

**TE MAAMA PALA:  
Continuity and change in coping with Tuberculosis in  
Tuvalu**

**Setapu Asenati Resture**

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## **ABSTRACT**

This thesis discusses attempts to deal with the problem of tuberculosis in Tuvalu from 1930 to the present. It examines the challenges faced by the Department of Health in Tuvalu in controlling tuberculosis in Tuvalu during the colonial period (1892-1974) and as an independent state (1974 to the present) and how the challenges changed over time. This examination of tuberculosis (TB) in Tuvalu in the twentieth century provides a window into the administration of health as one example of colonial and post-colonial processes of government in a small Pacific Island nation. This study considers the difficulties and struggles faced by the medical services during the colonial period and into the time of independence.

The research uncovered a number of problems associated with dealing with tuberculosis in Tuvalu. These include, the lack of awareness among the public on the disease, the social problem of stigmatisation and the late recognition of TB which, in turn, led to a delay in treatment. Problems with transportation and mobility and crowded living conditions were identified as agents of TB which also promoted the spread of the disease in Tuvalu. This problem was further exacerbated by intermittent treatment, screening and control programmes. This was due to irregular services, a lack of resources and transport problems to outer islands. Shortage of trained medical health staff also contributed to the problem of controlling the spread of tuberculosis.

The research encountered a number of its own problems. Obtaining useful information for my research in Tuvalu proved to be a challenge as most of the important information and

materials were lost during the move from the old Princess Margaret Hospital to the new one.

Materials from the University of Auckland, the Fiji School of Medicine, Tuvalu National Archives, and the Princess Margaret Hospital in Tuvalu were examined to gather more information on tuberculosis and how it was dealt with by the colonial administration and the independent government of Tuvalu. Personal interviews and exchange of emails with experts on the topic also provided important insights into the topic.

Tuberculosis is still a major health problem in Tuvalu. This is despite dedicated local women's groups who continue to support TB control programmes in a variety of ways including village inspections. In addition, more medical health staffs have been trained to help with the TB control and education programmes. These programmes have been financed by international aid agencies such as the WHO and UNICEF. Despite these efforts, the TB rates for Tuvalu remain high and present an ongoing challenge for the medical services of this Pacific Island nation.

## **DEDICATION**

I would like to dedicate my thesis to my late father, Mr. Telongo Olikene, who sadly passed away while I was away from his side. I will always miss you. Your words of endearment have brought me this far.

I would also like to dedicate this thesis to my dear beloved children, Masetapu, Seluka, Sulami, and JJ. I hope that this piece of work will inspire you to pursue academic excellence in order to achieve the best in life.

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A big *fakafetai lahi* goes to Drs Keith and Anne Chambers for their support and commitment during my research in the Western Pacific High Commission Archive at the University of Auckland library and the Tuvalu National Library on Funafuti and for helping me in creating ideas for my thesis.

I am truly indebted to Doctors Stephen Homasi (Director of Health) and Nese Ituaso-Conway (Chief of Public Health), Public Health Nurses Temilo Seono and Alaita Taulima, and staff of the Princess Margaret Hospital, and the Ministry of Health, Government of Tuvalu for allowing me to access confidential materials to support my thesis.

I would also like to acknowledge Ms Briar Sefton for the beautiful maps, Mr Noa Tapumanaia of the Tuvalu National Archive, and Ms Jo Birks & Mr Stephen Innes of the University of Auckland Library Special Collection, who helped us with finding the much needed materials from their respective archives. Also to Ms Laura McLauchlan for proofreading and Philip Abela for helping me with the endnotes- Thank you.

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community: Vaisamoa Manoa, Misalaima Seve, Noatia Simeona, Fomai Malua, Taua Paia, and Tuvaluan respondents in Tuvalu: Betty Vave, Freda Katepu, Laoi Alan Katepu, Kilisimasi Itaaka and the four former TB patients.

To my friends and cousins Faasinoala Niva, Siemai Apinelu I am truly thankful to you for being my messengers when I needed urgent information to be collected or messages to be delivered, you are always there to help me out.

I am also very thankful to Mr Peter McQuarrie, author of *Tuvalu: A Celebration of 10 years Independence* and *Strategic atoll: Tuvalu in the Second World War* and Mr Letasi Iulai for granting me permission to use their beautiful photos for my portfolio.

A special thank you and *fakafetai lasi* goes to Associate Professor Julie Park, Mrs Saaga Malua and Associate Professor Judith Littleton for spending their valuable time reading my drafts, tabulating and organising the data. Many thanks are also due to my fellow colleague, Debbie Futter from the Cook Islands for being a good friend throughout our academic year.

To my parents, Sulami Fialea and Limasene Olikene, and my siblings, Olikene Telogo, Kuineta Telogo, and little sister Melisula Limasene, I know that you have always supported me through your prayers, and I thank you for your support from the bottom of my heart!

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Fakafetai lasi,  
Tuvalu mo Te Atua  
Setapu Asenati Resture

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## LIST OF ABBREVIATIONS

Bacillus Calmette-Guerin	BCG
British Phosphate Commissioner	BPC
Central Medical School	CMS
Expanded Programme of Immunisation	EPI
Gilbert and Ellice Islands Colony	G&EIC
Native Medical Practitioner	NMP
Princess Margaret Hospital	PMH
Senior Medical Officer	SMO
South Pacific Commission	SPC
Tuberculosis	TB
Tuvalu Maritime Training Institute	TMTI
Tuvalu National Archive	TNA
United Nations Children's Emergency Fund	UNICEF
United Nation Volunteers funding	UNV
Western Pacific High Commission Archive	WPHCA
World Health Organisation	WHO

## GLOSSARY

*maama pala*

*tufuga*

*ua patoo*

Pulmonary Tuberculosis

Traditional healer

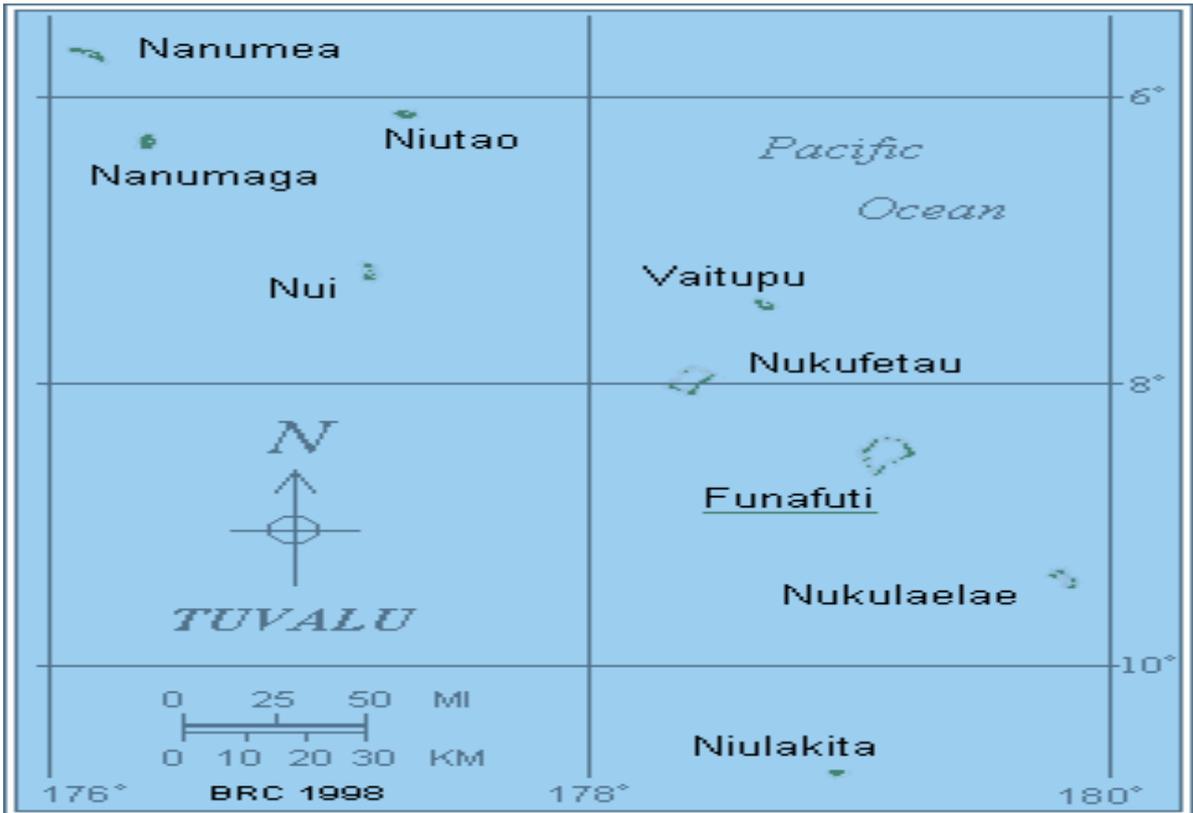
Tubercular glands

# MAPS



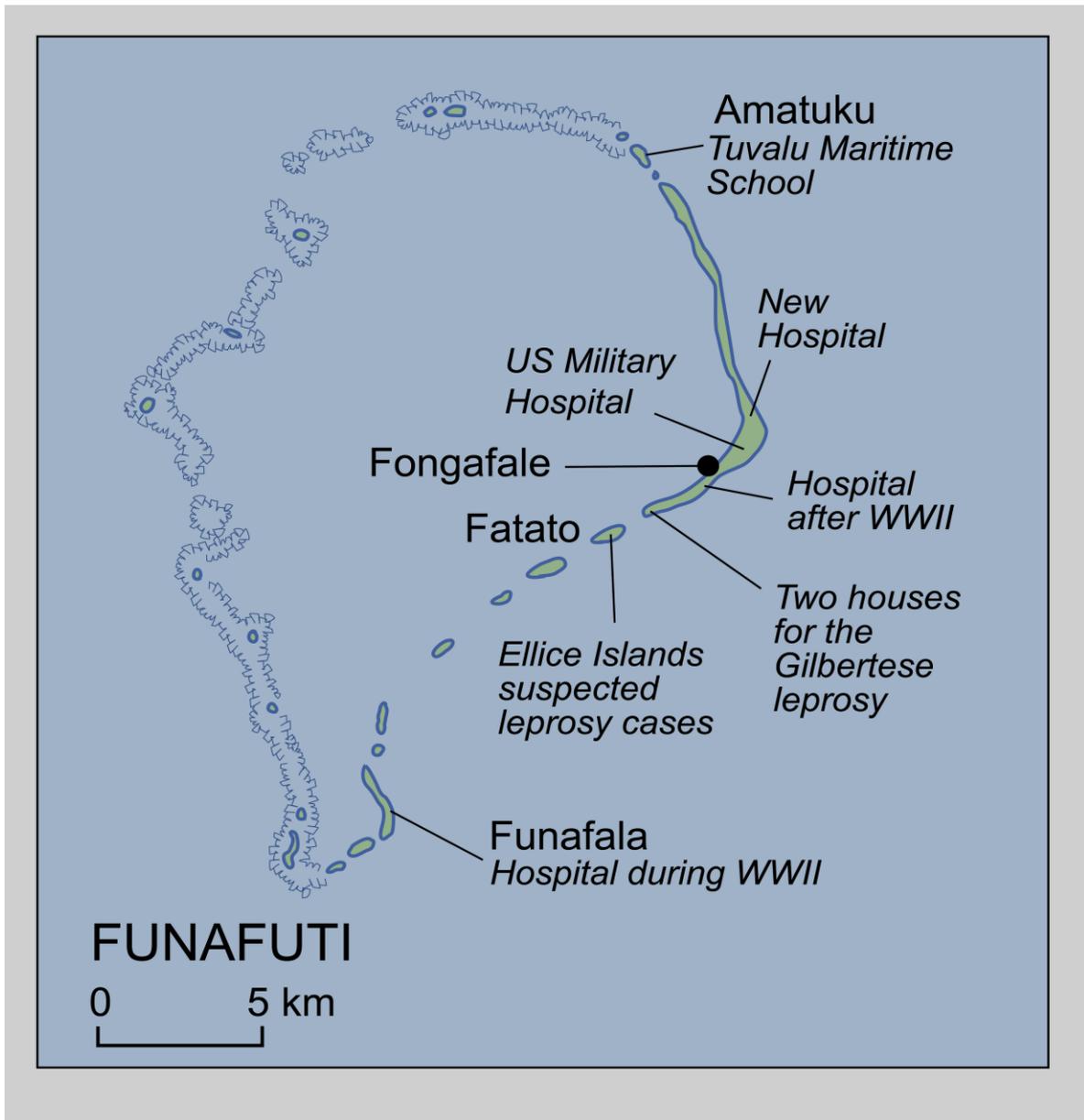
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Source: Tuvalu online at [www.tuvalu.islands.com/maps/maps.html](http://www.tuvalu.islands.com/maps/maps.html)



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Source: Created by Briar Sefton. University of Auckland.

# INTRODUCTION

The history of tuberculosis (TB) in Tuvalu in the twentieth century provides a lens into the difficulties and struggles faced by the medical services during the colonial period and into the time of independence. This thesis will discuss TB in Tuvalu and how it changed over time from 1930 to the present. Also I will explore the difficulties faced in addressing TB at the national level. These difficulties included limited medical personnel, limited medical resources, financial constraints, political and economic issues.

What does TB really mean to the people of Tuvalu? The question of meaning motivated my historical research on TB in Tuvalu. I was motivated to research the roles played by the British Government and the Government of Tuvalu in later years in regards to the health problems caused by TB.

I was volunteering in a three month attachment to Economic Research Planning and Development, a section of the Ministry of Finance in Funafuti, when I was drawn into conversation with two visitors who were talking with the Director of the Statistics Department of the Government of Tuvalu, Mr Semu Malona. They were discussing a research project on TB and health in general in Tuvalu which was part of a project involving the Cook Islands and New Zealand also. Immediately I was interested in assisting as I was at that stage working on the analysis of the recent health survey. While initially it was the opportunity to gain more research experience that attracted me, it was not long before I became fascinated by TB.

In Tuvalu, where I grew up, TB is all around. Not only has it affected my friends and family there, but when you go to visit the Princess Margaret Hospital (PMH), the TB isolation ward is right there - a separate building but very visible. There are two rooms in the TB ward so that if there is an outbreak of 'flu one of the rooms can be used as an ordinary hospital ward. People in Tuvalu, especially in Funafuti, are very familiar with TB. In the outer islands, too, TB patients, going back and forwards to the clinics for their treatment, are a familiar sight, and people are curious about illnesses. Sometimes, people with TB would experience a subtle form of discrimination. For example, after a guest thought to have TB had left a house, the host might destroy their cup. This could happen well after a person had been cured.

When I first heard of this project I had no idea that TB rates were still so high in Tuvalu compared with, say, the Cook Islands. Once I learned this, the idea that in a small way my research, and the project as a whole, might find ways to support communities to reduce those rates that cause so much suffering became an important motive for doing this research.

The research on TB has led me to consider broader historical issues. Over the last hundred years of the twentieth century, Tuvalu has spent three quarters of that time under colonial administration, first as part of the Gilbert and Ellice Islands Protectorate (1882-1916), and then as part of the Gilbert & Ellice Islands Colony (G&EIC), under the British Western Pacific High Commission. The official reports of the time allege that the Protectorate was formed according to the locals' wishes.<sup>1</sup> In 1976 the two parts of the Colony separated and the Ellice Islands became Tuvalu, prior to Independence on 1 October 1978. Thus, my thesis

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<sup>1</sup> Gilbert and Ellice Islands Colony Biennial Report, 1952-53. WPHC 9 1229071 F. 3/2/1. WPHCA, Special Collection, University of Auckland Library.

examines the struggles of one arm of the administration, i.e., Health, under the colonial administrations, including during the Second World War, through the transition to independence, and as a new small island state.

One of the challenges for me has been to understand why, during all this time, providing good health services for Tuvalu has been such a struggle. There are several possible reasons to explore. The geography of Tuvalu is one (see Figure 1 & Figure 2). Tuvalu comprises nine coral atoll islands of approximately 25.6 square kilometres in all, set in 900 000 sq km of Economic Exclusive Zone in the Central Pacific Ocean.<sup>2</sup> From the northernmost island of Nanumea to the most southern, Niulakita, is 676 kilometres. Funafuti is 1100 kilometres north of the Fiji Islands, 3500 kilometres north east of Australia and approximately 3500 kilometres north of Auckland. Shipping is the only form of interisland transport within Tuvalu and it has been a constant struggle to keep a frequent and reliable shipping schedule operating. Shipping and air services between the capital, Funafuti, and the outside world are also difficult.

Communication of information has been a long-standing problem, although recent upgrades of the Internet have helped here. The cost of transport is an additional issue. Finances in general have been a second major constraint on health services. A third reason has been the limited availability of trained health personnel, although the Fiji School of Medicine has been a crucial training institution for Tuvalu. A fourth reason has been the slow speed at which planned improvements have been implemented. While transport, communications and finance are all implicated, the archives show that bureaucratic processes have hindered

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<sup>2</sup> The Government of Tuvalu and United Nation Development Programme, 'Tuvalu Millennium Development Goals Report 2006', ed. Ministry of Finance and Economic Planning Funafuti, 2006, p.2.

improvements. When TB survey and control programmes were finally implemented they were enthusiastically received by the communities.

While during colonial days international agencies such as the World Health Organisation (WHO) and the United Nation Children's Fund (UNICEF) were very important in health as in other areas of life in the Pacific Islands, after independence such agencies became even more important for Tuvalu. The story of TB and health is also a story of involvement from these international agencies, as well as regional agencies such as the South Pacific Commission (SPC), now called the Secretariat of the Pacific Community, and other nations engaged in bi- or multi-lateral aid agreements.

Like much historical research, this project is limited by the materials available. With my senior colleagues, Anne Chambers and Keith Chambers, I searched for all relevant material in several archives in Funafuti, the Western Pacific High Commission Archive (WPHCA) at the University of Auckland and did a more limited search at the library at the Fiji School of Medicine. This provides rich material from the point of view of administrators and medical personnel. However there are some gaps and puzzles in the records. A major gap is that the views and experiences of ordinary people are largely missing. I interviewed current and retired medical practitioners and some former TB patients to provide some insights into community experiences. Some of the gaps and puzzles are in the health statistical material found in the various archives. Sagaa Malua has worked on this material as part of the larger project on "Transnational Pacific Health". It provides vital information for the thesis. One of the rewards and challenges of this thesis research has been the opportunity to bring together

this material in a coherent form, making it available for others, including people in Tuvalu and Tuvaluans anywhere, to read.

As a person brought up in Tuvalu, I have done this research very aware of the social and cultural features of life there. In Tuvaluan culture the islands where your parents, especially the patriarchal lineage descends from, is considered your home island. On Funafuti, people organise themselves into their island groups, but their local Funafuti community, their church and other community groups also form their communities and networks. People are closely connected with relatives overseas, up to their 23<sup>rd</sup> cousin! Strangers and visitors are welcomed and may become part of particular communities. Caring for and sharing resources with others are highly valued. Relationships between people are very important and doing research to respect those relationships with individuals and communities is something I have tried to uphold. This has been a particular consideration in this work on TB, a stigmatised disease.

Economic conditions, diet and sanitation practices shaped overall health in Tuvalu.

Communicable diseases such as TB, measles, influenza, whooping cough, dysentery, yaws and syphilis had contributed to the increase of the death rate among the people of Tuvalu especially children, in the nineteenth and early twentieth century. After the WWII there was a decline in mortality due to the contribution made by the improvement of medical services and establishment health programmes. These health programmes included health education, vaccination services, family planning and filariasis campaigns.<sup>3</sup>

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<sup>3</sup> Anne Chambers and Keith S Chambers, 'Illness and Healing in Nanumea, Tuvalu,' in *Healing Practices in the South Pacific*, Claire D F Parsons, ed., Honolulu, 1985, pp.20-2.

## Tuberculosis

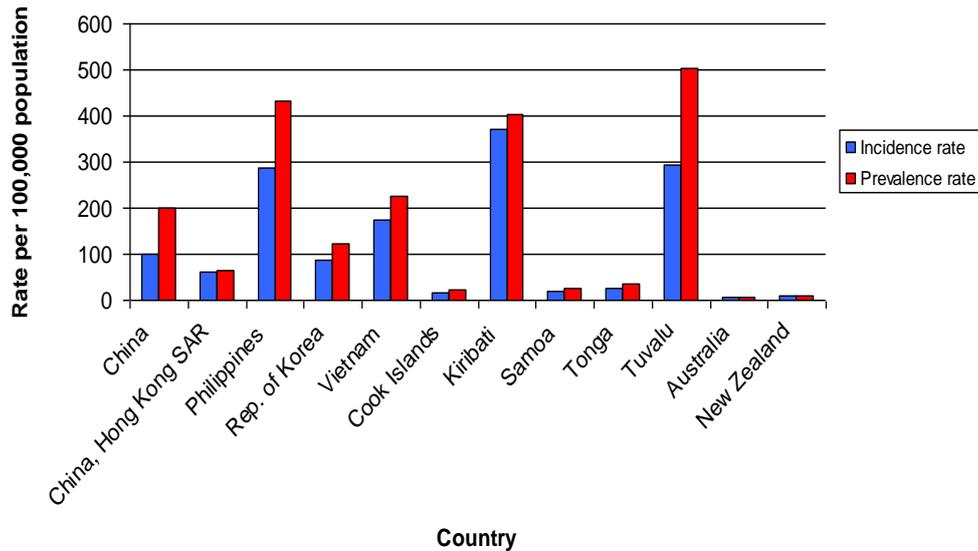
The Pacific Islands were free from most infectious diseases before the Europeans arrived. Epidemiologists called the Pacific Islands a ‘*virgin soil population*’, although that concept has been contested.<sup>4</sup> There is little conclusive evidence about how infectious diseases reached the Pacific Islands. Scholars such as Miles and Shlomowitz noted that infectious diseases were brought to the islands of the Pacific through European explorers, whalers, traders, missionaries, colonisers and the labour trade.<sup>5</sup> Linda Bryder also noted that TB was brought to New Zealand by European settlers, mainly the British, in the early nineteenth century.<sup>6</sup> Since the late nineteenth century and well documented for the twentieth century, TB has been a major health problem in Tuvalu. This continues today. Figure 4 shows that both Tuvalu and Kiribati (the former Gilbert Islands) have high rates for the island Pacific. Yet effective means for diagnosing and treating most forms of TB have been available for the last 60 years.

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<sup>4</sup> Randall M Packard, *White Plague, Black Labor: Tuberculosis and the Political Economy of Health and Disease in South Africa*, London, 1990, p.31; Ralph Shlomowitz, 'Differential Mortality of Asians and Pacific Islanders in the Pacific Labour Trade', *Journal of the Australian Population Association*, 7, 2, 1990, p.116.

<sup>5</sup> John Miles, *Infectious Disease: Colonising the Pacific*, Dunedin, New Zealand, 1997; Shlomowitz.

<sup>6</sup> Linda Bryder, 'Tuberculosis in New Zealand,' in *History of Tuberculosis in Australia, New Zealand and Papua New Guinea*, A J Proust, ed., Canberra, 1991, p.79.



**Figure 4: TB rates of Selected Countries in the Western Pacific Region, 2006.**  
 Source: Auckland Regional Public Health Service, Tuvalu TB Awareness Programme Handbook, 2009.

In 1882 a German biologist, Robert Koch, announced that he had isolated the organism that caused TB. He claimed that he had discovered an anti-TB vaccine however, ultimately his discovery was shown to be unsuccessful as a vaccine. His discovery, however, made possible the development of a diagnostic tool to identify individuals who had been infected by the tubercle bacillus, *mycobacterium tuberculosis* (*M. tuberculosis*).<sup>7</sup> Human and bovine bacilli were the two main sources that caused TB in humans. Archaeological research has shown that humans in Europe and the Near East have been infected with TB for several thousand years. The bacillus was transmitted to other people from an infected person with pulmonary TB through coughing and sneezing. The bovine bacillus was spread to humans by consuming

<sup>7</sup> Linda Bryder, 'We Shall Not Find Salvation in Inoculation: Bcg Vaccination in Scandinavia, Britain and the USA, 1921-1960', *Social Science & Medicine*, 49, 1999, p.1158; Johanna Kelly, 'What Is Tuberculosis,' in *Before 'the San': Tuberculosis in Hamilton at the Turn of the Twentieth Century*, Ann Herring, ed., Hamilton, Ontario, 2007, pp.5-14.

meat and milk (unpasteurised) from infected cows.<sup>8</sup> This would not have been a problem in Tuvalu where there are no cows nor fresh milk.

At the Pasteur Institute in Paris, a bacteriologist and a veterinarian named Albert Calmette and Camille Guerin, respectively, worked on a strain of bovine tubercular bacillus that was isolated in 1901. Prior to announcing their successful attempts they tested the vaccine on cattle which proved successful. Another successful story was carrying out a trial of the vaccine (the vaccine was administered orally) for the first time on a newborn baby whose mother died at birth from TB. The infant was raised by the grandmother who also had TB and as a result of the vaccine the baby did not develop TB. In July 1921 an anti-TB vaccine was declared and the vaccine was named after them, Bacillus Calmette-Guerin (BCG).<sup>9</sup>

TB is a major health issue in the world and one third of the worlds' population is infected with the TB bacterium.<sup>10</sup> TB is closely tied to problems such as overcrowding, poor diet, poor hygiene and sanitation and poor housing conditions, especially poor ventilation.<sup>11</sup> Packard noted that TB was the main cause of death in Europe and America in the nineteenth century. The Industrial Revolution in Europe and America, whereby people from rural areas moved to the city for better opportunities in life, was marked by a high incidence of TB. People tended to live in poverty, in overcrowded and unsanitary living conditions, enduring endless working

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<sup>8</sup> Linda Bryder, *Below the Magic Mountain: A Social History of Tuberculosis in Twentieth-Century, New York, United States of America*, 1988, p.3.

<sup>9</sup> Bryder, 'We Shall Not Find Salvation in Inoculation: Bcg Vaccination in Scandinavia, Britain and the USA, 1921-1960', p.1158; Laurence Monnais, 'Preventive Medicine And " Mission Civilisation" Uses of Bcg Vaccine in French Colonial Vietnam between the Two World Wars', *International Journal of Asia- Pacific Studies*, 2, 2006, p.46.

<sup>10</sup> Kelly, p.5.

<sup>11</sup> Packard, p.68.

hours and poor nutrition.<sup>12</sup> It was at this time that contact with Europeans intensified in the Pacific, thus creating the conditions for transmission of the disease to Pacific Islands people.

In addition to transmission from Europeans, the Pacific labour trade brought migrants from various parts of Asia. New infectious diseases such as bacillary dysentery, TB, pneumonia and influenza could be simply spread when foreigners who had been exposed to these diseases came to the Pacific as labourers. The indentured system that was established to provide low-paid labourers for the British Colonies was introduced in Fiji in 1879. This system hired labourers from India to work on the sugar and copra plantations with other Pacific Islanders. There was a high death rate among the labourers, especially the Pacific Islanders, because the recruits from the Pacific Islands were exposed to new introduced diseases.<sup>13</sup>

### **The Tuvalu Situation with TB**

Early in my research I came across a report on TB in the Gilbert and Ellice Islands by Dr E P Hamblett who was working under the auspices of the SPC. This is a detailed examination of TB in the four years from January 1964 to December 1967. Because of the detailed information in this report it stands as a unique centrepiece in the story of TB in Tuvalu. He provided an historical review of TB as well as in-depth analysis for the four years in question.

From his work we know that in the late nineteenth century TB was responsible for a high proportion of deaths among the people in the Gilbert and Ellice Islands and that glandular TB

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<sup>12</sup> *ibid.*

<sup>13</sup> Shlomowitz, pp.117-8.

was common in the nineteenth century. He recorded that fifty percent of hospital admissions and eighty percent of hospital deaths were caused by TB in 1916/17. Only about 5% of the 402 recorded cases in 1916/17 were pulmonary TB. Not until the second half of the twentieth century did pulmonary TB start to predominate and our more recent research shows that it has remained the major form of TB until the present.<sup>14</sup>

An interview with Dr Nese Ituaso-Conway, the Acting Director of Public Health of Tuvalu, confirmed that pulmonary TB is the most common form of TB in Tuvalu and that the trend of registered TB cases had slowly declined over the past twenty years.<sup>15</sup>

### **About the Gilbert and Ellice Islands Colony**

Ocean Island in the Gilbert Islands was chosen as the administrative headquarter of the Colony whereby all the administration for the Colony was controlled from there. Tarawa, also in the Gilbert Islands, was the capital of the Colony.<sup>16</sup> The phosphate mining on Ocean Island and copra production from Fanning Island and Washington Island (Gilbert Islands) and Niulakita (Ellice Islands) was the main revenue for the G&EIC.

I-Kiribati (natives of the Gilbert Islands) culturally belong to Micronesia while the Tuvaluans (natives of the Ellice Islands) are of Polynesian descent. Thus the G&EIC were composed of populations with different cultures. Movement of people to the capital of the Colony from the outer islands seeking job opportunities rapidly increased during colonial times. Therefore,

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<sup>14</sup> E. P. Hamblett, *Tuberculosis in the Gilbert and Ellice Islands Colony (1964-1968)* Noumea, 1969.

<sup>15</sup> Nese Conway-Ituaso, 27/07/ 2009. Dr Ituaso graduated from the Fiji School of Medicine in Fiji in 1999. She started to work for the Government of Tuvalu, at the Princesses Margret Hospital, in 2000. In 2003, she was assigned by the Ministry of Health to be responsible for the Public Health Department in the Ministry of Health, Tuvalu.

<sup>16</sup> Hamblett.

there was competition between the Gilbertese and Ellice Islanders for employment. Being the minority, the Ellice Islanders were worried about future discrimination which led to the referendum for separation from the Gilbert Islands in 1974. The referendum was observed by the United Nations and ninety two percent of the Ellice Islanders who voted in the referendum favoured the separation. In 1975 the Ellice Islands separated from the Gilbert Islands and Tuvalu became an independent country on the 1 October 1978, having Funafuti as its capital.<sup>17</sup>

### **Health sector**

After separation, Tuvalu's medical services adopted the administrative model that was practiced for the G&EIC.<sup>18</sup> The health sector primarily focused on preventive health on all islands, maintained curative services and developed healthcare services through a primary healthcare approach which was promoted by the Women's committee in each island.<sup>19</sup> While this approach was supported (in principle) by the Government of Tuvalu, the number of TB patients still remained high. Problems of shortage of trained staff, inadequate medical supplies, disrupted shipping services to the outer islands, and lack of medical equipment all contribute to the prevalence of high TB rates. For example, it was highlighted in the second National Development plan that one doctor is responsible for 2,000 people.<sup>20</sup> This situation lends importance to a discussion of trends in TB.

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<sup>17</sup> Barrie Macdonald, *Cinderellas of the Empire : Towards a History of Kiribati and Tuvalu*, Canberra, Australia Suva, Fiji, 2001.

<sup>18</sup> Ministry of Finance, *Tuvalu Development Plan 1978-1980*, Funafuti, Tuvalu, 1978, p.83.

<sup>19</sup> Government of Tuvalu, *Tuvalu Second Development Plan 1980-1983*, Funafuti, Tuvalu, 1980, pp.100-2.

<sup>20</sup> *ibid.*, p.101.

## **Research Outline**

I came to this research project from a background in economics, statistics and education, with a Pacific focus. Consequently, as a newcomer to history, in preparation for this study I researched aspects of the global history of TB to become familiar with historical methods and with the history of TB. My primary research began in the WPHCA in Auckland, where the Drs Chambers and I began building on a reference database on health in Tuvalu. This material included information on staffing, training of health personnel, information on specific health problems, health initiatives and health administration in general. The archive spanned from 1900 to 1975 but some other reference sources gave sporadic information from earlier years. The Chambers and I went to Tuvalu in July to conduct further research at the Tuvalu National Archives (TNA), the Tuvalu Attorney General's library, the Statistics Department, the Department of Health and the hospital administration. En-route to Tuvalu, we visited the Fiji School of Medicine's library, in Suva, mainly to scope the resources for later study. While we were there we read about early control and health promotion programmes for the Fiji Islands which were likely to have provided models for Tuvalu. Other useful sources of information have been successive censuses, the Tuvalu Development Plans as well as published literature.

Anne Chambers and I interviewed ten health practitioners (nurses, dressers, technicians, doctors) who worked during colonial times in the Gilbert and Ellice Islands. We also, with Keith Chambers, interviewed two medical practitioners who began work after independence. I also interviewed two former TB patients and one on current treatment and one recent admission to hospital. These interviews took place in Funafuti, Wellington and Auckland and all were in the Tuvaluan language. The purpose of the interviews was to supplement the

missing information gathered from the archives. These were particularly valuable to provide more personal reflections and community perspectives not available from the archived papers. For example, some of my interviewees talked about the stigma and burden of TB. From my informal conversations during my month working in Funafuti, especially people's responses when they heard what I was working on, I also learned a good deal about people's past experiences with TB and the importance of the first campaign in 1960 at raising community awareness of the seriousness of TB. One of the main problems that the research encountered was the loss of important information at the PMH in Funafuti. Files of important documents were lost when they shifted to the new hospital in 2003. Other material also seems to have disappeared in earlier times.

In analysing this data I have used a chronological and thematic analysis. I have come to identify the themes because information demonstrating their importance occurs repeatedly in the archive and interview materials. I also considered relevant ideas of TB used by Linda Bryder and Randal Packard which related to the case in Tuvalu.

Bryder discussed that TB was the major cause of death in Great Britain in the twentieth century. The launching of anti-TB campaigns had contributed to the decline of the disease in Great Britain. In order to have a complete history of British TB, Bryder also considered and valued the views and experiences shared by the patients who had the disease. She also pointed out that TB was recognised as a disease of poverty in terms of poor housing, poor nutrition and poor living standards. However, the National Association for the Prevention of TB concentrated on the education of poor people as a solution to the problem.<sup>21</sup>

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<sup>21</sup> Bryder, *Below the Magic Mountain: A Social History of Tuberculosis in Twentieth-Century*, pp.1-3; 19-20.

Packard's work in South Africa pointed out that poor living conditions and poor nutrition for the black miners had an impact on TB. The miners were accommodated in flats which were poorly constructed with an inadequate supply of water and poor sanitation. They paid very high rent to their white landlords.<sup>22</sup> High rents may create the overcrowding problems as more people will share the flat to reduce costs. The spread of TB among the Africans was mainly due to the inexperience with the disease and limited access to medical facilities. Labourers who worked in the gold mining industry and in the diamond industry may have been exposed to the disease in the mining camps and possibly by infected family members, friends and other people around them when they returned home. A number of TB cases in Transkei and Ciskei were apparently infected by family members who worked in the gold mines.<sup>23</sup>

In summary, the purpose of this thesis is to examine the attempts to address the problem of TB in Tuvalu during the colonial period (1892-1974) and after an independent state and how these changed over time. This examination of TB provides a window into the administration of health as one example of colonial and post-colonial processes of government in a small Pacific Island country. I see this research as having practical as well as academic implications. An understanding of the disease of TB by the general public would promote public awareness, thereby facilitating the effective implementation of TB control programmes in the country. Furthermore, a good understanding of past control programmes can inform current public health services in improving health-related problems, especially in controlling TB.

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<sup>22</sup> Packard, p.133 & 46.

<sup>23</sup> *ibid.*, pp.31, 92-3.

In the next section of my thesis I introduce the reader to TB which was endemic in the Gilbert (Kiribati) and Ellice (Tuvalu) islands colony during the colonial period. Chapter One of the thesis focuses on the TB Control Programmes in the G&EIC from 1960. Chapter Two analyses the TB control programmes, such as the Expanded Programme of Immunisation (EPI), after Tuvalu's Independence from Great Britain (1980 – 2000). In my final chapter I discuss the key issues and themes and draw my conclusions.

## **Chapter One: TB IN THE GILBERT AND ELLICE ISLANDS (1900-1959)**

This chapter discusses trends in TB in the Gilbert and Ellice Islands from 1900 – 1959. In the early twentieth century TB was identified as a ‘silent killer’. TB was not easy to determine as a health issue in the Gilbert and Ellice Islands until the disease had progressed to the serious stage of being a ‘killer’. As a consequence, individuals had a fatalistic attitude to the disease as the local people did not have access to knowledge about TB and how to protect themselves from the disease.

The local Native Medical Practitioners (NMP), who trained at the Central Medical School (CMS) in Suva, Fiji, were the backbone of the Medical Department in the G&EIC and served the local people in the outer islands. Communication and transportation between the islands of the Colony were the two main problems which hindered all activities. Developments in medical services in the Ellice Islands were ruined during the World War II and took time to recover from the damage due to ongoing financial problems. World War II had positive and negative impacts on the people. A TB Control Programme for the Colony was finally planned in the late 1950s for the prevention and treatment of TB.

### **Early Medical Services in the Ellice Islands (1900 – 1940)**

In order to understand the public health approach to TB it is necessary to outline general medical services, of which TB services became a part. Medical services in the Ellice Islands during the early twentieth century were limited. Before the introduction of western medicine, people relied on traditional healers, *tufuga*, to cure them when they were sick. Traditional healers did not go to a medical institution to learn the skill but it was passed on from their

ancestors.<sup>24</sup> In some cases people believed in supernatural powers whereby if the traditional herbal medicine did not work they thought that someone may have placed a magical spell on them.<sup>25</sup>

Church organisations, such as the Presbyterian and Catholic churches, as well as individual Europeans, had introduced formal education and western medicine into the Pacific. The London Missionary Society (Protestant) and the Sacred Heart Mission (Catholic Church) introduced formal education in the G&EIC, in early 1857. Schooling was later made compulsory for all children from the age of seven to sixteen.<sup>26</sup> Formal education played an important role for the children of the Colony who attended these schools. After completion, students were able to apply for clerk or typist jobs in the government and other students could apply for government scholarships for further studies, such as a scholarship to study at the Medical School in Fiji.

The spread of western medicine in the Pacific resulted in Pacific scholars undertaking medical courses at the Suva Medical School in Fiji which was established in 1885. Courses initially trained the local people as vaccinators.<sup>27</sup> In 1928 the Suva Medical School changed its name to Central Medical School. Dr Sylvester Lambert of the Rockefeller Foundation initiated the idea to educate selected young people from the Western Pacific countries to do a four-year course. This course began in 1929 and those who completed the course were

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<sup>24</sup> Pasoni Taafaki, 'The Old Order,' in *Tuvalu: A History*, Simati Faaniu, et al., eds, Suva, Fiji Funafuti, Tuvalu, 1983.

<sup>25</sup> Chambers and Chambers, pp.22-5.

<sup>26</sup> Medical Services in the Gilbert and Ellice Islands Colony. 1940-44. WPHC 9 1229274 F. 52/28. WPHC Archive, Special Collection, University of Auckland Library.

<sup>27</sup> Fiji School of Medicine; available at: [www.fsm.ac.fj](http://www.fsm.ac.fj) (10/20/ 2009)

qualified as Native Medical Practitioners.<sup>28</sup> Their practice in medicine was limited to those countries that recognised their qualification.<sup>29</sup> They were encouraged to practise in their own home country. Graduated Ellice Islands students were allocated their posts by the Senior Medical Officer (SMO) of G&EIC headquarters in Tarawa in the Gilbert Islands.<sup>30</sup> Besides the training provided by the CMS in Suva, the Medical Department for the G&EIC had established a training school for the local people to become Dressers and Nurses at the Central Training School in Tarawa. This was facilitated by the European staff nurses. Upon completion from the Central Training School they would graduate as a colony Dresser and a colony nurse. Other nurse trainees were sent to the CMS in Suva to train but this was stopped due to the fact most of the Gilbert and Ellice Islands girls who were sent to train in Suva ended up marrying without completing the course.<sup>31</sup> Inequality of treatment between the local staff nurse and a *half caste* nurse, Miss Janet McArthur also known as Neeti, was noted in this period. There were a lot of discussions to justify the differentiation in pay between the G&EIC native nurses and *half caste* nurses even though they went to the same training institute. Mr H E Maude suggested that only full-blooded natives should be sent overseas for training because the superior abilities of the *half castes* meant they could not be expected to live on the salary scale paid to native employees.<sup>32</sup>

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<sup>28</sup> Annie Stuart, 'Contradictions and Complexities in an Indigenous Medical Service', *The Journal of Pacific History*, 40, 2, 2005.

<sup>29</sup> C D Williams, 'Whither Welfare', *British Medical Journal*, 1, 1941.

<sup>30</sup> Tiliga Pulusi, 04/09/ 2009. Dr Tiliga Pulusi graduated as an Assistant Medical Officer in 1950 from the Central Medical School in Suva, Fiji. He worked for the Gilbert and Ellice Islands Colony Medical department from 1951-1960. He was posted to work on Nanumea Island, Tuvalu 1965-1975. After Separation, he worked for the Tokelau Government from 1981-1984. He returned to Tuvalu and worked for the Government of Tuvalu until he retired in 2004. He was responsible for the registration of tuberculosis cases in the Tuvalu Group.

<sup>31</sup> Letter: Secretary of the WPHC to Resident Commissioner. 20/1/1944. WPHC 9 1229270 F.52/9 WPHCA. Special Collection, University of Auckland Library, p.119.

<sup>32</sup> Native Nurses for Gilbert and Ellice Islands Colony Training and Posting. WPHC 9 1229270 F.52/9. WPHCA. Special Collection, University of Auckland Library, p.119, 127 & 135.

G W B Smith-Rewse, the District Magistrate in the Ellice Islands from 1908 to 1915, was the founder of the District Hospital in 1913.<sup>33</sup> The District Hospital was located on Fogafale, the main settlement on Funafuti. This was built together with a house for a European doctor.<sup>34</sup> From 1916 to 1919 the hospital was under the supervision of Dr J. G. McNaughton, SMO, and attendants known as first, second class and third class Dressers. Early in 1919 Dr McNaughton resigned and left the Ellice Islands and unfortunately his position was left vacant for almost a decade. The first class Dresser, Simeti from Tokelau, was in charge of the hospital.<sup>35</sup> First class Dressers were equivalent to senior nurses who worked very closely with the NMP and took over when the NMP was on leave or away for a meeting. Second class Dressers were those who had been working for three to four years in the hospital, assistants to the first class Dresser. Third class Dressers were new graduates, assistants to the NMP, first and the second Dressers.<sup>36</sup>

The District Hospital on Funafuti was chosen as the Central Hospital for all the eight islands in the Ellice group. This is because Funafuti was the port of entry in the Ellice Islands, hence all ships that enter the Ellice Islands discharge and load at Funafuti. The Assistant Medical Officer would act as a quarantine officer and also act as a public health officer.

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<sup>33</sup> Simati Faaniu, et al., *Tuvalu : A History*, Suva, Fiji; Funafuti, Tuvalu, 1983.

<sup>34</sup> Noatia P Teo, 'Colonial Rule,' in *Tuvalu : A History* Simati Faaniu, et al., eds, Suva, Fiji Funafuti, Tuvalu, 1983, p.134.

<sup>35</sup> Puamau Sowani, Medical Report for the Year Ending 30<sup>th</sup> June 1919. WPHC 4 1226993 43 320/1920. WPHCA, Special Collection, University of Auckland Library, p20. Travelling Senior Native Medical Practitioner Puamau Sowani, visited the Ellice Islands on a medical tour and filed this report with the help of the Acting Senior District Officer Mr Stanley Harmer Anderson.

<sup>36</sup> Moeava Alefaio, 03/08/ 2009. Mr Alefaio brought up on Funafuti, Tuvalu. He was familiar with the medical administration in the Gilbert and Ellice Islands from his brother Ale Alefaio. Ale was a Dresser at the Funafuti District hospital.

Each island had a dispensary and a Dresser to serve the people in the outer islands. These dispensaries and wards for patients in the outer islands were built using local materials. All severe cases in the outer islands were referred to the Funafuti District Hospital before they were referred to the Colonial Central Hospital in Tarawa.<sup>37</sup> In 1920 the District Hospital was looked after by the Native Medical Practitioners, who trained at the CMS in Suva, Fiji. They were John Taliauli and Teoti from Tonga, Simeti and John A Logologo from Tokelau and Puamau Sowani from Fiji and they were assisted by local Dressers Alani Kopule and Elisala Kae.<sup>38</sup> NMPs worked under the supervision of European medical doctors and nurses, based at the Headquarters in Tarawa in the Gilbert Islands. European staff were employed for short term periods until the trained islanders were confident to take up the job.<sup>39</sup> In most cases, Dressers used to work on their own in the outer islands. In Smith-Rewse's Annual Report for 1912 he pointed out that Native Medical Practitioners and Dressers who worked for the Ellice Islands, unsupervised, did a perfect job and did their very best in the medical service. He predicted that, 'the future treatment of diseases and indeed the future of the people rest largely in the hands of the Medical Department.'<sup>40</sup>

Dressers regularly undertook refresher courses at Funafuti conducted by the Assistant Medical Officer stationed on Funafuti or by a Medical Officer from the headquarters in Tarawa. Assistant to the island Dresser was a '*kaupule*' nurse, nominated by the island elders. *Kaupule* nurses had no experience in the health field and were usually trained by the Dresser of that particular island and in addition to that, other training was provided by the Medical

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<sup>37</sup> Pulusi.

<sup>38</sup> Teo, p.134.

<sup>39</sup> Barrie Macdonald, 'Policy and Practice in an Atoll Territory: British Rule in the Gilbert and Ellice Islands 1892-1970', Australian National University, 1971, p.110.

<sup>40</sup> G B Smith Rewse, (1913). Annual Report for the Ellice Islands for the Year 1912. TUV 1/2/1. TNA, Funafuti, Tuvalu. Smith- Rewse was the first District Officer for the Ellice Islands since 1908-1915.

Officers at the District Hospital on Funafuti. The roles of the *kaupule* nurse(s) were to assist the Dresser in carrying out activities such as vaccination, midwifery, home visits and baby clinics. The number of medical staff posted to each island depended on the population on that particular island.<sup>41</sup>

Almost ten years after Dr McNaughton resigned in 1919 from the medical services of the G&EIC, a new medical doctor was appointed by the Medical Department of the Colony to work in the Ellice Islands. In 1930 Dr D C Macpherson was responsible for all the islands in the Ellice group. He was based on Funafuti. There was an improvement in medical services where most cases were treated at the Funafuti District Hospital and a small number of cases were referred to the Central Colonial Hospital in Tarawa. Dr Macpherson was assisted by Dressers Lopati, Ane, Feso, Apisai and Foepua.<sup>42</sup> He worked there for three years and then left for Fiji in 1933 and handed over all the instructions to the second class NMP, Bakoa Tewei. In 1935, NMP Naou Tatoaa joined NMP Tewei; both were from the Gilbert Islands. A successful Ellice Islander NMP, Seanoa Ka, graduated from the CMS in 1935. In 1936 he was posted to work in the Ellice Islands as third class NMP.<sup>43</sup>

Interruptions in communication may have slowed down the progress of activities in the Colony. However, the first Government wireless telegraph station commenced operating in 1934 at Funafuti, using apparatus privately owned apparatus by Mr D G Kennedy. In addition

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<sup>41</sup> Alefaio; Maimoaga Salesa, 28/07/ 2009.

<sup>42</sup> Teo, p.134.

<sup>43</sup> *ibid.* Officers no longer in the Western Pacific High Commission Services 1910-1951. WPHC 4 1227343 15/1/4. WPHCA. Special Collection, University of Auckland Library.

to the presence of wireless telegraph, the metrological station at Funafuti had teleradio sets on its branches on the islands of Nanumea, Niutao, Nui, Vaitupu and Niulakita.<sup>44</sup>

In the early twentieth century, diseases such as filariasis, dysentery, leprosy, influenza, measles and yaws were common in the Colony. Filariasis was more prevalent in the Ellice Islands than in the Gilbert Islands.<sup>45</sup> The G&EIC were divided into six sanitary districts as mentioned in the Public Health Ordinance, Number 8 of 1926. The six sanitary districts were Ocean Island, Northern, Central and Southern Gilbert Islands, the Ellice Islands and Fanning Island. Under this Public Health Ordinance, all Medical Officers, NMPs and Administrative Officers were appointed as sanitary inspectors on their respective locations.<sup>46</sup>

In addition to the sanitary inspector, women in the Ellice Islands played an important role in health, hygiene and sanitation. In the Ellice Islands, there was a women's committee which was established about 1930. On each island the women's committee was responsible to inspect all households on the island on a weekly basis.<sup>47</sup> An interview with Mrs Misilaima Seve explained how the women's committee started in the Ellice Islands. The women's committee was influenced by the Samoan pastors who worked for the London Mission Society in the Ellice Islands. The pastors were very concerned with the health and living conditions of the local people. The women of the island selected a committee that consisted of a president, treasurer, secretary, and two other women as messengers. The pastor's wife

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<sup>44</sup> District Annual Report for the Ellice Islands District 1946. WPHC 9 1229108 F. 10/18/4. WPHCA. Special Collection, University of Auckland Library, p.31.

<sup>45</sup> Medical and Sanitary Report of Gilbert and Ellice Islands for the Year 1939 onwards. WPHC 9 1229271 F.52/II/I Volume 1. WPHCA. Special Collection, University of Auckland Library.

<sup>46</sup> Gilbert and Ellice Islands Colony Medical Department, 'Gilbert and Ellice Islands Colony: Medical and Sanitary Report for the Year 1938' in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa, 1916-1973.

<sup>47</sup> Medical and Sanitary Report of Gilbert and Ellice Islands for the Year 1940. WPHC 9 1229271 F.52/II/I Volume 1. WPHCA. Special Collection, University of Auckland Library, p3.

would be the leader of the committee.<sup>48</sup> Similar committees operated in (Western) Samoa as described by Penelope Schoeffel. She pointed out that the first women's committee was formed in Samoa when Theodore Weber initiated the idea of exporting copra in the 1870s as a source of income. And in 1920 Dr Robert, the wife of the American consular who lived in the outskirts of Apia noticed the unhealthy living conditions of the local people in her particular village. She convinced the women of that village to form a women's committee aimed to take care of infant and maternal clinics and to organise activities such as cleaning up the village. By knowing women with good reputation, high status and higher education in Samoa, Dr Robert was able to persuade them to do the same thing in their own villages.<sup>49</sup> The aim of the committee was to check that people lived in satisfactorily hygienic and sanitary conditions, that people kept the village clean at all times and cared for the welfare of the children. There were certain responsibilities a woman in each individual house should do everyday. They had to make sure that family members used clean eating utensils, drank clean water and ate good food, had a clean house, bathed the children and made sure to check the children's fingernails were clean at all times. The committees were responsible to ensure that the women fulfilled their responsibilities and reported any case(s) of sickness to the Dresser for prompt assistance.<sup>50</sup> This inspiration spread to the Gilbert Islands but did not really work out well. It was the duty of the medical officer in the outer islands or in their respective villages to educate and address the local people about good health and sanitation. However, these efforts were not always appreciated by the local people. There was a saying that describes the resentful reaction of the local people concerning health instructions which was:

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<sup>48</sup> Misalaima Seve, 14/04/ 2010. Misalaima Seve the wife of late Seve Iotama did pastoral work on the island of Nanumea, far northern island in the Ellice Islands since 1968-1982. Misalaima worked very closely with the women of the island in any activities related to women.

<sup>49</sup> Penelope Schoeffel, 'The Origin and Development of Women's Association in Western Samoa, 1830-1977', *The Journal of Pacific History*, 3, 1977, pp.11-3.

<sup>50</sup> Seve.

‘Thou shalt do this’ and ‘Thou shalt not do this’<sup>51</sup> Late in the 1930s the people in the Gilbert Islands were now aware of the importance of good hygiene and good sanitation. They set up a committee which consisted of the headman of the village, policeman and few women. Their role was to make sure that the village was kept clean. Offenders would be fined or imprisoned under the Sanitary Regulation.<sup>52</sup>

### **TB 1900 - 1940**

There is some evidence that the local people, including health workers, were not very familiar with the precise details of western diagnoses and did not have the technologies to refine their diagnoses. In 1937, Ieti, a man from Funafuti, suspected of leprosy, was isolated by the NMP, Naou Tatoa to a nearby islet, Fatato. A European doctor, from the administration, came on his visiting tour and examined Ieti and he confirmed it was not leprosy.<sup>53</sup>

On the island of Funafuti the local people did not recognise the presence of TB. They did recognise that filariasis and leprosy were serious communicable diseases. For instance, in an interview Vaisamoa Manoa shared what she remembered in 1937, when she was ten years old. She was personally not aware of the presence of TB and the isolation of TB patients from other patients even though it was a leading cause of death. All she remembered was the two big traditional houses that were built in 1937, at the northern end of Fogafale to isolate two Gilbertese leprosy patients from Tarawa while they waited for a ship to transport them to the Makogai Leprosy Sanatorium in Fiji. These two houses were built voluntarily by the men of

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<sup>51</sup> Gilbert and Ellice Islands Colony Medical Department.

<sup>52</sup> Annual Report for the Gilbert and Ellice Islands Colony for the Year 1946. WPHC 9 1229071 F. 3/2 Volume I. WPHCA. Special Collection, University of Auckland Library, p.21

<sup>53</sup> Vaisamoa Manoa, 19/09/ 2009. Ms Vaisamoa Manoa was born in 1927 on the island of Funafuti. She grew up and spent most of her lifetime there. She is now a permanent resident of New Zealand.

Funafuti. These houses were then used to isolate measles patients in 1938.<sup>54</sup> Similarly, on the island of Nanumea, measles patients were isolated and the hospital was marked the boundary with white sands to stop all the visitors from trespassing.<sup>55</sup>

In the early 1930s, pulmonary TB was not prevalent in the Gilbert and Ellice Islands. The most common form of TB was cervical lymph adenitis (enlarged glands in the neck). Serious cases of gland infection were treated by an operation. Moeava Alefaio shared his experiences when he was a small boy. Children and adults who had TB glands had a neck operation. Children who had such an operation would be obvious to others by scars on their neck. Such children were often teased at school.<sup>56</sup>

There was no medication available to treat TB in the Colony, hence the Medical Department was trying to find a way to solve the problem. They felt that giving a balanced diet and arsenicals injection to a patient would gradually decrease the rate of mortality from TB. Arsenicals injections were given to enable the body to fight against the disease.<sup>57</sup>

Cervical lymph adenitis, sometimes called TB glands and tubercular adenitis, was the most common form of TB in the Colony. The only treatments available were vitamins and combination of malt and cod-liver oil and ostelin. A large dose of calciferol and early surgery in some cases was the best solution. It was mentioned that Dr McNaughton, Dr Murray

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<sup>54</sup> *ibid.*

<sup>55</sup> Taaua Paia, 10/09/ 2009. Mr Paia finished high school in 1955 and Return to Nanumea. While he was there he helped the island Dresser in the general out-patients for almost ten years before he was recruited to work on Ocean Island.

<sup>56</sup> Alefaio.

<sup>57</sup> Gilbert and Ellice Islands Colony House of Representative and Governing Council Informative Document: Number 6/69. WPHC 9 1228850 F. 309/37/5. WPHCA, Special Collection, University of Auckland Library.

Young and Puamau Sowani were the only ones who ‘were keen’ to do tubercular adenitis surgery. From the Funafuti District Hospital it was evident that the number of tubercular adenitis cases declined and there was an improvement in the treatment of the disease (Table 1). In 1930 European doctors commented on the occurrence of TB cervical lymph adenitis in the colony. Dr J.W. Hunt noted (from experience) that tubercular cervical lymph adenitis among the Gilbert and Ellice Islands was extremely high compared to other Pacific Islands. Tokelau Island, located 480 kilometres south of Western Samoa, was used as an example to compare with the situation faced by the G&EIC. Tokelau, with similar environmental and dietary conditions, experienced no incidence of TB cervical lymph adenitis. Hence there was no clear idea what caused TB cervical lymph adenitis.<sup>58</sup>

**Table 1. Funafuti District Hospital Admissions for Pulmonary TB and TB Glands.<sup>59</sup>**

Disease	1916a	1938a	1939b	1940b
Pulmonary TB	5	1	2	3
TB Glands	12	7	7	4
Deaths caused by Pulmonary TB	4	1	0	3
Annual total Deaths	9	1	0	5

Source: a. Compiled Medical Report for the G&EIC 1916-1975.  
 b. WPHC 9 1229271 F. 52/II/I Volume I

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<sup>58</sup> Telegram Savings Number 80: Resident Commissioner (G&EIC), Tarawa to High Commissioner for Western Pacific, Honiara. 16<sup>th</sup> May, 1954. WPHC 9 1229271 F. 52/II/I Volume III. WPHCA. Special Collection, University of Auckland Library, p.3-4.

<sup>59</sup> Missing Years were due to an unexplained reason. Presumably the gap in records from 1916-1938 were due to the inter island shipping problem and also medical reports were not filed during the occupation of Japanese during the Second World War.

The Funafuti District Hospital records (Table 1) showed that TB in all forms, especially pulmonary TB, was the main cause of death in the hospital in the Ellice Islands. However, surprisingly, in 1940, Dr D C E Macpherson, Assistant Director of Medical Services for the Western Pacific High Commission in Suva, Fiji, in his report for the Ellice Islands, found no evidence of the presence of TB, this despite medical records that showed the increased number of registered TB cases of all forms.<sup>60</sup> Mrs Noatia Peni, the sister of the Dresser for the Funafuti District Hospital, Mr Ale Alefaio, also provided an eye witness account. She recalled that when she was nine years old when she went to the hospital for a visit, she saw people with '*ua-patoo*' TB glands, and few others had '*maama pala*' pulmonary TB. She remembered that all the patients admitted to the hospital were all in one room like a dormitory. This means that there was no isolation ward for TB patients.<sup>61</sup> I should note that some deaths would have occurred in private homes.

In 1917 and 1926 (Figure 5), the numbers of TB cases admitted were very high according to the records for the Central Hospital in Tarawa. This matched the experiences of the local people and the difficulties faced by the Medical Department of the G&EIC. However, there was nothing in the records that described the reasons why the numbers were so high for these two years. Maybe at those times people had limited understanding of the disease as there were no awareness programmes to explain TB. Secondly, there was no effective treatment available in the Colony and limited numbers of medical personal to concentrate on combating the disease. Lastly, treatments were often delayed due to interisland shipping problems.

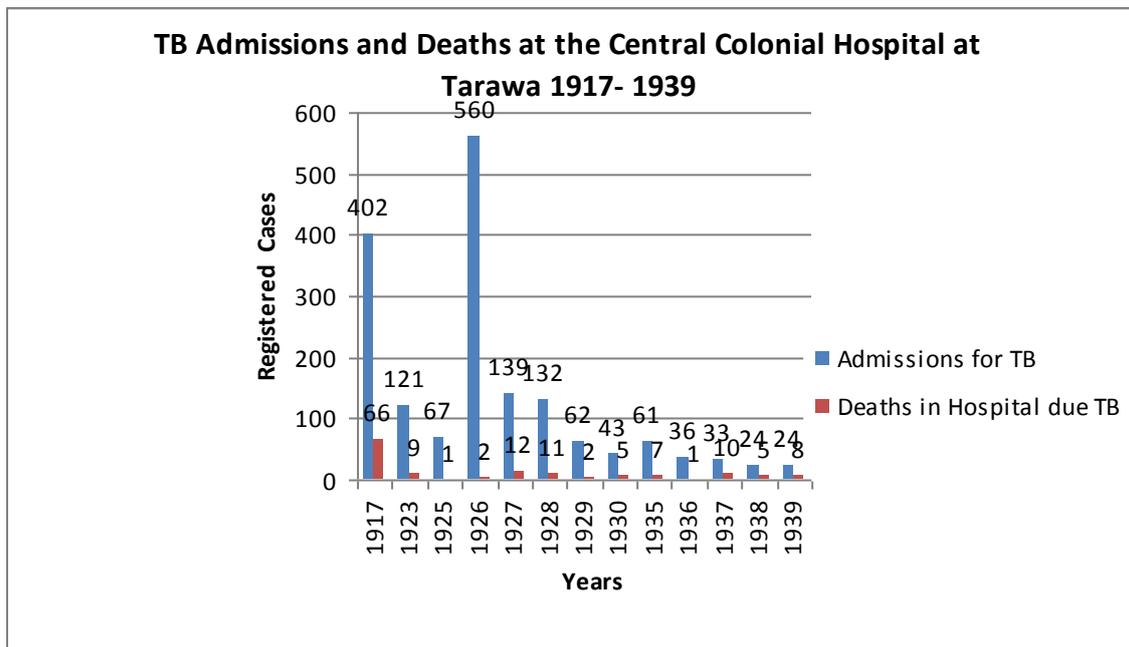
However in later years 1927-1939 the number of cases declined probably due to better

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<sup>60</sup> Central Medical Authority for the Gilbert & Ellice Islands Colony 1940-1944. WPHC 9 1229274 F. 52/28. WPHCA. Special Collection, University of Auckland Library.

<sup>61</sup> Noatia Simeona, 22/01/ 2010. Mrs Noatia Simeona was born in 1932 and brought up on Funafuti.

treatment for those admitted to the Central Colonial hospital focusing on nutrition values and cod liver oil supplement or there were still unreported cases.



**Figure 5. TB Admissions and Deaths at the Central Colony Hospital at Tarawa (1916-1939).**

Source: WPHC 91229271 F. 52/II/I Volume III. WPHCA, Special Collection, University of Auckland.

### Impact of Second World War on Medical Services 1943-1949

The Second World War reached the Ellice Islands in 1943 when Japanese aircraft bombed Funafuti in March. During the bombing, the Island church, located at Malefatuga on Fogafale, was damaged. Prior to the Japanese attack, the American troops were already in the Ellice Islands. They were based on the islands of Nanumea, Nukufetau and Funafuti.<sup>62</sup>

The Second World War (WWII) had negative impacts on the lifestyle and health of the local people in the Ellice Islands. First was the damage that was done by the American troops to

<sup>62</sup> Melei Telavi, 'War,' in *Tuvalu: A History*, Simati Faaniu, et al., eds, Suva, Fiji Funafuti, Tuvalu, 1983, pp.140-3.

the land. The island of Nanumea suffered severely as a result of cutting down of trees and land was dug up on all three islands to build airstrips, some of which are now used as *pulaka*, *taro* pits. The unused dug up land was left as ponds (*taisala*). A huge number of trees, especially edible plants, were destroyed during the war. It was estimated that there were 55672 coconuts trees, 1633 breadfruit trees and 797 pandanus trees destroyed on these three islands.<sup>63</sup> Due to the devastation caused by the war, there would be a high likelihood of people tending to consume American canned food which was ready to eat compared to the preparation of scarce local foods.

Secondly, the war had both negative and positive impact on local people who wanted to renovate or built their traditional houses after the war. They had trouble looking for mature coconut and pandanus trees. As a result of the lack of local building materials, the people would collect materials such as lumber and corrugated iron that were left behind by American troops after the war. Corrugated iron and aircraft fuel tanks were used to collect rain water. The local people used the materials to built semi-European structured houses.<sup>64</sup>

Although the war brought damage to the Islands, the Americans troops had contributed to the Colony in terms of medical supplies. On 29 November 1943, a health report on Ellice Islands was prepared by George R Hemming. The health report was conducted only on the three islands that were occupied by the American troops. The report showed that the American doctors assisted the local people and medical attendants in supplying medicine, surgery work and provided transportation. Hemming learned from Lieutenants John Neil Falvey and

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<sup>63</sup> Impact of Second World War. WPHC 9 1229108 F.10/18/4. WPHCA. Special Collection, University of Auckland Library, p.13

<sup>64</sup> Ibid, p.4-5

Collins that the United States doctors were very generous to the local people. The United States doctors supplied and transported various drugs such as aspirin and sulfa group drugs to other dispensaries in the Ellice Islands, admitted surgical cases to their ward, and treated a patient who had gonorrhoea.<sup>65</sup> In addition to the medical services they supplied for the Ellice Islands, the United States military medical personnel carried out two surveys on filariasis in 1944 and concluded that there was a high incidence of filariasis in some islands.<sup>66</sup>

After the war, the United States military medical personnel left the unused medicines to be administered by the Native Medical Practitioner and Dressers to local people. A few months later, there was a high death rate among the old Funafuti people and a few cases of TB patients who were also admitted to one of the former American wards. The people were surprised because they had the American medicines but others suggested that it was the result of 'too much depending on delicious American canned food, drinking hot stuff and smoking cigarettes'.<sup>67</sup>

Caring for others is very important in the Tuvaluan culture. When someone is admitted to the hospital, a close relative would become a caretaker. Sometimes when the patient was in a serious condition, the number of caretakers would be two or more. The caretaker would look after the patient until they were discharged from the hospital. The caretaker system also assisted the medical attendant to look after patients, such as by caretakers helping to cook the food for all the patients. In 1946 the caretaker system was ended by the SMO, Dr M Rose, from the Headquarters in Tarawa in the Gilbert Islands. This routine was stopped as a

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<sup>65</sup> George Hemming, 1943. Health Report on Ellice Islands. WPHC 9 1229274 F. 52/28/1. WPHCA. Special Collection, University of Auckland Library, pp3-6

<sup>66</sup> Medical and Sanitary for the Year 1944. WPHC 9 1229271 F.52/II/I Volume 1. WPHCA. Special Collection, University of Auckland Library, p.2

<sup>67</sup> Manoa.

preventive measure for all the caretaker(s), patients, families and other people on the Island to stop the spread of communicable diseases.<sup>68</sup>

A ship for the Medical department was built in Hong Kong and was completed on 21 September, 1938. She was named RSC *Kiakia* and was arrived in the Colony on 9 November the same year. The purpose of the *Kiakia* was to transport referred patients from outer islands to the Central Hospital in Tarawa, returning treated patients to their home islands, transporting medical supplies and touring Medical Officers to outer islands.<sup>69</sup> However the problem of transportation started over again when the *Kiakia* was not operating according to its intention. Firstly the *Kiakia* was used by the Fiji Naval Volunteer Reserve in Fijian waters during the World War II and, secondly, the *Kiakia* was used as public transport to transport passengers and cargo, police officers and prisoners between the islands.<sup>70</sup> The SMO, Dr M Rose, wrote to the Resident Commissioner that there was insufficient room on the ship for referral cases to be admitted to the Central Hospital hence it defeated the purpose of the ship. The Resident Commissioner forwarded the Medical Department proposal to the Western High Commissioner in Suva, Fiji, in 1949 with regard to the exclusive use of the *Kiakia* by the Medical Department.<sup>71</sup> In correspondence with the Western High Commissioner on the matter, the Resident Commissioner suggested that it would be better to operate the *Kiakia* to its full economic capacity because the Colony still faced financial constraints and the cost of operating the ship between the islands of the Colony was very high. The matter would be

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<sup>68</sup> Dr M Rose visited the Funafuti District hospital early November 1945. He was accompanied by the sister in charge at the Central Hospital in Tarawa . WPHC 9 1229108 F. 10/18/4. WPHCA. Special collection, University of Auckland, p.4 & Medical and Sanitary Report for the Year 1945. WPHC 9 1229271 F.52/II/I. WPHCA. Special Collection, University of Auckland Library, p.10

<sup>69</sup> Gilbert and Ellice Islands Colony Medical Department.

<sup>70</sup> Gilbert and Ellice Islands Colony, *News from the Gilbert and Ellice Islands Colony*, Bairiki, 1962, p.3.

<sup>71</sup> Medical and Sanitary Report for the Year 1946. WPHC 9 1229271 F 52/II/I Volume I. WPHCA.Special Collection, University of Auckland Library, pp. 2 & 7.

reviewed when the new Colony ship, RSC *Nimanoa* and *Nareau* would be in operation.<sup>72</sup> The *Kiakia* was never allocated to be operated by the Medical Department as requested.

### **Post war Developments relating to Medical Services**

During the war the District Hospital was shifted to Funafala, an islet far away from the main settlement, under the responsibility of Dr Ka while Dr Simeona Peni (who graduated in 1940) was responsible for the Americans on Fogafale.<sup>73</sup> Unfortunately the district hospital on Fogafale was destroyed during the war. After the war the district hospital transferred from Funafala to Fogafale and temporarily used the American hospital, located at Vailele. It took quite a while to give approval from the administration of the G&EIC for the construction of a new hospital. The British Colonial Development and Welfare Act, passed in Britain, provided the aid-grants to British colonies but the Gilbert and the Ellice Islands did not realise the benefit from this grant until after the Second World War.<sup>74</sup> After the war the grant prioritised improving social services (transport and communication) and medical facilities in the Colony. The funding under the scheme was mainly for reconstruction purposes rather than for changes to the administration of the Medical Department.<sup>75</sup>

Early 1946, J.C.R Buchanan, the Inspector General for the South Pacific Medical services, proposed the reconstruction of medical facilities in the Colony that would be funded under the Colonial Development and Welfare fund. In his proposal for the Ellice Islands and the Phoenix groups (in the Gilbert Islands), the District Hospital was to be located on Fogafale on

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<sup>72</sup> Telegram Saving: Resident Commissioner, Tarawa to High Commissioner, Suva. 11 November 1949. WPHC 9 1229271 F.52/II/I Volume I. WPHCA. Special Collection, University of Auckland Library, p.34

<sup>73</sup> Teo, p.134.

<sup>74</sup> Macdonald, *Cinderellas of the Empire : Towards a History of Kiribati and Tuvalu*, p.123.

<sup>75</sup> Macdonald, 'Policy and Practice in an Atoll Territory: British Rule in the Gilbert and Ellice Islands 1892-1970', p.108.

Funafuti atoll because of the convenient shipping route to the Phoenix groups. He also proposed to build an isolation ward for active TB cases at every district hospital in the colony with ten beds in each.<sup>76</sup> He suggested upgrading the standard of Dressers so that that they could be in charge of dispensaries independently and be confident on the job. The district hospital was only partially built on Funafuti in 1947 due to the difficulty of securing building materials.<sup>77</sup>

### **TB Control**

The war had an impact to the increased number of registered and deaths cases who were admitted to the Central Colonial Hospital at Tarawa as shown in Table 2. The people of the Colony might have been exposed to the disease during the war and other factors mentioned below may have contributed to the problem.

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<sup>76</sup> Plans for the Post War Reconstruction of the Medical Department in the Gilbert and Ellice Islands Colony (1944-1952). WPHC 9 1229275 F.52/50/1. WPHCA. Special Collection, University of Auckland Library, p.92

<sup>77</sup> Ibid, p.41-3

**Table 2. TB Admissions and Deaths Records at the Central Colonial Hospital 1944-1953.**

Year	Admissions for TB	Hospital Deaths due to TB
1944	29	3
1945	29	5
1946	28	4
1947	19	3
1948	46	5
1949	40	6
1950	43	9
1951	61	10
1952	31	1
1953	44	1

Source: WPHC 91229271 F. 52/II/I Volume III. WPHCA, Special Collection, University of Auckland.

### **Training and supply of health workers**

After the war there was a good supply of qualified Gilbert and Ellice Islands medical doctors who graduated from the CMS in Suva, Fiji. This meant that there would be an improvement to the medical services delivered throughout the Colony. The SMO, Dr M Rose, pointed out in the 1947 Annual Medical Report, that the Medical Department had been operated efficiently and on a more extensive scale compared to the years before the war.<sup>78</sup> However, TB still remained a health problem in the Colony despite the increase in the number of medical doctors. This continuing health problem could be blamed on the ongoing problems such as poor communication, poor shipping schedule, no treatment available and lack of medical staff in the right place at the right time. The increased number of medical doctors still did not solve the problem as there are 37 islands in the Gilbert and Ellice groups, of which the Gilbert Islands consists of 28 islands and the Ellice Islands consists of nine islands.

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<sup>78</sup> M Rose, Medical and Sanitary Report for the Year 1947. WPHC 9 1229271 F.52/II/I. WPHCA. Special Collection, University of Auckland Library, p.22.

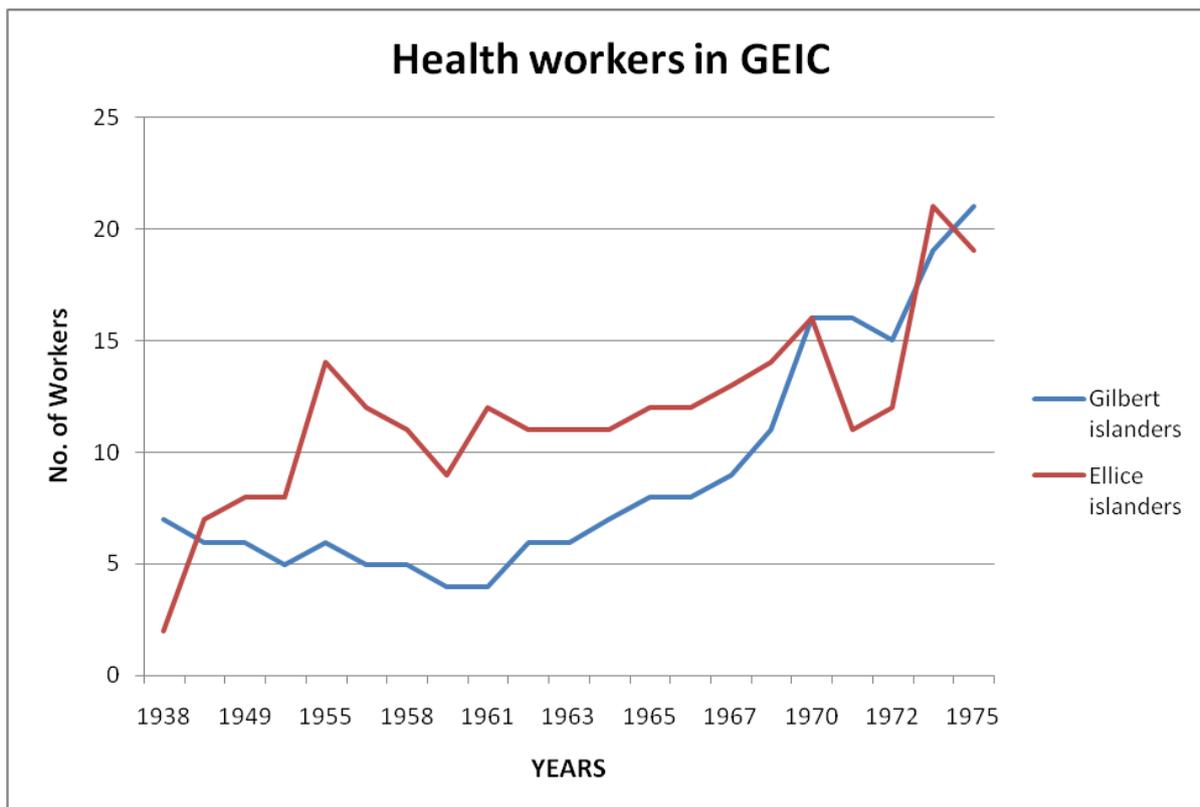
The shortage of NMPs posted to outer islands and the high incidence of communicable diseases in the colony was a problem that the Medical Department needed to put more effort into, according to Dr M Rose, who suggested that the only solution to manage communicable diseases in the outer islands was to increase the number of NMPs. He wrote ‘we should fill as many vacancies at Colonial Medical School as are offered to us – these vacancies should be chosen from the Gilbertese students rather than Ellice Islands.’<sup>79</sup> The need to choose more Gilbertese over the Ellice Islanders may have been based on several factors. These factors were the rapid increase of the Gilbertese population, the greater size and expanse of the Gilbert Islands ( the Gilbert Islands has twenty eight islands, compared to the Ellice Islands with nine islands) and the Gilbertese doctors would be able to understand the indigenous language and also the cultures. In Figure 6 it shows that the Ellice Islanders outnumbered the Gilbertese in the medical services.<sup>80</sup> According to Drs Tiliga Pulusi and Tomasi Puapua, in a shared interview, there was a high failure rate among the Gilbertese students from the Colonial Medical School compared to the Ellice Islanders. Dr Pulusi further explained that from his experience, it is a tradition in Tuvalu when a child left their home island, parents, families and even the elders on the island reminded the child of the importance of hard work and encouraged the child for future endeavours. There is a saying, ‘*Fenua he takua i toku loto e mahei*’, which simply means that the child should struggle to achieve what he or she was sent for in order to avoid the bad reputation of the country.<sup>81</sup>

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<sup>79</sup> Plans for the Post War Reconstruction of the Medical Department in the Gilbert and Ellice Islands Colony (1944-1952). WPHC 9 1229275 F.52/50/1. WPHCA. Special Collection, University of Auckland Library, p.2

<sup>80</sup> Macdonald, *Cinderellas of the Empire : Towards a History of Kiribati and Tuvalu*, p.249.

<sup>81</sup> Tomasi Puapua, 03/09/ 2009; Pulusi.



**Figure 6. Comparison of Ellice Islanders and the Gilbertese Medical Practitioners.**  
 Source: Compiled Medical Report for the G&EIC 1916-1975.

### Mobility and Distance

Mobility and distance were key factors in Tuvaluan health. A mobile health unit was proposed in 1947 and cost the medical department a sum of \$400.00. This mobile health unit would have contained a projector and films about health. In 1948, Henry Evans Maude, the Resident Commissioner, commented on the proposal that there was a need to have a mobile health unit for the people on the outer islands, so that they could have an opportunity to benefit from education in hygienic. Likewise Dr Rose suggested that it was wise to have a mobile health unit because he considered the expenditure of \$400 was not expensive.<sup>82</sup> The decision for a mobile health unit was not favourable due to economic reasons and the

<sup>82</sup> Medical and sanitary Report for the Year 1945. WPHC 9 1229271 F. 52/II/I.WPHCA. Special Collection, University of Auckland Library, p.2

proposal was changed to train a sanitary inspector at the CMS in Fiji.<sup>83</sup> In 1950, however, the mobile health unit was accepted. The South Pacific Health Unit provided the required materials and funds so that the projector could be operated by the medical officers, health sisters and Assistant Medical Practitioners for education in the island communities. This was used by the visiting TB officer, Dr L G Poole, to instruct people on proper hygiene and also to attract people to come to the gathering for a TB survey and vaccination.<sup>84</sup> Unfortunately records of the results seem to have disappeared.

The atolls within the G&EIC are scattered. Scattered islands made communications and transportations between islands difficult. Shipping was the main type of transportation. Poor transportation and communication hindered all activities in the colony such as travelling medical officers visiting outer islands' Dressers and patients. In these visiting trips, medical officers could carry out medical and surgical work above the capability of the island Dressers on the outer islands.<sup>85</sup> These visits were also initiated to reduce the number of people admitted to the Central Hospital and this would have the added advantage that patients would have adequate supplies of local food on their own islands, which was not the case for patients in Tarawa.<sup>86</sup>

Patients from the outer islands who came to Tarawa for treatment were very late for effective treatment due to the inefficient transportation. This problem was also mentioned by Mrs

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<sup>83</sup> Medical and Sanitary Report for the Year 1949. WPHC 9 1229271 F.52/II/I Volume II. WPHCA. Special Collection, University of Auckland Library, p.4

<sup>84</sup> Medical and Sanitary Report for the Year 1951. WPHC 9 1229271 F.52/II/I Volume II. WPHCA. Special Collection, University of Auckland Library, pp 105-6

<sup>85</sup> Medical and Sanitary Report for the Year 1939. WPHC 9 1229271 F.52/II/I. WPHCA. Special Collection, University of Auckland Library, p.7.

<sup>86</sup> Medical and Sanitary Report for the Year 1947. WPHC 9 1229271 F.52/II/I. WPHCA. Special Collection, University of Auckland Library, p.5.

Noatia Peni when she was interviewed. Mrs Peni was the wife of the Native Medical Practitioner, Dr Simeona Peni. She mentioned that all cases of pulmonary TB were partially treated on Funafuti before they were sent off to Tarawa for full treatment. TB patients who were on Funafuti were the lucky ones compared with patients on the outer islands because Funafuti is the port of entry for the islands in the Ellice group. The TB patients were then sent off if there was transport available at that time. TB patients from the outer islands were still referred to Funafuti then to Tarawa.<sup>87</sup> At Tarawa Central Hospital, treatment and case management were very difficult because there was no isolation ward for TB patients. Finally, in 1949 a TB ward on Tarawa was built and accommodated three males and four female TB patients.<sup>88</sup>

### **Child Health**

After the war a shift in lifestyle was noticed in the Colony. In 1948 a memo from Sister J. Adams, a sister in charge of the Colonial Hospital, encouraged mothers to breastfeed babies rather than bottle-fed using the Glaxo (milk powder), with the exception of babies whose mother had died at birth or suffered from TB. She highlighted that mothers were lazy and that they depended on milk powder rather than breastfeeding. In the Colony news magazine *Tero*, written in Gilbertese language and *Tala o Tuvalu* in Tuvaluan language, she explained that the natives imitated the *I-Matang* (Europeans) which made them feel superior to other natives who cannot afford to do so.<sup>89</sup>

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<sup>87</sup> Noatia Peni, 2010.

<sup>88</sup> Medical and Sanitary Report for the Year 1949. WPHC 9 1229071 F. 3/2 Volume II. WPHCA. Special Collection, University of Auckland Library, p.19.

<sup>89</sup> Child Welfare in the Gilbert and Ellice Islands Colony 1939-1948. WPHC 9 1229275 F.52/50/4.WPHCA. Special Collection, University of Auckland Library, p.6

Children under the age of five continued to develop tubercular glands during this period. The cause of enlarged TB glands among children was unknown and gave rise to some debate.<sup>90</sup> In New York, a study had found that unpasteurized milk was not safe because it was infected with *mycobacterium bovis* (*M. bovis*) that causes TB. Cases like abdominal TB, caused by *M. bovis*, were more prevalent among the children under the age of five since milk was their main food and drink.<sup>91</sup> Yet the Ellice Islands had (and has) no cows and no fresh milk and children consumed only limited amounts of powdered milk. The investigation could not be done in Suva due to the lack of necessary equipment. However staffs of the University of Melbourne were able to find out what causes the increase of tubercular glands. A memo to the resident Commissioner explained that it was important to further investigate the problem since the infection was linked with the bovine strain of bacillus, but the whole colony consumed milk powder stored in cans and not fresh milk.<sup>92</sup> Thus there was no evidence that had indicated about the findings.

### **Tuvaluan medicine**

On the island of Nanumea, the far northern island in the Ellice group, a man named Malele Tauila, was a well-known local herbal medicine doctor in 1951. He had knowledge about TB and the appropriate medical plants. People suspected of having TB went to ask him for help while they waited for the next trip of the ship to take them to Tarawa for examination. The patients had to drink the medicine he made, one cup in the morning and one in the afternoon,

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<sup>90</sup> Gilbert and Ellice Islands Colony, *Annual Medical Report*, Bairiki, Tarawa, 1916-1973.

<sup>91</sup> Tara Jenkins, 'Children and Tuberculosis in Hamilton,' in *Before 'the San': Tuberculosis in Hamilton at the Turn of the Twentieth Century*, Ann Herring, ed., Hamilton, Ontario, 2007, p.35.

<sup>92</sup> Memorandum 28 December, 1957: Inspector General of the South Pacific Health Services, Suva to Resident Commissioner, Tarawa. WPHC 16 1228666 F.173/6/5. WPHCA. Special Collection, University of Auckland Library, p.23-24

and were often cured before the boat arrived.<sup>93</sup> *Tufuga* continue to be important, as discussed in Chapter 3.

### **Inching towards a TB Control Programme (1950 -1959)**

This decade was characterised by a great deal of planning for a TB Control Programme and an equal amount of frustration as these plans were not realised. For an epidemiological survey of TB and a control programme to eventuate, many conditions had to coincide. These included the political will, funding, trained health personnel, transport and communications, suitable equipment and a population enthusiastic, or at least accepting, of such a programme. The antibiotic for TB was invented in 1943 and proved its efficacy after WWII. A decade after its invention, streptomycin, the first antibiotic for TB treatment arrived into the Colony in 1954.<sup>94</sup> As the following sections demonstrate, the TB control programme that was finally implemented in 1960 was first mentioned in 1951, when it was scheduled to follow a survey. However in 1952, the TB Control Programme was actually carried out in the Fiji Islands and British Solomon Islands Protectorate under the Colonial Development and Welfare Funds, Scheme Number D284, with the approved amount of £A7, 000.<sup>95</sup>

TB Control Programmes for the Gilbert and Ellice Islands delayed and would be redressed when the TB Control Programme for the Fiji Islands and the British Solomon Islands Protectorate had successfully been completed. The TB Control Programme for the G&EIC was dependent on the availability of Assistant Medical Practitioner, Macu Salato, from Fiji, a specialist in TB, or any other qualified Assistant Medical Practitioner specialised in

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<sup>93</sup> Paia.

<sup>94</sup> Hamblett, p.28; Monnais, p.47.

<sup>95</sup> Reorganisation of the Medical Services (1944-1952). WPHC 9 1229275 F.52/50/1. WPHCA. Special Collection, University of Auckland Library, p.92

TB.<sup>96</sup> This plan was not instantly implemented due to the lack of trained and experienced medical staff on the programme. BCG immunization was also planned as part of the campaign with the hope that it would help prevent the population from being easily infected with TB which, in turn, would reduce the expenses spent on the referral of cases to the Central Hospital. In the intervening decade of delay forty-nine people from the Colony died of TB in hospital, probably many more died without going to hospital, and five hundred and twenty-nine new cases were admitted to hospital.

A joint anti-TB and anti-yaws campaign was planned in 1955 with the assistance of the WHO and UNICEF to carry out Heaf tests.<sup>97</sup> BCG would be the focal point of this TB Control Programme, and it was hoped that this initiative would increase resistance to TB.

Unfortunately, the TB Control Programme was temporarily dropped because the dried BCG vaccine, which is the most suitable vaccine in the Colony, was suspended by the specialist advisor of the WHO while study was being undertaken to prove its efficacy.<sup>98</sup> The powdered freeze-dried BCG did not require a cold chain. As refrigeration was a continuing problem, the campaign could not go ahead with any other form at this time. A memo to the Resident Commissioner, M L Bernacchi, from the Inspector-General for the South Pacific Health Services, P W Dill-Russel, indicated that he had obtained funds from the Association for Prevention of TB in Australia to buy a mobile x-ray machine to be used in the Colony TB campaign.<sup>99</sup>

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<sup>96</sup> WPHC 16 1228666 F. 173/6/1. WPHCA. Special Collection, University of Auckland Library, p. 1

<sup>97</sup> Medical and Sanitary Report for the Year 1957. WPHC 16 1228666 F. 173/6/7. WPHC. Special Collection, University of Auckland Library, p.17

<sup>98</sup> Great Britain Foreign and Commonwealth Office, *Colonial Reports Gilbert and Ellice Islands Colony and the Central and Southern Lines Islands: Report for the Year 1954-1956*, London, 1957, pp.2-3.

<sup>99</sup> Gilbert and Ellice Islands Colony Medical Department, *Medical and Sanitary Report for the Year 1954*, Bairiki, Tarawa, 1916-1973, p.23.

Dr J.S. Hogg, the SMO for the G&EIC, met with Professor F R G Heaf, a consultant in TB to the Colonial Services and the man after whom the Heaf test was named, while he was on leave in the United Kingdom in 1957. Dr Hogg discussed with Professor Heaf that he was concerned with the increased incidence of TB in the Colony and had decided to do a control programme on TB. A mass Heaf test and BCG vaccination would be the focal point of the control programme on TB. Professor Heaf did not recommend the mass BCG. He preferred, in the case of a diagnosed TB patient in a village, to examine all close contacts using Heaf tests. The positive reactors were to be admitted and treated while the negative reactors would be BCG vaccinated. He also suggested that all newborn babies and children up to age twelve should be vaccinated.<sup>100</sup>

The Acting Resident Commissioner, Mr R. Davies, wrote to Mr M D Gass, the Acting High Commissioner in 1959, to express his ideas about how to cope with TB and what measures might be taken. He stated that a proposed plan was prepared in 1957 by the Inspector General of the South Pacific Health Services of WHO to do a wide survey on TB together with a BCG campaign. This plan had been modified following a recommendation made by Professor Heaf at the 1958 SPC Conference in American Samoa.<sup>101</sup>

The TB Control Program that was planned and deferred by the WHO in 1955, would be implemented in 1960 with the assistance of the Colonial Development and Welfare Funds after the anti-yaws campaign was successfully completed at the end of 1959.<sup>102</sup> Before the

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<sup>100</sup> Medical and Sanitary Report for the Year 1957. WPHC 16 1228666 F. 173/6/7. WPHCA. Special Collection, University of Auckland Library, p.17.

<sup>101</sup> Tuberculosis Control Programme 1956. WPHC 20 1229773 F.207/17/2. WPHCA. Special Collection, University of Auckland Library, pp.8-9.

<sup>102</sup> Great Britain Foreign and Commonwealth Office, *Colonial Reports Gilbert and Ellice Islands Colony and the Central and Southern Lines Islands: Report for the Year 1958 and 1959*, London, 1961, p.5.

TB Control Programme proceeded, Professor Heaf had recommended that it would be wise to invite a chest physician specialist to the Colony to train those who would be involved in the TB Control Programme. His suggestion was not favourably received by the Acting Resident Commissioner, Mr R. Davies, because the Medical Department had selected a specialist to take control of the TB Control Programme. Assistant Medical Practitioner Faanoa H Pine from the Ellice Islands was appointed to in charge of the TB Control Office.<sup>103</sup>

### **TB care 1950-59**

Facilities for TB treatment did not improve in the 1950s. Dressers on the outer islands did not have medical equipment such as microscopes or X-ray machines to detect TB. The usual method of detecting suspected TB cases was through analysis of observable clinical symptoms and family medical history. Symptoms included productive coughing, coughing up blood, very high temperature in the evening, loss of weight, poor appetite and night sweats.<sup>104</sup> TB was sometimes confused with pneumonia because symptoms were almost the same. Medical Assistants and Dressers at their first reaction to the symptoms were to treat patients with the antibiotics for pneumonia and if there were no changes in the patient then they were definitely positive that the patient had TB infection. It was the responsibility of the Dresser in the outer islands to notify the Assistant Medical Practitioner at the District hospital about the new TB patients. Patients had to register before commencing TB antibiotic medication for and were kept in the isolation ward for three months. All the instructions for the patients'

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<sup>103</sup> Tuberculosis Control Programme 1956. WPHC 20 1229773 F.207/17/2. WPHCA. Special Collection, University of Auckland Library, p.7.

<sup>104</sup> Bryder, *Below the Magic Mountain: A Social History of Tuberculosis in Twentieth-Century*, p.105.

treatment were controlled from the Funafuti District Hospital either by letter or by telegram savings messages.<sup>105</sup>

Due to the lack of medical equipment, the Assistant Medical Practitioner and Dressers carried out medical activities by trial and error based on their experience, plus what they had learnt at the Medical School. For instance, data of registered cases and deaths from TB were unreliable because medical attendants were not able to confirm their diagnoses by X-ray and sputum test. In an example from 1951, a patient who had shortness of breath was scheduled to have a surgery but a student who was on internship advised the Assistant Medical Practitioner to check the patient's chest because he suspected the patient had TB. The patient was infectious with active pulmonary TB. He was treated with TB antibiotics and his shortness of breath was gone.<sup>106</sup>

Despite these very inadequate health services, in 1954 the High Commissioner for the Western Pacific, Sir Robert Stanley, wrote to the Secretary of State for the Colonies that he was concerned at the rising cost of medical services in the colony.<sup>107</sup> B C Cartland, Acting Resident Commissioner for the Gilbert and Ellice Islands, replied that the rising cost of medical services was due to the increased cost of medical supplies especially antibiotics (streptomycin available in 1954) which were needed to treat TB.<sup>108</sup> Such a response may have indicated to the High Commissioner that such a penny-pinching approach to health services in the Colony was creating future costs through the spread of TB. It also indicates

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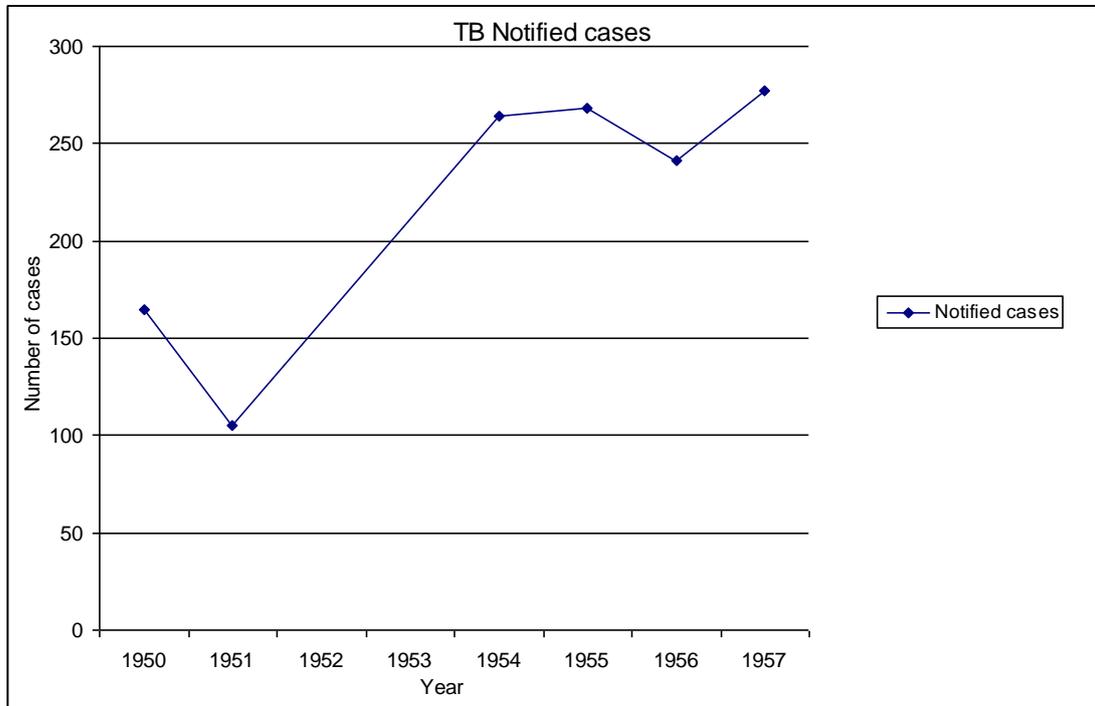
<sup>105</sup> Salesa.

<sup>106</sup> Pulusi.

<sup>107</sup> Medical and Sanitary Report. WPHC 9 1229271 F. 52/II/I Volume II. WPHCA. Special Collection, University of Auckland Library, p.116.

<sup>108</sup> Ibid, p. 97.

that the Commissioner was very aware of the high incidence of TB. Figure 7 shows that the number of notified TB cases was still very high even though the anti-TB antibiotic had already started.



**Figure 7. Notified TB Cases in the Colony.**

Source: Compiled Colonial Reports Gilbert and Ellice Islands Colony and the Central and Southern Lines Islands; Compiled Medical Report for G&EIC 1916-1975.

A Conference on TB was organised by the SPC and was held in American Samoa in November 1958 and attended by representatives from the Colony. The conference considered that there was a relationship between TB and nutrition. It was suggested that a study regarding TB and nutrition in South Pacific countries would be useful because with people living in the same environment with different cultures it would be likely that there would be differences in nutritional practices between the various groups.<sup>109</sup> Attempts to do this had been made by the Medical Department for the G&EIC in early 1958. The Medical

<sup>109</sup> Tuberculosis in General. WPHC 9 1229773 F. 207/17/1. WPHCA. Special Collection, University of Auckland Library, p. 6

Department dealt with the improvement of nutrition and living conditions in the Colony under the supervision of the Assistant Medical Practitioner Teleke Kofe.<sup>110</sup>

Assistant Medical Practitioner Faanoa H Pine, TB control officer, represented the G&EIC to the first WHO TB refresher course that was held in Suva, Fiji in 1959. This refresher course provided the participants with an opportunity to re-examine all relevant aspects of TB with special emphasis on prevention, case-finding and treatment, methods of control that were appropriate to the social and economic situation of their respective territories and to discuss problems faced in controlling the disease and exchange of ideas about their work. All participants involved in this refresher course were medical personnel and representatives from the SPC and WHO.<sup>111</sup> This indicates that the health professionals and researchers at the conference were actively exploring the reasons why rates of TB in the Pacific were so varied from island group to island group, and were aware that they did not yet have all the answers. As the section on the 1960s demonstrates, this suggestion to study nutrition along with the epidemiology of TB was taken seriously, as the Hamblett report also comments on nutrition.

At the end of this decade, TB was still recorded as a major health problem in the G&EIC Medical Reports. NMPs stationed in the outer islands tried their best to treat TB patients in their respective islands. Communication and transportation between the outer islands and the Medical Department Headquarter in Tarawa hindered the quick responses needed for effective treatment of TB patients. Prevention and treatment of TB was planned in 1959 and a

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<sup>110</sup> TB in General. WPHC 16 1228666 F.173/6/7. WPHCA. Special Collection, University of Auckland Library, p.17.

<sup>111</sup> World Health Organisation & South Pacific Commission, 'Report on the Refresher Course on Tuberculosis and Leprosy', Suva, Fiji, 17/03-12/04 1969, p.1.

plan was finally implemented in 1960. However, before I consider the next decade, my attention turns to the situation of groups of Ellice Islanders who were part of an international labour market working on phosphate deposits on Ocean Islands.

### **TB and Phosphate Labourers on Ocean Island**

The Tuvaluan story of TB is also the story of colonial relationships. These were not only political and administrative relationships but also involved labour migrants who converged from several parts of the world on the South Pacific phosphate islands. Phosphate was a valuable resource in intensive agriculture and was used extensively on the farms of North America, Australia, New Zealand and elsewhere.

Ocean Island, also known as Banaba, lies 40 miles west of the equator and some 300 miles west of the central portion of the Gilbert Islands.<sup>112</sup> Ocean Island was initially chosen as the Government Headquarters of the Colony because of its major economic resource, the phosphate.<sup>113</sup> The phosphate on Ocean Island, owned by the British, was the major revenue for the G&EIC Administration. The phosphate was exported to New Zealand and Australia. An agreement was signed between the British Phosphate Commissioner (BPC) and the Gilbert and Ellice Islands Administration that all services for the community were provided by the BPC. The company provided all facilities that were required by the hospital and the hospital administration, including an infant welfare centre and free milk and soup for labourers' children.<sup>114</sup> The recruitment of the first thirty-five Ellice Islanders to work as

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<sup>112</sup> Thomas Grace Tyrer, *Nauru and Ocean Islands Story*, Wellington, 1963, p.28.

<sup>113</sup> *ibid.*, pp.33-4.

<sup>114</sup> Gilbert and Ellice Islands Colony Medical Department, 'The Gilbert and Ellice Islands Colony Medical Department Annual Report for the Year Ending 31st December 1962.', in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa., 1916-1975.

phosphate labourers were from the island of Nanumea. They were recruited in August, 1900 after Albert Ellis from the Pacific Island Company based in Sydney, Australia discovered large deposits of high grade phosphate rock in May the same year.<sup>115</sup>

Packard stated that in South Africa, the primary source of TB in the rural areas in South Africa were those labourers who worked in the mining industry. When these labourers returned to their families after their contract expired there was a high possibility of spreading TB and infecting family members.<sup>116</sup> This observation also applies to the Ocean Island situation where workers who returned to their homes in the outer islands could also infect their families.<sup>117</sup>

TB was the main health issue on Ocean Island as clearly reported in the 1938 medical report (Table 3). TB of all forms developed very seriously among the native labourers, and was a major cause of death both in adults and children.

**Table 3. Ocean Island Registered Pulmonary TB and Other Forms 1938-1947.**

Year	Registered Pul TB	Deaths due to Pul TB	Registered other form	Deaths due to other forms
1938		13		2
1947	17	3	18	1
1948	10		1	
1949	12	0	2	0

Source: Compiled Medical Report for the G&EIC 1916-1975.

On Ocean Island, there were three separate hospitals for the different ‘races’. These races were the Europeans, Chinese and the native labourers (*I-Kiribati* and Ellice Islanders). The

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<sup>115</sup> Faaniu, et al., p.122.

<sup>116</sup> Packard, pp.92-3.

<sup>117</sup> Hamblett, p.28.

European hospital was meant for Europeans only and provided free medical services for all the European employees of the British Phosphate Commission and their dependents. The Chinese hospital for indentured Chinese employees was also made available to non-European members of the crews of visiting ships. The native hospital was for indentured native labourers and their dependents. The hospital had a well equipped operating theatre, an X-ray plant, a laboratory and a dispensary.<sup>118</sup> None of the medical reports explained why three segregated hospitals were necessary. In a similar situation in Ghana, West Africa, separate medical facilities were supplied for local and European patients, and segregation was justified as a preventive method to reduce the spread of diseases.<sup>119</sup> Segregation of medical services on Ocean Island was witnessed by Mr Taaua Paia when he joined the British Phosphate Company labour force in 1965. He described the medical services on Ocean Island as a satisfactory service:

I am satisfied with the medical service provided by the company. Whatever services provided at the European hospital is also provided at the British Phosphate Commissioner labourers' hospital- I do not understand why TB was still a problem among the labourers.<sup>120</sup>

The Japanese raids on Ocean Island had negative impacts on the lives of the Banabans (the natives), the Gilbert and Ellice Islanders and the BPC's labourers on the island. The BPC residency was bombed shortly after Pearl Harbour was bombed by the Japanese in 1941. A day later, the Japanese bombed the machinery house, the house of the manager for the BPC, and the radio station which was the only means of communication on the island. The Australian and New Zealand Government helped to evacuate the women and children before

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<sup>118</sup> Gilbert and Ellice Islands Colony Medical Department, 'Gilbert and Ellice Islands Colony: Medical and Sanitary Report for the Year 1938 '.

<sup>119</sup> S Kojo Addae, *History of Western Medicine in Ghana 1880-1960*, Edingburg, 1997, p.32.

<sup>120</sup> Paia.

the Japanese attack happened. After the attack, the Europeans were evacuated by the Australian and New Zealand Governments leaving behind the Banabans, Gilbertese, and Ellice Islanders. When the Japanese took over Ocean Island they treated the people as slaves and later faced shortages of food on the island and shipped the people to the other islands (Tarawa, Nauru and Kusaie, in the Caroline Islands) that were under Japanese rule. One hundred and fifty men were left behind to work for the Japanese and some of these men were shot dead by the Japanese after the Japanese surrender in 1945.<sup>121</sup>

The Japanese ruling over Ocean Island had an impact on medical services on the island. Two NMPs were taken by the Japanese as prisoners during the war. They were Arobati Hicking and Tentau Iotimo. After the war, Hicking decided not to return to the Colony Medical Services and to work for the United States Authorities in the Carolines. On the other hand, Iotimo returned to the Colony to work for the Colony Medical Services, developed phthisis and was sent to Fiji for treatment. He was pronounced dead in Suva hospital in August 1946.<sup>122</sup>

On the reoccupation of Ocean Island after the war, NMP Teauoki Bukitaua and the Australian Medical Authorities went to Ocean to do an assessment on the sanitary condition which they found appalling.<sup>123</sup> As a result of the problems mentioned above, the number of registered cases and deaths of pulmonary TB and other forms were also increased, as described in Table 3.

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<sup>121</sup> Jane Resture, *Banaba and World War 2* 15/01/ 2009; available at: [www.janeresture.com/banaba/ww2.htm](http://www.janeresture.com/banaba/ww2.htm) (23/12/ 2009)

<sup>122</sup> Medical and Sanitary Report for the Year 1946. WPHC 9 1229271 F. 52/II/I Volume 1. WPHCA. Special Collection, University of Auckland Library, p.1

<sup>123</sup> Medical and Sanitary Report for the Year 1945. WPHC 9 1229271 F.52/II/I. WPHCA. Special Collection, University of Auckland Library, p.2.

Houses built for married couples after the war were very small and poorly constructed (see Figure 8). All the labourers and family members had shared toilets and bathrooms. The houses were built on stilts with a wooden floor, about one to two meters above ground level. These houses accommodated two families (with a maximum of two children). There was also a possibility to accommodate family members underneath the house when it became overcrowded. The houses had a partition in the middle for the two families and no walls. As it was the occupants' responsibility to provide shutters, the local people could only use empty sacks as shutters.<sup>124</sup>



**Figure 8. British Phosphate Commission Married Quarters after the Second World War.**

Source: Photo National Archives N.Z BAKF A689, box 35.

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<sup>124</sup> Fomai Malua, 10/09/ 2009.

New flats (European style) were completed in 1965. The houses were all in satisfactory condition and were given to the Chinese, and Nanumea and Vaitupu labourers (both from the Ellice Islands). But there was a problem, the people complained about the dusty environment because their accommodation was very close to the pile of sand which contained the (phosphate) – ‘our house, beddings, eating utensils were covered by the dust’.<sup>125</sup> The water was contaminated because the dust deposited on the roof washed off when it rained and ended up in water catchments. This caused pneumoconiosis and labourers requested compensation from the company for the dusty environment. The compensation was only for the labourers whose house located near the piled of sand. In 1967 the company stopped giving compensation without offering any reason.<sup>126</sup>

## **Conclusion**

The spread of TB into the Colony was a result of colonialism and European contacts. The migration of the people within the Colony to search for paid work, especially to work on the phosphate on Ocean Island, had the possibility of spreading diseases. Poor transportation and communication resulted in the recognition of traditional medicine. Thus, traditional medicine and western medicine worked side by side due to the poor delivery of medical services to the Islands. NMPs were the keystone of delivering the service to the outer islands.

Fighting against the disease, the Medical Department had been trying very hard to find ways to reduce the rate of incidence of TB. However, due to the lack of trained medical doctors and funding, the programmes were delayed until the proposal for the TB Control Programme

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<sup>125</sup> Paia.

<sup>126</sup> *ibid.*

was approved in 1959 under the Colonial and Welfare Funds. The TB Control Programme proceeded in 1960.

## **Chapter Two: TB CAMPAIGNS AT LAST: 1960s AND 1970s**

Concerns over the continuing high incidence of TB in the Gilbert and Ellice Islands led to the implementation of the First TB Control Programme in 1960, funded under the Colonial Development and Welfare Funds. In 1965 the Second TB Control Programme for the Gilbert and Ellice Islands was begun with the assistance of the WHO and UNICEF.

SPC had contributed to the Colony to combat the disease through organised conferences and refresher courses on TB for medical personnel, as did consultants through their technical reports. SPC was established in 1947 by the six Governments who were then responsible for the administration of island territories. These Governments were Australia, France, Netherlands, New Zealand, United Kingdom and United States of America. Dr E P Hamblett, a consultant from SPC, wrote a technical report on TB for the British Solomon Islands Protectorate (1958-1965) and the G&EIC (1964-1968). In his work for the G&EIC he reorganised the TB records for the whole Colony according to ethnicity, which meant it became much easier to read the results. Dr Hamblett's work will be discussed in further details later in the chapter.

Transportation was an ongoing problem in the G&EIC that slowed down the progress of TB Control Programme. This was due to the isolated nature of the islands in the Colony. Training of local people was required at the time due to the shortage of medical staff to carry out activities of the programmes. Despite all the problems faced during the TB Control Programmes, the island communities played their role to achieve the goals of these TB Control Programmes. Compared with the 1950s, these subsequent two decades were characterised by considerable activity to control TB.

### **The First TB Control Programme (1960-1964)**

The 1959 proposal for a TB Control Program for the Gilbert and Ellice Islands was approved by Britain in April 1960 for the sum of £17,438, (Scheme 4196 and A) under the Colonial Development and Welfare Funds. It was a five year programme and the funding was used to carry out case finding, treatment, aftercare and health education for the whole Colony. While funding was accessible, the Colony faced the lack of TB specialist medical staff to undertake the TB Control Programme. The tuberculin test and BCG vaccination were considered to be fundamental to the campaign.<sup>127</sup> The tuberculin test that was used in the TB Control Programme was the test that was used in the United Kingdom to test for exposure to *TB mycobacterium* and possible latent infection. The tuberculin test was named after Dr Professor F R G Heaf, who had earlier advised how the TB Control Programme in the G&EIC should perform.<sup>128</sup>

In an interview with one of the retired Dressers, Tekinene Mataio, I learned that in 1960 the TB Control Programme was carried out, beginning on Tarawa in the Gilbert Islands, and was conducted by Medical Practitioners and Dressers. The team members were Medical Practitioners Teekai Tekanene (the leader of the team) and Tofiga Puta, Dressers Fataasi Enele, Bwenibeia and Tabora Jack (the record keeper).<sup>129</sup>

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<sup>127</sup> Great Britain Foreign and Commonwealth Office, *Colonial Reports Gilbert and Ellice Islands Colony and the Central and Southern Lines Islands: Report for the Year 1960 and 1961* London, 1962, p.5 & 42.

<sup>128</sup> Hamblett.

<sup>129</sup> Tekinene Mataio, 9/12/ 2009. Mr Mataio graduated in 1960 from Tarawa Nursing School. He started to work as a Dresser on his home island Nui, in the Ellice Islands. He assisted the Tuberculosis Control Programme when the team visited Nui.

A Heaf gun was used to inject the serum (purified protein derivative which was manufactured by Glaxo Limited in England) on the surface of the left forearm and was read between two to seven days later. Non-reactors (i.e., people who had had no exposure to *TB mycobacterium*) would be immediately BCG vaccinated. The BCG was a freeze dried vaccine manufactured by the Commonwealth Laboratories in Melbourne, Australia.<sup>130</sup>

In 1961 there were 440 notified cases of TB and over 8000 people had been examined during general and campaign work in the G&EIC.<sup>131</sup> Under the TB Campaign Order, all people who had suspected cases of TB were sent to the Central Hospital on Tarawa for further investigation and treatment. All treatment was by chemotherapy. This order was only put into practice for one year and thereafter it came to an end. The medical department could not afford it because it was too expensive to transport all the suspected cases to Tarawa and also there were not enough beds to accommodate TB patients at the hospital. In order to overcome this situation the SMO encouraged Dressers and nurses who worked in the outer islands to treat all TB patients on domiciliary therapy after a relatively short period of treatment at the Colonial Hospital.

The TB Control Programme was like a wakeup call for the people in the outer islands. A retired Dresser, Mr Tekinene Mataio, who was the Dresser for his home island, Nui, in 1961, described how the people reacted when they were told they had TB. The people refused to come forward if they experienced positive symptoms of TB. To solve the problem, he

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<sup>130</sup> Report on a Field Visit to the Gilbert and Ellice Islands Colony in 1965 by Dr R C Leclerq. WPHC 20 1229773 F. 207/17/2. WPHCA. Special Collection, University of Auckland Library, p.112.

<sup>131</sup> Great Britain Foreign and Commonwealth Office, *Colonial Reports Gilbert and Ellice Islands Colony and the Central and Southern Lines Islands: Report for the Year 1960 and 1961* p.42.

personally approached the family unexpectedly so that other people would not notice his presence. He felt that he urgently needed to do something before it was too late for treatment.<sup>132</sup>

Dresser Maimoaga Salesa, who later joined in the TB Control Programme in 1962, shared his experience of what they did to prepare for the campaign. Prior to the campaign all the campaigners practised how to use the Heaf gun and how to inject the BCG in the right way. They tested each other using the Heaf gun and inoculated themselves with BCG in their upper left arms. He described the procedure they followed during the campaign. Case finding was initially from house to house testing only the children. Almost all the children were read negative so BCG vaccination was administered to their upper left arms. And if the child was found positive, treatment was given and a further investigation on family members was carried out. All the children in households which had been visited by the campaigners tested negative therefore they had to change the target. The campaigners came to a decision to target adults in every household. They repeated the Heaf test on families whose children were tested negative. The repeated procedure of the Heaf test was a difficult task because some people had changed their home address or had moved to stay with other relatives therefore it was difficult to monitor the progress of the TB Control Programme. The Medical Department faced a problem of getting a qualified pathologist to carry out laboratory work during the campaign. He also proudly shared that he was assigned to carry out laboratory work for the TB Control Programme. For him it was a very difficult task: ‘I was not trained to do the job

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<sup>132</sup> Mataio.

but it was challenging. I came to learn TB mycobacterium, how to use the microscope and analyse the samples through textbooks'.<sup>133</sup>

Posting of Assistant Medical Officers to outer islands depended on the population of that particular island. In the Ellice Islands, a Dresser and a nurse could be posted together to the outer islands with a high population and a Dresser or a nurse could be posted to other islands. Dresser(s) and nurse(s) had their hands full with their responsibilities. They were responsible for all health problems and tried to accomplish the goals of the TB Control Programme as well. In 1961, Dr Tiliga Pulusi proposed to the Chief Medical Officer Dr R. K. Bowman the idea of posting an Assistant Medical Officer to the outer islands. His request was made especially for the island of Nanumea. Nanumea is the northern-most island in the Tuvalu group with the highest population in the Ellice Islands. In his proposal, the Assistant Medical Officer would give assistance in treating TB cases to the Dresser or nurse on nearby islands, rather than referring cases to the Central Hospital, and this would continue the TB Control Programme.<sup>134</sup> In 1962 Assistant Medical Officers were posted to work in some outer islands and Dr Bwebwentekai Tekanene from the Gilbert Islands was appointed by the Medical Department to work on Nanumea.<sup>135</sup>

Problems were solved when travelling and relieving medical officer, Dr A.W. Marr and his wife J Marr, a nursing sister, were posted to the Ellice Islands to work for five months in

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<sup>133</sup> Salesa.

<sup>134</sup> Pulusi.

<sup>135</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31 December, 1962,' in *Gilbert and Ellice Islands Colony Annual Report*, Bairiki, Tarawa, 1916-1975, p.6; Pulusi.

1962.<sup>136</sup> Dr Marr was the first medical officer to be posted to the Ellice Islands in the almost thirty years since Dr D C Macpherson had left in 1933. The purpose of their visit was to carry out the TB Control Campaign and to report on what was required urgently for the improvement of the Funafuti District hospital.<sup>137</sup>

Home treatment of discharged TB cases was put into practice in the outer islands in 1962 with the hope that this would help the touring medical officer if the problem of shipping came up. This was on trial for one year and the island pastor and volunteer(s) from the community were assigned by the Health Department to monitor TB patients' medication. In 1963 it was noticed that this technique did not work properly in the outer islands; monitors were not capable of making sure the right amount of dosage was given for the patients, and therefore raised the possibility of creating of drug-resistant bacilli.<sup>138</sup> Dr Tiliga Pulusi commented that sometimes patients did not turn up to take their medication and the monitors failed to follow up the patients. In addition to this problem was the insufficiency of tablets distributed among the islands in the Colony. This monitored home treatment was continued only for the children under six years old who had positive Heaf tests.<sup>139</sup>

The Resident Commissioner, Mr V. J. Anderson, submitted his financial summary report with respect to the Tuberculosis Control Programme Scheme 4196 and A in 1963 to the Secretary of State in London seeking permission to extend the TB Control Programme to 31 December,

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<sup>136</sup> Gilbert and Ellice Islands Colony Information Office, 'Resident Doctor for the Ellice Islands,' Bairiki, Tarawa, 1960-1962, p.5.

<sup>137</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31 December, 1962,' p.6.

<sup>138</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1963,' in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa, 1916-1975.

<sup>139</sup> Tuberculosis Control Programme 1956. WPHC 20 1229773 F. 207/17/2. WPHCA. Special Collection, University of Auckland Library, p.48;Pulusi.

1964 at no extra cost. The extension of the time frame of the TB Control Programme was needed mainly because of the poor accessibility of transportation at the beginning of the campaign.<sup>140</sup> As a result of poor transportation the Medical Department found out that none of the islands in the Colony had completed the primary campaign (BCG vaccination).<sup>141</sup> The problem of transportation between islands was improved when a shipping schedule of regular voyages was introduced in 1963. Referral of patients from the outer islands to the District Hospital on Funafuti and to the Central Hospital in Tarawa and transport of drug supplies was improved. However, in 1964, the scheduled regular voyages between islands could not be maintained because of unexpected changes of shipping schedules when there was an emergency that required transportation. As a result of poor shipping schedules, all Assistant Medical Practitioners working in the outer islands were issued a microscope.<sup>142</sup> In the Ellice Islands only Nanumea and Funafuti had Assistant Medical Practitioners, received a microscope to carry out sputum tests of suspected TB cases. Patients from Nanumaga and Niutao, the neighbouring islands of Nanumea, were referred to the Assistant Medical Practitioner on Nanumea depending on the availability of transportation and other islands were referred to the Assistant Medical Practitioner at Funafuti District Hospital depend on the shipping schedule.<sup>143</sup>

In addition, the TB Registry had broadcast radio programmes on 'Prevention and Control of TB' twice every month. The programme was broadcast in Gilbertese and Tuvaluan

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<sup>140</sup> Telegram Saving Number 99: Resident Commissioner, Tarawa to Secretary of State, London. 21/09/1963. WPHC 20 1229773 F.207/17/2. WPHCA. Special Collection, University of Auckland Library, pp. 40-1.

<sup>141</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1963,' p.21.

<sup>142</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1964,' in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa, 1916-1975, p.8 & 21.

<sup>143</sup> Pulusi.

languages. The idea might have been adopted from Fiji. In Fiji a doctor from the CMS would deliver the message through broadcasting to all Assistant Medical Officers working in the outer islands and villages of Fiji. The message would relay department news, transfer of staff, new projects, matters on hygiene and preventive measures against communicable diseases.<sup>144</sup>

### **The Second Phase of the TB Control Programme (1965- 1970)**

The second phase of the TB Control Programme was a continuation of the First TB Control Programme with the assistance of the WHO and UNICEF, discussed at the conference on TB Control which was held at Kuala Lumpur, Malaysia in late 1964.<sup>145</sup>

The WHO TB Adviser to the New Hebrides, Dr R C Leclerq, visited the G&EIC from 18 January to 3 February 1965. The purpose of his visit was to gather information for the initial preparation of the Second TB Control Programme and advise the medical personnel regarding the work in relation to the Programme that would soon start in the Colony. In his discussion, he informed the medical personnel that the WHO strongly recommended abandoning the Heaf test and using the Mantoux test instead in the campaign.<sup>146</sup> The tuberculin PPD-RT23 (purified protein derivative) was used for the Mantoux test and a BCG vaccination, a Japanese freeze dried vaccine, would be given to non-reactors.<sup>147</sup>

Professor F R G Heaf disagreed with Dr Leclerq's report against the Heaf test. Dr Leclerq mentioned in his report that the Heaf test was considered inadequate to measure the

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<sup>144</sup> P W Dill Russell, *Broadcast to Assistant Medical Officer in Fiji. 1/59* (Suva: Fiji School Medicine, 1959).

<sup>145</sup> Tuberculosis Control Programme 1956. WPHC 20 1229773 F. 207/17/2. WPHCA. Special Collection, University of Auckland Library.

<sup>146</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1965,' in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa, 1916-1975, p.23.

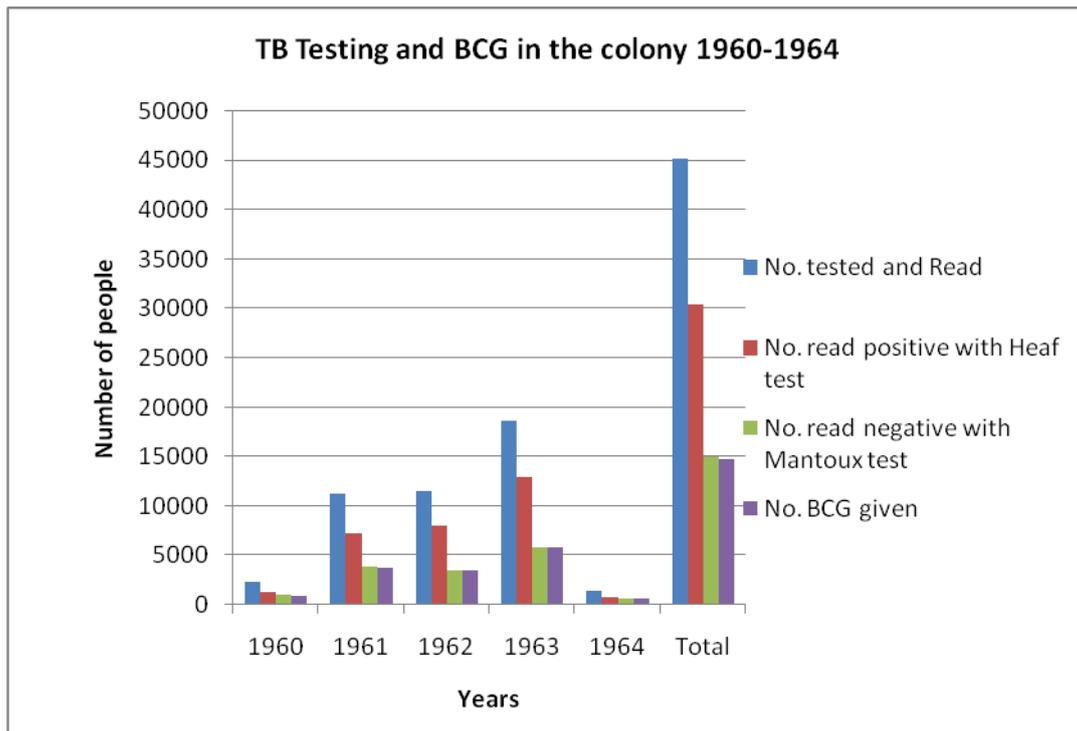
<sup>147</sup> *ibid.*, p.112.

prevalence of TB susceptibility. The prevalence of TB was overestimated by the Heaf test as there were ninety one people who previously tested positive with the Heaf test and tested negative with Mantoux (Figure 9).<sup>148</sup> Professor Heaf sent his remarks to Dr Leclercq concerning recommendations to abandon the Heaf test. Professor Heaf stated that Dr Leclercq did not carry out proper research but jumped to conclusions without giving sufficient information. He mentioned that the people tested positive with PPD-R 23 have not been further investigated with other antigens. He continued explained that the Heaf test proved to be a satisfactory test because much work had been done to investigate the cause of the low allergy by testing with other antigens. He further stated that 'I shall be happy to give Dr Leclercq further information if he cares to write to me.'<sup>149</sup> Ultimately the Mantoux test won, not just in this Colony, but worldwide.

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<sup>148</sup> *ibid.*

<sup>149</sup> Letter : Minister of Overseas Development, London to Mr V J Anderson, Tarawa. Professor F R G Heaf comments on Dr Leclercq report. WPHC 20 1229773 F.207/17/2. WPHC. Special Collection, University of Auckland Library, p.119



**Figure 9. Comparison between Heaf Test and Mantoux Test 1960-1964.**

Source: A report prepared by Dr R C Leclerq WPHC 20 1229773 F.207/17/2.

International organisations assisted in the continuation of the TB campaign. An official agreement was signed between the WHO, UNICEF and the Government of the G&EIC in 1965 on the 27 April, 4 May and 1 June respectively.<sup>150</sup> In this signed agreement, it was stated that the WHO would provide technical assistance and UNICEF would provide BCG vaccines (freeze dried made in Japan), streptomycin, isoniazid tablets, x-ray films, x-ray developers and x-ray fixers.<sup>151</sup>

There was no alteration to the administration of the second phase TB Control Programme.

The TB Control Programme was still under the control of the Assistant Medical Officer, Dr Faanoa Pine, two Dressers (one part-time and one full-time), a clerk to keep all the records,

<sup>150</sup> Gilbert and Ellice Islands Colony House of Representative and Governing Council Informative Document: Number 6/69. WPHC 9 1228850 F. 309/37/5. WPHCA, Special Collection, University of Auckland Library, p.41

<sup>151</sup> WHO Tuberculosis Control Programme (1967-1968). WPHC 30 1228850 F. 309/37/5. WPHCA. Special Collection, University of Auckland Library, pp. 35 & 40-1.

and all medical staff worked in the outer islands to assist when the team visited their respective islands.<sup>152</sup> Dr Pine would notify the Dresser or the Nurse of the island to be visited one week before the team visited. Notification could be passed to the outer islands through a letter, radio or telegram. The Dresser or nurse would report to the village council and ask the council members to prepare the census list. The list was important to the visiting team because the name of the person to be examined would be called out from that list and this made the work easier. It was the responsibility of the TB Control Officer in charge to register and follow up all notified cases of TB and supervise all cases on domiciliary treatment.<sup>153</sup>

There was a need for medical staff to be well trained on the new method of tuberculin testing (the Mantoux test). Miss Ellen Wilhemsson, a nurse educator from the WHO, visited the G&EIC in 1965. The purpose of her visit was to train medical staff on the approved method of tuberculin testing and BGC vaccination. The training programme was for all the medical staff that were available during her visit. She facilitated the campaign and found out that there was no doubt that the general public welcomed it campaign and appreciated its purpose.<sup>154</sup>

The population of all the islands were expected to be Mantoux tested in the campaign. Dresser(s) and Nurse(s) in the outer islands adopted the usual practice learned in the first campaign if they found TB suspected cases. There were doubts about the reports on the campaign from the outer islands in 1965. The Medical Department suggested that reports from the outer islands were unreliable because there were no sputum positive cases reported.

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<sup>152</sup> Gilbert and Ellice Islands Colony, 'World Health Organisation Tuberculosis Control Programme. Wphc 30 1228850 F. 309/37/5', Auckland, 1967-1968, p.41.

<sup>153</sup> Great Britain Foreign and Commonwealth Office, *Colonial Reports Gilbert and Ellice Islands Colony and the Central and Southern Lines Islands: Report for the Year 1966 and 1967*, London, 1969, p.44. ; Ibid, p.8.

<sup>154</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1966,' in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa, 1916-1975, p.19.; Ibid,p.41.

They suggested staining of sputum samples was not properly done by the unsupervised island Dresser or Nurse but there was no evidence to support this.<sup>155</sup>

There was an improvement in transportation in the Colony. The Fiji Airways operated an aircraft 'Heron' to serve the G&EIC in 1966. The 'Heron' was on a weekly schedule from Nausori, Fiji to Bonriki, Tarawa via Nadi, Fiji and to Funafuti in the Ellice Islands and transported the patients from Funafuti and Tarawa to Fiji who required medical and surgical treatment and brought drugs and vaccines to Funafuti. In September 1968, the Fiji Airways had a new aircraft, the 'Hawker Siddeley 748', with a fortnightly schedule which served the same purpose as the 'Heron'.<sup>156</sup>

The TB Control Programme was expected to finish at the end of 1968 as stated in the agreement that was signed in 1965 between the funding organisations and the Government of the G&EIC. There was a great need to continue the TB Control Programme as all the people of the Colony needed to learn how TB spread, who was most likely to get infected with the TB mycobacterium and how to combat the disease. There was also a need for the team to complete all the case finding. In 1969 a formal agreement between the funding organisations and the Government of the G&EIC to continue the activities was signed. At this time the TB Control Programme would continue in conjunction with a Family Planning Campaign.<sup>157</sup>

As the control programme was coming to an end, it is good to now look at Hamblett's work in further detail to see the recommendations he made to further assist the monitoring of TB.

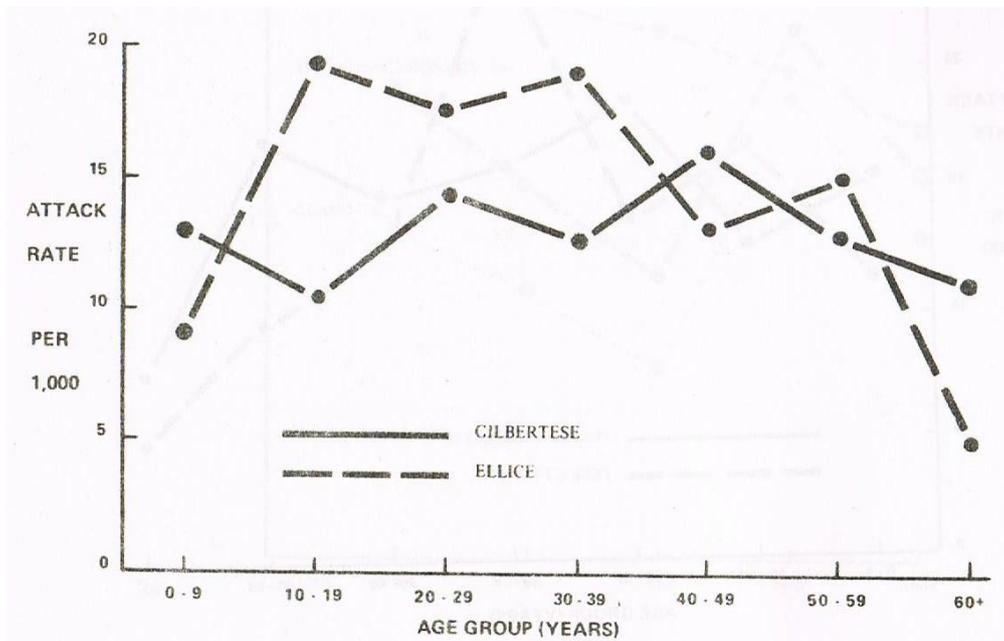
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<sup>155</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1965,' p.23.

<sup>156</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ending 31st December, 1966,' p.5 & 8.

<sup>157</sup> Letter: Regional Director of WHO, Fracisce J Dy to Resident Commissioner, V J Anderson on 24<sup>th</sup> October 1968. WPHC 30 1228850 F.309/37/5. WPHCA. Special Collection, University of Auckland Library, p.36.

Dr. E.P. Hamblett from the SPC produced a report on tuberculosis in the G&EIC for the four-year period from the 1<sup>st</sup> January, 1964 until the 31<sup>st</sup> of December, 1967. There were 637 registered TB cases in the colony during this period and due to insufficient data, only 627 cases were analysed in this report. Of the 627 cases, 93 of them were Ellice Islanders, comprised of 43 males and 50 females. From this analysis, Dr Hamblett was able to make the following conclusions which would be helpful in assisting the medical services planners and the health department in their efforts to control TB in the colony: Firstly, there was a difference in the TB attack rates for the Gilbertese and the Ellice Islanders. The Gilbertese males' TB attack rate was 12.1/1000 and for the Ellice Islanders it was higher at 13.4/1000 for males. Figure 10 below from this report clearly showed that the TB attack rate for the Ellice islanders was markedly higher than that of the Gilbertese from ten to forty years of age. Ellice Islands' 10 - 30 years males' attack rate was almost double that of their Gilbertese counterparts and for the females, while the numbers were higher for the Ellice islanders at the age groups between 10 – 19 and 30 – 39.



**Figure 10: TB attack rates by race.**

Source: Hamblett, E. P., TB in the G&EIC (1964-1968), Noumea, 1969, p.136.

From the data analysed, pulmonary tuberculosis was the most common type of TB with 60.7% of the total cases analysed. The report stated that successful diagnosis by sputum examination under the microscope of many cases could be easily done by a ‘subordinate medical worker’ equipped with a microscope and knowledge of how to carry out these examinations. This would help in cutting back on the number of suspected TB cases being sent to the main hospitals and more focus be paid to the diagnosed TB cases and other illnesses including other forms of tuberculosis.

The report also placed an emphasis on the importance of specifically noting TB cases involving people who had changed residence in order to explore the linkage between mobility and the incidence of tuberculosis. There was a ‘satisfactory conversion up to one year’ seen from the samples of some of those who had been given BCG vaccination after testing

negative in the tuberculin testing.<sup>158</sup> Dr Hamblett pointed out that it would be necessary to make note in the registering of any new case whether the person had received a BCG vaccination. This would help in the assessment of whether BCG was a success in the prevention of tuberculosis.

### **Continuing TB Programmes and training of Medical Doctors 1970-1974**

The WHO officials who visited the Gilbert and Ellice Islands in 1970 were Dr J. J. Huang, a bacteriologist, and a public health nurse of the Regional TB Advisory Team, Miss Ellen Wilhelmsson, both of whom had visited in 1965. The purpose of their visit was to assist in assessing Gilbert and Ellice Islands TB field activities and to give refresher courses to health workers involved in BCG vaccination, case finding and treatment.<sup>159</sup>

In 1970 all islands in the Ellice Islands had been covered by tuberculin testing and BCG vaccination. On-going problems still continued that hindered all activities of the TB Control Programme. There had been difficulty in transportation between islands and shortages of adequately trained staff that had increased the cost of the campaign. Hence there were problems of follow up of registered cases and supervision of domiciliary treatment in the outer islands.<sup>160</sup>

The international funding of the TB Control Programme by WHO and UNICEF, who provided all the materials required for the programme, was expected to cease at the end of

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<sup>158</sup> Hamblett.

<sup>159</sup> Letter: Regional Director of WHO, Francisce J Dy to Resident Commissioner, Sir John Field on 22<sup>nd</sup> September 1970. Re: Informing visitors to the Gilbert and Ellice Islands Colony. WPHC 30 1228850 F.309/37/5. WPHCA. Special Collection, University of Auckland Library, p. 41

<sup>160</sup> Communicable Diseases Control and Immunisation Process Services. MD F. 8/15 Volume 1. TNA. Funafuti, Tuvalu, p.94.

1971. There was uncertainty about the continuation of the programmes due to financial constraints. However, a sum of \$4,000 from the recurrent budget of the Medical Department was allocated to continue the programmes of TB control and child healthcare which was to be used because it was anticipated that UNICEF would end its assistance shortly.<sup>161</sup>

Medical services in the Ellice Islands were not properly equipped when Hurricane Bebe struck Funafuti in late October 1972 and caused extensive damage to the Funafuti District Hospital and other medical facilities. The Medical Department for the Gilbert and Ellice Islands could provide only basic curative services while waiting for the rebuilding of the Funafuti District Hospital.<sup>162</sup>

## **Conclusion**

The TB Control Programme concentrated on BCG inoculation as a primary focal point of the programme. This programme was carried out in two phases. The first phase was locally funded under the Colonial & Development Welfare Grant and the second phase was funded by the WHO and UNICEF. However, the TB control programme was not satisfactorily delivered due to transportation problems which were an ongoing problem.

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<sup>161</sup> Gilbert and Ellice Islands Colony, *Gilbert and Ellice Islands Colony Development Plan 1971-1973*, Tarawa, 1971, p.65.

<sup>162</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ended 31 December, 1972,' Bairiki, Tarawa, 1916-1975, p.12.

## Chapter Three: TUVALU TRANSITIONS 1975-2000

### Separation

The name of the Ellice Islands was changed to Tuvalu when she legally separated from the Gilbert Islands on 1 October, 1975. Tuvalu means 'Eight islands standing together'.

Although there are nine islands in Tuvalu, Niulakita is not thought of being a separate community as it is affiliated with the island of Niutao (see Figure 1).<sup>163</sup>

The Ministry of Health for the G&EIC faced a shortage of medical staff during the political separation of Ellice Islands in 1975 when a number of Ellice Islanders opted to retire including the Communicable Disease Control officer, Dr Tomasi Puapua.<sup>164</sup> Dr Puapua and Dr Tiliga Pulusi, both from the Ellice Islands, described their experiences at the time of political separation, during their interviews for my thesis. The Tuvaluan medical doctors, Dressers and Nurses were given three options. These options were to settle and work in the Gilbert Islands, return and serve in the Ellice Islands or retire. Some medical doctors who opted to retire migrated to Tokelau and Western Samoa and worked there.<sup>165</sup>

In the newly formed but not yet independent Tuvalu in 1976, the medical department was under the control of the Ministry of Social Services and the chief medical officer was responsible for the administration of the hospital. The District Hospital for Tuvalu, located at Fakaifou on Fogafale, which had been destroyed by Hurricane Bebe, was completed in

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<sup>163</sup> WHO Correspondence. MD F. 8/15 Volume 1. TNA. Funafuti, Tuvalu, p.1

<sup>164</sup> Gilbert and Ellice Islands Colony Medical Department, 'Medical Department Annual Report for the Year Ended 31st December, 1975,' in *Gilbert and Ellice Islands Colony Annual Reports*, Bairiki, Tarawa, 1917-1975, p.1 & 22.

<sup>165</sup> Puapua; Pulusi.

1975.<sup>166</sup> The Health Department in Tuvalu comprised two medical doctors, one dentist, one health inspector and one radiographer based on Funafuti and seventeen Nurses, including Dressers. Nine or ten Nurses (including Dressers) were posted to the outer islands and the remainder were based on Funafuti.<sup>167</sup>

Poor communication was still a major problem between the main hospital on Funafuti and the outer islands' dispensaries. The only available communication between islands was through telegraphs, where a telegraph operator would send a message using morse code to a recipient operator, Very High Frequency (VHF) radio communication, or sending letters when there was a voyage scheduled to travel to the outer islands. The SMO, Dr Alesana Seluka, requested the Secretary for Health and Welfare, Dr Marr, in Tarawa for a transceiver for the main hospital on Funafuti. The transceiver could be used in case of telecommunication breakdown and for emergency purposes as a means of communicating to the outer islands.<sup>168</sup>

The Public Health Department of Tuvalu was still concerned about TB and filariasis as the most essential problems in Tuvalu. After separation the TB Control Program was still maintained with the assistance of WHO and UNICEF. Fortunately UNICEF had continued its help throughout the period. Despite the shortage of staff in the medical department, medical personnel continued the programme by concentrating on BCG vaccinations of babies and children and case finding. This programme would be carried out by medical officers touring the outer islands every three months.<sup>169</sup>

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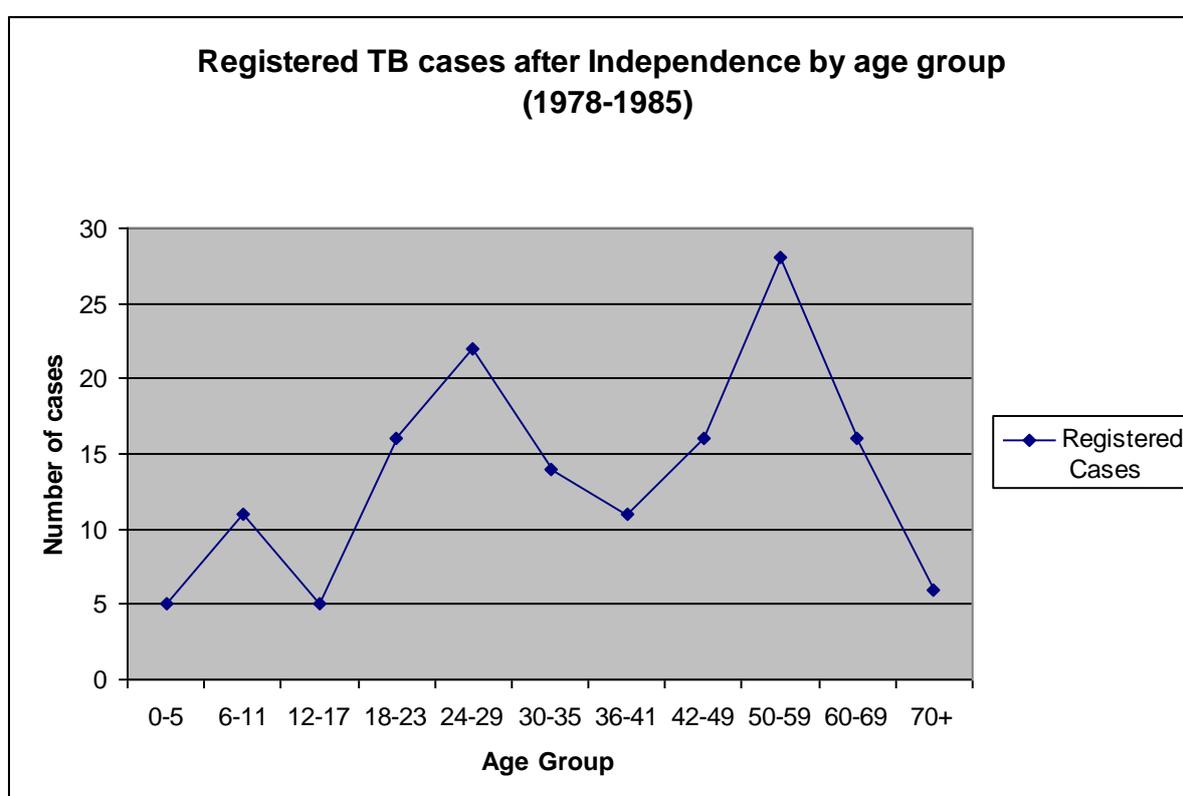
<sup>166</sup> Tuvalu Hospital Extension Project. MD F. 27/1/1. TNA. Funafuti, Tuvalu, p. 26.

<sup>167</sup> Plan of Operation of a Project for the Development of Health Services in Tuvalu. MD F. 8/15 Volume 1. TNA. Funafuti, Tuvalu, p.75.

<sup>168</sup> Letter: SMO, Funafuti to Secretary for Health, Tarawa on 6<sup>th</sup> June 1976. MD F. 8/3/2 Volume II

<sup>169</sup> Country Report 1977. MD F. 8/15 Volume 1. TNA. Funafuti, Tuvalu, p.68.

The TB incidence in Tuvalu increased perhaps due to the shortage of staff to carry on the TB campaign. The Tuvalu Health Department was concerned during this period, and through to the end of the decade, mostly with the increase of incidence in TB among children below the age of fourteen. This group contributed nearly one third of the newly registered TB cases. However, in Figure 11 it shows that age groups 24-29 and 50-59 were recorded the highest compared to the total of age the group below the age of fourteen.



**Figure 11. Registered TB Cases after Independence in Age Group.**  
 Source: Ministry of Health, Government of Tuvalu.

Children’s BCG vaccination in the outer islands continued to face difficulties, no doubt contributing to the new cases. Children received BCG vaccinations once the nurses received the BCG vials; otherwise this had to be done by the touring medical officer who toured every three months. The BCG vaccination had to be performed immediately upon the vials’ arrival

because there were no cold storage facilities in the outer islands. Dr Wah Wong, a representative of UNICEF, supplied kerosene-operated refrigerators, vaccines and clinic equipment for the central hospital in 1977. All these supplies were covered under the UNICEF regular budget.<sup>170</sup>

The Government of Tuvalu was not ready to finance equipment for the main hospital itself, and still relied for financial assistance on the Government of the United Kingdom and international organisations. Mr Henry Faati Naisali requested Dr S V Raja Rao, the United Nation Family Planning Activity (UNFPA) regional director, to assist in providing ten refrigerators for the main hospital and the outer islands clinics. In his letter he stressed that ‘Tuvalu is a new Nation with no spare resources’.<sup>171</sup>

Expenses allocated for a touring Medical Officer were saved for other purposes because of the availability of kerosene-operated refrigerators in the outer islands. However, another setback was faced by the nurses on the outer islands when some of the refrigerators were reported to be not working. There were two possible reasons for this. Firstly there was no kerosene available in the Cooperative Island store due to poor transportation. Secondly the manager for the Cooperative Island store for a particular island refused to refill the refrigerator because the medical department had an outstanding debt.<sup>172</sup> Mr H. Wooley, Cooperative officer, wrote to the SMO, Dr Seluka, on 25 January 1978 that the Health Division had a bad reputation with the Cooperative Society for the outstanding debt, and the

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<sup>170</sup> United Nations Funds for Population Activities General. MD F. 8/16 Volume III. TNA. Funafuti, Tuvalu, p.11.

<sup>171</sup> Letter: Secretary of Finance, Government of Tuvalu to Regional Director UNFPA, 26<sup>th</sup> January 1976. MD F.8/15 Volume I. TNA. Funafuti, Tuvalu, p.16

<sup>172</sup> Salesa.

management had made a decision not to lend kerosene to the medical department.<sup>173</sup> All vaccines including BCG vaccine for the outer islands were packed into thermos flasks to transport them from the outer islands clinics to the main hospital at Funafuti where they were all kept. If the vaccine was no longer useable because of the length and time of the voyage the nurses were to make sure that all the vaccines were buried or burned in an incinerator. Since the kerosene-operated refrigerator did not solve the problem, the Medical Department reinstated the old vaccine policy whereby the touring Medical Officer would carry out the inoculation of BCG and other injections for children.<sup>174</sup>

### **Independence regained**

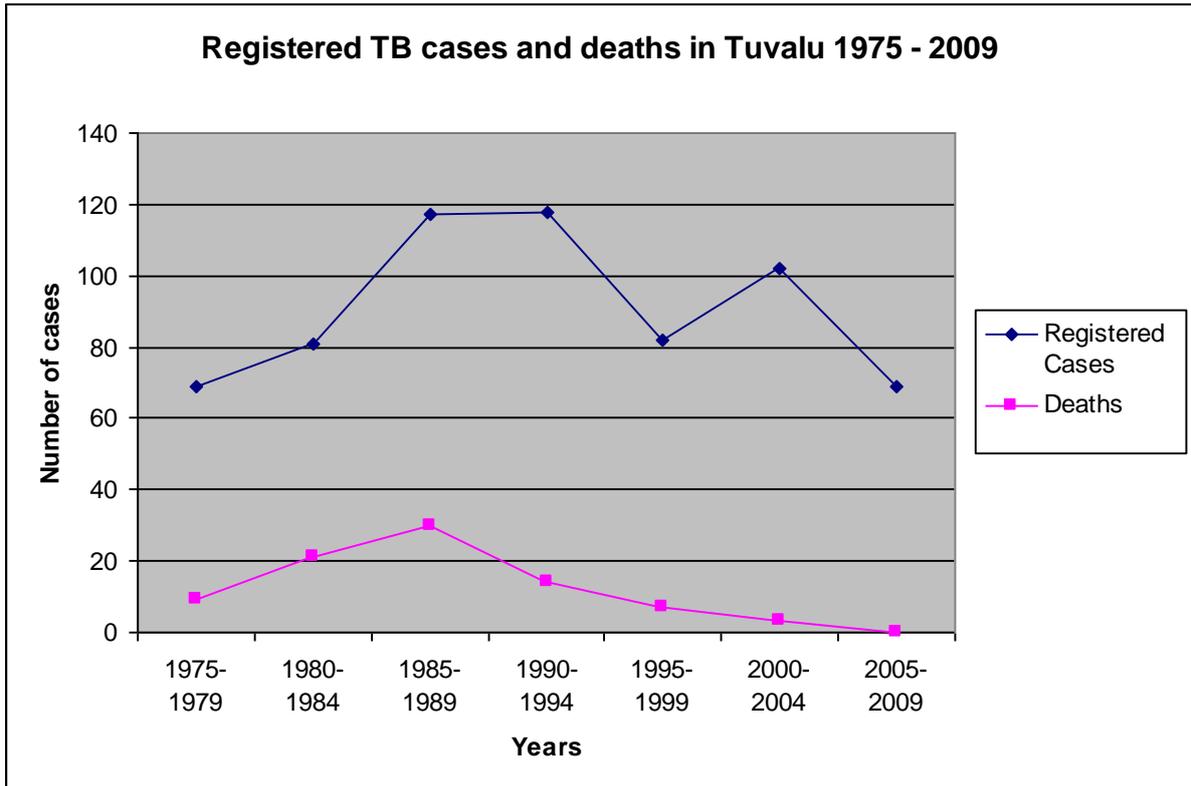
Tuvalu regained independence on 1 October 1978. The opening of the new central hospital in Funafuti, built with a New Zealand aid grant, was part of the official celebrations leading up to Independence. It was officially opened on the 29 September 1978 by Her Royal Highness Princess Margaret after whom the hospital was named- Princess Margaret Hospital (PMH).<sup>175</sup> After Separation and Independence, many Tuvaluans who had resided in the Gilbert Islands settled back in Tuvalu. The data from 1975 to 1999 recorded in the TB register log book (Figure 12) of PMH showed that there was an increase in registered TB cases including relapsed cases who worked in the Ocean Island and the Gilbert Islands.

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<sup>173</sup> Stores and Supplies to the Outer Islands. MD F. 8/3/2 Volume II. TNA. Funafuti, Tuvalu, p.51

<sup>174</sup> Alefaio; Salesa.

<sup>175</sup> Enele Sopoaga, 'Post War Development,' in *Tuvalu : A History*, Simati Faaniu, et al., eds, Suva, Fiji Funafuti, Tuvalu, 1983, p.151.



**Figure 12. TB Cases in Tuvalu after Separation.**  
 Source: Ministry of Health, Government of Tuvalu.

Accurate diagnosis of TB cases continued to be a key aim which became more achievable in the post-Independence era. The detection of suspected TB cases using sputum tests was available from 1979. Mr Faiatea Laatasi was the first Tuvaluan to qualify as a pathologist from the Fiji School of Medicine. At the beginning of 1978, his last year at the Fiji School of Medicine, he placed orders for the PMH laboratory. The laboratory had the basic equipment such as a microscope and the reagents for staining specimens, however safety in the laboratory was a concern. The laboratory did not have a biological safety cabinet, which was a necessity as carrying out the tests without a safety cabinet posed a risk of infection. Mr Laatasi managed to design and build a biological safety cabinet for himself by following the diagram of a safety cabinet from medical journals. He did care for his safety: ‘Safety was my conscience’ he said in his interview. He requested the Ministry of Social Services for an

exhaust fan, which would help to remove the air from the chamber. Unfortunately he did not receive the fan.<sup>176</sup>

Attention was also given to X-ray, so important for case detection and checking the progress of treatment. Mr K. H. Searle, a representative from WHO, visited Tuvalu in 1979 for one week under the inter-country project for Radiation Health Advisory Services to check the X-ray equipment and observe the X-ray radiographer. An experienced laboratory technician who had worked on Ocean Island for twenty one years without any formal training was employed by the Tuvalu Health Department to work as the radiographer. Mr Searle noted that the X-ray machine was malfunctioning due to the inadequate current produced by a 50 KVA hospital generator and nothing had been done about it.<sup>177</sup>

The finances of the new nation were a challenge to the Government of Tuvalu in its efforts to overcome health-related problems following independence in 1978. The country's economy was still dependent mostly on the grant aid from the United Kingdom Government.<sup>178</sup> In addition to this financial hindrance, Tuvalu still faced transportation problems. During the separation of Tuvalu from the Gilbert Islands, Tuvalu received only one asset from the British Government. It was the *MV Nivaga* (Figure 13), an interisland ship. The *MV Nivaga* was a colony ship that was designed to transport cargo only. However the Government of Tuvalu used the *MV Nivaga* to carry cargo and allowed fewer than one hundred certified

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<sup>176</sup> Faiatea Laatasi, 28/07/ 2009.

<sup>177</sup> K H Searle, Notes on WHO visit to Tuvalu in 1979. MD F. 8/16/1 Volume II. TNA. Funafuti, Tuvalu, p. 441-42.

<sup>178</sup> Maura E Leavy, 'Public Health Advisory Services in the South Pacific Vol 2. Md F.8/15', ed. Ministry of Social Services Funafuti, Tuvalu, 1977, p.1.

passengers to travel on board between the islands.<sup>179</sup> The *MV Nivaga* took approximately six weeks to tour all the islands of Tuvalu. The introduction of the internal sea plane (Figure 14), *Grumman Goose*, in 1981 made transport for people and mail much quicker. This sea plane could carry ten passengers and became very handy in emergency cases from the outer islands. It can only service the islands with lagoons and these islands are Nanumea, Nui, Vaitupu, Nukufetau, Funafuti and Nukulaelae. However the seaplane was in operation for only two years before it was abandoned due to its high cost of maintenance.<sup>180</sup>



**Figure 13: *MV Nivaga* departed Funafuti for the Outer Islands**

Source: McQuarrie, Peter, *Tuvalu: A Celebration in Photos of 10 Years Independence*, Funafuti, 1988, p.15.

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<sup>179</sup> Fred Resture, 13/02/ 2010.

<sup>180</sup> Peter McQuarrie, *Tuvalu: A Celebration in Photos of 10 Years Independence*, Funafuti, 1988, p.14; Sopoaga, p.152.

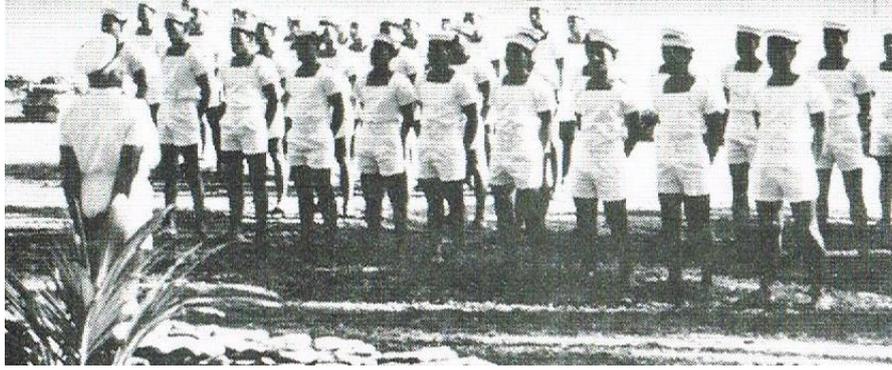


**Figure 14: The Sea Plane, *Grumman Goose* landing at the Nukulaelae lagoon.**  
Source: McQuarrie, Peter, *Tuvalu: A Celebration in Photos of 10 Years Independence*, Funafuti, 1988, p.15.

Seafarers were a source of income to Tuvalu's economy. The Tuvalu Maritime School (Figure 15), now known as Tuvalu Maritime Training Institute (TMTI), financed by the Government of Australia, was established in 1979. Before it opened, the seamen were trained in the Gilbert Islands. The TMTI was located on the islet of Funafuti called *Amatuku* (Figure 3). The duration of the training was one year.<sup>181</sup> As a source of money, more and more young men of Tuvalu would be employed by overseas vessels. While their wages were welcomed, this also meant that there would be a possibility these young men had been exposed to a variety of communicable diseases.

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<sup>181</sup> Fred Resture, 'The Tuvalu Maritime School: A Review', Funafuti, Tuvalu, 1999; Resture; Enele Sopoaga, 'Today and Tomorrow,' in *Tuvalu: A History*, Simati Faaniu, et al., eds, Suva, Fiji; Funafuti, Tuvalu, 1983, pp.178-9.



**Figure 15: Tuvalu Maritime School Students.**

Source: McQuarrie, Peter, *Tuvalu: A Celebration in Photos of 10 Years Independence*, Funafuti, 1988, p.27.

International organisations such as the WHO and UNICEF played a major role in providing funds for the health services. A basic agreement was signed on the 14 November, 1979 between the new Government of Tuvalu and the WHO. This agreement included that the WHO would assist Tuvalu financially and technical advice. The agreement was valid for only one year. The WHO assistance to Tuvalu was covered under the Basic Agreement it made in 1952 with the United Kingdom.<sup>182</sup>

Community participation as part of public health efforts became a focus from 1978. Fundamental to Tuvaluan culture or values is that individuals participate actively if they work as a team or group in community activity rather than working as an individual. A new strategy was implemented in 1978 to improve the health of the people of Tuvalu. Nurses on the outer islands associated their work with the community through organisations such as the women's club, religious organisation, youth and island councils. This integration of services was intended to promote awareness programmes, spreading the service to everyone, and to encourage participation and appreciation of the services by the community at the family

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<sup>182</sup> WHO Expanded Programme of Immunisation. MD F. 8/16/5. TNA. Funafuti, Tuvalu.

level.<sup>183</sup> Dr Nese Ituaso-Conway pointed out in her interview that she just realised the importance of community involvement in Public Health as a continuing theme.<sup>184</sup>

In-service and pre-service training of health personnel received a boost after Independence.

X-ray, a diagnostic tool to detect TB suspected cases, was more available from 1981.

Pousima Umu was the first qualified Tuvaluan in x-ray radiography; he graduated from the College of Allied Health Science in 1980 and resumed duty in 1981. He was sponsored by the WHO.<sup>185</sup>

An organised training programme, funded by the WHO, was held in Suva, Fiji, in 1981. The programme was designed for representatives from the Medical Department of Tuvalu to observe the administration of some clinics and examine similar problems faced by the people who lived in the interior villages of Viti Levu. Senior Dresser Mataio Tekinene represented Tuvalu on this programme. The first thing he noticed in Fiji was the isolation ward for TB patients in Suva. The isolation ward was located at Tamavua, Suva (and still is today) which is distant from the Colonial Memorial Hospital compared to the isolation ward on Funafuti, Tuvalu, which was adjacent to the ante-natal ward. In his interview he said that he was worried about the new born babies who might be exposed to TB because they have very weak immune systems but he had no choice because of limited space the Government of Tuvalu face on Funafuti. Another thing he noted was that nurses and Dressers who worked in the village were not allowed to prescribe medication as in Tuvalu nurses and Dressers were allowed to do so. However there were some similarities observed. These were the treatment of TB patients in the interior villages. The suspected TB cases were all referred to the

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<sup>183</sup> WHO Correspondence. MD F. 8/15 Volume I. TNA. Funafuti, Tuvalu, p.175.

<sup>184</sup> Conway-Ituaso.

<sup>185</sup> South Pacific Health Services Epidemiological Report for the Year 1976. MD F. 8/14. TNA. Funafuti, Tuvalu, p.2

Colonial Memorial Hospital for confirmation but patients were only transferred to the hospital if there was transport available.<sup>186</sup>

The Health Department also promoted health programmes over the radio of Tuvalu, the only easy way of passing the message to individuals in the outer islands and of conducting refresher courses for medical personnel. Refresher courses and seminars organised by the Medical Department helped to broaden health professionals' knowledge of new developments in TB work. Occasionally medical personnel travelled to Funafuti for courses. Dr Kalaki Laupepa coordinated a week long seminar on Primary Health Care on Funafuti in 1982. Representatives of the *kaupule* and Nurse aid(s) from outer islands and medical personnel on Funafuti attended the seminar which was on ways to prevent TB in the community.<sup>187</sup>

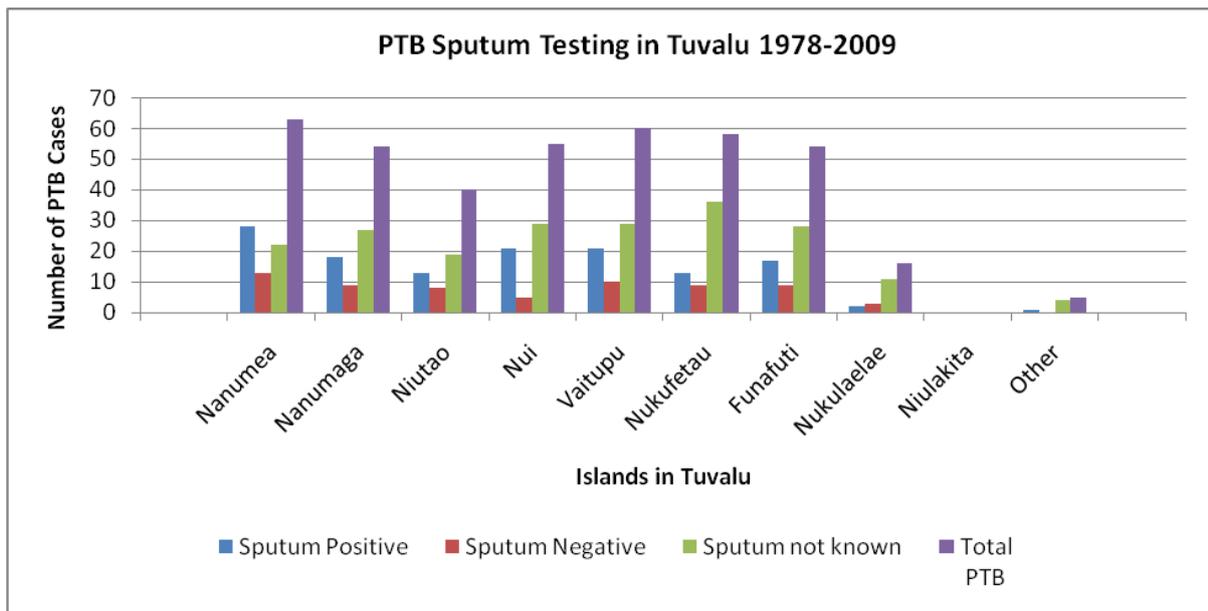
In 1983 the WHO funded a further training course for nurses and Dressers from the outer islands. The training was in support of the Health Department's attempts to economise on transportation, accommodation and meals for suspected TB cases from the outer islands. Once more, all suspected TB cases and cases being followed up every three months were to be examined by the island Dresser and nurses in the outer islands instead of by medical doctors on Funafuti. The training was held on Funafuti and was again facilitated by Mr Faiatea Laatasi. They were trained on how to collect and prepare sputum specimen on slides and to pack the samples in containers ready to transport. All containers were provided by the WHO for the outer islands. The trainer also instructed them on what to do when a dispensary

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<sup>186</sup> Mataio.

<sup>187</sup> Primary Health Care Seminar held on Funafuti, Tuvalu. 23<sup>rd</sup>- 27<sup>th</sup> April, 1982. MD F.1/1. TNA. Funafuti, Tuvalu.

in the outer islands was out of stock of containers. They used the mid-ribs of the coconut fronts to separate the slides and tightly packed with them tissue papers and put in a small box. All samples were tested at the PMH. This was on trial for one year and the results of the trial were discouraging. Dressers and nurses in the outer islands had other responsibilities in the dispensary which contributed to the failure of this approach. As a result, once again all suspected TB cases in the outer islands were transported to Funafuti to be tested and treated there.<sup>188</sup> However, as shown in Figure 16, in most registered cases, the sputum test was not known. Therefore the results matched the interviews of the two retired medical officers. These can be explained by the lack of equipment necessary for testing in the outer islands, that the pathologist was on study leave and there were no reagents (acid fast bacilli).<sup>189</sup>



**Figure 16: Pulmonary Sputum Testing for all Registered Cases 1978-2009.**  
Source: Ministry of Health, Government of Tuvalu.

A proper clinic and comfortable accommodation for seriously ill patients in the outer islands had still not been achieved by 1980 even though it was highlighted in the Tuvalu

<sup>188</sup> Laatasi.

<sup>189</sup> *ibid*; Salesa.

Development Plan 1978-1980 that all dispensaries in the outer islands would be upgraded.<sup>190</sup>

The island council of Nukulaelae requested the Island representative to the House of Parliament, the Honorable Henry Faati Naisali, that the island of Nukulaelae urgently needed an island clinic. The matter was brought up in the House of Parliament and unfortunately it was declined. The staff nurse on the island of Nukulaelae, Ms Miliama Mauga again requested the SMO, Dr Falesene Salesa, on behalf of the island councils, to raise the matter with the Minister of Social Services.<sup>191</sup> Dr Salesa responded to the request and explained that all the outer islands dispensaries will be upgraded and the labour force to build the island dispensary will be provided by the island council on a voluntary basis. The Secretary of Works and Local Government, Mr Saufatu Sopoaga, had confirmed to the island council of Nukulaelae that the construction of wards and dispensaries in the outer islands was still in progress.<sup>192</sup>

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<sup>190</sup> Government of Tuvalu, *Tuvalu Development Plan 1978-1980*, Funafuti, Tuvalu, 1978, p.88.

<sup>191</sup> Nukulaelae Medical. MD F.12/1/10. TNA, Funafuti, Tuvalu, p.39.

<sup>192</sup> *Ibid*, p.46.



**Figure 17: The Nurse for the island of Niutao**  
 Source: Photographed by Mr Letasi Iulai, 2005.

A number of incidences illustrate the continuing challenges of providing consistent services. SMO, Dr Salesa, informed all Dressers and Nurses who worked in the outer islands (Figure 17) that Miss Maura E. Leavy, a Public Health Nurse from the WHO, had reported that supplies of penicillin and streptomycin injections that had expired in 1979 had caused resistance to the drugs. He advised the Dresser(s) and nurse(s) to ensure that these supplies were discarded.<sup>193</sup>

In 1984 Dr Salesa was concerned about the increased number of relapsed TB cases in the outer islands while the patient was still undergoing treatment. He found out that one of the patients had actually stopped taking medication based on the nurse's advice. The nurse explained the reason was that the dispensary ran out of tablets. He wrote to all the Dressers and nurses working in the outer islands to remind them that it was their responsibility to make the Medical Officer in charge aware of the situation and all treatment instruction for TB

<sup>193</sup> A Memorandum: SMO to all staff. MD F. 12/1/8. TNA, Funafuti, Tuvalu, p.198.

patients would come from the Medical Officer in charge of TB. In his letter he highlighted that ‘You cannot stop treatment, increase or decrease any drugs for any patients until you received directives from the Medical Officer responsible for TB’.<sup>194</sup>

### **Implementation of the Expanded Programme of Immunization in Tuvalu**

This National Expanded Programme of Immunisation (EPI) was implemented in Tuvalu in 1981 as a result of the WHO’s initiative for the Western Pacific Countries (WPCs) in 1976. The WPCs were divided into two groups, developed and developing countries. Developing countries were further categorized according to their economic development and health infrastructure. Tuvalu was categorized in the developing countries because of the undeveloped economy, poor health infrastructure and limited national budget allocated to health services. Regardless of the constraints faced by the Health Department of the WPCs the goals of the project were accomplished through the continued participation of the community. UNICEF was in partnership with the WHO to promote the programme. UNICEF provided the vaccines and the cold chain equipment for the WPC.<sup>195</sup> The main aim of this programme was to reduce the rates of morbidity and mortality by providing immunisation services against diphtheria, pertussis, tetanus, measles, poliomyelitis and TB for all the children of the world by the year 1990. The WHO organised training on immunisation prior to the implementation of the programme. The training was geared for all staff who would be directly involved in the programme.<sup>196</sup>

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<sup>194</sup> Letter: SMO to the staff nurse on the island of Niutao. MD F. 12/1/5. TNA. Funafuti, Tuvalu, p.321.

<sup>195</sup> H Mehta, 'General Overview of the Expanded Programme on Immunization in the Western Pacific Region', in *Expanded Programme on Immunization Global Advisory 11th Group Meeting* Abidjan, Cote D'Ivoire, 1988.

<sup>196</sup> WHO Expanded Programme of Immunisation. MD F.8/16/5. TNA. Funafuti, Tuvalu, p.15.

When the EPI was implemented in Tuvalu the focal point of the programme was the SMO, Dr Falesene Salesa. His responsibility was to update all the records of immunisations and report to the WHO representative. The report would include the objective and target at the national level, the origin and quality of the vaccine in use, the immunisation coverage currently achieved and the incidence of the targeted diseases. Dr Salesa received a letter on 24 April 1982 from the Regional Director of the WHO, Dr Hiroshi Nakajima to further elaborate on the programme. Dr Nakajima reminded him that it was important for the public to know the aim of the programme and for mothers to understand and support the idea of children's immunisation.<sup>197</sup>

Although immunisation is encouraged and is practiced, it is not compulsory in Tuvalu. There is no national law that enforces the compulsory immunisation of children. This is seen as a problem by the Medical Department because if mothers do not understand the importance of immunisation, there would be no incentive from their part to take their children for immunisation. Therefore it is the responsibility of the nurse to explain the advantage of giving the inoculation to the infant or the child. Failure to do so may in turn weaken the Health Department's attempt to immunise children in Tuvalu. In a shared interview with the retired nurse and the current nurse responsible for the immunisation programme in Tuvalu, Ms Viki Ituaso and Ms Alaita Taulima, respectively, stated that the 1980 Immunisation Plan (prepared by WHO) for Tuvalu had a scheduled plan of all the immunisations that would be given to a child. BCG vaccination is scheduled to be given to a child at birth and again given at the age of six. This programme aimed at one hundred percent immunisation of children.<sup>198</sup>

Table 4 and Table 5 (shown below) illustrate that the percentage coverage of immunisations

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<sup>197</sup> Ibid, p. 25 & 47

<sup>198</sup> Viki Ituaso, 29/07/ 2009; Alaita Taulima, 29/07/ 2009.

in 1980-1989 and 1990-2006 were 92% and 97% respectively. Mrs Fiailoa Salesa commented that, overall, the immunisation programme in Tuvalu was successful because most mothers had agreed to inoculate their babies.<sup>199</sup>

**Table 4. WHO and UNICEF Estimated Coverage of Immunisation Percentage in Tuvalu (1980-1989).**

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
WHO/UNICEF estimated %	99	89	78	99	90	90	92	86	95	98

Source: Ministry of Health, Government of Tuvalu.

**Table 5. WHO, UNICEF and Government estimated coverage of immunisation in percentage in Tuvalu for the 1990-2006**

Year	WHO/UNICEF estimated %	Government official estimated %	Reported doses administered %	Number of babies born
1990	96	96	96	
1991	95	95	95	
1992	97	97	97	
1993	83	83	83	
1994	90	90	90	
1995	88	88	88	
1996	99	100	100	233
1997	99	100	100	239
1998	99	100	100	262
1999	99	100	100	253
2000	99	100	99	256
2001	99	99	100	267
2002	99	100	100	226
2003	99	100	100	238
2004	99	100	100	257
2005	99	100	100	264
2006	99	100	100	243

Source: Ministry of Health, Government of Tuvalu.

<sup>199</sup> Fiailoa Salesa, 11/09/ 2009.

## BCG inoculation and Parents Responses

Parents who had come into contact with the disease were very concerned about the importance of BCG inoculation and other inoculations for other diseases. Their experiences, illustrated below, would send a message to all parents to do the right thing for their children.

Mother 1: 'I do not want her to experience what I had been through, being stigmatised by others.' Mother 2: 'My baby needs the BCG vaccination because we have some family members in the family who had been treated for TB.' Mother 3: 'TB is a new disease and I am scared so I do not ask so many questions - I just want my baby to be protected.'<sup>200</sup>

Parents were informed by the nurse that the baby could experience high fever as a result of the BCG inoculation. Parents were advised to apply Vicks if the injection spot was swollen. BCG inoculation of children was given on the upper left arm so that it was not confused with other injections.<sup>201</sup> A scar on the injection site indicated that a child had a BCG injection. After two months the nurse would inspect for a physical sign of the scar where it was injected. At this stage parents were concerned that another BCG inoculation would be given to the child if there is no sign of the scar.<sup>202</sup> Dressers and Nurses had to learn how to give the BCG injection properly to avoid the repeated injection being given because the scar was not showing because the first injection went too deep.<sup>203</sup>

Another BCG injection was given to my baby was not a nice thing to do. I know that my baby already had a BCG injection and she is healthy. I hope that the second injection would double its strength to prevent my baby from TB.<sup>204</sup>

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<sup>200</sup> These mothers do not want their names to be mentioned.

<sup>201</sup> Salesa.

<sup>202</sup> Ituaso.

<sup>203</sup> Taulima.

<sup>204</sup> Freda Katepu, 04/08/ 2009.

Another factor that has also contributed to the repeated inoculation of BCG was the immunisation card (Figure 18). Mothers were issued with an immunisation card as a record of all the immunisation that had been given and the dates of other immunisations to be given. These cards were provided by the WHO. Mothers who were familiar with this immunisation programme were well aware of the procedure. Hence all mothers were required to keep their babies immunisation cards in a safe place to avoid the repeated inoculation.

**TUVALU UNDER FIVE HEALTH CHART**

Clinic		No.	
Childs Name:		Boy/Girl	
Date of Birth:	Time of birth	Birth Wt	
Mothers Name		Occupation	
Fathers Name		Occupation	
Family Address		Place of Birth	
Born <i>Hosp/Home/Clinic</i>		Birth <i>Normal/Breech/Multiple/Other</i>	
Delivered by Dr:      Nurse:      Aide:      M.A.:      TBA:      Other:			

**IMMUNISATIONS**

Vaccine	Schedule	Date	Signature
BCG1	At Birth (within 24 hrs)		
HepB 1		Time	
DTP1	6 weeks		
OPV1			
HepB 2	10 weeks		
DTP 2			
OPV 2	14 weeks		
DTP 3			
OPV 3	12 months		
HepB 3			
MR 1	18 months		
MR 2	School Entry (5-6 yrs)		
DTP 4			

FH 07/2005

**Figure 18: Immunisation Card for Babies under the Age of Five.**  
Source: Ministry of Health, Government of Tuvalu.

Primary school children were also given a BCG inoculation. At age six, the child who was then a first year student at primary school level would be given another dose of BCG inoculation. The medical officer in charge would inform the head teacher of the date and time of immunisation of all first year students and it was the responsibility of the head teacher to inform the students to pass on the message to the parents about the BCG inoculation. Head

teachers differed in ways they approached the parents and informed them to send their children to school on the day of immunisation. The normal practice of informing parents was by sending the message through the child verbally, though sometimes the message did not reach the parents. Other teachers had initiated their own ways of relaying the message to parents. 'It is compulsory for all the students of my school to have a communication book, as a medium of communication with parents where all the school events were recorded. There was no doubt parents would send their children to school on that day because if the child was absent the nurse would visit that house to give the injection.'<sup>205</sup>

Some primary students I interviewed, attending Nauti Primary School on Funafuti, shared their experiences when receiving a BCG injection. 'I would be the first one to be vaccinated in my class and I showed off to my friends that I am not scared of the injection'<sup>206</sup> 'I always cried when I had an injection. I pretend to get sick on that day. I preferred the nurse to visit me at home'.<sup>207</sup>

Some problems related to EPI were faced by the Medical Department. In 1982 all newly expectant mothers in the outer islands were encouraged to deliver their first baby on Funafuti and likewise other pregnant mothers with complications.<sup>208</sup> A vial of a BCG vaccine would vaccinate ten babies at the same time. The usual practice of BCG vaccination on newborns was that all babies born on Funafuti or in the outer islands would defer BCG vaccination until ten babies were born so that the BCG vaccine would not be wasted. The BCG vaccine would only last six hours after opening. It was a difficult task because not many babies were born on

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<sup>205</sup> Betty Vave, 10/08/ 2009.

<sup>206</sup> Laoi Alan Katepu, 04/08/ 2009.

<sup>207</sup> Kilisimasi Itaaka, 08/08/ 2009.

<sup>208</sup> Ituaso.

Funafuti in the same month. In other circumstances, when a baby was born from a mother who was a registered case of TB, or if any of the family member(s) had a history of TB, these babies needed immediate attention.<sup>209</sup>

I felt responsible for not giving BCG vaccination to the baby at the right time. The baby needed to be prevented from TB especially TB meningitis but had to wait for other unborn babies to share the BCG vial. I had no option if the number was below the required vaccinated number I would definitely go ahead with the vaccination. It was worth it to be prevented before it was too late.<sup>210</sup>

Due to problems noted above and general wear and tear, kerosene-operated refrigerators, were not an option for storing the vaccines in the outer islands. Dr Kalaki Laupepa, informed all Dressers and nurses working in the outer islands to remind them to place their order of vaccines at the right time. Orders of vaccines for the outer islands were made quarterly and vaccination would be carried out in the months of March, July and November, with the exception of the island of Nukulaelae and Niulakita which ordered in every six months. These vaccines were stored and transported in cold boxes (Figure 19) which were provided by the WHO project in 1981. This method contributed to the postponement of BCG vaccination of babies in the outer islands. When the vaccine arrived the Dresser or the nurse would immunize the babies immediately but some babies would have been born a few months earlier, while others were newborn.<sup>211</sup>

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<sup>209</sup> *ibid.*

<sup>210</sup> *ibid.*

<sup>211</sup> WHO EPI. MD F.8/16/5. TNA. Funafuti, Tuvalu, pp. 80, 124 & 58.



**Figure 19: WHO Approved Cold Boxes to Transport Vaccines to Remote Areas.**  
Photo courtesy of Gayatri Medical Equipment Manufacturing Company, India.

### **Patient experiences**

TB was defined by its victims as an unfriendly disease. TB patients felt that they were being stigmatised by members of the community which discouraged them from participating in community activities or functions.

Historically TB has been associated with a high level of poverty. I asked Dr Conway from her own perspective if TB is a disease of poverty. She replied that it depends how a person defines poverty. Constrained economic conditions, difficulties in access to land, a struggle to achieve a nutritious diet and crowded housing (Figure 20) all promote the spread of TB and the development of active infection. The story below further illustrates this:

In February 1977 my husband left our home island to go to Funafuti, the capital of Tuvalu, seeking for a paid job. My husband found a casual job and he earned AU\$50+ fortnightly. At that time we had only one child. In June I came with my daughter to Funafuti to be together with my husband. The family we were staying with had one bedroom, eight adults and five children. In 1981 my husband's relative offered us a small land to build a house for ourselves. We only manage to build a shed for ourselves. I got a job and I earned AUD\$20 a week and I made handicraft as another source of

income. There was no other means of financial support from other relatives therefore it was very difficult to cook a nice delicious meal to put on the table. My husband and I worked very hard and in 1982 I contracted the disease and life became very difficult for my family.<sup>212</sup>



**Figure 20: Housing and overcrowding in Funafuti.**

Photographed by Mr Letasi Iulai, 2006.

Some people associated TB with certain families. An interview asking about understandings of and views on TB was conducted with a former TB patient. She explained her TB experiences in highly emotional terms.

To my understanding TB is a disease that chases people away from you. (she smiled). I remembered members of my family who had TB: my grandmother, my father, I and my daughter were known TB cases. I was admitted to the TB ward after the doctor had confirmed that I had pulmonary TB. I was ashamed of being around other people. Having the disease I refrained myself from participating in community activities. I was

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<sup>212</sup> A woman who contracted tuberculosis in 1982

unhappy because I had learnt how the people reacted if they heard a person was admitted to TB isolation ward.<sup>213</sup>

A best friend of a known TB patient had the courage to share what she had learnt from this TB patient:

It was a good thing to know how a mother of four children took care of her family. She was a known case of TB during the colonial days and when she came to Tuvalu she again had pulmonary TB and was admitted to the hospital. She kept all her eating utensils in a woven basket and hanged it at the corner of the house so that no one in the family touched it. When she attended a community or women's meeting she still carried her basket of utensils for her to use when there was a refreshments after the meeting. Until now none of her children or her husband contracted TB and unfortunately she died from TB.<sup>214</sup>

### **Medical and Public Response**

Some of the medical staff of the PMH was interviewed to order to discover their opinions about the disease. Their interviews were analysed and conclusion were drawn.

The usual practice of suspected TB cases is that they seek traditional healers for local medicine which they think is the right way before consulting the medical doctor. The Medical Department does not support the idea of being treated by traditional healers. Some people believed in supernatural powers instead of being appreciative of the service provided by the qualified doctors in the Medical Department. The disadvantage of this kind of attitude was that when they were not treated, they would seek help from the doctor. Thus the effective

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<sup>213</sup> A women was diagnosed with pulmonary TB in 1985.

<sup>214</sup> Riana Puapua, 03/09/ 2009. Mrs Riana Puapua is a qualified Colonial nurse who graduated from Tarawa Nursing School in 1965. She shared her experience in remembrance of her best friend who contracted the disease.

treatment for the disease was delayed, and TB was allowed to develop to a more advanced stage. In addition to the use of traditional medicine was the denial of suspected TB cases. Sometimes suspected TB cases had showed symptoms but did not accept the diagnosis of TB. This became a challenge to TB containment because, in this way, denial is able to assist the spread the disease. Such denial is connected to stigma.

People had different attitudes and interpretation towards the word ‘stigma’. According to a retired Dresser Mr Moeava Alefaio, stigma is very common among the people. He defined stigma from the medical perspective, was that stigma was a preventive measure thus isolation of infectious patients was the best way to do. Some people of Tuvalu still have that mentality of looked down on people who had TB hence known cases of TB always got offended when they were told that they had contracted the disease. He further explained that the Government should play an important role in reducing the number of TB registered cases through supporting health programmes and educating the public in ways to protect them from the disease. This would cause a change in public attitudes toward TB patients and prevent them from being stigmatised.<sup>215</sup>

Going to western-trained doctors is not only or not always the first response for Tuvaluans. *Tufuga* also play an important part in contemporary times. A post for a *tufuga* was created in the Health Department in 1980. He is Mr Tefoa Lopati who is a well known *tufuga* on Funafuti. He massaged those who needed his assistance with their injuries and dislocated joints. The hypertension cases and those with diabetic problems also had the opportunity to

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<sup>215</sup> Moeava. Alefaio, 2009.

see him if they wish. He was stationed at the PMH and he would tour with the touring medical officer to the outer islands.<sup>216</sup>

The Chief of Public Health, Dr Nese Ituaso-Conway, at present expressed her view point on local medicine and massages. She commented that these traditional practices might intervene with the drugs prescribed by the doctor. In some incidents, cases like muscle abscess were made worse by traditional massaging that could break through the muscles and spreading the pus around. Herbal medicine dosage could also intervene with the blood tests for patients because dosage was not usually given in certain amount.<sup>217</sup>

### **A Fresh Start for Tuvalu at the end of the Twentieth Century**

The increased number of local medical doctors who worked in Tuvalu in the 1980s led to better medical services compared to those existing at the Separation in 1975. However, in the late 1980s to the early 1990s there was a great loss to the Government of Tuvalu because these doctors migrated for better opportunities to work in Fiji, Tokelau and Vanuatu.

After these medical doctors migrated, the PMH was under the supervision of the three local medical doctors, Drs Teleke Kofe, Iupasi Kaisala and Tiliga Pulusi and unfortunately Dr Kofe passed away in 1993. The PMH was then left under the responsibility of Drs Kaisala and Pulusi. They were fortunate to have Dr Tekai Nelesone, a successful Tuvaluan medical graduate. Dr Nelesone graduated from the Fiji School of Medicine, Suva in 1995 and started to work with Drs Kaisala and Pulusi in 1996.<sup>218</sup>

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<sup>216</sup> Posting. MD F. 11/3/1. TNA. Funafuti, Tuvalu. Mataio.

<sup>217</sup> Conway-Ituaso.

<sup>218</sup> Email correspondence with Dr Teekai Nelesone. 22<sup>nd</sup> -29<sup>th</sup> January, 2010.

Dr Nelesone faced a lot of challenges when he worked in different sections, Public Health, Clinical services and Director of Health, within the PMH. He mentioned that the problems faced by the Medical Department were the continued problems that had been since Independence. These problems were the lack of training in the area of public health, the lack of postgraduate opportunities in different specialities, the need to upgrade the standard of knowledge of staff and the shortage of medical supplies and pharmaceutical products.<sup>219</sup>

Tuvalu was also fortunate to have additional doctors who came into the country under the United Nation Volunteers (UNV) funding. These expatriate doctors were from China, Germany, Russia and Burma. The last UNV expatriate doctor was Dr Issac Mark from Burma, who worked in Tuvalu from 1997 to 2002.<sup>220</sup> The UNV programme has been operated by the United Nations since 1971 to provide opportunities for professional work in developing countries for a period of two years.<sup>221</sup>

To have more than one graduate doctor from a medical school in a single year was a milestone in the medical service history which Tuvalu achieved in 1999. The three young successful doctors who completed their studies from the same institution were Drs Nese Ituaso-Conway, Miliama Simeona and Stephen Homasi and these three were working in Tuvalu at the time of my study while Dr Nelesone was working in the Cook Islands where he had been a contract medical officer since 2008.

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<sup>219</sup> *ibid*

<sup>220</sup> *ibid*

<sup>221</sup> United Nation Association in Canada; available at: [www.unac.org/en/get\\_involved/jobs](http://www.unac.org/en/get_involved/jobs)

Drs Homasi and Conway were interviewed and shared their experiences about when they first started working at the PMH. For the first six months they mostly worked in the outpatients and later that year these new doctors planned to have different responsibilities within the medical services in addition to their clinical load. Dr Conway was responsible for the Public Health, Dr Homasi was responsible for the Healthy Islands Programmes and Dr Simeona was responsible for general clinical work.<sup>222</sup>

The Healthy Island Programme was an initiative adopted by the WHO and its member countries in 1995. This Healthy Island Programme was basically based on the 1986 Ottawa Charter for Health Promotion which was reviewed in the Fourth International Conference on Health Promotion and issues such as poverty, increasing urbanisation, and globalisation were issues highlighted during the conference that had an impact in the health of the Pacific people. The Healthy Island Programme, funded by the WHO in collaboration with the Government of Tuvalu, was integrated as part of the existing health programmes in Tuvalu such as Family Planning Programmes, HIV programmes and stop TB programmes. Promotion of these health programmes in Tuvalu does not run smoothly accordingly to plan. Disruptions to the promotion of these health programmes are caused by factors such as the changes in the management of the Medical Department and political turnover for the past ten years.<sup>223</sup>

There will be an improvement in health services in Tuvalu if Tuvalu continues to seek help from other countries. The Prime Minister of Tuvalu, Honourable Mr Apisai Ielemia attended the Cuba-Pacific ministerial meeting in Cuba in 2008. This meeting focused on strengthening

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<sup>222</sup> Conway-Ituaso; Stephen Homasi, 29/07/ 2009.

<sup>223</sup> Dr Tekaai Nelesone

cooperation in health, sports and education. The Cuban Government agreed to assist Pacific Island countries' medical services through sending its qualified medical doctors to work in the Pacific and to provide medical education to Pacific students. There are three Cuban doctors are working for the Medical Department. The first doctor to arrive in Tuvalu was in October 2008. His name is Dr Livan Rojas. His two fellow colleagues joined him in February 2009. The Government of Tuvalu had sent, through Cuban scholarships, ten Tuvaluan students (girls), to study medicine in one of the Universities in Cuba at the end of 2008, and ten more were sent early this year.

### **Conclusion**

Tuvalu was declared independent in 1978 from the United Kingdom. Tuvalu continued the TB Control Programme (with the assistance of WHO and UNICEF) by concentrating on the BCG inoculation of infants and six year old children. Thus the EPI was implemented. Tuvalu continued to experience problems that hindered the activities of the TB Control Programme. These problems were the lack of trained staff, poor transportation, poor communication and poor storage of vaccine in the outer islands.

## CONCLUSION

This research has examined the history of TB in Tuvalu in the twentieth century. Although some changes can be identified through the transition of colonialism to an independent state, there were also many continuities in the challenges of and responses to this disease. This study explored how the disease spread, problems faced by the Medical Department for effective finding and treatment of active TB cases and the responses from the public and patients towards the disease. As a result of this study, a number of conclusions can be drawn. In this chapter, I first give an overview of the history of TB in Tuvalu and then identify the major challenges and responses.

During the colonial days, TB was always a health problem as was clearly mentioned in the health reports. However, there was a major TB campaign beginning in the 1960s which had two phases and this made an impact on TB in the colony. Initially, there was a rise in the number of cases identified, presumably due to better case finding, and then the number declined. These campaigns involved not just the colonial government but international organisations as well. The campaigns were characterised by very active Heaf and later Mantoux testing, BCG, X-rays, where available, and later, sputum tests, and anti-tubercular drugs, provided by the international organisations. Later in the campaigns, the numbers of new cases started to decline, presumably due to very active case-finding in the initial stages and good treatment of cases. In the last quarter of the twentieth century, in independent Tuvalu, on-going prevention continued with testing and BCG injections and treatment of cases, still with input from international organisations.

However, in current times, TB is a continuing challenge. With better hospital facilities, cases can be isolated if necessary, and laboratory and X-ray facilities make diagnosis easier and more reliable. The WHO continues to play an important role in the STOP TB campaign. The annual number of new cases tends to fluctuate from the mid-30s to single figures per year, averaging 19 per year from 1975 to 2009 in a population that has been gradually increasing to 9561 at the last census in 2002.

A lack of awareness of TB, what it is and how it is spread increases the rates of TB amongst the people. In the early twentieth century, the people in Tuvalu were not fully aware of TB as a disease that can be easily spread. There was a common understanding that it was passed down in families (family disease) and it was stigmatised. As the interviews with the mothers demonstrated, it was a disease that was feared. The evidence suggests that TB was not always recognised, especially in its early stages. This was complicated by the fact that glandular TB was a very common form. As a result, diagnosis, and thus, treatment, was often quite delayed. The hospital records, though intermittent, clearly showed that TB was a major health problem at this time.

Social stigma still surrounds TB, even today, and it is still seen as a horrible disease. The continued stigma of TB, health workers suspect, delays diagnosis and treatment and helps spread the disease. Despite effective treatment being available which renders people non-infectious, this is not always understood and the possibility of infection is feared. However, people with TB are cared for by their families and health workers as they would be, no matter what the illness.

The main agent for the transmission of TB for Tuvaluans is the mobility of people. TB first came to Tuvalu as a result of European colonial expansion into the Pacific. In the twentieth century, back and forth movement between Ocean Island and the islands of Tuvalu, as Tuvaluans sought paid work, appeared to have had a considerable influence on TB in Tuvalu. With TB already introduced to Ocean Island, the poor living and working conditions there would ensure transmission.

Within Tuvalu there has been a lot of inter-island movement, and especially movement to Funafuti, which currently holds about half of the population of the group. Movement between Tuvalu and the Gilberts, as well as movement to Fiji, especially for training and education, has long been a feature. From 1979 the Tuvalu Maritime Training School was also the gateway to the world for successive groups of young Tuvalu men.

Colonial officials and the representatives of regional and international organisations and of other governments visited Tuvalu for periods, as did professionals of various kinds. In a variety of ways they affected the health services.

Tuvaluans have also migrated all over the world, mainly for education and work, and return home for visits from time to time. New Zealand and Australia are important destinations. Although Tuvalu is a distance from major population centres, it is not cut off from the wider world. It faces many of the same issues as other countries in terms of population movement and exposure to diseases including threats from MDR-TB and HIV-TB.

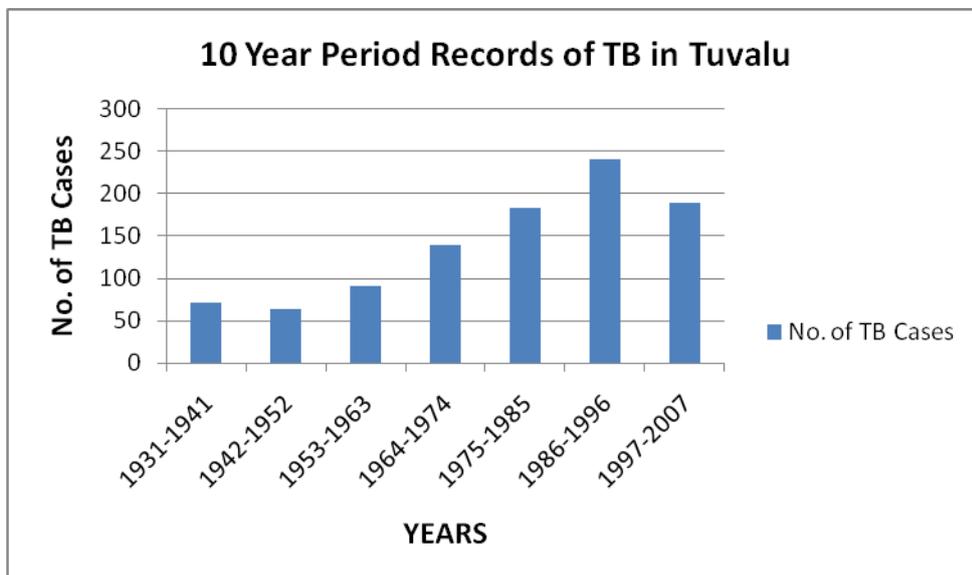
The distance between the islands and infrequent shipping services hinder all activities in Tuvalu. This had been an ongoing dilemma during colonial periods and still continued after Tuvalu became an independent state. TB control was often interrupted because of transport problems. Tuvalu still struggles with the development of infrastructure. Two sizeable boats now service the outer islands and the run to Suva but there are still disruptions to the service. Scheduled air services from Suva to Funafuti have improved transport for people requiring more specialised medical attention and for urgent medical supplies.

Over the period considered, shortages of trained medical staff to assist the TB Control programmes hindered progress. Hence, the only possible way to continue was to concentrate on BCG vaccination. Often active case finding was curtailed because of staff shortages and other problems. Tracing the contacts of infectious TB cases appeared to be very difficult to carry out in the TB programme which depended more on the goodwill of the suspected TB cases to come forward for effective treatment at an early stage. However, the problem of the lack of trained doctors was overcome when Tuvalu received voluntary medical doctors funded by the UNV Fund. In addition to the voluntary doctors, Tuvalu had increased its own local trained doctors towards the end of the twentieth century, who graduated from the Fiji School of Medicine.

One of the challenges faced by Tuvalu was and is the living conditions of the people which, in some cases, promote the spread of a range of diseases. In response, the women's committees on each island were and are good role models that show 'strong community spirit' and that organise activities to promote good hygiene, good sanitation and the wellbeing

of individuals on the islands. All the activities the women organised have assisted the medical attendants on each island, filling in some of the gaps in the health services.

After Tuvalu became an independent state from Britain in 1978, Tuvalu faced problems financially this delayed all activities. Thus the Government of Tuvalu could not continue health programmes on its own. The good Samaritans, WHO and UNICEF, still continue to send funds to continue the health programmes in Tuvalu, along with expertise and equipment. Over the years, health workers were enthusiastic about TB control and other health programmes within the country but were often inconvenienced by the factors outlined above. In 2007 a dedicated TB control nurse to administer the DOTS programme and provide education to patients and families, and a laboratory technician were appointed. This was an important step towards TB control.



**Figure 21: Overall Analysis from 1931 – 2007.**

Source: Ministry of Health, Government of Tuvalu & MD F.27/I/I, box 3, TNA, Funafuti.

Despite all the effort and input to control the disease by the Medical Department and the funding international organisation, TB still continues to be a health problem (Figure 21). This is not only a problem that the Medical Department has to deal with but is a responsibility of the Government and the people of Tuvalu.

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## **APPENDIX**

Please see back cover for accompanying compact disk containing statistical information.