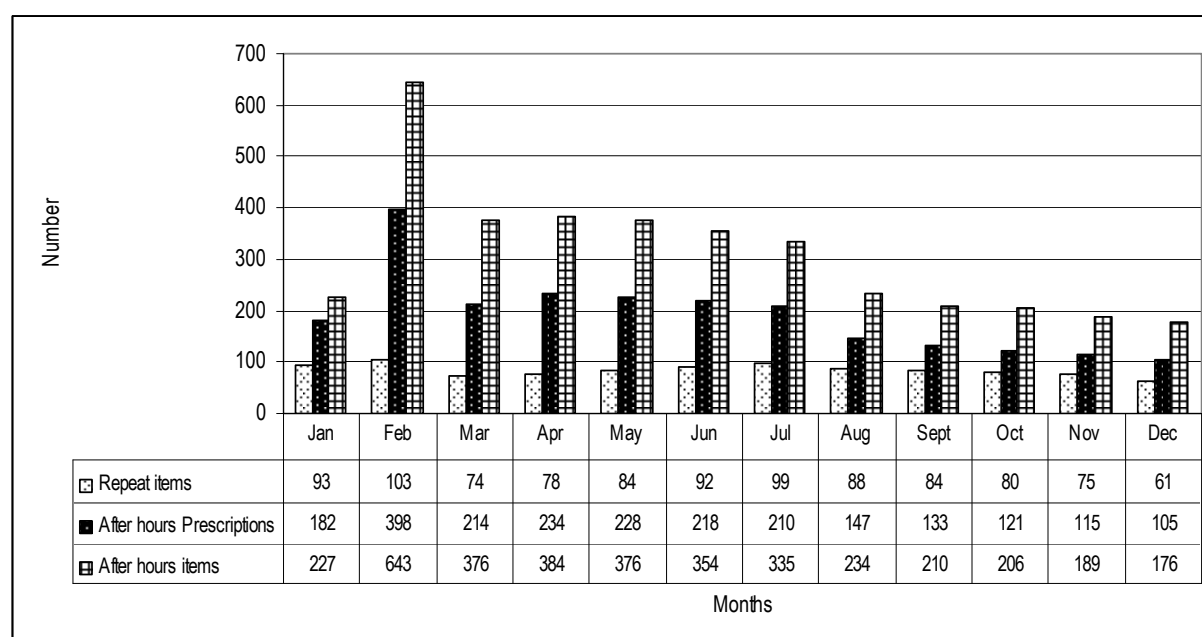
Ms. Neini Tulikaki is the Assistant Pharmacist working at Niu'ui Hospital Pharmacy.

Figure 47 Prescription Record for Niu'ui Hospital Pharmacy, 2007



Source: Pharmacy Registration

Figure 48 Monthly registration of items, prescription and repeats, Niu'ui Hospital 2007



Source: Pharmacy Registration

There has been a reduction in the number of prescriptions dispensed this year compared to last year. February showed the highest due to a flu epidemic that fell during this month. There were 289 diabetic and 39 asthmatic cases regularly seen at Niu'ui throughout the year.

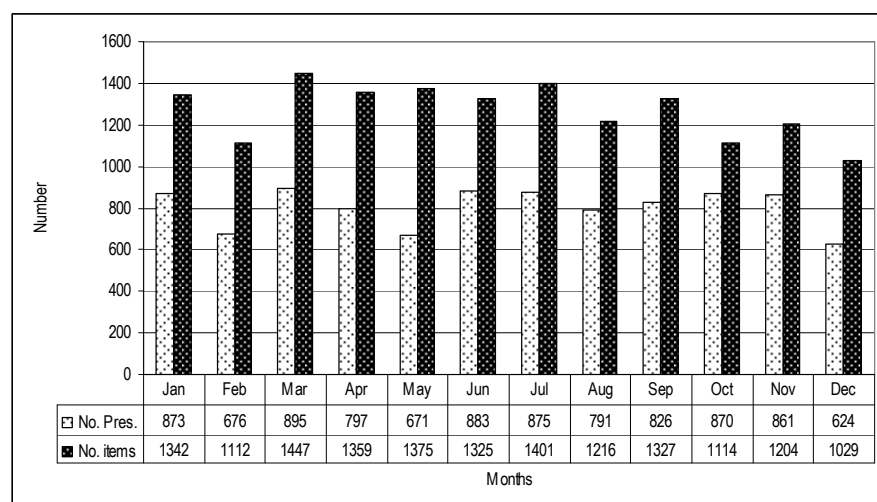
Niu'ui hospital pharmacy needs a water filter or a distilling unit to use for dispensing liquid preparations for the children. The dispensing room is small and congested and needs air conditioning as well as a computer for dispensing as well as for stock inventory control.

Niu'eiki Hospital Pharmacy

One Assistant Pharmacist Grade II Mr. 'Eneasi Palanite runs Niu'eiki Pharmacy. The Niu'eiki Pharmacy faces the main road and dusts are always deposited on the shelves. It would be best to install an air conditioner to ensure the temperature is kept cool for the medicines and it would also help reduce dust coming into the room.

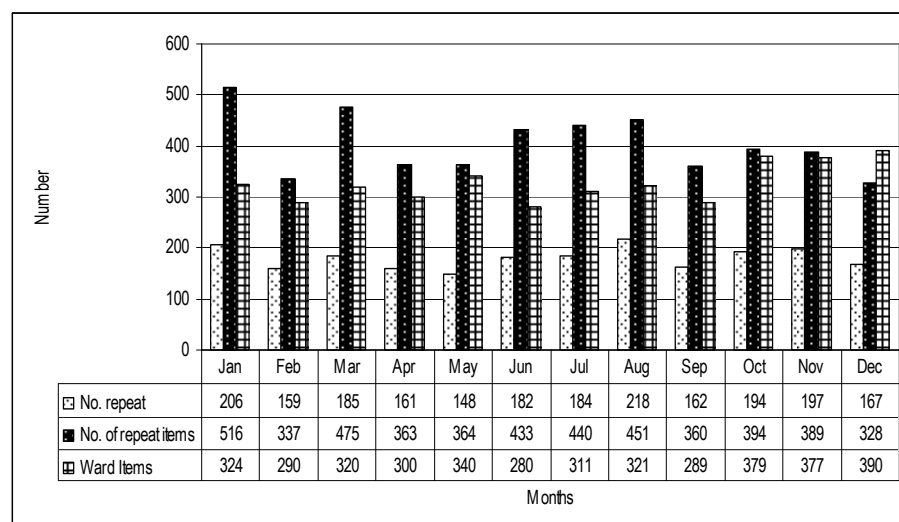
The officer works from Monday to Friday 8.30am till 4.30pm. On other days he is on call. When the officer is sick or has casual leave, a nurse fills in for him as he is the only pharmacy officer.

Figure 49 **Prescriptions for Niu'eiki Hospital Pharmacy, 2007**



Source: Pharmacy Registration

Figure 50 Monthly registration of items and repeats, Niu'eiki Hospital 2007



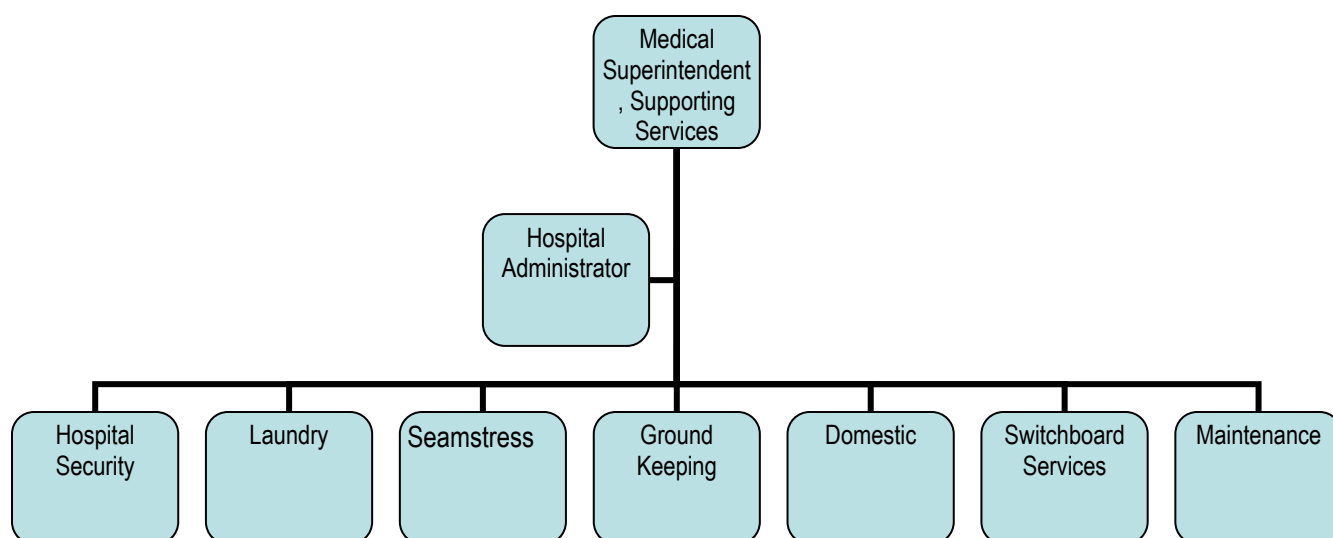
Source: Pharmacy Registration

7.2.5 Physiotherapy:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> Maintain current level of service to both hospital inpatient and outpatient. 	<ul style="list-style-type: none"> Beginning Antenatal exercise class for pregnant mothers in January. Japanese volunteer, Ms Kumi Kao, finishing up her term of two years in the Ministry by July. Aussie team Mr. Andrew Leicester with clubfoot team visited in November. Donations of a used computer from the AUSAID office at Vaiola in December.
<ul style="list-style-type: none"> Make services available to sporting teams upon request, as a representative of vaiola hospital. 	<p>Designated physiotherapist:</p> <ul style="list-style-type: none"> Tau'uta rugby team for pacific rugby tournament. South Pacific Game 2007 in Samoa Local sporting tournament

7.3 NON-CLINICAL SUPPORT SERVICES



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Hospital Administration	Salote Puloka	2	2,500
Hospital Security	Vacant	1	50,000
Laundry	Funaki Vea	13	2,500
Catering	Soana Muimuiheata	13	0
Seamstress	Vacant	0	500
Groundskeeping	Filipe Taufu	3	10,000
Domestic	'Ailine Foster	33	36,000
Switchboard Services	Luseane Polota	2	0
Maintenance	Feleti Eke	13	632,167
Total staff and financial resources	7	80	\$ 733,667

7.3.1 Non Clinical Support Services:

Non Clinical Support Services is responsible for delivering Maintenance, Domestic, Catering, Laundry, Seamstress, Grounds Keeping, Central Sterile Supply and Switchboard Operation services for Vaiola Hospital.

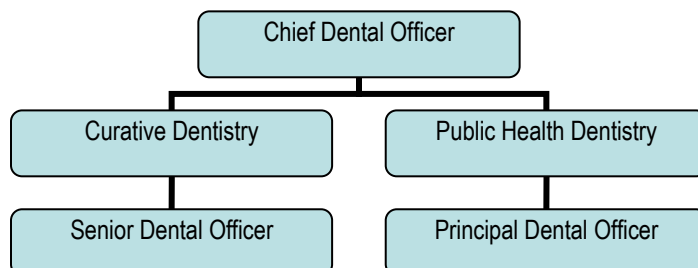
Objectives	Selected Milestones
<ul style="list-style-type: none"> To upgrade the quality of the service in all sections. To cut cost to the lowest level possible without compromising the quality of the service provided. 	<ul style="list-style-type: none"> Ongoing infection control training offered for relevant staff of these sections throughout the year. Close monitoring of each section budget was very effective compared to previous years. Recruitment of 1 Hospital Administrator, 1 Nutritionist and 1 Estate Clerk

<ul style="list-style-type: none"> ▪ To improve communication with staff through regular meetings and dissemination of information. 	<p>Officer enhance the performance and productivity of services from each section.</p> <ul style="list-style-type: none"> ▪ Appointment of 1 Nutritionist 'Esiteli Pasikala greatly improved the performance of this section especially preparing of food and ensuring the right calories is given for each patient at the hospital. ▪ St John of God Staff exchange ▪ The installation of Automatic change over switch for Main Sewerage Pump and Safety Switches for the Recovery Unit. The Staff exchange visit by Feleti Eke to SJOG Hospital. <p>Overseas Attachment</p> <ul style="list-style-type: none"> ▪ Mikimeta Muna 2-weeks visit to Biomedical Engineering services of Waikato Hospital at New Zealand ▪ 'Ofeina Soakai the Refrigeration Mechanic attended the Vaccine Refrigerator course held in Fiji in November.
<ul style="list-style-type: none"> ▪ To identify training needs for staff that would empower them and further enhance performance. 	
<ul style="list-style-type: none"> ▪ To ensure that all the appropriate facilities and equipment needed for best practice in each section are provided. 	
<ul style="list-style-type: none"> ▪ To develop plans for future development that would further enhance service delivery in a cost effective way. 	

8 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	27	116,125
Public Health Dentistry	Dr. Salise Faiva'ilo	4	0
Total staff and financial resources	2	31	\$ 116,125

8.1.1 Curative Dentistry:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> To reduce other oral/dental health problem. 	<ul style="list-style-type: none"> Dental prosthetic works carry out in Vava'u.
<ul style="list-style-type: none"> To create and maintain a working environment that is safe and productive to maintain the interest and motivation of staff. 	<ul style="list-style-type: none"> Transfer one of the Leading Hand Electrician to the Dental Division to repair, maintain, and service the Dental equipments to continue its life long value. SPMT (Japan) donate one Vehicle for Fluoride programme.

8.1.2 Public Health Dentistry:

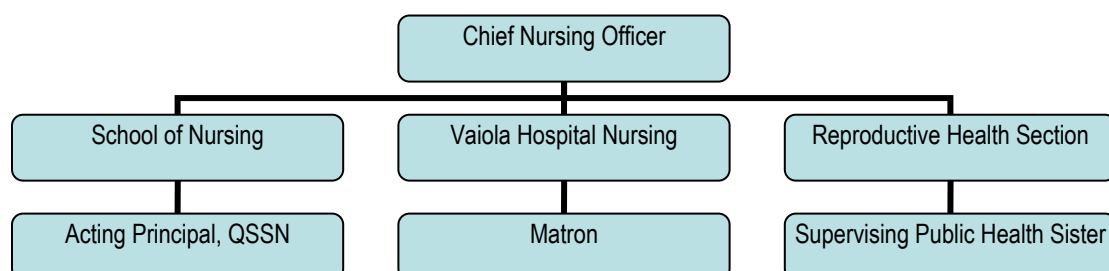
Public Health Dentistry section is responsible for providing preventative programmes to reduce the incidence of dental caries and other dental health problems in the public particularly in primary schools.

Objectives	Selected Milestones
<ul style="list-style-type: none">▪ To reduce incidence of dental caries in our school children (pre-school, primary and secondary schools).	<ul style="list-style-type: none">▪ Continue visit of the Japanese teams to distribute brush and fluoride to the Primary School of Lifuka, 'Uiha, Ha'ano and Foa.
<ul style="list-style-type: none">▪ To implement various school preventive programmes.	<ul style="list-style-type: none">▪ Extension Fluoride programme to cover over ninety five (95%) of the primary school in Tongatapu which mean that they rinse with the fluoride once a week.▪ Continuation and extension of the pit and fissure sealant programme for the class two of the Primary School.▪ Commencement of fluoride mouth rinse programme in all the (6) primary school at 'Eua.▪ Involvement of 2 school from the island of Ha'ano and 1 school from Uiha Island in the fluoride rinse programme.▪ Fluoride programme cover 31 primary schools in Vava'u.
<ul style="list-style-type: none">▪ To ensure that all people of Tonga are access and achieve optimum oral/dental services with available resources.	<ul style="list-style-type: none">▪ Upgrading of Nukunuku Health Center with equipments and instruments donated by the Ballarat Dental Rotarian to cater for the Dental needs of the Western district.

9 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	Sr. 'Amelia Tu'ipulotu	105	8,237
Vaiola Hospital Nursing	Sr. 'Ofa Takulua	202	49,376
Reproductive Health Nurse	Sr. Sela Paasi	35	78,150
Total staff and financial resources	3	342	\$ 135,763

9.1.1 School of Nursing:

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

Objectives	Selected Milestones
<ul style="list-style-type: none"> 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. 	<p>Workshop conference Attended by QSSN Staff</p> <ul style="list-style-type: none"> Sr. 'Ana Kavaefiafi - Canada 15th – 2nd January 2007 Sr Kathy Ramsay – Public Service International meeting March 2007, Auckland NZ Sr Kathy Ramsay – Public Service International Congress 21st Sept-2nd Oct, Vienna, AUSTRIA Sr. 'Amelia Tu'ipulotu, Sr. Akesa Halatanu and CNT. 'Ana Fevaleaki: Standard Treatment Guidelines Workshop, Tonga Sr. 'Akesa Halatanu and CTN 'Ana Fevaleaki: Reproductive Health Section Annual Review Workshop, Tonga CTSG Mele'ana Ta'ai and CTN 'Ana Fevaleaki – STI Workshop, Tonga Sr. Amelia Tu'ipulotu, CTSG Mele'ana Ta'ai and SSN Matangisinga Taufa: Management and Leadership Workshop, Tonga. Sr. 'Ana Kavaefiafi was promoted to Chief Nursing Officer post 22 May 2007.

	<ul style="list-style-type: none"> Most staff of the Queen Salote School of Nursing undertook Postgraduate Certificate in Health Science in Health Professional Education. (Akesa Halatanu, Kathy Ramsay, Mele'ana Ta'ai, 'Ana Fevaleaki, Matangisinga Taufu).
<ul style="list-style-type: none"> To develop the full potential of the nursing student to enable him/her to apply the knowledge and skills in various health care setting. 	<ul style="list-style-type: none"> 20 students of 2004 Class sat the examination. (Only 5 passed the first Examination and 10 passed second examination) This is a total of 15 students altogether. The remaining 5 students will sit this examination together with 2005 Class in February-March 2008
<ul style="list-style-type: none"> To direct educational programme to utilize physical, medical and social sciences and humanities as foundation for learning the art and science of nursing. 	
<ul style="list-style-type: none"> To develop appropriate instructional strategies to cope with individual differences of the learner. 	
<ul style="list-style-type: none"> To render student-based training to nursing students. 	
<ul style="list-style-type: none"> To utilize other health professionals in the training of nursing students. 	
<ul style="list-style-type: none"> To facilitate the upgrading of instruments/equipments in hospital wards as support service for student learning. 	

9.1.2 Vaiola Hospital Nursing:

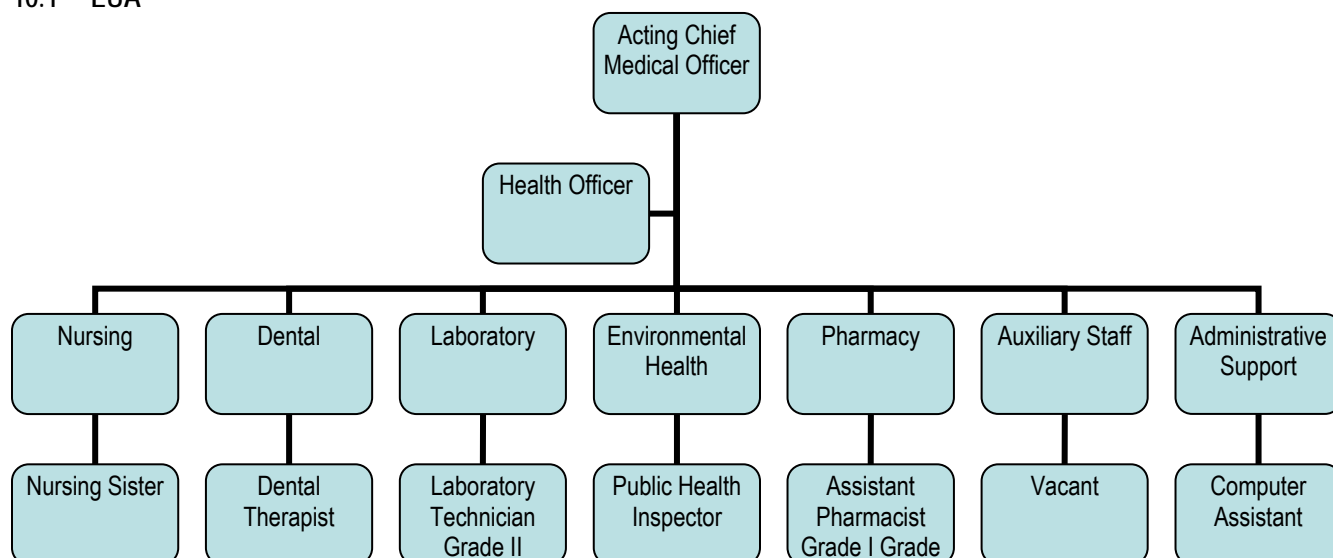
Vaiola Hospital Nursing section is responsible for providing nursing services at hospital setting including clinics and other allied health services in Vaiola Hospital.

Objectives	Selected Milestones
<ul style="list-style-type: none"> To upgrade staff's knowledge and skills 	<p>Attachment at St. John of God Hospital, Ballarat, Australia</p> <ul style="list-style-type: none"> ICU – Sr Lineti Fakauho – Paediatric Ventilation and Wound Care Med. Ward – S/N 'Atimoa Me'afo'ou – Update nursing aspects of Acute coronary care and post op care of cardiac surgery. ICU Nurse Specialist John MacDonald, Clinical Nurse Consultant Carolyn Mornane and The Ballarat Team, visited Vaiola Hospital in September 19th – 27th. Their main concern was the wound care because the Inadine Supply had run out. At the same time they were pleased with nursing staff who were noted to have greater understanding of wound care products and wound care principles. NMW Taina Manu Palaki attended a workshop in Beijing China, on Reproductive Health for 2 weeks, in May. S/N Tulukava Talia and Lose Uili of Prince Ngu Hospital were transferred temporarily to Vaiola Hospital for 2 months to up-date their nursing skills and knowledge 21/9/2007-19/11/2007.

	<ul style="list-style-type: none"> NMW Lower Mafi and S/N 'Ofa Vea undertook 12 month online course on "Postgraduate Certificate in Health Science – Health Profession Education. Hopefully they will graduate by May 2008.
<ul style="list-style-type: none"> To upgrade the standard of Hospital Nursing Services 	<ul style="list-style-type: none"> The Paediatric, Medical and Isolation Wards were officially commissioned by Her Majesty Queen Halaevalu Mata'aho on the 19th December 2007 where patients and staff moved into their lovely new place on the 21/12/2007. 15 new students nurse joined the clinical nursing care services after completion of nursing diploma training in the Queen Salote Nursing School.
<ul style="list-style-type: none"> To upgrade and improve the Nursing Staff's management 	<p>Hospital Board of Visitors</p> <ul style="list-style-type: none"> Board members bought the following equipment requested by the Ministry: <ul style="list-style-type: none"> Photocopier Washing machine The Board members also paid a one week TV and Radio program for the Ministry of Health to mark the 2007 Hospital Week with prayers and Health Awareness, 30 minutes every evening 2-7 September. No money collection. They visited the patients on 20/12/2007, offered prayers and gifts to all the patients (81) Fund raising committee members visited Australia (Tongan Community) They collected T\$224,454.06

10 ISLAND HEALTH DISTRICTS

10.1 'EUA



Staffing and financial information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	'Asipeli Mafi	1	19,827
Nursing	Pasifiki Tonga	11	0
Dental	Penisimani Taufa	1	0
Laboratory	Mele Ve	0	0
Environmental Health	'Amelia Ve	0	1,000
Pharmacy	'Eneasi Palanite	0	0
Auxiliary	Vacant	11	0
Administrative Support	Siesia Lolohea	1	35,500
Medical Records	Puataukanave Mala'efo'ou	0	0
Total staff and financial resources	8	25	\$ 56,327

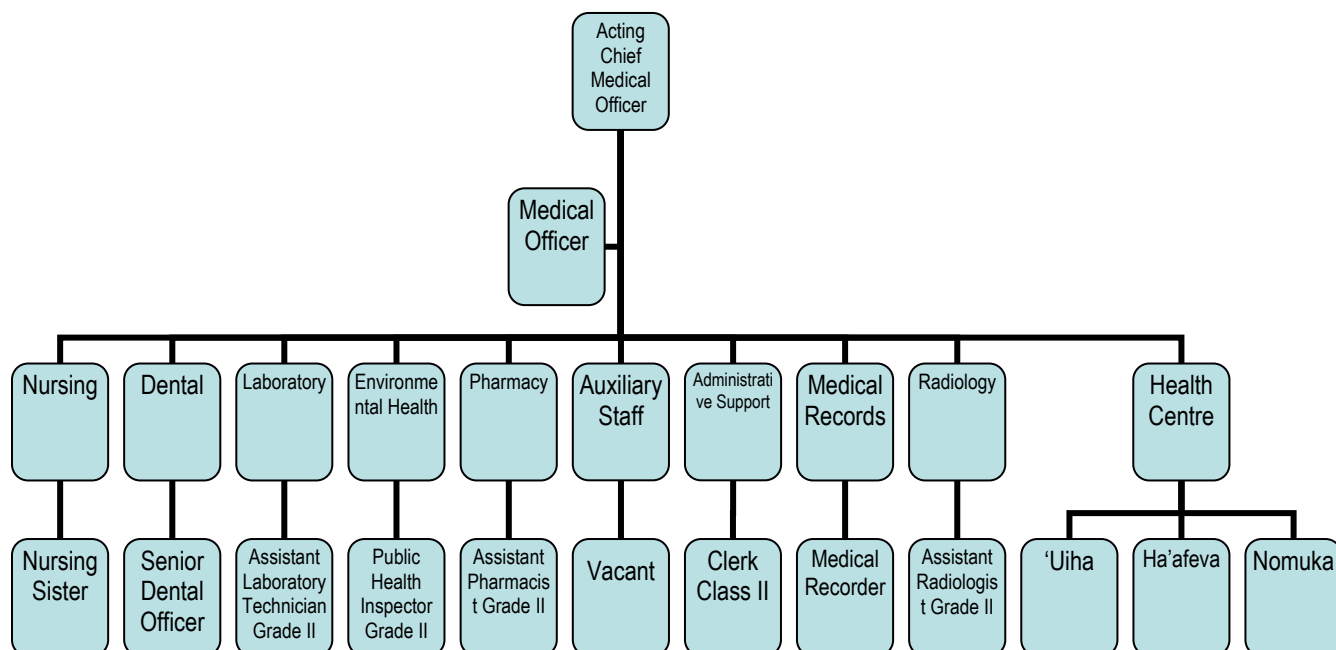
Objectives	Selected Milestones
<ul style="list-style-type: none"> To reduce number of patients with complications and referral to Vaiola b Strengthening r staff in-service training and appropriately use of available medical equipment. To reduce incidence of Diseases by strengthening Health Promotion and Preventative Programme. 	<ul style="list-style-type: none"> New Ambulance vehicle donated by Hospital Board of Visitors. Renovate of hospital building and staff quarters. Community Kava Group funded referral cases to Vaiola Hospital. Organized Government Department village inspections specifically on cleaning environment and Office Building cleanliness.

Table 35 Demographic Summary of 'Eua Island Group for 2007

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	80	64	144	3%
1 – 4 years	247	281	528	11%
5 – 9 years	303	347	650	14%
10 – 14 years	325	341	666	14%
15 – 19 years	274	265	539	11%
20 – 29 years	270	244	514	11%
30 – 39 years	259	291	550	12%
40 – 49 years	210	206	416	9%
50 –59 years	174	177	351	7%
60 – 69 years	134	128	262	6%
70 + years	61	61	122	3%
TOTAL POPN – this period	2337	2405	4742	100%
TOTAL POPN – last period	2533	2596	5129	
	Male	Female	Total	
Migration out > 6/12	70	93	163	
Migration in > 6/12	72	59	131	
Total Deaths	17	15	32	
Natural Popn Growth %	$= \frac{(Births - Deaths)}{Total\ Population} \times 100 = 2.1\%$			
Net Population Growth %	$= \frac{(Births - Deaths) + (Migration\ in - Migration\ out)}{Total\ Population} \times 100 = 1.5\%$			

Source: Reproductive Health Section

10.2 HA'APAI



Staffing and financial information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Lisiate 'Ulufonua	3	49,727
Nursing	Kalisi Finau	15	0
Dental	Talihoui Latu	1	0
Laboratory	Vuela Tapa'atoutai	1	0
Environmental Health	Mosese Fifita	2	0
Pharmacy	Neini Tulikaki	2	0
Auxiliary	Vacant	9	0
Administrative Support	Hisipanio Iketau	1	65,350
Medical Records	'Ilaise Tu'utafaiva	0	0
'Uiha	Saane Fangaloka	0	0
Ha'afeva	Fusi Kaho	1	0
Nomuka	Tupou Taufu	1	0
Total staff and financial resources	11	36	\$ 115,077

Objectives	Selected Milestones
<ul style="list-style-type: none"> To construct or extend facilities at Niu'eiki Hospital and in the community. To upgrade the laundry. To upgrade the kitchen. 	<ul style="list-style-type: none"> Building of 3 staff quarter funded by Japanese Government and 1 funded by AusAID. Renovation of Niu'ui Hospital constructed by Kiwi Tonga Construction funded by the Government of

<ul style="list-style-type: none"> ▪ To upgrade the laboratory. ▪ To upgrade the Dental Department. 	New Zealand and AusAID.
<ul style="list-style-type: none"> ▪ To introduce an integrated package of sexual and reproductive health information and services to regular programmes with innovative approaches that encourage behavior change, regarding safe sexual and reproductive health. 	<ul style="list-style-type: none"> ▪ Dr Tevita Vakasiuola attended an Antenatal, Infection Controlled and the Annual Reproductive Health Review Workshop.
<ul style="list-style-type: none"> ▪ To upgrade health services at health centre, clinic's level in rural and outer islands to be able to fully manage health problems. 	<ul style="list-style-type: none"> ▪ Island Tour was undertaken and covers all the island group of Ha'apai to deliver several health care services such as dental, general outpatient and special clinic, health inspecting, school visit and visit to elderly and bed-ridden patients.

Statistical Information:

The Ha'apai Group is consist 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 stays at Lifuka and Foa. There are two Medical Officers, which stayed at Niu'ui Hospital with a Health Officer at Nomuka and a Nurse Practitioner at Ha'afeva.

Table 36 Demographic Summary of Ha'apai Island Group for 2007

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	89	62	151	2.05
1 – 4 years	396	366	762	10.3
5 – 9 years	448	409	857	11.6
10 – 14 years	475	458	933	12.6
15 – 19 years	410	328	738	10.03
20 – 29 years	638	618	1256	17.07
30 – 39 years	410	415	825	11.2
40 – 49 years	276	323	599	8.1
50 –59 years	244	281	525	7.06
60 – 69 years	194	204	398	5.3
70 + years	147	178	325	4.3
TOTAL POPN – this period	3727	3642	7369	
TOTAL POPN – last period	3771	3720	7491	
	Male	Female	Total	
Migration out > 6/12	470	447	917	
Migration in > 6/12	339	351	703	
Total Deaths	34	25	59	
Natural Popn Growth %	$= \frac{(Births - Deaths)}{Total Population} \times 100 = 1.2\%$			
Net Population Growth %	$= \frac{(Births - Deaths) + (Migration in - Migration out)}{Total Population} \times 100 = 1.6\%$			

Source: Reproductive Health Section

Table 37 Monthly summary of admission, outpatient visit, patients transferred out of hospital and died in hospital, 2007

Month	Admission	Outpatient Visit	Transfer Out	Death
Jan	41	1002	4	1
Feb	33	970	2	
Mar	46	976	5	1
Apr	32	947	1	1
May	36	1133	3	2
Jun	47	960	3	
Jul	40	1139	1	1
Aug	42	1251	3	-
Sep	47	1064	3	2
Oct	42	986	1	3
Nov	36	1341	1	-
Dec	32	1500	2	2
Total	474	13269	29	13

Source: Niu'ui Hospital

Also the medical team is doing home visits around Lifuka and Foa once a month and twice a month visits to the Lotofoa Health Centers. We have a small laboratory that can do the basic lab test and to sent the rest to Vaiola. Our X-Ray was out of order at the beginning of the year and the technician was transferred back to Vaiola, we are still waiting on the X-ray room to be upgrade before the Japanese Government donates a new x – ray machine.

Dental Section is running under two Dental therapists and they perform dental outpatient, inpatient and also the fluoride visit to the Primary school of Lifuka and Foa.

Table 38 Staff Transfer

No.	Division/Section	Staff transferred from Niu'ui Hospital	Place where the staff has been transferred	Staff transfer to Niu'ui Hospital
	Medical	Dr. Lisiate 'Ulufonua	Vaiola	Dr. Tevita Vakasiuola
	Medical	Dr. Macaque Tupou	Fiji	Dr. Loutoa Finau
	Medical	Dr. Violet Tupou	Fiji	
	Public Health/Environmental Health	Sela Fa'u	Vaiola	Mosese Fifita
	Medical/Laboratory	Falekakala Tomu	Vaiola	Vuela Tapa'atoutai
	Medical/Radiology	Suka 'Ahovalu	Vaiola	
	Nursing	SN Sauliloa Suka	Vaiola	
	Public Health/Community Health	'Amone Vaka'uta	Vaiola	Fusi Kaho
	Nursing/Reproductive Health	'Ana Vaka'uta	Vaiola	Satua Kanogata'a
	Health Planning and Information/Medical Records	Lesieli 'Ali	Vaiola	'Ilaise Tu'utafaiva
	Public Health/Community Health	Paea Fifita	Niua	

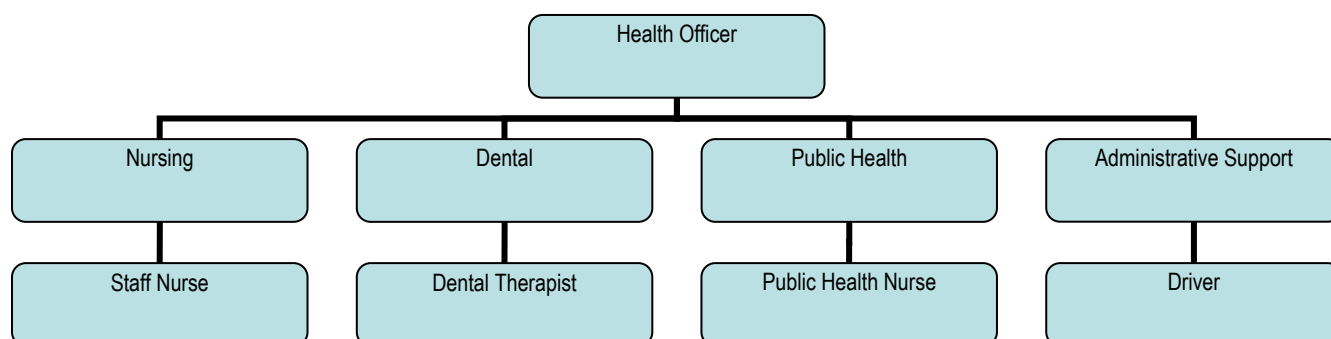
Source: Niu'ui Hospital

During 2007, there was 10 staff transferred from Niu'ui Hospital where some of them has replacement as presented and few has not as reflected in the above table.

Visiting Team to Niu'ui Hospital

1. Cardiac Team: Dr. Toakase Fakakovikaetau & Starship Hospital (Auckland) Cardiac Team
2. Neonatal Resuscitation and ARI: Dr. Toakase Fakakovikaetau and Team.
3. Eye Team only glasses (2 tech) from New Zealand: Health Officer Savelina Veamatahau
4. Reproductive Health: Sr. Sela Paasi
5. Regarding Hospital Renovation: Dr. Litili 'Ofanoa (DOH)
6. Regarding Hospital Renovation: Prime Minister

10.3 NIUAFO'OU



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Loaline Kaufusi	0	3,189
Nursing	Telesia Tu'itupou	0	0
Dental	Lu'isa Salt	0	0
Public Health	Fifita Hafoka	0	0
Administrative Support	Vacant	0	11,938
Total staff and financial resources	4	0	\$ 15,127

Objectives	Selected Milestones
<ul style="list-style-type: none"> To work together as a team in the Health Centre and the Public through outreach programme to achieved all our respective sectional goals. 	<ul style="list-style-type: none"> We received 1 wheelchair, 1 walker, 2 pairs of clutches, drugs, 6 box flexus donated by "Hands Across the Ocean" a group from the United States of America.
	<ul style="list-style-type: none"> We received 1 wheelchair, 1 clutches, 1 adult bed, 2 mattress, 1 Paediatric bed, 1 IV stand and 20 linen donated by Tongan Niuafo'ou Community in the United State of America.
	<ul style="list-style-type: none"> On the 26th December 2007 (Youth day), all villages participate in sports, traditional dancing and followed by social night.
	<ul style="list-style-type: none"> On the 1st January 2008, the Hospital Board of Visitor organized a gathering of all Government Departments and Private Sectors to mark the importance of our role for the youth.

Statistical Information:

Table 39 Major Health Services delivered in Tu'a-ki-Falelei Health Centre

No.	Items	Number
	Total Consultations	2314
	Admission	51
	Viral Influenza	1910
	Broncho Pneumonia	39
	Bronchiolitis	27
	Brocho Asthma	7
	Infant Diarrhoea	12
	Unstro-enteritis	14
	Gastro-enteritis	4
	Minor Surgery	14
	Stature	17
	Hypertension	14
	Diabetes	8
	Heart Diseases	2
	Diabetes/Hypertension	7
	Referrals to Vaiola	7
	Total live births	7
	Total Deaths	5

Source: Tu'a-ki-Falelei Health Centre

This is the general health care services delivered by this Health Centre during 2007.

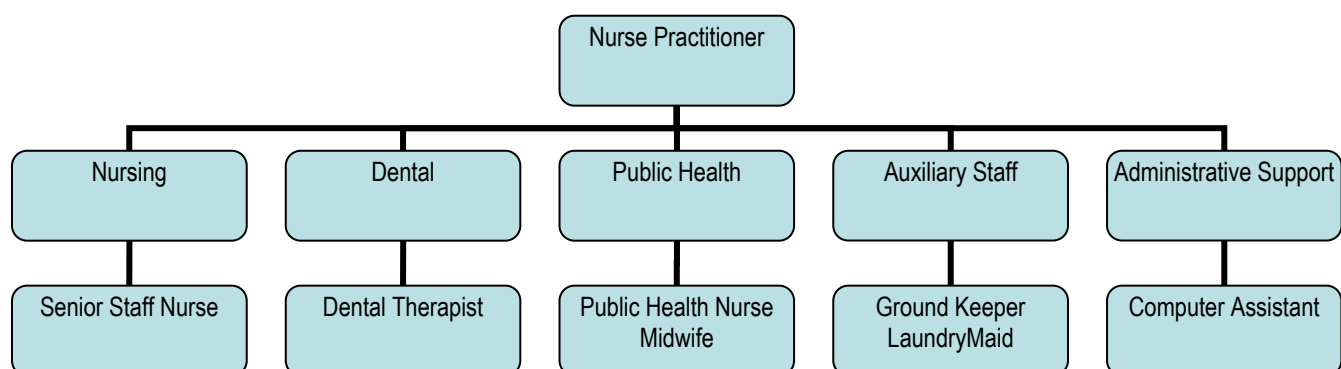
Table 40 Demographic Summary of Niuafu'ou Island Group for 2007

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	6	5	11	2%
1 – 4 years	38	24	62	10%
5 – 9 years	46	52	98	15%
10 – 14 years	42	41	83	13%
15 – 19 years	42	38	80	12%
20 – 29 years	39	31	70	11%
30 – 39 years	18	17	35	5%
40 – 49 years	50	45	95	15%
50 – 59 years	18	15	33	5%
60 – 69 years	27	22	49	8%
70 + years	19	10	29	4%
TOTAL POPN – this period	345	300	645	100%
TOTAL POPN – last period	391	309	700	
	Male	Female	Total	
Migration out > 6/12	5	7	12	
Migration in > 6/12	6	4	10	
Total Deaths	5	0	5	

Natural Popn Growth %	$= \frac{(Births - Deaths)}{Total\ Population} \times 100 = 7.3\%$
Net Population Growth %	$= \frac{(Births - Deaths) + (Migration\ in - Migration\ out)}{Total\ Population} \times 100 = 11.2\%$

Source: Reproductive Health Section

10.4 NIUATOPUTAPU



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Paea 'I Moana Fifita	0	5,601
Nursing	Monika 'Onesi 'Uvea	0	0
Dental	Nenase Latu	0	500
Public Health	Taufa Mone	0	0
Administrative Support	Kasanita Lolo Vaka	1	19,080
Auxiliary	Vacant	2	0
Total staff and financial resources	5	3	\$ 25,181

Objectives	Selected Milestones
<ul style="list-style-type: none"> Reduce after hour consultation and default clinic 	<ul style="list-style-type: none"> Established a routine outreached programmes to address common issues addressed in the objectives: Monday morning <ul style="list-style-type: none"> -Consultation and NCD clinic in the Health Centre for Hihifo Monday afternoon <ul style="list-style-type: none"> -Home visit to elderly people (monthly basis) and trace default clinic (weekly basis) Tuesday morning <ul style="list-style-type: none"> -Clinic and Consultation for Falehau at FWC hall, home visit for elderly people and trace default clinic (weekly) Tuesday afternoon <ul style="list-style-type: none"> -Consultation at the Health Centre for Hihifo Wednesday <ul style="list-style-type: none"> -Consultation and antenatal clinic at the Health Centre Thursday <ul style="list-style-type: none"> -Clinic and Consultation for Vaipoa at FWC hall, home visit for elderly
<ul style="list-style-type: none"> Improve outreached programme for elderly people, mother and child 	
<ul style="list-style-type: none"> Improve community environmental health, healthy lifestyle and exclusive breast feeding. 	
<ul style="list-style-type: none"> Upgrade the Health Centre and standard of service delivered for the people of Niuatoputapu 	

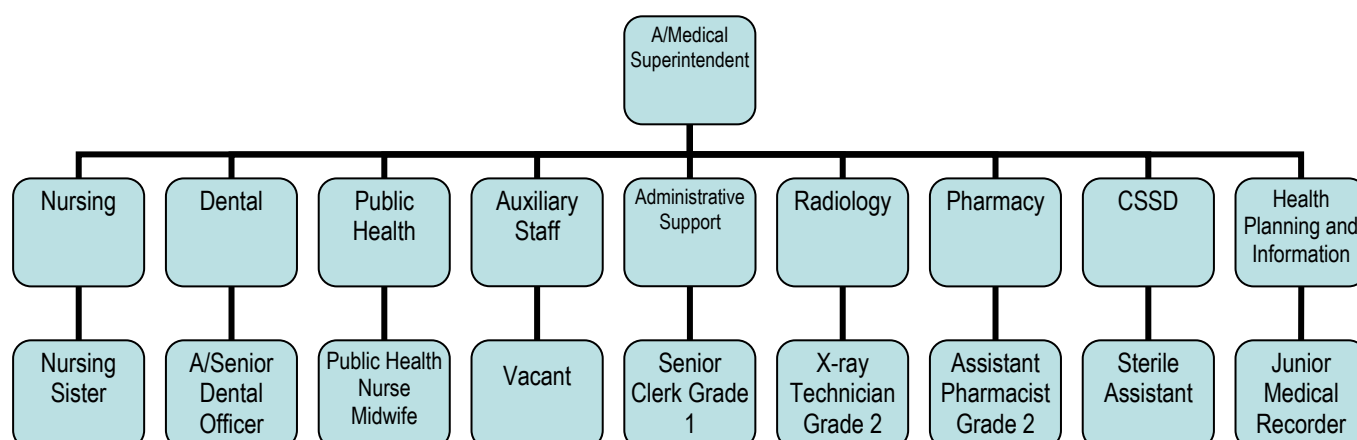
	<p>people and trace default clinic (weekly)</p> <ul style="list-style-type: none"> ▪ Friday morning ▪ -Clinic and Consultation for Hihifo ▪ Friday afternoon ▪ -Cleaning and improving the condition of the Health Centre ▪ A Health Committee for the island has established consist of 46 representatives from Falehau, Vaipoa, Hihifo and Tafahi. The committee members include 4 town officers, 1 district officer, 2 staff from the Health Centre and a representative of the Women Development Committee. This committee initiated and promotes series of activities to strengthen monthly village inspection, physical activity, regular health check up for NCD and potential NCD patients, exclusive breast feeding and health environment. ▪ Outreached programmes were also delivered by the Nurse Practitioner, Dental Therapist and Public Health Nurse for schools, youth, churches and women weaving group.
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Table 41 Demographic Summary of Niuatoputapu Island Group for 2007

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	7	6	13	1%
1 – 4 years	27	33	60	6%
5 – 9 years	63	59	122	13%
10 – 14 years	84	51	135	14%
15 – 19 years	73	63	136	14%
20 – 29 years	40	38	78	8%
30 – 39 years	46	53	99	10%
40 – 49 years	40	57	97	10%
50 –59 years	48	40	88	9%
60 – 69 years	41	35	76	8%
70 + years	21	25	46	5%
TOTAL POPN – this period	490	460	950	100%
TOTAL POPN – last period	559	531	1090	
	Male	Female	Total	
Migration out > 6/12	56	61	117	
Migration in > 6/12	18	17	35	
Total Deaths	4	1	5	
Natural Popn Growth %	$= \frac{(Births - Deaths)}{Total Population} \times 100 = 0.9\%$			
Net Population Growth %	$= \frac{(Births - Deaths) + (Migration in - Migration out)}{Total Population} \times 100 = 7.2\%$			

Source: Reproductive Health Section

10.5 VAVA'U



Staffing and Financial Information:

Sections	Head of Section	Number of supporting staff	Operation Cost
Medical	Dr. 'Alani Tangitau	2	38,102
Nursing	Sr. Mele Haveleta	21	0
Dental	Dr. 'Afa Taulangovaka	1	0
Public Health	Vacant	6	0
Health Planning	Ms. Palaniketi Talia'uli	1	0
Administrative Support	Mrs. Tupou Kainga	2	145,525
Radiology	Mrs. 'Atomi Havea	0	0
Pharmacy	Mr. Ma'u Tu'ineau	0	0
CSSD	Petsy Lomu	0	0
Auxiliary	Vacant	17	0
Total staff and financial resources	8	50	\$ 183,627

Objectives	Selected Milestones
<ul style="list-style-type: none"> To recruit additional staff if required To have dedicated nursing staff in key areas To organise training for staff at Vava'u Continue to engender an environment which encourages team work and co- operation 	<ul style="list-style-type: none"> Wound Care Workshop in September. Training Implemented : Wound Care Workshop facilitated by Sister 'Ana Kavaefiafi and Salote Schaumkel TB Workshop facilitated by Dr. Louise Fonua and Mr. Saia Penitani AusAID Health Management Workshop organized and facilitate by Mrs. 'Olivia Tu'ihalamaka and Rachael Butterworth PIP Eye Team visited Vava'u in July mainly to check diabetics with retinopathy and other eye problems. Nurse Midwife, Meliame Tupou, join the Maternal Mortality Auditing workshop in Vaiola Planning is on the way for on the job training and lunch hour clinical

	<p>meeting including auditing and mortality meeting on a regular basis</p> <ul style="list-style-type: none"> ▪ Reproductive Health workshop for 2 groups of nurses upgrading their knowledge and skills on Emergencies in Obstetrics ▪ Maternal Mortality Review workshop which was attended by Dr. Tangitau and Midwife Meliame Tupou ▪ Dr. 'Afa Taulangovaka 1 year attachment in Australia ▪ Attachments in Vaiola for both our Medical Records staff which proves a success. ▪ Visiting from the Vaiola IT section on 2 occasions to check on our internet programme ▪ Visit from the Supervising Public Health Inspector, Mr. Sateki Telefoni, from Vaiola to discuss ways of improving the performance of the 2 officers ▪ Public Health Inspector Grade 2, Mr. Leopino Fa'asolo, attended a workshop in Nuku'alofa regarding the International Health Regulation draft report. ▪ Training workshops for the community leaders and also the hospital staff regarding TB awareness and upgrading the knowledge for our staff ▪ Programme and banners were erected around Vava'u on the World TB Day. ▪ Financial help from the TB fund to buy fuel for our vehicles that was used for the TB-DOTs programme ▪ Mr. Latuseleu Tonga went on overseas attachment to various places such as :- ▪ A month attachment at the Engineering Department at the St. John of God Hospital, Ballarat. ▪ In NZ, Nelson & Auckland.
<ul style="list-style-type: none"> ▪ To continue to improve equipment standards 	<ul style="list-style-type: none"> ▪ Renovation of the Operating Theatre funded by EU which include Oxygen Gas Bank, New Recovery Room and New Monitoring Equipment. ▪ Initiation of tooth extraction under GA for kids in theatre. ▪ 1 brand new vehicle donated by Japanese Team ▪ Biochemistry analyser – donated by Friends of Prince Wellington Ngu Hospital Board ▪ Approval by EU to fund the relocation of the lab and it will also accommodate a TB lab ▪ Installation of the air condition funded by Friends of Prince Wellington Ngu Hospital Board ▪ Donation of a desktop x-ray processor by EU ▪ New sterilizing machine donated by EU ▪ Ballarat Rotary Club and the Melbourne's Fofa'anga Club donated equipment ▪ Free supply of oxygen from Vava'u Dive thus eliminating the hassle of waiting for our oxygen cylinders from vaiola.
<ul style="list-style-type: none"> ▪ To upgrade hospital facilities 	<ul style="list-style-type: none"> ▪ Relocation of the Emergency to the ward area and it has a separate entrance. All funded by EU which will be up and running early next year. ▪ Various equipment donated by EU which include defibrillators, nebulizers and other equipment needed during emergency. ▪ Arrival of new equipment donated by EU which include Accu-Chek

	<ul style="list-style-type: none"> glucometer Renovation of the x-ray room funded by EU Renovation of the Pharmacy Room funded by EU Installation of the mSupply in October funded by the Hospital Board. New sterile store room being approved to be funded by EU in 2007 Visit by Mr. Sioeli Manu for servicing the dental equipment
<ul style="list-style-type: none"> To upgrade equipment for clinical services sections 	<ul style="list-style-type: none"> 1 brand new ambulance donated by a Japanese Team
<ul style="list-style-type: none"> To upgrade equipment for Public Health sections 	<ul style="list-style-type: none"> Financial support for fuel from the TB fund and RH fund thus enabling the continuation of our community programme.
<ul style="list-style-type: none"> To upgrade equipment for non-clinical support sections 	<ul style="list-style-type: none"> Approval by EU to renovate the laundry building to be the new Diabetic Centre. Renovation of the old store room including new benches Installation of the new washing machine and a dryer which was funded by EU Approved by EU to build a new Laundry Building in order to make way for the renovation of the old laundry building to be the new Diabetic Center and Reproductive Health Clinic. Cleaning detergents and equipment (mop, bucket etc) donated by the Ballarat Rotary Club from Melbourne Donation of cleaning materials from the Friends of the Prince Wellington Ngu Hospital Board. 2 lawn mowers and 2 weed-eater machines donated by EU All the staff at the hospital help out with maintaining of the hospital compound cleanliness Donations of food items from various organizations including the Free Wesleyan Church in Neiafu, Toakase from the SDA church and others which is not mentioned here Donations of cooking utensils from the visiting Ballarat Rotary Club in conjunction with the Fofu'anga Club in Melbourne.
<ul style="list-style-type: none"> To make the lifestyle in the Communities healthier 	<ul style="list-style-type: none"> Health Promotion Team visit from Vaiola in conjunction with the Ma'a Lahi Project with the help from the Westpac Bank of Tonga makes it possible to run an aerobic competition for the 1st time in Vava'u. In addition, Walk for Health was also initiated and to be continued by the staff in Vava'u
<ul style="list-style-type: none"> Improve facilities for MCH (Reproductive Health) Services 	<ul style="list-style-type: none"> Secure fund from UNDP, through the assistance from Sister Sela Paasi, to finance our fuel for our vehicles thus ensuring our community programme.

Table 42 Demographic Summary of Vava'u Island Group for 2007

Population	Male	Female	Total	
			Number	%
Infants (below 1yr)	206	187	393	3%
1 – 4 years	888	745	1633	10%
5 – 9 years	1117	947	2064	13%
10 – 14 years	1003	973	1976	13%
15 – 19 years	862	812	1674	11%
20 – 29 years	1122	1162	2284	15%
30 – 39 years	844	940	1784	11%
40 – 49 years	713	727	1440	9%
50 –59 years	494	524	1018	6%
60 – 69 years	390	402	792	5%
70 + years	310	343	653	4%
TOTAL POPN – this period	7949	7762	15711	100%
TOTAL POPN – last period	8258	8015	16273	
	Male	Female	Total	
Migration out > 6/12	798	764	1562	
Migration in > 6/12	379	319	698	
Total Deaths	53	38	91	
Natural Popn Growth %	$= \frac{(Births - Deaths)}{Total Population} \times 100 = 1.7\%$			
Net Population Growth %	$= \frac{(Births - Deaths) + (Migration in - Migration out)}{Total Population} \times 100 = 3.8\%$			

Source: Reproductive Health Section

11 ACKNOWLEDGEMENT

I wish to acknowledge my appreciation to the Director of Health and all staff of the Ministry of Health for their loyalty, cooperation and dedication during the year, without which much of what is contained in this Annual Report would not have been achieved.

I wish to make special acknowledgement of the villages and districts throughout the Kingdom that have embraced and supported the Ministry's efforts to extend its services to the community and request this excellent relationship be continued into the future.

I am indebted to members of the Royal Family, Honourable Ministers of the Crown, Nobles of the Realm, Heads of Government Departments, Development Partners and Agencies, Non Government Organizations which the Ministry was associated with for the valuable partnership and support throughout 2007.

12 APPENDIX

Appendix 1 Officials and Personnel of the Ministry of Health by Posts, 2003- 2007

POST	2007		2006		2005		2004		2003	
	EST	POST	EST	POST	EST	POST	EST	POST	EST	POST
	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED
MINISTER FOR HEALTH	1	1	1	1	1	1	1	1	1	1
ADMINISTRATION	8	8	10	6	9	7	8	6	8	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	1	1	0	0	0	0	0	0	0
Health Administrator	3	3	4	2	4	3	3	3	3	2
Hospital Administrator	0	0	1	0	1	1	1	0	1	0
Assistant Secretary	1	1	1	0	1	0	1	0	1	0
MEDICAL STAFF	88	81	100	80	103	75	83	63	85	65
Royal Physician	1	1	1	1	1	1	1	1	1	1
Medical Superintendent	2	1	2	2	2	2	2	2	1	1
Chief Medical Officer	3	3	5	2	4	2	4	2	4	2
Senior Medical Officer	15	14	11	9	14	10	15	10	15	12
Medical Officer Special Grade	6	6	10	9	10	4	7	4	7	4
Medical Officer	31	28	30	23	31	22	25	21	26	22
Chief Surgeon Specialist	1	1	1	1	1	1	1	1	1	0
Anaesthetist Specialist	1	1	2	1	2	1	2	2	2	2
Physician Specialist	1	1	1	0	1	0	1	0	1	0
Obstetrician Gynaecologist Specialist	0	0	1	0	1	0	1	0	1	0
Paediatric Specialist	1	1	1	1	1	0	0	0	0	0
Medical Officer Trainee	0	0	2	1	2	1	0	0	0	0
Supervising Health Officer	1	1	1	1	1	1	1	1	1	1
Senior Health Officer	4	4	5	5	5	4	5	4	5	4
Health Training Co-ordinator	0	0	1	0	1	0	1	0	1	0
Health Officer	13	12	16	14	16	16	17	15	19	16
Health Officer Trainee	8	7	10	10	10	10	0	0	0	0
DENTAL STAFF	40	33	52	40	53	43	45	41	46	43
Chief Dental Officer	1	1	1	0	1	1	1	1	1	1
Principal Dental Officer	2	1	2	2	2	2	2	2	2	2
Senior Dental Officer	4	4	5	4	5	4	5	5	5	5
Dental Officers	7	3	7	4	9	6	8	5	9	8
Senior Dental Therapist	2	2	5	3	4	4	4	4	4	4
Dental Therapist	13	12	13	13	13	13	6	6	6	6
Senior Dental Technician	0	0	1	1	1	1	1	1	1	1
Dental Prosthodontist	1	1	1	1	1	1	1	1	1	1
Dental Technician	2	1	2	2	2	2	0	0	0	0
Dental Receptionist	1	1	1	1	1	1	1	1	1	1
Dental Sterile Supply Assistant	1	1	1	1	1	1	1	1	1	0
Dental Therapist Trainee	0	0	5	0	5	0	7	7	7	7
Dental Chairside Assistant	6	6	8	8	8	7	8	7	8	7
NURSING STAFF	323	302	425	325	421	362	400	315	380	342
Chief Nursing Officer	1	1	1	0	1	1	1	1	1	1
Matron	1	1	1	0	1	1	1	1	1	1
Assistant Matron	0	0	1	0	1	1	1	0	1	0
Supervising Public Health Sister	1	1	1	1	1	1	1	1	1	1
Senior Nursing Sister	2	2	3	2	6	5	5	5	5	5
Nursing Sister	13	11	14	12	18	15	16	14	16	14
Senior Staff Nurse	24	21	26	24	26	22	25	20	25	20
Assistant Senior Nursing Sister	1	0	1	1	1	1	1	1	1	1
Staff and Student Nurse	211	198	235	188	245	219	258	200	228	219
Staff Nurse Diplomat	50	50	51	41	21	21	0	0	0	0
Principal Q.S.S.N	1	1	1	1	1	1	1	1	1	1
Nursing Sister Graduate	5	3	8	5	8	6	8	7	8	7
Senior Tutor Sister	1	1	2	1	2	1	2	2	2	2
Senior Nurse Midwife	9	9	7	7	16	16	9	8	16	15
Public Health Sister	1	1	1	1	2	2	2	2	2	2
Public Health Sister Graduate	2	2	3	2	3	3	3	2	3	2

Officials and Personnel of the Ministry of Health by Posts, 2003- 2007

POST	2007		2006		2005		2004		2003	
	EST	EST	EST	POST	EST	POST	EST	POST	EST	POST
	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED
Public Health Nurse	12	10	22	9	18	8	20	12	21	11
Public Health Nurse Midwife	2	2	3	2	3	2	3	3	3	3
Nurse Midwife	12	10	10	2	18	12	17	12	20	16
Senior Public Health Sister	0	0	1	0	1	1	1	1	1	1
Tutor Sister (Graduate)	2	2	4	3	4	4	4	4	4	3
Clinical Nurse Tutor	1	1	1	0	1	1	1	1	1	1
Clinical Nurse Tutor (Graduate)	1	1	1	0	1	1	1	1	1	1
Senior Public Health Nurse	18	15	17	13	17	12	14	11	14	11
Librarian	1	1	1	1	1	1	1	1	1	1
Nurse Practitioner	4	4	2	2	2	2	2	2	1	1
Public Health Senior Nurse Midwife	2	2	7	7	2	2	2	2	2	2
TECHNICAL STAFF	121	110	162	115	158	121	161	130	164	132
Senior Health Promotion Officer	0	0	1	0	1	1	1	1	1	1
Health Promotion Officer			1	0	1	1	1	1	1	1
Health Promotion Officer Graduate	1	1	1	1	1	1	0	0	0	0
Health Promotion Officer (Education)	3	1	1	0	1	1	2	2	2	1
Health Promotion Assistant Grade II	2	2	2	2	2	2	3	2	3	3
Senior Health Education Technician	0	0	1	0	1	0	1	0	1	0
Senior Health Education Assistant Grade II	0	0	1	0	1	0	1	1	1	1
Health Promotion Officer Grade I	2	1	2	1	2	1	2	1	2	2
Health Promotion Officer Grade II	3	1	3	1	3	0	0	0	0	0
Health Promotion Officer (Technician)	1	1	1	1	1	1	1	1	1	1
Health Promotion Technician Trainee	1	1	1	1	1	1	1	1	1	1
Supervising Public Health Inspector	1	0	1	1	1	1	1	1	1	1
Senior Public Health Inspector	2	2	2	2	2	2	2	2	2	2
Public Health Inspector Graduate	1	1	1	1	1	1	1	1	1	1
Public Health Inspector	0	0	1	0	1	1	1	1	0	0
Public Health Inspector Grade I	2	2	1	1	1	1	1	1	2	2
Public Health Inspector Grade II	9	9	14	10	14	10	11	11	15	11
Public Health Inspector	0	0	1	0	1	0	0	0	0	0
Public Facilities Attendant	0	0	1	0	1	1	3	2	3	2
Sanitation Officer	4	4	5	4	4	4	5	4	5	4
Water Maintenance Officer	3	3	3	3	3	3	3	3	3	3
Public Health Assistant Grade I	3	3	3	2	3	2	3	3	3	3
Public Health Assistant Grade II	1	1	1	2	3	2	3	2	3	2
Principal Pharmacist	1	1	1	1	1	1	1	1	1	1
Senior Pharmacist Graduate	1	1	1	1	1	1	1	1	0	0
Pharmacist Graduate	2	2	1	0	2	2	2	2	3	1
Senior Pharmaceutical Technologist	0	0	1	1	1	0	1	1	1	1
Assistant Pharmacist Grade I	3	2	3	3	3	3	3	3	3	3
Assistant Pharmacist Grade II	15	15	17	17	15	15	14	11	16	13
Assistant Pharmacist Trainee	0	0	6	0	2	0	6	6	6	6
Procurement Officer	1	1	1	1	1	1	1	1	1	1
Stock Control Officer	0	0	1	0	1	1	1	1	1	1
Principal Medical Scientist	1	1	1	1	1	1	1	1	1	1
Senior Medical Scientist	3	3	3	3	3	3	3	3	3	3
Medical Scientist	4	4	4	4	3	2	3	3	3	2
Senior Laboratory Technician	1	1	1	1	1	1	1	1	1	1
Laboratory Technician Grade I	3	3	4	4	4	4	4	4	3	3
Laboratory Technician Grade II	15	14	18	16	15	14	15	12	16	15
Assistant Laboratory Technician Grade II	0	0	1	0	5	4	7	4	7	0
Senior Radiology Technologist	0	0	1	0	1	1	1	1	1	1
Radiographer	0	0	1	0	1	0	1	1	1	1
Senior Ultrasonographer	0	0	1	0	1	1	1	1	1	1
Radiographer Graduate	0	0	1	0	1	0	1	0	1	0
Assistant Radiographer Grade I	2	2	5	2	5	2	5	2	5	2
Assistant Radiographer Grade II	4	4	7	5	7	6	7	6	7	7
Radiology Technologist	1	0	1	1	1	1	1	1	1	1
Assistant Radiographer Trainee	0	0	3	0	3	0	3	0	1	0
Assistant Radiographer Trainee Grade II	0	0	1	0	1	0	1	0	0	0
Psychiatric Assistant Grade I	0	0	2	1	1	0	0	0	0	0

Officials and Personnel of the Ministry of Health by Posts, 2003- 2007

POST	2007		2006		2005		2004		2003	
	EST	POST	EST	POST	EST	POST	EST	POST	EST	POST
	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED
Psychiatric Assistant Grade II	5	3	7	5	7	5	9	7	9	9
Mental Health Welfare Officer	1	1	2	1	2	1	2	1	2	1
Psychiatric Social Worker	1	1	1	1	1	1	1	1	1	1
Nutritionist	2	2	2	2	2	2	2	2	2	2
Physiotherapist	1	1	1	0	1	1	1	1	1	1
Occupational Therapist	0	0	1	0	1	0	0	0	0	0
Health Statistics Officer	1	1	1	1	1	1	1	1	1	1
Computer Programmer	1	1	1	1	1	1	1	1	1	0
Computer Operator Grade I	4	4	1	1	1	1	1	1	1	1
Senior Medical Record Officer	1	1	1	1	2	0	1	0	1	0
Health Project Officer	1	1	1	1	1	1	1	0	1	1
Health Planning Officer	1	1	1	1	1	1	1	1	1	1
Senior Sterile Supply Supervisor	0	0	1	1	1	0	1	0	1	1
Sterile Supply Supervisor			1	0	1	1	1	1	1	1
Sterile Supply Assistant	6	6	4	4	4	4	6	5	6	5
ACCOUNTING AND CLERICAL	44	41	58	42	57	47	51	47	50	44
Senior Accountant	0	0	1	1	1	1	1	1	1	0
Principal Accounting Officer	1	1	1	1	1	1	1	1	1	1
Accounting Officer	2	2	2	2	2	2	1	1	1	1
Senior Hospital Executive Officer	1	1	1	1	1	1	1	1	1	1
Clerk Class I	2	2	3	2	3	3	2	2	2	2
Clerk Class II	3	3	3	3	3	3	5	4	5	4
Medical Record Officer	0	0	1	0	1	0	1	0	1	0
Senior Medical Recorder	0	0	1	0	1	1	1	1	1	1
Medical Recorder	2	2	3	2	3	3	3	3	2	2
Junior Medical Recorder	10	8	10	9	10	5	7	7	8	8
Typist Clerk Grade III	1	1	1	1	1	1	1	1	1	1
Computer Operator Grade II	2	2	3	1	3	3	0	0	0	0
Computer Operator Grade III	5	5	7	3	7	5	8	8	6	6
Computer Assistant	9	9	10	7	9	9	10	9	13	12
Health Registry Recorder	1	1	2	2	2	2	2	2	2	2
Financial Analyst	1	1	1	0	1	0	1	0	0	0
Accounting Officer Diplomat	2	2	2	2	2	2	2	2	1	0
Clerk Class III	2	1	6	5	6	5	4	4	4	3
SUPERVISORY AND DOMESTIC	125	110	181	137	169	154	193	177	196	160
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	1	1	1	1	1	1	1	1	1	1
Store Assistant	3	3	4	3	3	3	4	3	4	2
Chief Cook	1	1	2	0	2	2	3	2	3	2
Assistant Cook	12	11	14	13	14	14	15	13	15	13
Seamstress Supervisor	0	0	1	0	1	1	1	0	1	0
Seamstress	0	0	1	0	1	1	4	2	4	3
Domestic Supervisor	2	1	1	0	2	2	2	1	2	1
Laundry Supervisor	1	1	1	1	1	1	1	1	1	1
Laundryman	4	4	5	4	5	5	7	5	7	4
Laundry Maid	11	9	13	11	12	11	13	12	12	10
Male Orderlies	10	9	18	10	16	16	17	15	19	15
Wardmaids	18	15	23	18	23	16	29	22	29	24
Laboratory Maid	4	3	5	4	5	5	5	5	5	5
Dental Maid	1	0	1	0	1	0	1	0	1	1
Transport Supervisor	0	0	1	1	1	1	1	1	1	1
Senior VIP Driver	1	1	1	1	1	1	0	0	0	0
VIP Driver	1	1	1	1	1	1	1	1	1	1
Driver	24	23	27	25	26	23	27	27	26	25
Senior Driver	0	0	1	1	1	1	1	1	1	1
Mechanic	0	0	1	1	1	0	1	1	1	1
House Keeper	2	2	2	2	2	2	4	2	4	2
Groundskeeper	4	3	7	4	7	6	9	5	9	5
Caretakers	2	1	2	2	2	2	2	2	2	2

Officials and Personnel of the Ministry of Health by Posts, 2003- 2007

POST	2007		2006		2005		2004		2003	
	EST	POST	EST	POST	EST	POST	EST	POST	EST	POST
	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED	POST	FILLED
Building Tradesman Leading Hand	1	1	1	1	1	1	1	1	1	1
Steam Maintenance Fitter	1	1	1	1	1	1	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	1	0	1	1	1	1	1	1
Oxygen Plant Operator	1	1	1	1	1	1	1	1	1	1
Engineer	0	0	1	1	1	1	1	1	1	1
Senior Telephone Operator	1	1	1	1	1	1	1	1	1	1
Telephone Operator	2	2	4	4	4	4	4	4	4	3
Painter	0	0	1	1	1	1	2	2	2	2
Senior Hospital Engineer Graduate	1	1	1	1	1	1	1	1	0	0
Plumber	1	1	2	1	2	2	1	1	2	2
Kitchen Hand	1	0	2	0	2	2	2	2	2	2
Plumber Tradesman Leading hand	1	1	1	1	1	1	1	1	1	0
Sewage Plant Operator	0	0	1	0	1	1	1	1	1	1
Hospital Fitter Electrician	1	1	1	1	1	1	1	0	2	2
Hospital Service Foreman	0	0	1	0	1	1	1	1	1	1
Hospital Maintenance Electrician	1	1	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	2	1
Hospital Security Officer	1	1	6	3	5	5	9	6	10	7
Security Officer	1	0	1	1	1	1	1	1	1	1
Garbage Removal Supervisor	0	0	1	1	1	0	1	1	1	1
Garbage Remover	0	0	3	0	3	3	3	3	3	3
GRAND TOTAL	749	685	989	746	971	810	942	780	930	792

Source: Civil List
Human Resource Section, Ministry of Health

Description: This table presents the staff establishment of the Ministry of Health from 2002 to 2007.

Appendix 2 **Estimates of Health Expenditure and Revenue Government of Tonga, Fiscal Years
2002/2003 - 2007/2008**

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
2007/2008 (App Bud)	17,760,981	506,353	17,254,628	102,259	172
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
2002/2003 (Act)	10,919,797	298,016	10,621,781	101,002	108

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 Health'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, 2002/2003 - 2006/2007**

FISCAL YEAR	HEALTH SERVICES EXPENDITURE	TOTAL GOVERNMENTS RECURRENT EXPENDITURE	% OF TOTAL GOVERNMENT EXPENDITURE
2006-2007(Est)	17760981	235608737	7.5%
2005-2006 (Est)	14845304	167333724	10.4%
2004-2005 (Est)	13344463	114576468	11.6%
2003-2004 (Est)	11544180	112980798	10.2%
2002-2003 (Act)	10144818	98632662	10.3%

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 Transport Services: 2007

	Vaiola		Ngu		Niu'ui		Niu'eiki		NTT		NF		TOTAL	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Established drivers	19	17	5	3	2	1	1	1	1	1	1	1	29	24
Un-established drivers	3	3	0	2	0	0	1	0	0	0	0	1	4	6
Number of Vehicles	32	32	7	6	2	2	2	1	1	1	1	0	45	42
Motor cycles	3	0	1	0	1	1	0	0	0	0	0	0	5	1

Source: Transport Section-Manual Data Collection

Description: This table reflects the number of drivers employed by the Ministry, as well as the number of vehicles operated by the Ministry of Health in 2006 and 2007.

Appendix 5 Population by Sex, 1998 – 2007

YEARS	BOTH	MALE	FEMALE
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
2000	100283	51019	49264
1999	99821	50732	49089
1998	98372	49875	48497

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 2007. 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 Population Break Down by Sex and Age Group, 2007

AGE GROUPS	TOTAL	ACCUMULATE %	MALE	FEMALE
ALL AGES	102259	100%	51898	50361
0 - 4	13786	13%	7172	6614
5 - 9	12875	13%	6787	6088
10 - 14	12347	12%	6424	5923
15 - 19	10316	10%	5402	4914
20 - 24	9054	9%	4599	4455
25 - 29	7410	7%	3691	3719
30 - 34	6276	6%	3104	3172
35 - 39	6220	6%	3102	3118
40 - 44	5208	5%	2679	2529
45 - 49	4074	4%	1997	2077
50 - 54	3500	3%	1659	1841
55 - 59	2872	3%	1370	1502
60 - 64	2453	2%	1159	1294
65 - 69	2147	2%	1067	1080
70 - 74	1618	2%	791	827
75 +	2103	2%	895	1208

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 2007 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 7 Reported Livebirths, Total Deaths and Infant Deaths Under 1 Year, 2002 – 2007

YEARS	LIVEBIRTHS		DEATHS		INFANT DEATHS	
	TOTAL	CRUDE BIRTH RATE*	TOTAL	CRUDE DEATH RATE *	TOTAL	INFANT MORTALITY RATE **
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
2004	2429	23.8	617	6.1	38	15.7
2003	2658	26.2	588	5.8	34	12.8
2002	2442	24.2	581	5.8	24	9.8

* 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 8 Reported Livebirths by Age of Mother and District, 2007

AGE OF MOTHER	WHOLE KINGDOM	TONGATAPU	VAVA'U	HA'APAI	EUA	NTT
Unknown	29	8	16	2	2	1
Under 15	1	1				0
15 - 19	125	104	16	1	4	0
20 - 24	664	560	76	16	12	0
25 - 29	821	703	81	16	21	0
30 - 34	612	522	62	13	14	1
35 - 39	382	311	56	8	7	0
40 - 44	103	86	10	4	3	0
45 - 49	1	1				0
Total	2738	2296	317	60	63	2

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 1%.

Appendix 9 Reported Deaths By Age and District, 2007

AGE GROUP	WHOLE KINGDOM				DISTRICT				
	BOTH	F	M	Accum %	Tongatapu	Vava'u	Ha'apai	'Eua	Niua's
< 1	32	17	15	6%	29	2	1		
1 - 4	13	9	4	2%	11	1		1	
5 - 14	11	2	9	2%	10	1			
15 - 24	9	2	7	2%	8				1
25 - 34	9	1	8	2%	9				
35 - 44	43	16	27	8%	35	4	2	2	
45 - 54	54	24	30	10%	50	4			
55 - 64	98	37	61	18%	71	11	11	4	1
65 - 74	135	43	92	25%	99	17	15	3	1
75 +	137	63	74	26%	94	23	14	6	
TOTAL	536	214	322	100%	416	63	43	16	3

Source: Medical Records Inpatient Death Database
 Vaiola Hospital Mortuary Registration Book
 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 10 Health Facilities by District, 2007

DISTRICT	LOCATION	ESTIMATED POPULATION	AVAILABLE HEALTH FACILITY		
			HOSPITAL	HEALTH CENTRE	MCH CLINIC
TONGATAPU	Tofoa	70404	1	0	19
	Kolonga	5021	0	1	0
	Mu'a	5684	0	1	0
	Fua'amotu	4070	0	1	0
	Vaini	6310	0	1	0
	Houma	4331	0	1	0
	Nukunuku	3150	0	1	0
	Kolovai	3564	0	1	0
VAVA'U	Neiafu	16519	1	0	5
	Ta'anea	2409	0	1	0
	Falevai	1327	0	1	0
	Tefisi	2496	0	1	0
HA'APAI	Hihifo	8553	1	0	5
	Nomuka	772	0	1	0
	Ha'afeva	1346	0	1	0
'EUA	Niu'eiki	5186	1	0	3
NIUA'S	Niuaatoputapu	1348	0	1	1
	Niuafo'ou	772	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 11 Health Services: Hospital Activities, 2003-2007

SERVICES	HOSPITAL				TOTAL 2007	YEARS			
	VAIOLA	NGU	NIU'UI	NIU'EIKI		2006	2005	2004	2003
<u>1. BED CAPACITY AND OCCUPANCY</u>									
Bed Capacity: Beds	196	43	10	17	266	281	5	303	303
Bassinets	45	7	4	2	58	51	57	57	57
Bed Occupancy %: Beds	70%	62%	46%	29%	65%	49%	37%	36%	34%
Bassinets	26%	9%	2%	10%	5%	11%	27%	18%	44%
<u>2. SUMMARY INFORMATION OF PATIENTS:</u>									
Discharge: Adult	6906	1312	249	231	8698	8377	6055	6413	6906
Children	1255	326	76	72	1729	1606	1043	942	1173
Infants	125	44	8	16	193	397	934	764	773
TOTAL DISCHARGE	8286	1682	333	319	10620	10380	7381	8119	8852
Deaths: Adult	192	Na	10	6	208	205	152	185	149
Children	12	Na	0	0	12	18	13	16	12
Infants	11	Na	0	0	11	17	8	30	15
TOTAL DEATHS	215	Na	10	6	231	182	182	239	176
<u>TOTAL PATIENTS DAYS</u>									
Adult	44309	7621	1276	1465	54671	42147	35411	35341	37201
Children	5986	2034	421	342	8783	8482	5326	4259	5206
Infants	652	231	30	76	989	2121	5550	3785	3853
<u>AVERAGE LENGTH OF STAY</u>									
Adults	6	6	5	6	6	5	5	6	5
Children	5	6	6	5	5	5	5	5	4
Infants	5	5	4	5	5	5	5	5	5
<u>3. CONFINEMENTS:</u>									
Delivery: Normal	1850	Na	87	144	2081	1485	2272	2471	2483
Breech	24	Na	0	0	24	36	35	23	38
Forceps	52	Na	0	0	52	39	25	28	38
Cesarean	305	Na	0	0	305	318	298	270	229
Total: Livebirths	2242	Na	87	144	2473	2706	2676	2814	2723
Still Birth	20	Na	0	0	20	15	28	20	32
<u>4. OUT-PATIENT DEPARTMENT:</u>									
Consultation	60756	23098	15436	10244	109534	105348	129013	129412	140515
<u>5. SURGICAL OPERATION:</u>									
In-patient	1128	Na	Na	0	1128	1569	2213	2096	1687
Post Operative Infection	0	Na	Na	0	0	0	3	0	2
Death During Operation	0	Na	Na	0	0	0	0	0	0
Minor Operation	1423	Na	Na	1020	2443	1996	2219	1910	2059
Major Operation	549	Na	Na	0	549	956	860	784	766
General	1335	Na	Na	0	1335	1394	1392	1505	1579
Spinal	378	Na	Na	0	378	441	376	221	203
Local	859	Na	Na	0	859	625	621	439	494
<u>6. DENTAL SERVICES:</u>									
Patient Seen	25378	6607	1373	1541	34899	32813	4678	49277	44461

NA: not available

Sources Admission and Discharge Database, Medical Records Section
Obstetric Ward Manual Registration
Outpatient Department Manual Registration
Surgical Ward Manual Registration
Dental Division Manual Registration

Description: This table summarizes major activity in the four main hospitals in Tonga for 2007 and over the last five years.

Appendix 12

Health Services: Health Centre Activities, 2007

ACTIVITY	Whole Kingdom	TONGATAPU							HA'APAI		NIUA'S	
		Mu'a	Kolonga	Fua'amotu	Vaini	Nukunuku	Houma	Kolovai	Nomuka	Ha'afeva	Ntt	Nf
Total Patient	44314	13227	5342	6111	4951	3818	5722	5143	Na	Na	Na	Na
Type of Diseases												
Acute	35854	9086	5250	5835	4188	3163	4794	3538	Na	Na	Na	Na
Infectious	7154	2864	3	938	1601	0	101	1647	Na	Na	Na	1955
Chronic	3901	937	61	307	644	398	838	716	Na	Na	Na	Na
Diabetes	3215	681	225	472	381	244	677	535	Na	Na	Na	8
Hypertension	1696	140	131	191	86	255	490	403	Na	Na	Na	14
Heart Disease	107	8	1	3	14	0	45	36	Na	Na	Na	2
Accident	102	2	0	1	30	2	45	22	Na	Na	Na	0
Cancer	10	1	1	4	4	0	0	0	Na	Na	Na	0
1. Total Visit	52039	13719	5672	7751	6948	4062	6990	6897	Na	Na		2314
Age Group												
<2	5838	1554	1036	732	683	458	772	603	Na	Na	Na	Na
2-5	6231	2065	885	762	644	414	829	632	Na	Na	Na	Na
6-15	7288	2270	820	870	946	601	1066	715	Na	Na	Na	Na
16-25	4559	1482	589	644	483	363	495	503	Na	Na	Na	Na
26-35	4444	1334	545	666	507	379	453	560	Na	Na	Na	Na
36-45	4485	1440	477	637	428	456	482	565	Na	Na	Na	Na
46-55	3774	1190	311	549	340	353	499	532	Na	Na	Na	Na
56-65	3494	1071	272	532	294	295	440	590	Na	Na	Na	Na
66-75	2676	768	203	372	320	269	388	356	Na	Na	Na	Na
76+	2289	779	337	326	236	176	288	147	Na	Na	Na	Na
3. Health Programme												
Home Visit	1238	20	105	62	143	61	435	412	Na	Na	Na	Na
Preventative	313	30	0	0	4	185	0	94	Na	Na	Na	Na
Immunization	432	286	0	0	1	0	41	104	Na	Na	Na	Na

Source: Health Officers' Monthly Report

Description: Summary of the 9 major activities delivered in the health centres and the number of services delivered. The statistics of the three Health Centres in Vava'u are not included in this table due to limited number of Health Officers to run these clinics.

Appendix 13 ENT Clinic: Inpatient and Outpatient Treatment, 2004 – 2007

ACTIVITY	2007	2006	2005	2004
A. TOTAL CONSULTATION	1829	1624	3226	3290
B. CAUSES OF COMPLAINTS:				
Otitis Media (Acute)	90	177	382	289
Otitis Media (Chronic Suppurative)	436	221	603	616
Otitis Media (Serious or Glue)	50	23	189	157
Otitis Externa (All Kinds)	127	152	246	269
Chronic Mastoiditis	13	5	7	20
Rhinitis (All Kinds)	13	25	63	96
Nasal Polypi	15	27	30	32
Sinusitis (Acute & Chronic)	70	64	42	71
Foreign Body (Ear)	63	66	125	135
Foreign Body (Nose)	13	13	36	19
Foreign Body (Trachea or Bronchus)	2	2	0	0
Foreign Body (Oesophagus)	3	2	12	7
Eczema	10	31	126	86
Wax Impaction	283	417	499	699
Tonsillitis	35	30	73	38
Quinsy	1	1	0	1
Generalised Pharyngitis	15	15	36	9
Laryngitis (Acute & Chronic)	3	4	4	5
Epiglottitis/Nasal Polyps	1	4	0	2
Laryngo-tracheitis	0		0	1
Epistaxis	17	26	32	28
Tumors (All kind)	21	20	15	13
Thyroid Tumor	2	8	21	30
Trauma (All kind)	7	10	37	33
Others	528	353	648	634
<i>Total complaints</i>	<i>1818</i>	<i>1696</i>	<i>3226</i>	<i>3290</i>
Minor Operations	169	125	298	302
Major Operations	86	80	221	226
<i>Total Operations</i>	<i>255</i>	<i>205</i>	<i>519</i>	<i>528</i>
D. INPATIENTS 5 LEADING CAUSES OF ADMISSION	1) Post-op 2) Severe Posterior Epistaxis 3) Neck-space infectious 4) Facial & Nasal Cellulitis 5) Severe Acute Tonsillitis & Peritonsillar Cellulitis	1) Post-op(42) 2) Epistaxis(2) 3) Epiglottitis (1) 4) Laryngitis(1) 5) Neck Space Infection(2)	1) Post-op care for Tonsillectomy and acute Tonsillitis (21) 2) Sinus surgery including FESS and Sinusitis (20) 3) Polypectomy (16) 4) Thyroidectomy including Parotidectomy & submandibulectomy (13) 5) Mastoiditis and post-op care for Mastoidectomy (6)	1) Post-op care for Tonsillectomy and acute Tonsillitis (19) 2) Sinus surgery including FESS and Sinusitis (16) 3) Thyroidectomy including Parotidectomy & submandibulectomy (12) 4) Polypectomy (9) 5) Mastoiditis and post-op care for Mastoidectomy (9)
No. of Admission	128	Na	84	72

Source: ENT Section Manual Registration

Description: This table contains the major conditions treated for both inpatients and outpatients as reported by the ENT clinic for 2007 and the previous three years.

Appendix 14 Ophthalmic Clinic: Examination and Treatment, 2004- 2007

ACTIVITY	DISTRICT								YEARS			
	VAIOLA		NGU		NIU'UI		NIU'EIKI					
	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2005	2004
Routine Test	56	93	0	0	0	0	0	0	56	517	424	1188
Refraction	150	207	0	0	0	0	3	0	153	887	680	1578
Conjunctivitis	1512	1884	0	0	0	0	0	0	1512	2380	496	404
Diabetic eye check	1104	880	140	0	80	0	60	0	1384	2001	1121	593
Presbyopia	960	1084	0	0	0	0	0	0	960	1554	470	215
Cataract	165	257	0	0	0	0	0	0	165	610	353	378
Contusions Eye injury	182	117	0	0	0	0	0	0	182	266	149	40
Pterygium	75	115	0	0	0	0	0	0	75	250	135	177
Corneal Ulcer	52	63	0	0	0	0	0	0	52	113	50	50
Glaucoma	3	1	0	0	0	0	0	0	3	3	2	3
Uveitis	40	0	0	0	0	0	0	0	40	49	49	20
Review	417	580	0	0	0	0	0	0	417	1265	685	501
Others	310	226	0	254	0	0	0	158	310	770	132	661
Minor Surgery	14	8	0	0	0	0	0	0	14	34	26	25
Major Surgery	92	77	24	12	0	0	0	0	116	215	126	91
Argon Laser for Retinopathy	143	190	32	24	0	0	0	0	175	364	150	75
Yag for Capsulotomy	9	5	0	0	0	0	0	0	9	15	10	5
TOTAL SERVICES	5284	5787	196	290	80	0	63	158	5623	13299	5058	6004

Source: Ophthalmic Section Manual Registration

Description: This table contains the main conditions treated and services provided by the ophthalmic clinic in the four district hospitals for 2007 and the previous two years.

Appendix 15 Vaiola Hospital Outpatient Special Clinics, 2003 - 2007

ACTIVITY	2007	2006	2005	2004	2003
1. DIABETIC CLINIC					
Total Register	3126	2595	2434	2463	2247
No. of Attendances	6300	6662	8277	10094	13984
Dressings	11276	3408	3194	3175	4065
Others	1151	1715	423	6919	9919
Mode of Therapy:					
Insulin and OHA	519	515	460	415	450
Oral Hypoglycemic Agents	2201	1772	1637	1798	1366
Insulin	100	53	98	30	35
Diet Alone	306	255	285	220	396
Special Tests:					
Micro Albuminuria		-	-	-	115
Glycated Haemoglobin	10	196	162	411	110
No. of new cases	176	190	209	246	270
No. of old cases	6124	2405	2225	2199	1977
2. HYPERTENSION CLINIC					
Responsible Medical Officer (s)	1	1	1	1	2
No. of Attendance's	867	813	716	1087	1051
Male	550	525	333	586	581
Female	317	293	383	501	470
No. of new cases	49	NA	41	NA	51
No. of old cases	813	NA	948	1087	1051
3. GENERAL MEDICAL CLINIC					
Responsible Medical Officer (s)	1	1	1	2	2
No. of Attendances	630	657	686	476	381
Total No. of Patients	1196	1183	949	585	413
4. CARDIAC CLINIC					
Responsible Medical Officer (s)	1	1	1	2	2
No. of Attendances	1473	1412	1476	1085	785
No. of RHD	90	NA	NA	NA	NA
No. of RHD referred overseas	N/A	75	NA	NA	NA
No. of IHD	100	95	NA	NA	NA
5. PEDIATRIC CLINIC					
Responsible Medical Officer (s)	1	2	2	2	2
No. of patients	928	951	605	850	1122
Male	452	302	260	458	400
Female	301	321	181	392	539
No. of Attendances	753	623	441	NA	939
<i>Pediatric cardiac clinic</i>					
No. of patients	431	425	426	405	104
Male	155	133	165	200	39
Female	178	164	152	185	39
No. of Attendances	323	297	317	385	78
6. SURGICAL CLINIC					
Responsible Medical Officer (s)	3	3	3	3	3
No. of patients	2031	2487	1612	1378	1002
Male	1200	827	650	763	650
Female	831	666	513	615	352
7. CHEST CLINIC					
Responsible Medical Officer (s)	1	1	1	1	2
No. of Patients	839	944	840	913	525
Male	310	227	344	441	182
Female	234	167	283	417	206
No. of Attendances	544	394	627	858	388

NA- Not Available

Source: Special Clinics Manual Registration and the Diabetic Database

Description: This table captures the clinician's workload in the seven special clinics, and the numbers of visits for 2007 and the previous four years.

Appendix 16 X-Ray and Ultrasound Examination by Hospitals, 2003- 2007

SITE	YEARS					HOSPITALS	
	2007	2006	2005	2004	2003	VAIOLA	NGU
CHEST							
Routine investigation for diseases, injuries and reviews	3474	3618	3219	3390	3911	3274	200
Routine for injuries	180	238	170	472	196	137	43
Routine for government services & visas	1957	1762	1993	1711	1594	1897	60
ABDOMEN RADIOGRAPHY							
Plain Abdomen	396	432	298	348	302	343	53
Ba Meal	25	35	24	37	52	25	0
Ba Enema	37	12	19	40	45	37	0
(I.V.P and Cystogram) Urography	0	20	20	44	48	0	0
Obstetric and Gyenecology radiography Mother & foetus	15	23	28	21	45	0	15
Pelvimetry	0	0	0	0	0	0	0
Hysterosalpingogram	0	0	0	1	0	0	0
Intrauterine Contraceptive Device	0	3	0	1	0	0	0
BONE RADIOGRAPHY:							
Extremeties	2200	1745	1688	1886	2264	1967	233
Thoracic Spine	125	116	101	78	56	93	32
Skull & Facial Bones	787	706	580	805	897	746	41
Pelvis & Hips	388	541	203	262	218	358	30
Lumbosacral spine	390	573	304	370	414	344	46
Cervical spine	252	209	192	252	304	229	23
SCREENING PROGRAMME: MISCELLANEOUS	0						
Myelogram	30	28	19	12	25	30	0
Venogram	0	0	0	1	0	0	0
Sialogram	0	0	0	0	0	0	0
Foreign Bodies	67	60	41	27	18	67	0
Ultrasound:	0						
Obstetric	1456	1651	1487	1742	1944	1456	0
Upper Abdomen	715	228	922	914	769	715	0
Pelvis and Lower Abdomen	385	857	966	692	476	385	0
Breast, Thyroid and other small parts	192	138	226	170	148	192	0
Echo Cardiography	0	211	370	379	15	0	0
TOTAL	13071	13206	12870	13655	13741	12295	776

NA - Not Available

Source: X-ray and Ultrasound Manual Registration

Description: This table contains the number of X-ray and Ultrasound examinations and screenings that were performed in the hospitals in 2007 and the previous four years.

Appendix 17 Laboratory Tests Referred and Performed in the Hospital Laboratories, 2002-2007

TYPE OF TEST	2007	2006	2005	2004	2003	2002	%	TT	VV	HP	'EUA
Blood	45016	164218	156635	160097	155896	160443	95.2%	41495	2509	674	338
Urine	2269	3783	8279	7590	6830	8338	2.2%	2073	148	48	0
Stool and Rectal swabs	1078	997	1251	1475	1552	1865	0.6%	732	144	202	0
Sputum	487	268	541	443	840	1458	0.2%	469	14	4	0
Cerebro-Spinal Fluids	68	561	317	215	242	243	0.3%	68	0	0	0
Pleural & Other body fluids	35	561	140	110	194	120	0.3%	35	0	0	0
Skin Scrapping	23	49	138	173	95	128	0.0%	22	1	0	0
Water	56	748	15	12	65	474	0.4%	56	0	0	0
Leprosy skin biopsy	0	0	0	8	0	0	0.0%	0	0	0	0
Medico - legal Test	4	2	5	2	2	8	0.0%	4	0	0	0
Semen	9	0	0	5	30	70	0.0%	9	0	0	0
Pus & Other swab	395	520	1235	1071	1106	1537	0.3%	379	14	2	0
Bone Marrow	0	0	0	3	7	2	0.0%	0	0	0	0
Cytology	106	106	109	162	125	104	0.1%	106	0	0	0
Histology	711	642	522	661	623	664	0.4%	711	0	0	0
Food	0	0	0	0	0	0	0.0%	0	0	0	0
Tissues	0	0	0	0	0	0	0.0%	0	0	0	0
TOTAL	50257	172455	169187	172027	167607	175454	100%	46159	2830	930	338
Specimens for oversease tests:											
Blood	1087	1418	425	463	457	615	99.5%	1087	0	0	0
Sputum / TB Sensitivity	0	0	0	0	0	0	0.0%	0	0	0	0
Body Fluid	0	0	0	0	0	0	0.0%	0	0	0	0
Bone Marrow	0	0	0	0	0	0	0.0%	0	0	0	0
Block	0	1	39	0	0	0	0.1%	0	0	0	0
Tissues	0	0	0	4	27	27	0.0%	0	0	0	0
Urine	0	6	2	3	1	6	0.4%	0	0	0	0
Miscellaneous	0	0	1	0	0	0	0.0%	0	0	0	0
TOTAL	1087	1425	467	470	485	648	100%	1087	0	0	0

Source: Laboratory Manual Registration

Description: This table contains the types of tests referred and preformed in the hospitals laboratories in 2007 and the previous 4 years.

Appendix 18 Dental Services: Patients Seen & Services Provided by Health Districts, 2002-2007

	TT	VV	HP	'EUA	NTT	NF	2007	2006	2005	2004	2003	2002
Number of Patients seen	25378	6607	1373	1541	276	72	35247	33735	48759	51538	47180	40206
Adult	19169	4828	1041	1148	207	52	26445	27332	40735	37216	36722	30279
Children	4792	1377	241	281	57	18	6766	4594	5883	12112	8282	7583
Expectant Mothers	1417	402	91	112	12	2	2036	1809	2141	2210	2266	2344
Services Rendered	34615	19399	1234	2005	521	124	57898	53643	100177	97605	108163	50175
Oral Examination	25378	6607	1373	1541	276	72	35247	33735	48841	41425	47180	40206
Dental Extraction:												
Total No. of teeth removed	17006	3169	652	1000	171	34	22032	20456	19815	25607	36719	21497
Caries	13080	1785	446	289	75	15	15690	13738	14140	16194	20956	14824
Perio	3577	1017	177	574	84	14	5443	5222	4905	3675	15763	1696
Others	349	367	29	137	12	5	899					
Conservative:												
Temporary Fillings	3960	1105	245	258	24	8	5600	7016	11938	9477	12039	10760
Permanent Fillings	3988	2520	89	271	30	6	6904	4992	10779	7956	5994	4997
Simple Amalgam	653	188	32	168	16	4	1061	1228	3170	2611	2301	2176
Compound Amalgam	399	175	39	59	14	2	688	981	2335	1776	1265	1187
Composite Amalgam	2651	1261	18	44	0	0	3974	2270	2892	2147	1563	1629
Endodontic Treatment	285	896	0	0	0	0	1181	513	2317	2788	1075	952
X-rays (Periapical)	506	121	0	0	0	0	627	590	807	1362	1034	907
Preventive:												
Oral Hygiene Instruction	6330	318	91	370	276	72	7457	4780	2279	2536	47130	5765
Scaling	263	318	6	0	0	0	587	582	912	1007	708	667
Polishing	195	318	6	0	0	0	519	814	759	720	660	356
Gingival treatment	63	0	0	0	0	0	63	97	0	36	206	137
Antibiotic Therapy	1374	458	141	106	20	4	2103	1910	2029	2692	2553	2818
Dental Prosthetic:												
a. Full Upper	97	28	0	0	0	0	125	200	132	52	98	68
b. Full Lower	100	28	Na	Na	Na	Na	128	170	125	36	95	65
c. Partial Upper	123	47	Na	Na	Na	Na	170	302	190	279	187	289
d. Partial Lower	32	43	Na	Na	Na	Na	75	110	50	135	81	86
e. Repair	82	75	Na	Na	Na	Na	157	227	177	168	273	271
f. Rebase	1	0	Na	Na	Na	Na	1	0	1	5	13	11
g. Refining	7	2	Na	Na	Na	Na	9	12	14	22	35	24
h. Easing	23	12	Na	Na	Na	Na	35	20	37	80	92	123
Orthodontic Therapy	5	2	Na	Na	Na	Na	7	49	35	18	46	4
Operations:												
a. Minor Oral Surgery	175	29	4	Na	Na	Na	208	394	305	372	159	848
b. Major Oral Surgery	Na	Na	Na	Na	Na	Na	Na	55	38	72	NA	45
c. OMF Surgical	Na	Na	Na	Na	Na	Na	Na	0	NA	0	0	0
School Visited:												
Primary School	51	31	8	6	2	2	100	58	72	77	80	61
Secondary School	0	6	0	2	1	1	10	5	1	9	10	0
No. of Visits to School	39	39	39	14	5	1	137	182	206	471	150	174
No. of Children participating	8719	2639	853	403	163	104	12597	8725	12206	15492	15267	0
Fluoride Programme:												
Pre-school	4	0	2	0	0	0	6	3	6	5	3	0
Primary school	51	31	8	6	0	0	96	35	17	12	10	0
No. of Children examine & treated with fluoride oral hygiene	8719	2639	853	403	0	0	12614	5876	3589	2385	3563	0
No. of visits to these school	39	39	39	14	0	0	131	256	690	76	66	0
Fissure Sealant Prog:												
No. of Children participating	542	0	66	0	0	0	590	829	1128	76	66	0
No. of teeth seal	1646	0	198	0	0	0	1844	2065	4225	0	0	0

NA - Not Available

Source: Dental Division Manual Registration

Description: Statistics of the main services delivered by the Dental Division in 2007 and the previous four years, and a profile of the patients receiving these services. These services are delivered in hospitals and some health centres.

Appendix 19 Psychiatric Ward Admissions, 2003-2007

CAUSES	2007	2006	2005	2004	2003
Schizophrenia	44	49	30	50	88
Schizoaffective disorder	2	2	0	3	8
Bipolar mood disorder	43	36	23	42	65
Acute and transient psychotic disorder	2	0	2	0	2
Personality and behavioural disorder due to brain disease, damage and dysfunction	0	1	3	0	4
Other Non-Organic psychosis	6	3	3	2	0
Delusional disorder	2	1	1	1	1
Other anxiety disorder	0	0	0	0	1
Other non-organic psychotic disorder and panic disorder	0	0	0	0	0
Dementia	2	4	3	5	5
Other mental disorder due to brain damage, and dysfunction and physical disease	0	2	2	2	3
Mental retardation	4	7	1	10	4
Mental and behavioural disorders due to use of alcohol	2	1	0	0	2
Mental and behavioural disorders due to use of cannabinoids	0	4	0	0	2
Conduct disorder	0		1	1	6
Mental and behavioural disorder due to psychoactive substance use	7	3	4	6	8
Non-organic sleep disorder, unspecified	0	0	0	0	0
Dissociative (conversion) disorder	3	1	0	0	0
Borderline Personality disorder	0	0	0	0	0
Other schizophrenic-like disorder	0	0	0	0	2
Obsessive compulsive disorder	1	0	0	0	0
Acute stress disorder	3	0	0	0	0
Panic disorder	0	0	0	0	0
Alcohol withdrawal	1	1	1	0	0
Adjustment disorder with parasuicidal act	0	4	3	0	0
Schizotypal Disorder	1	2	1	0	0
Medical induced movement disorder	1	0	0	0	1
Adjustment disorder	18	17	4	7	26
Recurrent depressive disorder	0	0	0	1	7
Depressive episode	3	3	0	0	1
Conduct disorder and Organic Amnesic	0	0	1	0	0
Mental Retardation and Bipolar affective disorder	5	7	3	0	0
Mental and behavioural disorder associated with the puerprium NEC	0	0	0	0	0
Dissocial personality disorder	5	0	1	1	3
Manic episode	5	7	4	3	0
Tic disorder	0	0	0	0	0
Paranoid Personality disorder	0	0	0	0	2
Mental disorder, not otherwise specified	0	0	2	0	5
Somatoform	2				
TOTAL ADMISSIONS	162	155	93	134	246

Source: Mental Health Ward Manual Registration

Description: Statistics on the causes of admission to the Psychiatric Ward for 2007 and the previous four years

Appendix 20 Queen Salote School of Nursing Student Roll, 2004-2007

Class	No. Students		Graduates	Resigned	Termination
	1/01/2007	31/12/2007			
2004	20	20	20		
2005	35	34			1
2006	33	29		2	2
TOTAL	88	107		2	3

Source: Queen Salote School of Nursing Student Roll

Description: Total number of new nursing students recruited at the beginning of each training program since 2004. This also indicates the number of students that successfully completed the training program, and those who left without completing.

Appendix 21 Laundry Services Provided, 2007

Equipment / Activities	Washing Equipment						Washing		Labelling
	W/Mach	Dry Spinner	Dryer	Roller	Presser	Loads	Pieces	Uniform	New Linen
No	3	0	2	1	0	3100	171998	-	2569

Source: Mental Health Ward Manual Registration

Description: Statistics on the causes of admission to the Psychiatric Ward for 2007 and the previous four years.

Appendix 22 Ante Natal Clinic Attendance (New) by Trimester and District, 2007

TRIMESTER	TONGA		TT		VV		HP		'EUA		NIUA'S	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Early (12 weeks)	187	7	128	7	21	5	25	16	12	9	1	4
I (13-20 weeks)	689	27	432	23	110	28	87	56	48	37	12	43
II (21-32 weeks)	1182	46	866	47	210	53	34	22	59	45	13	46
III (33+)	463	18	391	21	53	13	7	5	10	8	2	7
No Booking	31	1	26	1	2	1	2	1	1	1	0	0
TOTAL	2552		1843		396		155		130		28	

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 2007.

Appendix 23 Causes of Complaint During Pregnancy, 2007

CAUSES	TONGA	TT	VV	HP	'EUA	NIUA'S
	No.	No.	No.	No.	No.	No.
1. Bleeding Ante Postpartum	27	23	3	1	0	0
2. Hypertension	51	36	10	2	1	2
3. Diabetes	44	38	4	1	0	1
4. Teenage Pregnancy	96	74	13	2	6	1
5. Elders (too old)	245	162	47	8	21	7
6. Frequent births (less than 2 yrs)	436	300	82	23	24	7
7. Too many children (more than 4)	516	336	101	47	23	9
8. Anaemia	174	157	2	9	6	0
9. Other	27	21	6	0	0	0
TOTAL	1613	1147	268	93	81	24

Source: Reproductive Health Section

Description: Statistics of the major causes of complaints during pregnancy by district for 2007.

Appendix 24 Deliveries by Attendant and Place of Birth, 2007

Place of Birth	Traditional Birth Attendant	Medical Officers	Nurses	Health Officers	Others	No. of Deliveries for 2007	No. of Deliveries for 2006
Home	42	0	2	0	2	46	71
HC & Clinics	0	0	1	3	0	4	29
Hospital	0	589	1266	17	0	1872	2551
Others	0	0	0	0	0	0	4
TOTAL	42	589	1269	20	2	1922	2655

Source: Reproductive Health Section Manual Registration

Description: This table provides statistics on the location of deliveries and the type of personnel attending the delivery for 2007. This information was compiled by Public Health Nurses. This number of deliveries counts all livebirths irrespective of whether the babies have been issued a Certificate of livebirth or not.

Appendix 25 Immunization Programme Coverage, 2007

Immunization	Tonga				Tongatapu		Vava'u		Ha'apai		'Eua		Niua's	
		Tot	Imm.	%	Tot	Imm.	Tot	Imm.	Tot	Imm.	Tot	Imm.	Tot	Imm.
BCG	1	2744	2739	99.82%	2032	2032	393	390	151	150	144	143	24	24
POLIO	1	2633	2632	99.96%	1973	1972	363	363	140	140	136	136	21	21
	2	2478	2472	99.76%	1871	1865	336	336	128	128	126	126	17	17
	3	2393	2293	95.82%	1854	1754	299	299	102	102	121	121	17	17
HEP B	1	2744	2744	100.00%	2032	2032	393	393	151	151	144	144	24	24
	2	2625	2624	99.96%	1965	1964	363	363	140	140	136	136	21	21
	3	2356	2349	99.70%	1754	1747	336	336	128	128	121	121	17	17
DPT/HIB	1	2633	2632	99.96%	1973	1972	363	363	140	140	136	136	21	21
DPT/HIB	2	2478	2472	99.76%	1871	1865	336	336	128	128	126	126	17	17
DPT/HIB	3	2293	2304	100.48%	1754	1765	299	299	102	102	121	121	17	17
MR	1	2601	2590	99.58%	1911	1901	390	390	142	142	123	123	35	34
	2	1876	1851	98.67%	1316	1291	335	335	101	101	101	101	23	23
DPT	4	1863	1837	98.60%	1311	1285	335	335	101	101	93	93	23	23
TOTAL		31717	31539	99.44%	23617	23445	4541	4538	1654	1653	1628	1627	277	276

Source: Reproductive Health Manual Registration

Description: This table shows the type immunization provided by Public Health Nurses, the coverage rate of immunization for 2007.

Appendix 26 Infant Nutritional Mode, 2007

Nutritional Mode	TONGA		Tongatapu		Vava'u		Ha'apai		'Eua		Niua's	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
A. Exclusive Breast Feeding:												
(4 - 12 months)	2209	69	1768	70%	251	56%	91	82%	83	69%	16	64%
B. No Breast Feeding:												
(4 - 12 months)	193	6	128	5%	52	12%	8	7%	5	4%	0	0%
C. Breast Feeding with Supplement:												
(4 - 12 months)	816	25	619	25%	143	32%	12	11%	33	27%	9	36%
Total No. of Mother's interviewed	3218		2515		446		111		121		25	

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 2007.

Appendix 27 Number of New Acceptors by Method, 2007

DISTRICT	IUD	PILL		CONDOM		RHYTHM	VAS	TUB	DEPO	OTHERS	TOTAL
Tongatapu											0
Vava'u	47	59	81	46	0	32	0	233	316	0	814
Ha'apai	67	31	28	53	2	65	0	89	199	0	534
Eua	70	18	20	23	1	9	0	47	131	0	319
Niua's	11	4	0	8	0	25	0	11	22	25	106
TFH	0	0	0	0	0	0	0	0	0	0	0
Total	195	112		130		131	0	380	668	25	1773
%	11%	6%		7%		7%	0%	21%	38%	1%	100%

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 2007.

Appendix 28 Total Contraceptive Users by Method and Age, (Method Mix), 2007

AGE GROUP	IUD	PILL		CONDOM		RHYTHM	VAS	TUB	DEPO	OTHERS	TOTAL
		C	M								
Below 20									2	0	2
20 - 24	4	7	5	6	0	7	0	0	24	0	53
25 - 29	10	10	17	9	2	19	7	7	36	0	117
30 - 34	23	4	10	14	0	16	0	11	52	0	130
35 - 39	17	6	6	17	0	9	0	21	43	0	119
40 - 44	12	2	0	7	0	9	0	28	31	0	89
45 +	1	2	0		0	5	0	22	11	0	41
TFHA	0	0	0	0	0	0	0	65	0	0	65
TOTAL	67	69		53	2	65	7	154	199	0	616

C:- Combined

M:- Mini-pill

Source: Reproductive Health Manual Registration

Description: This table shows the contraceptive users by method and age group for 2007.

Appendix 29 Reasons for Discontinuation of Family Planning, 2007

REASONS	IUD	PILL	CONDOM	RHYTHM	DEPO	OTHERS	TOTAL
Over Age	1	6			3		10
Want a child	16	54	20	10	101		201
Client Failure		20	8				28
Method Failure	10	10		6			26
Husband refusal	1	3		1	5		10
Pregnant	3	33	9		31		76
Migrated Out	3						3
Nurse failure	1		1		5		7
Side effect	5	4	7		7		23
Other Pregnancy	1	1	20	9	58		89
TOTAL	41	131	65	26	210	0	473
Tongatapu	41	132	67	28	210	4	482
Vava'u	10	54	17	18	89	7	195
Ha'apai	6	9	12	18	24		69
'Eua	3	2	3	0	21		29
Niua's		3	3	4	10		20

Source: Reproductive Health Manual Registration

Description: This table shows statistics of those who discontinue using contraceptive methods based on patient reported reasons for 2007 by district.

Appendix 30 Tuberculosis Case Notification, Detection and Cure Rates, 2003-2007

Year	Smear Positive	Smear Negative	Extra Pulm TB	Retreatment Cases	Total	Notification (All types)	CASE DETECTION	
							All type	Smear Pos
							WHO est. (89/100000)	WHO est. (40/100000)
2003	11	3	2	0	16	16	18%	28%
Cure rate					88%			
2004	8	3	1	0	12	12	14%	30%
Cure rate					88%			
2005	11	3	5	0	19	19	21%	48%
Cure rate					89%			
2006	14	3	1	0	18	18	20%	35%
Cure rate					26%			
2007	14	5	4	0	23	23		
Total	52	11	10	2	88	88		
Ave. Cure rate					91%			

Source: Communicable Disease Manual Registration

Description: This table shows the reported TB cases, cure rates and the case detection from 2003 until 2007.

Appendix 31 Confirmed Curable STI's by Age and Gender, 2007

Age Group	Gonorrhoea		Trichomonas		Others		Total
	Male	Female	Male	Female	Male	Female	
10 - 15	0	0	0	0	0	0	0
16 - 20	19	0	0	0	0	0	19
21 - 25	48	2	0	0	0	0	50
26 - 30	25	1	0	0	0	0	26
31 - 35	12	1	0	0	0	0	13
36 - 40	4	1	0	0	0	0	5
41 - 45	3	0	0	0	0	0	3
46 - 50	0	0	0	0	0	0	0
51 - 55	1	0	0	0	0	0	1
56 +	1	0	0	0	0	0	1
Total	0	5	0	0	0	0	117

Source: Communicable Disease Manual Registration

Description: This table presents the number of cases of Sexually Transmitted Infections for 2007 by age group and sex.

Appendix 32 Environmental Health Services by District, 2007

Sanitary Inspection:	Tongatapu	Vava'u	Ha'apai	'Eua	Total
Allotment:					
Occupied allotment:	3743	960	487	1122	6312
Unoccupied allotment:	567	111	89	137	904
Building:					
Dwelling House:	3277	858	513	1003	5651
Public Dwelling:	173	76	51	119	419
Bath Facilities:	2957	785	498	1081	5321
Kitchen Facilities	2994	805	490	979	5268
Water Supply:					0
Piped	2877	626	458	913	4874
Well	0	4	24	3	31
Water Tank	2240	703	451	1049	4443
Toilet Facilities:					0
Septic Tank	2192	336	415	640	3583
Water Seal Toilet	219	32	42	114	407
Pit Toilet	506	474	242	362	1584
Household without	26	13	0	6	45
Food Premises Inspection:					0
Wholesale Store	19	4	4	4	31
Retail Store	676	101	31	4	812
Restaurant	79	23	2	4	108
Bakeries	9	4	2	4	19
Aerated Water Factory	1	0	0	0	1
Snack Bars	10	0	0	0	10
Canteen	15	0	1	0	16
Butcher Shop	3	0	0	0	3
Ice – Cream Factory	4	0	0	0	4
BBQ	18	0	2	3	23
Hawkeries	88	16	14	2	120
Refuse Disposal:					0
Collection Services	0	0	0	0	0
Burn	2930	815	487	1003	5235
Bury	0	4	487	0	491
Meat Inspection:					0
Bovine Carcass	0	1	2	8	11
Pork Carcass	0	0	0	4	4
Hospital Waste: (kg)					0
Sharp	3687	0	0	0	3687
Clinical	14705	0	0	0	14705
General	2407	0	0	0	2407
Food Premises Registration:					0
Wholesale Store	19	4	4	4	31
Retail Store	676	182	31	56	945
Restaurant	79	23	2	4	108
Bakeries	9	4	2	1	16
Aerated Water Factory	1	0	0	0	1
Ice Cream Factory	4	0	0	0	4

Sanitary Inspection:	Tongatapu	Vava'u	Ha'apai	'Eua	Total
Food Premises Registration:					0
Snack Bars	10	0	0	0	10
Butcher Shop	3	0	0	0	3
BBQ	18	0	0	0	18
Hawkeries	88	16	2	0	106
Food Handler	1731	425	14	83	2253
Water Sampling Collection:	97	0	0	0	97
Building Plan:					
Public Building	106	5	9	4	61
Private Building	126	5	4	2	185
Septic Tank	232	10	11	6	234
Sites	232	10	13	6	246
Quarantine Services:					
Number of ship arrivals	207	189	3	0	248
Number of pratique issues	207	189	3	0	248
Community Education:					
Public Meeting	30	17	6	16	97
Radio Programme	12	6	2	0	12
TV Programme	10	0	0	0	3

Source: Environmental Health Manual Registration

Description: This table present the major environmental health activities undertake in 2007 and the previous three years.

Appendix 33 Medically Certified Causes of In-Patient and Out-Patient Deaths by Age Group, 2007

CAUSES	Total			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	T	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD	11	7	4	5	3	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Bacterial sepsis of newborn, unspecified	1	1	0			1																	
Hyperkalaemia of newborn	1	0	1		1																		
Neonatal aspiration of amniotic fluid and mucus	1	1	0	1																			
Neonatal aspiration syndrome, unspecified	1	0	1						1														
Other bacterial sepsis of newborn	1	0	1		1																		
Respiratory distress syndrome of newborn	6	5	1	4	1									1									
CERTAIN INFECTIOUS AND PARASITIC DISEASES	35	16	19	2	1	2	1	1	0	1	0	0	2	2	1	2	1	2	3	2	5	2	5
Acute hepatitis B without delta-agent and without hepatic coma	3	1	2													1		1		1			
Dengue fever (classical dengue)	1	0	1																	1			
Erysipelas	1	0	1																			1	
Meninococcal heart disease	1	1	0																			1	
Other specified fluke infections	1	1	0													1							
Sepsis due to Escherichia coli (E.Coli)	1	1	0			1																	
Sepsis due to Staphylococcus aureus	2	1	1	1																1			
Sepsis due to unspecified staphylococcus	2	0	2																	1		1	
Sepsis, unspecified	22	10	12	1	1	1	1	1		1			2	1	1		1	2	2	2	1	1	3
Staphylococcus aureus as the cause of diseases classified to other chapters	1	1	0											1									
CONGENITAL MALFORMATIONS, DEFORMATIONS AND CHROMOSOMAL ABNORMALITIES	2	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Congenital malformation of heart, unspecified	1	1	0			1																	
Hydranencephaly	1	1	0	1																			
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS AND CERTAIN DISORDERS INVOLVING THE IMMUNE MECHANISM	5	5	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	2	0	0	0	0	0
Anaemia, unspecified	1	1	0											1									
Aplastic Anaemia, unspecified	2	2	0									1					1						
Di. George's syndrome	1	1	0														1						
Disease of blood and blood-forming organs, unspecified	1	1	0											1									
DISEASES OF THE CIRCULATORY SYSTEM	196	68	128	2	0	0	0	0	0	0	3	0	3	3	12	12	7	16	28	16	43	19	32
Acute myocardial infarction, unspecified	21	6	15													1	4	1	7	2	4	2	
Atrioventricular block, complete	1	0	1																				
Cardiac arrest, unspecified	76	22	54	2						1		3	1	8	2		7	8	5	18	5	16	
Cardiac arrhythmia, unspecified	1	1	0												1								
Cardiomyopathy, unspecified	1	0	1															1					
Cardiovascular disease, unspecified	21	10	11											1	1	2		2	5	3	2	2	3
Chronic ischaemic heart disease, unspecified	7	1	6											1		1	1	2		2			
Congestive heart failure	12	6	6														2		1	2	3	4	
Essential (primary) hypertension	3	2	1											1	1						1		
Generalised and unspecified atherosclerosis	2	1	1														1			1			
Heart diseases, Inspecified	3	1	2												1					1		1	
Heart failure, unspecified	9	2	7							2				1						1	3	1	1
Hypertensive heart disease without (congestive) heart failure	1	1	0																1				
Hypertensive renal disease with renal failure	5	1	4														1	2		2			

CAUSES	Total			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	T	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Hypotension, unspecified	1	1	0													1							
Intracerebral haemorrhage, unspecified	2	2	0													2							
Left ventricular failure	2	0	2																	1			1
Other specified cardiac arrhythmias	1	0	1															1					
Pulmonary embolism without mention acute cor pulmonale	4	2	2													1					2	1	
Pulmonary heart disease, unspecified	6	1	5													1				1	2		2
Rupture of artery	1	0	1																				1
Sequelae of stroke, not specified as haemorrhage or infarction	1	1	0																			1	
Stroke, not specified as haemorrhage or infarction	15	7	8											1		1		1	1	2	5	2	2
Diseases of the digestive system	26	7	19	0	1	0	0	0	0	0	0	0	0	1	1	1	2	1	7	1	6	3	2
Appendicular concretions	1	0	1															1					
Cellulitis and abscess of mouth	1	1	0																			1	
Gastrointestinal haemorrhage, unspecified	7	1	6															2		3	1	1	
Hepatic failure, unspecified	5	1	4											1		1		1		2			
Liver disease, unspecified	2	1	1															1				1	
Obstruction of bile duct	1	1	0														1						
Other and unspecified cirrhosis of liver	4	0	4		1									1		1		1					
Other and unspecified intestinal obstruction	2	1	1																	1	1		
Peptic ulcer, site unspecified as acute or chronic, without haemorrhage or perforation	1	1	0													1							
Peritonitis, unspecified	2	0	2															1					1
DISEASES OF THE GENITOURINARY SYSTEM	30	17	13	1	1	0	0	1	0	0	0	0	0	2	1	2	1	4	5	4	5	3	0
Acute renal failure, unspecified	1	1	0					1															
Disorder of kidney and ureter, unspecified	3	2	1	1	1											1							
End-stage renal disease	12	8	4											2	1	1		1	2	2	1	2	
Nephrotic syndrome unspecified	1	0	1																		1		
Unspecified chronic renal failure	9	5	4															3	1	2	3		
Unspecified renal failure	3	1	2															2				1	
Urinary tract infection, site not specified	1	0	1													1							
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Hypersensitivity angitis	1	0	1													1							
Other chronic osteomyelitis unspecified	1	1	0																	1			
DISEASES OF THE NERVOUS SYSTEM	13	9	4	1	0	2	0	2	0	0	0	0	0	1	0	1	0	0	3	1	1	1	0
Cerebral oedema	1	1	0																			1	
Cord compression, unspecified	1	1	0													1							
Encephalitis, myelitis and encephalomyelitis, unspecified	1	0	1															1					
Epilepsy, unspecified	1	1	0			1																	
Hemiplegia, unspecified	1	1	0					1															
Meningitis, unspecified	5	3	2	1		1												1		1	1		
Paralytic syndrome, unspecified	1	1	0											1									
Pneumococcal meningitis	1	0	1															1					
Staphylococcal meningitis	1	1	0					1															
DISEASES OF THE RESPIRATORY SYSTEM	54	19	35	3	3	0	0	0	0	0	0	0	1	0	1	0	2	2	4	4	11	10	13
Acute bronchiolitis, unspecified	1	0	1																	1			
Acute respiratory failure	5	3	2																		1	3	1
Bronchoectasis	1	0	1																				1
Bronchopneumonia, unspecified	1	0	1																				1
Chronic obstructive pulmonary disease with acute exacerbation, unspecified	4	1	3																	2	1	1	

CAUSES	Total			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	T	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Chronic obstructive pulmonary disease, unspecified	7	2	5															1		1	1	1	3
Hypostatic pneumonia, unspecified	5	3	2																	1		2	2
Other specified respiratory disorders	3	1	2									1								1	1		
Pleural effusion, not elsewhere classified	1	1	0																	1			
Pneumonia, unspecified	3	1	2											1								1	1
Pneumonitis due to other solids and liquids	1	1	0	1																			
Pneumonitis to food and vomit	3	2	1	1													1			1			
Pulmonary collapse	1	0	1		1																		
Pulmonary oedema	1	0	1													1							
Respiratory disorder, unspecified	1	0	1															1					
Respiratory failure, unspecified	13	3	10	1	1											1	1	2			3	1	3
Status asthmaticus	1	0	1																	1			
Unspecified acute lower respiratory infection	2	1	1		1																	1	
Endocrine, Nutritional and metabolic diseases	27	19	8	2	1	1	0	0	0	0	0	0	0	3	0	0	0	2	1	5	4	6	2
Disorders of glycine metabolism	1	1	0			1																	
Other specified disorders of carbohydrate metabolism	1	1	0	1																			
Type 2 diabetes mellitus with advanced renal disease	2	1	1		1									1									
Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycaemic-hyperosmolar coma	1	1	0											1									
Type 2 diabetes mellitus with other specified complication	2	1	1															1		1			
Type 2 diabetes mellitus with other specified renal complication	2	2	0																			2	
Type 2 diabetes mellitus with poor control	4	1	3														1			1			2
Type 2 diabetes mellitus without complication	10	9	1											1						4	1	4	
Unspecified severe protein-energy malnutrition	2	1	1	1																1			
Volume depletion	2	1	1														1			1			
FACTORS INFLUENCING HEALTH STATUS AND CONTACT WITH HEALTH SERVICES	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Personal history of self-harm	1	0	1															1					
INJURY, POISONING AND CERTAIN OTHER CONSEQUENCES OF EXTERNAL CAUSES	13	1	12	0	1	0	3	0	1	0	1	0	0	0	3	0	3	0	0	0	0	1	0
Anaphylactic shock, unspecified	1	0	1													1							
Drowning and nonfatal submersion	4	0	4		1					1				2									
Flail chest	1	0	1											1									
Fracture of neck of femur	1	1	0																			1	
Fracture of skull and facial bones, part unspecified	1	0	1				1																
Unspecified injury of head	5	0	5			2		1								2							
NEOPLASMS	62	20	42																				
Bone and articular cartilage, unspecified	2	1	1														1						1
Brain, unspecified	2	1	1																	1	1		
Breast, unspecified	4	2	2					1								1		1					1
Bronchus and lung	1	1	0					1															
Bronchus or lung, unspecified	14	4	10													2	1	1	2		6	1	1
Cervix uteri, unspecified	1	1	0													1							
Chronic myeloproliferative disease	1	0	1																				1
Colon, unspecified	2	0	2														1				1		
Hodgkin disease, unspecified	1	0	1											1									
Intestinal tract, part unspecified	1	0	1									1											
Liver cell carcinoma	4	2	2											1			1	1					1
Liver unspecified	3	0	3												1								1
Malignant neoplasm of prostate	3	2	1																	1		1	1
Malignant neoplasm of rectosigmoid junction	1	0	1																		1		

CAUSES	Total			<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	T	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Malignant neoplasm without specification of site	5	2	3													1		1	1				2
Multiple myeloma	1	0	1																				1
Nasopharynx, unspecified	2	0	2		1											1							
Overlapping lesion of other and ill-defined sites	1	0	1															1					
Pancreas, unspecified	1	0	1																	1			
Pleura	1	1	0											1									
Prostate	1	1	0													1							
Secondary malignant neoplasm of liver	1	0	1					1															
Small Intestine	1	0	1																				1
Stomach	1	1	0																	1			
Stomach, unspecified	2	0	2											1		1							
Trachea, bronchus and lung	3	1	2															1	1	1			
Uterus	1	0	1																		1		
Vertebral column	1	0	1																		1		
PREGNANCY, CHILDBIRTH AND THE PUERPERIUM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Intrapartum haemorrhage, unspecified	1	1	0															1					
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	63	29	34	2	3	0	0	0	3	1	2	0	1	2	2	1	6	2	4	5	4	16	9
Asphyxia	3	1	2							1				1						1			
Cardiogenic shock	1	1	0																			1	
Coma, unspecified	2	0	2																				2
Dysphagia	1	0	1													1							
Haemorrhage from other sites in respiratory passages	1	1	0							1													
Haemorrhage, not elsewhere classified	1	0	1															1					
Hepatomegaly, not elsewhere classified	1	1	0																			1	
Intra-abdominal and pelvic swelling, mass and lump	3	1	2															1	1				1
Other specified general symptoms and signs	1	1	0																	1			
Other specified symptoms and signs involving the digestive system and abdomen	1	1	0															1					
Respiratory arrest	15	3	12						3		1		1		2		4			1	1	2	
Senility	26	16	10													1	1		2	3	2	12	5
Suicidal ideation	1	1	0											1									
Unspecified jaundice	1	0	1																				1
Unknown Cause of Death	5	2	3	2	3																		
TOTAL	541	221	320	19	14	7	4	4	5	2	6	1	7	17	21	19	23	32	56	39	79	61	63

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 2007.