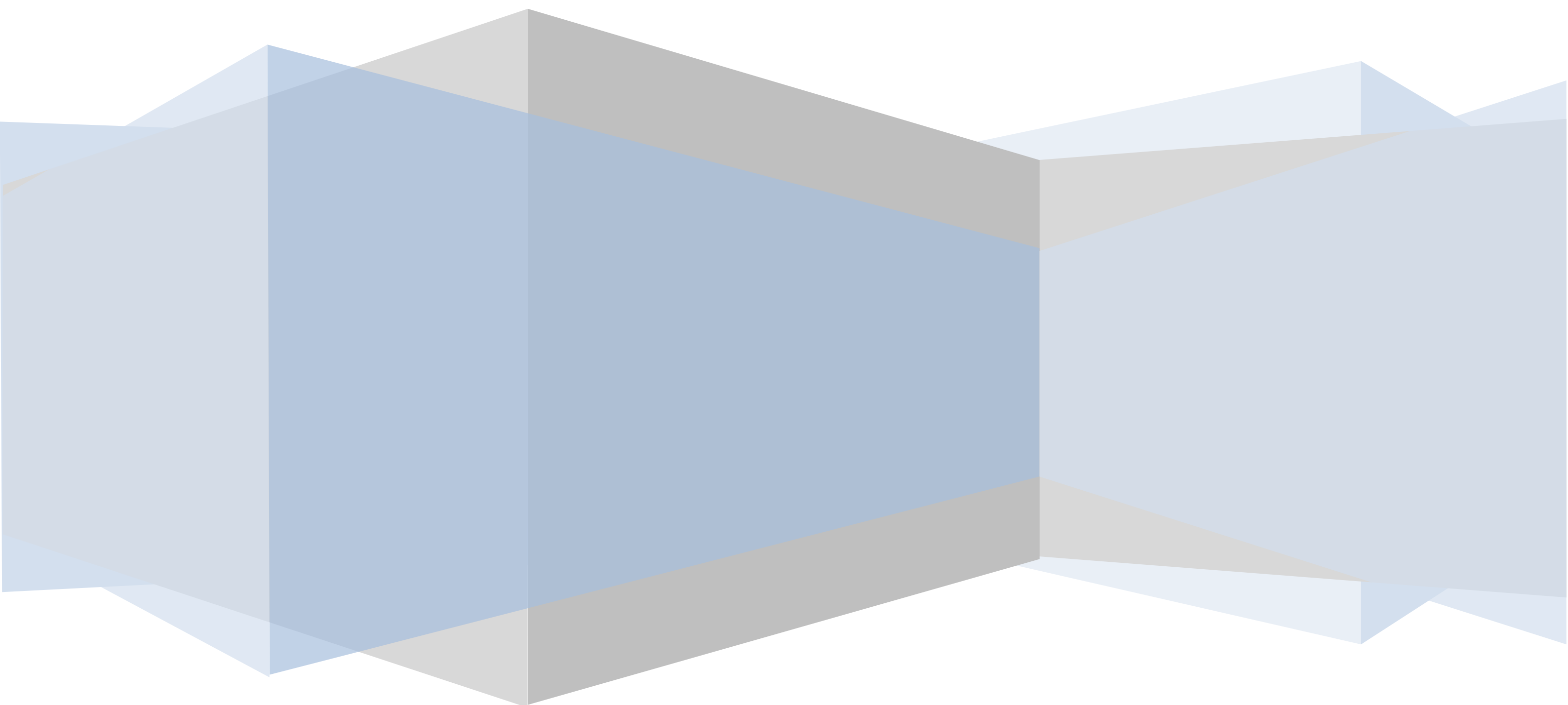
TE MARAE ORA - COOK ISLANDS MINISTRY OF HEALTH DENTAL SERVICES

TURANGA NIO MANEA E TE MATUTU

The Cook Islands National Oral Health Strategy 2014-2018



Contents

Minister's message 3

Message from the Secretary of Health 5

Message from the Manager Dental Services 6

Executive Summary 7

Acronyms & Abbreviations 9

1.1 PART 1: INTRODUCTION 10

What is Oral Health 12

Oral Health Status in the Cook Islands 12

Dental Health Care Services in the Cook Islands 13

Structure 13

Dental Work Force in the Cook Islands 13

Dental Services Provided 14

Dental Facilities 15

PART II: STRATEGIC VISION 17

Why a strategic vision? 17

"Turanga Oraanga Nio Manea e te Matutu" 17

Oral Health Vision in Context 18

Other Key Documents that informed this document 18

The Principles 19

Part III: PRIORITY STRATEGIC AREAS 20

1. Promote Oral Health 21
2. Reduce inequalities in oral health outcomes and access to oral health services 22
3. Workforce strengthening and development 22
4. Develop Infrastructure 23
5. Develop Oral Health Policy 23
6. Establish robust data base, research, monitoring & evaluation 23
7. Monitoring and evaluation of current strategy 24

Part IV: STRATEGIES AND ACTION PLAN 26

Goal 1: Promote oral health and create an environment that enables people to attain good oral health for life 26

Goal 2: To reduce inequalities in oral health outcomes and access to oral health 31

Goal 3: Oral health workforce strengthening and development..32
Goal 4: Develop infrastructure to enhance service delivery 34
Goal 5: Develop oral health policies 35
Goal 6: Establish robust data base through research and ensure monitoring & evaluation of programs developed and implemented 36
Goal 7: Monitoring and evaluation of current strategy..39
Appendix I .... **Error! Bookmark not defined.**
Community Health Services Directorate Organizational Structure which includes Dental Services .... **Error! Bookmark not defined.**
References 40

Minister's message

Kia Orana tatou katoatoa,

The development of this National Oral Health Strategy 2014-2018 is a significant milestone for the Ministry of Health Dental Services of the Cook Islands. The strategy highlights key areas that are crucial in the advancement of oral health care service delivery in our country and forms a solid foundation for achieving good oral health outcomes for our people. This is testament to the way the Ministry of Health wishes to conduct its business in ensuring that our most vulnerable groups are reached.

Oral health forms an important part of general health and wellbeing and it is also a fundamental human right, a view that is supported by the World Health Organization. The importance of oral health therefore cannot be overlooked and we at the Ministry of Health recognize that a healthy population is crucial to the economic development of our country. Oral health plays a significant role in that process.

We are also committed in improving the oral health care services in the Pa Enua. Initiatives have been developed to alleviate oral health care disparities in our Pa Enua. These include promoting oral health in the wider population and developing our workforce capable of providing quality primary and secondary oral health care services to our communities.

In light of the NCD crisis in our country, I am pleased with the approach this strategy has taken. It is prepared to contribute positively to reducing NCD in our country through a common risk factors approach. This integrated approach is very important as far as managing our scarce resources are concerned and the fact that NCD is a priority area for the Ministry of Health, making it everyone's business. We realize that in addressing these issues we need the collective effort of all stakeholders involved.

Finally, I would like to acknowledge the various organizations that have supported the Ministry of Health Dental Services in the past. I am confident that this strategy will enable us all to achieve more for our people.

Kia Manuia

Honorable Nandi Glassie
Minister of Health

Message from the Secretary of Health

Kia Orana tatou katoatoa,

The Cook Islands National Oral Health Strategy 2014-2018 has been developed to pave the way forward for the Dental Services division and the Ministry of Health in addressing oral health challenges in our communities. This I believe is a step in the right direction as far as advancing oral health care and improving both oral and general health outcomes in our country is concerned.

This strategic document will allow us to conduct our business of serving our people in a structured and cohesive manner. We will endeavour to ensure that appropriate support is provided to guarantee the desired outcome of this strategic plan.

On that note, I wish my team well on this journey and urge for their utmost commitment in the implementation of this strategic plan.

Kia Manuia

Mrs. Elizabeth Iro
Secretary of Health

Message from the Manager Dental Services

Tangike tatou katoatoa,

This document is developed in response to the changing landscape of how the Government of the Cook Islands and the Ministry of Health conducts its business. It provides the strategic direction by which the Ministry of Health Dental Health Services intends to deliver oral health care to the people of the Cook Islands for the next five years. The strategy is developed with the sole purpose of improving the oral health care service delivery to our people and to improve oral health outcomes for our communities.

On that note, I would like to acknowledge those individuals who contributed to the completion of this document. First and foremost the Ministry of Health, in particular, the Secretary of Health, Mrs Elizabeth Iro, Director of Community Health Services, Dr Rangiau Fariu and the Human Resources Manager, Ms Temarama Anguna. Thank you for your assistance and support.

Secondly, to Dr Veisinia Matoto, Non-Communicable Disease (NCD) Specialist, Ministry of Health, thank you for your assistance and guidance in the completion of this work – Malo au pito.

I would also like to acknowledge Mr. Owen Lewis, Director of the Cook Islands Tertiary Training Institute for his valuable contribution to this strategy. Critically evaluating this document in its draft form ensured that the content of this document is not only of the highest standard but are realistic and relevant.

To all my dental colleagues, thank you for your assistance in the development and completion of this very important document. Your desire to improve this important service to our people had been an inspiration to the creation of this document. I must also acknowledge the contribution of Dr Lagaau Vaevaepare who contributed immensely to the completion of this work. It is my sincere hope that, with this strategy in place we will be able to contribute significantly to the attainment of the Ministry of Health's vision of a healthier nation.

Kia Manuia

Dr Danny Areai
Manager Dental Health Services

Executive Summary

This National Oral Health Strategy 2014-2018 is a significant achievement for our Cook Islands Ministry of Health Dental Services Division. It outlines the philosophy and principles by which this strategy is based upon and put in the context of other existing strategies and commitments both nationally and internationally. It also states the vision of attaining good oral health status among our people and a quality, accessible, equitable oral health care service that is not only responsive to the oral health care needs of our people but is also innovative.

In light of the high prevalence of Non-Communicable Diseases (NCD) in the Cook Islands, this document is strategically positioned to assist in addressing this issue given that oral health diseases share common risk factors with other Non-Communicable Disease entities and the fact that oral health conditions can be classified as NCD.

This document outlines key strategic areas the division will focus in the next five years with the ultimate goal of attaining good oral and general health outcomes for all people living in the Cook Islands. These include;

- Promoting oral health;
- Reducing inequalities in oral health outcomes and access to oral health services;
- Workforce strengthening and development;
- Developing infrastructure;
- Developing oral health policies;
- Establishing robust databases, ongoing research and monitoring;
- Monitoring and evaluation of this strategy.

Promoting an enabling environment plays a significant role in improving both oral and general health outcomes. It is the intention of this strategy to contribute to creating a positive and healthy environment that will promote healthy behaviours and ultimately lead to positive health outcomes.

Disparity in the delivery of oral health care services in the Cook Islands is evident in the Pa Enua. This strategy intends to develop an oral health care system that is equitable and effective in serving the oral health needs of our people. In doing so, significant investment is required in the development of our oral health workforce, infrastructure, policies and regulations. Furthermore, it is crucial to establish a robust database to inform decision making processes in the future.

The development of this strategy is an important step for the Ministry of Health Dental Services division as it provides a clear direction and a solid foundation in realizing our

vision of “Turanga Nio Manea e te Matutu” (A Beautiful & Healthy Oral Health) for the people of the Cook Islands. More importantly, achieving the Ministry’s vision of “All people living in the Cook Islands living healthier lives and achieving their aspirations”

Acronyms & Abbreviations

CPI	Community Periodontal Index
DMFT	Decayed, Missing, Filled Teeth (permanent teeth)
dmft	decayed missing filled teeth (baby teeth)
DMFS	Decayed Missing Filled Surface
HHS	Hospital Health Service
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
KAP	Knowledge, Attitude, Practice
NCD	Non- Communicable Disease
PTA	Parents Teachers Association
SDS	School Dental Service
WHO	World Health Organization
MOE	Ministry of Education

1.1 PART 1: INTRODUCTION

Oral health plays a significant role in the health and wellbeing of an individual. Despite significant improvements in dental knowledge and technology, oral conditions such as; dental caries, periodontal diseases, tooth loss, oral cancer, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) related diseases and oro-dental trauma are prevalent, particularly in those underprivileged groups both in developed and developing nations [1-2].

In the Cook Islands dental caries, periodontal disease and tooth loss is prevalent. Preliminary findings from the recent Cook Islands National Oral Health Survey (CINOHS-2014) revealed dental caries in the five year old age group is high with the national mean decayed, missing and filled teeth (dmft) score of 6.6 with decay dominating the three measures assessed.

In contrast the mean DMFT status =1.7 for the 12 year olds were shown to be low, but this decline is negated by the sharp increase observed in the mean DMFT status (3.9) in 15 year olds with decay featuring strongly in the three components assessed. This is of significant importance because this trend tends to lead on into adulthood.

The mean DMFT observed in the three adult groups surveyed, showed a continuation of the sharp increase reported in the 15 year olds. The 20-24 year old age group reported a mean DMFT status of 7.3 with missing (3.1) and filling (2.7) components contributing significantly. Again, the mean DMFT status reported in the 35-44 and 65-74 year old age groups high. Compared to the 15 year old age group the mean DMFT status doubled (DMFT = 12.9) in the 34-45 year old age group and increased by three folds (mean DMFT = 21.9) in the 65-74 year old age groups.

The preliminary data for periodontal disease from this survey showed a significant proportion of the adult population examined suffered from some forms of periodontal disease. Bleeding upon probing (BOP) and probing depth of 4mm or more is reportedly high among the participants examined.

These findings are of significant importance given the high level of Non-Communicable Disease (NCD) in the Cook Islands, because these oral conditions shares common risk factors and are strongly associated with these conditions such particularly diabetes mellitus and cardiovascular diseases. Addressing these issues will require the collective

effort of all sectors of health (medical, dental and public health) together with our communities. The Ministry of Health have recognized the need to address this pressing matter.

In view of these challenges and the changing landscape of the Government's approaches to conducting it business, it is timely that the Dental Services division review the way it's delivers oral health care services in the Cook Islands. Crucial to this process is the development of a strategic framework that will allow the Ministry to address oral health challenges strategically and in a structured fashion, hence the reason for developing this important document.

What is Oral Health?

From a purely biological perspective, oral health is conceptualized as the absence of disease namely; tooth decay and gum disease. This definition however, fails to recognize other aspects of oral health that's contributes to the overall wellbeing of an individual.

According to the World Health Organization (WHO) oral health is;

> *"A natural, functional, acceptable dentition which enables an individual to eat, speak, and socialize without discomfort, pain or embarrassment, for a lifetime, and which contributes to general well being" (WHO 1982).*

This definition is more encompassing in that it recognizes the psycho-social importance of oral health. The biological component of oral health is concerned with the maintenance of all oral structures in an optimum state throughout one's life-time, but the psychosocial aspect of oral health requires that these oral structures (for example; teeth and gums) must function in a state that is socially acceptable, if one is to thrive in the society. The popularity of cosmetic dentistry is indicative of the fact that social constructs extend far beyond the absence of oral disease. The embarrassment and suffering from missing, damaged, diseased or otherwise aesthetically unappealing teeth has been reported to have a profound impact on an individual's quality of life.

Oral Health Status in the Cook Islands

In the Cook Islands dental caries and periodontal disease are two major oral health conditions affecting its population. Dental caries is rampant particularly among young children. Results from data collated previously from some of the Pa Enua revealed high percentages of decayed, missing, and filled teeth (dmft) for 5-year olds ranging from 85-100%.

Data obtained in the late fifties to the late seventies [9-11] reported high caries prevalence among young children in Rarotonga and Mangaia. Several decades later, dental caries prevalence remains relatively the same as reported in the recent CINOHS.

Like dental caries, periodontal disease is also prevalent in the Cook Islands among the adult population. Periodontal disease is a chronic progressive disease of the periodontium (gum, periodontal ligament, alveolar bone and cementum) caused by dental plaque. If left untreated, periodontal disease will progress to advance periodontitis and subsequently lead to tooth-loss.

Data collated from seven of the Pa Enua in 2001, showed calculus deposits (44-66%) and excluded sextants (10-32%) dominated the community periodontal index (CPI) of all adults examined. This data highlights not only the periodontal disease prevelance status but also the disparity in the provision of oral health care in the Cook Islands especially in the Pa Enua.

Dental Health Services in the Cook Islands

Structure

In the mid-nineties, the government dental service was dis-established and dental officers were deployed to the private sector. The dental health care in the Pa Enua was decentralized to the Island Administrations. Oral health care suffered tremendously under that system. In 2004, all dental health care services were again centralized and became one of the six outputs within the Ministry of Health, led by a Director of Dental Services. Following the 2007 Ministry of Health Management Review, the Dental Services division was merged with the Public Health division under the Community Health Services Directorate. This arrangement is current. The merger with the Community Health Services Directorate was deemed necessary to strengthen the management and clinical service delivery structure within Dental Services. The Dental Service division is divided into three main subdivisions; Te Marae Ora (Rarotonga), School Dental Services (SDS) and the Pa Enua with the former two based in Rarotonga. All administrative and the treatment of adult patients and school children referrals on Rarotonga and those from the Pa Enua are performed at Te Marae Ora dental clinic in Rarotonga.

Routine dental treatments for school aged children are performed in the school dental clinics provided by the SDS team. Treatments for the adults and school aged children in the Pa Enua are performed by residential Oral Health Care Providers or Dentists flown in from Rarotonga.

Dental Workforce in the Cook Islands

There are twenty-four staffs in the Dental division of the Cook Islands of which 70% of them are stationed in Rarotonga where approximately 70% of the population reside. Of these, 25% are nearing or over the retirement age of 60 years. The need to recruit and train new staff is urgently needed to succeed this cohort of health professionals who have been at the helm for many years. The fact that training dental professionals requires a considerable period of time means that the training must begin soon. It must also be noted, that in addition to the number of years training, these staff require additional time in service to gain adequate levels of clinical experiences.

For the islands of Aitutaki, Mangaia, Mauke, Atiu, Pukapuka and Nassau, the dental services are provided by the Primary Oral Health Providers whose scope of practice is limited to preventive procedures such as fissure sealants, fluoride applications, tooth brushing drills and scaling. In addition they are able to provide simple fillings and extractions. Complex treatments such as surgical removal of "wisdom" or third molar teeth, infections associated with teeth and gums, prosthetic and endodontic care are performed in Rarotonga. The islands of Manihiki, Rakahanga, Penryhn, Palmerston, Nassau and Mitiaro have no dental personnel. These islands require dental staff to ensure oral health care is readily accessible to their communities.

Table 1: Current dental workforce

Personnel	Numbers	Location
Dentist	7	Rarotonga
Dental Therapist	1	Rarotonga
Dental Nurses	4	Rarotonga
Primary Oral Health	7	Pukapuka, Nassau, Atiu, Mauke, Aitutaki, Mangaia, Rarotonga
Dental Technician	1	Rarotonga
Dental Assistants	3.5	Rarotonga
Receptionist	1.5	Rarotonga

Dental Services Provided

The oral health care services in the Cook Islands provides a broad range of clinical care and recently established a public health service arm in its structure.

Clinical services involves the diagnosis of oral disease entities and the delivery of a broad range of restorative (fillings) care, minor oral surgery procedures such as simple tooth extractions, impacted third molar extractions, simple periodontal treatments and provision of removable prosthesis.

Most recently, the prosthetic care services has been expanded into fixed prosthetic care to cater the demand for such care here in the Cook Islands. In addition, the orthodontic service has been introduced in response to the increasing demand for this specialized service in our country. Removable orthodontic appliances have been utilized in the past but fixed appliances are now used in an attempt to build capacity and broaden our scope of practice in this particular field in-country.

Endodontic treatment is another specialized care that has been delivered here in the Cook Islands. With the advancement of technology in this area, there is move to broaden the scope in this area.

Oral maxillo-facial surgery is also delivered here in the Cook Islands, but this is limited to the management of less complicated oral and maxillo-facial injuries. Complicated injuries are managed in New Zealand however most cases have been managed in country to date.

The public health arm of the service deals with preventative aspect of care in schools and the wider community. This is a crucial component in addressing oral health issues at the community level. Recently, this aspect of care has been incorporated as a special unit in the division. This signals our intention to broaden our scope in this area with a huge emphasis on addressing oral health issues in the Pa Enua.

This strategy recommends the development of a model of oral health care that is equitable and innovative.

Dental Facilities

There are thirteen dental clinics currently operating in the Cook Islands. Of these thirteen clinics, eight are based in Rarotonga (Te Marae Ora – main dental clinic, 1 private, 5 school clinics with fixed unit facilities and 7 schools are serviced with mobile dental facilities that are brought in when needed. The Southern Group islands of Mangaia, Aitutaki, Mauke, Atiu, and Mitiaro have fixed dental units of which some are situated in close proximities with school.

At present there are five school-based dental clinics with fixed dental unit facilities around Rarotonga. Avarua Primary and Tereora College dental clinic caters for the needs of all students in those schools. The clinic in Nikao Primary services students from Nikao and Avatea Primary. The clinic in St Joseph Primary caters for students from that school and Nukutere College. The remaining schools on Rarotonga are serviced using mobile dental units on an annual basis.

This arrangement is possible due to a long-standing working partnership between the Ministry of Education (MOE) and the Ministry of Health. The Ministry of Education provided the space in the school where the clinics are based to enable the Ministry of Health to address the general and dental health issues of the children more efficiently. In turn, this will minimize disruptions to the students learning at school and maximizes the program-reach to this vulnerable but very important group of our society.

Between the years 2003-2008, thirteen modern dental units (dental chair & drilling unit) were installed, one each on Mangaia, Aitutaki, Mauke and Atiu and 9 in Rarotonga (Te Marae Ora – 6, SDS – 3). Those installed in Rarotonga, Mangaia, Aitutaki, Mauke and Atiu are fixed dental units and includes Penrhyn and Manihiki, while that in Pukapuka and Nassau are mobile dental units.

The status of the dental infrastructure in the Cook Islands is relative to the services provided. At present general dental care is the hall-mark of the services delivered. Fillings of various types, minor oral surgeries (extractions, abscess drainage, periodontal care) and removable dentures are routinely performed. Endodontic treatment is also routinely performed although this is a specialised field however the facility requires improvement to improve the standard and quality of care in this area. More specialized procedures are gradually introduced but this will require some improvements in the oral health care infrastructure to enable clinicians to provide such care in-house.

PART II: STRATEGIC VISION

Why a strategic vision?

Oral health has been recognized by the World Health Organization (WHO) as an integral part of general health and a fundamental human right. A sentiment echoed in the *Liverpool Declaration 2005,* who called for national and international health authorities to develop oral health policies as an essential component of their national health programs.

Oral health conditions such as dental caries and periodontal disease are two most common diseases and these conditions are very common here in the Cook Islands. It is timely that the Ministry of Health Dental division has to re-examine the way it carries out its business in addressing these matters.

Improving oral health care in the Cook Islands is highlighted in two key documents of the Ministry of Health; The National Health Strategy 2012-2016 and the Cook Islands National Strategy and Action Plan to Prevent & Control Non-communicable Disease 2009-2014. These, together with the escalating burden of other non-communicable disease entities crippling the health of many Cook Islanders requires the development of a strategic framework to address these issues as they all share common risk factors and the fact that the current oral health care system is failing to deliver equitable oral health care services to our people particularly in the Pa Enua.

"Turanga Oraanga Nio Manea e te Matutu"

"Turanga Oraanga Nio Manea e te Matutu" is a vision aimed at attaining good oral health status among our people and a quality, accessible, equitable oral health care service that is not only responsive to the oral health care needs of our people but is also innovative. Realizing this vision will require a significant investment in oral health care services and re-orientation of certain aspects of it service delivery arm.

This document outlines the philosophy and principles by which this strategy is based upon and put it in context with other strategies, such as the Primary Health Care Strategy[8], Cook Islands National Health Strategy 2012-2016 and the Cook Islands

National Strategy and Action Plan to Prevent and Control Non-communicable Diseases 2009-2014.

It also outlines all key areas where the policies, strategies and action plan for oral health to focus in the next five years.

Oral Health Vision in Context

The Ministry of Health has signaled its intention to "provide accessible, affordable and equitable health care service" to all Cook Islanders, a call the Dental Health division is in support of. Improving oral health has also featured in the Ministry's National Health Strategy 2012-2016. The principles that underpin the vision for oral health are based within the context of other strategies namely;

- The Cook Islands Te Kaveinga Nui – National Sustainable Development Plan 2011-2015;
- The Cook Islands National Health Strategy 2012-2016;
- The Cook Islands National Strategy and Action Plan to Prevent and Control Non-communicable Diseases 2009-2014;

The first two strategies recognize the importance of controlling oral health disease and the crucial role it plays in reducing non-communicable diseases simply because oral diseases share common risk factors (smoking, alcohol and diet) with other non-communicable disease entities. Two common chronic oral diseases namely; dental caries and periodontal diseases are prevalent in the Cook Islands. Oral cancers however must not be ignored given the number of cases reported in recent years.

The National Sustainable Development Plan 2011-2015 recognized the importance of having collaboration with others (partnership), for Cook Islanders to have equal opportunities for all (equity), a system that can be sustained (sustainability) and building of strong leaders (leadership) in the advancement of our nations development a view that is strongly featured in this strategy.

Other Key Documents that informed this document

Ottawa Charter for Health Promotion, 21st November, 1986

The Liverpool Declaration: Promoting Oral Health in the 21st Century, 7th -10th September 2005

Declaration of Alma Ata – Primary Health Care, 6th -12th September, 1978

Oral Health Service in the Cook Islands – Review conducted by WHO 2004.

The Principles

The above strategies and key documents informed the principles that guide this strategic vision. These principles are:

- Improving the oral health of those most at risk and disadvantaged is a priority, particularly the young, elderly and those residing in the Pa Enua;
- Oral health is an integral part of general health and the overall wellbeing of an individual;
- The Ministry of Health, must ensure that quality oral health care services are readily available and delivered to the people of the Cook Islands;
- Strong preventive and curative services must complement each other;
- A strong workforce is trained to provide high quality service;
- Evidence based practice requires comprehensive up-to-date data obtained through on-going research that is robust enough to inform decision making processes.

Part III: Priority Strategic Areas

The framework by which this strategy is developed focuses on the following key areas:

- Promoting Oral Health;
- Reducing inequalities in oral health outcomes and access to oral health services;
- Workforce strengthening and development;
- Developing infrastructure;
- Developing oral health policies;
- Establishing robust databases, ongoing research and monitoring;
- Monitoring and evaluation of this strategy;

1. Promoting Oral Health

Achieving good oral health requires the attainment of an optimum state between several factors namely; biological, environmental, social, economic and behavioural issues. Providing treatments to restore diseased oral structures is only part of the solution. It must be complemented with a strong preventive and promotion components to realize our vision. By being proactive in this approach particularly in young children, we will be able to create a healthy environment and instil good health behaviour in our children that can lead to better oral health outcomes that are likely to last a life-time.

Essentially, the fundamental principle here is to improve oral health outcomes for our people and this requires strong preventive and promotion programs that complement a strong curative service.

This can be achieved through several ways;

1) Promoting a healthy environment
2) Promoting healthy behaviour

Promoting a Healthy Environment

Achieving good health begins with a healthy environment. The same is true for oral health. Environmental factors such as access to fluoride through (water, salt and tooth-paste), a smoke free environment and healthy diet are crucial in achieving good oral health.

Currently the water upgrade program in Rarotonga is underway where the addition of fluoride in our water system has been proposed. This project is an example of promoting a healthy environment where people in all strata of the population are likely to benefit.

A healthy environment must therefore be promoted at all levels of the population particularly at government level.

It is also important to note that an environment that promotes oral health also promotes general health and wellbeing. For example; smoke free campaigns can have a positive effect on an individual’s oral health and general health. Such action provides positive outcomes that are likely to create an environment that supports good oral health.

Promoting Healthy Behaviour

Promoting healthy behaviour is just as important as promoting a healthy environment, simply because a significant amount of the responsibility remains with the individuals. In doing so, efforts need to be focused on educating our people to make healthy choices that have life-long benefit.

For us in the Cook Islands an in-depth analysis is necessary to re-evaluate our current approach and to determine future course of actions.

2. Reducing inequalities in oral health outcomes and access to oral health services

Inequalities in oral health outcomes results from a number of factors, including, socio-economic status, housing, education, poor nutrition, lack of access to health care service and fluoride and attitude towards oral health.

Inequality in oral health outcomes in the Cook Islands is evident, across all sectors of our population. One of the areas of concern is Pa Enua. Closing the gap between Rarotonga and Pa Enua will require a mix of approaches addressing some if not all of those factors that have detrimental effects to the health and oral health outcomes of those people.

3. Workforce strengthening and development

Realizing our vision requires a strong workforce. Currently, there is a pressing need for strengthening and developing our oral health workforce in the Cook Islands. Currently six of our Pa Enua has no residential dental personnel and five are serviced by Primary Oral Health Care staffs. Training of a cadre of dental therapists is one strategy for addressing this much needed workforce strengthening and development program to allow the service to be accessible to our people in the Pa Enua. The training is expected to deliver a significant portion of community dentistry to equip them with adequate level of skills required to promote oral health in their respective communities.

Specialist Care

Although the focus for the Cook Islands is on reducing oral disease prevalence and reducing inequalities at the population level, we cannot ignore the need for development in specialist care. Currently, complex treatment modalities (i.e. oral surgery, orthodontics, periodontics, endodontics and fixed prosthodontics) are being delivered on Rarotonga but are limited. Other specialized fields such as geriatric dentistry, special needs, paediatric care, oral medicine and oral pathology are potential areas for development given that mental health and our elderly population is likely to increase and

the Dental division must be prepared to manage the oral health needs of these groups. This issue is further compounded by the high prevalence of NCD in our country and the fact that these patients are often treated with multiple drugs that may adversely affect their oral health.

Community Dentistry

Oral health is a unique service and like its medical counterpart has a significant clinical component. Community dentistry on the other hand is the public health arm of dentistry which is in its current form is not well developed. This particular undertaking needs time to examine all the logistics and resources involved.

4. Developing Infrastructure

Infrastructural development is crucial in the attainment of our vision. The existing clinic in Rarotonga has been in place for more than forty years. Although, improvements has been made in the past, it is due for another redevelopment to accommodate the increasing number of services provided and to strengthen our infection control capability in ensuring the prevention of cross-infection in this facility. In recent years, infectious diseases such as tuberculosis (TB), HIV/AIDS, Hepatitis B are on the rise again. While the status of these conditions in the Cook Islands is low, we cannot afford to wait and do nothing to prevent such incidents from happening. It is best to put the structure in place to enable us to maintain high quality services to our people.

Most recently, the dental service purchased and installed a state of the art ortho-panaromic radiography machine (OPG) to support our clinicians in disease diagnosis. It is important that the working environment is improved to protect and prolong the life of these expensive assets that will only benefit our people in the long term.

5. Developing Oral Health Policies

Achieving our vision will also require the development of sound oral health policies aimed at addressing the oral health needs of our people particularly, the young, elderly, Pa Enua population, medically compromised and those with special needs. In addition, the escalating burden of non-communicable disease in our population remains a major public health issue that needs to be reflected in this policy as they share common risk factors.

6. Establishing robust databases, ongoing research and monitoring

Establishing a robust data base for oral health is a very important component in realizing our vision. A robust data base is vital to informing decision making processes and to

bench mark progress made. The Cook Islands oral health care service does not currently have adequate data collection processes or systems.

Research into areas that will enhance the delivery of oral health must be encouraged. This will help not only build a stronger data base but will also allow us to remain abreast with developments and knowledge in oral health both locally and internationally.

7. Monitoring and evaluation of this strategy

Crucial to the effective application of this strategy is the proper monitoring and evaluation of all activities implemented. It is envisaged that such undertaking will be applied at both the strategic and the program level.

Part IV: Strategies and Action Plan

Goal 1: Promote oral health and create an environment that enables people to attain good oral health for life				
Objective 1: To intensify efforts in promoting and preventing oral diseases in schools and the wider community				
Outcomes	**Actions/Interventions**	**Indicators**	**Baseline**	**Estimated Cost**
1.1.1 Wider population is accessible to fluoride	1.1.1 Collaborate and advocate the use of fluoride with relevant government and private sector agencies 1.1.2 Acquire fluoride tablets, gels and varnish July 2015 1.1.3 Develop awareness program amongst communities advocating the use of water fluoridation by 2016-2017	1.1.1 Number of consultative meetings with stake holders 2017 1.1.2 Number of education sessions delivered annually for the next five years 1.1.3 Fluoride tablets, rinse, and varnish programs implemented in schools February 2016 1.1.4 Number of media campaigns conducted annually		$15,000 per annum Total = $75,000

		for the next five years 1.1.5 Number of print materials distributed annually for five years		
1.2.1 Strengthened oral health preventive programs in schools	1.2.1 Annual screening of school students and identify high risk cases 1.2.2 Acquire fissure sealants materials annually for fissure sealant program 1.2.3 Conduct tooth-brushing drills on a weekly basis 1.2.4 Conduct at least four oral health education sessions in schools annually 1.2.5 Strengthen partnership with ministry of education, schools and communities 1.2.6 Strengthen healthy food policy in schools	1.2.1 Screening completed data collated and annual action plan developed 1.2.2 Number of fissure sealants placed, weekly tooth brushing drills and health education programs delivered 1.2.3 Increased healthy food days 1.2.4 Reduction in dental caries prevalence (dmft/DMFT, dmfs/DMFS)	5-year olds -dmfs- 6.6 12-year olds -DMFT 1.7 15-year olds -DMFT 3.9	$15,000 per annum Total = $75,000

	through close collaborations with teachers and parents	1.2.5 Increase in percentage of caries free 5 year old children by 10% 1.2.6 Number of consultations with school teachers, PTA by July 2015	Caries free: 20%	
1.3.1 Improved oral health outcomes for our young children through early interventions	1.2.1 Develop a register in close collaboration with public health nurses, to enroll children for dental care as early as 12 months old by 2016 1.2.2 Develop awareness on bottle feeding habits in relation to nursing bottle caries (NBC) by 2015-2016 1.2.3 Replace existing vehicle to support outreach programs by 2015	1.3.1 System developed and data collated 1.3.2 All children enrolled 1.3.3 Number of awareness programs developed 1.3.4 Purchase replacement van for Rarotonga Dental		$ 35,000
1.4.1 Better understandings	1.4.1 Conduct knowledge, attitude and practice	1.4.1 KAP conducted 1.4.2 Information		$ 40,000

of people's behavior and attitude towards oral health	(KAP) survey by 2018	disseminated to inform further developments in oral health		
Objective 2: Establish oral health promotion team and building work force capacity				
2.1.1 Work force more acquainted to health promotion philosophies 2.1.2 Integrated approach to oral health promotion activities 2.1.3 Availability of a wide range of oral health promotion information/materi als	2.1.1 Train oral health staff from Pa Enua and the school dental services in Rarotonga in oral health promotion by June 2015. 2.1.2 Collaborate closely with the health promotion units in developing, planning and financing of oral health promotion programs annually for the duration of this strategy 2.1.3 Develop local materials that are culturally appropriate annually for the duration of this	2.1.1Number of training sessions conducted 2.1.2 Number of staff trained 2.1.3 Number of integrated activities conducted and number of Materials available and distributed in appropriate establishments		$25,000 Total= 25,000

	strategy			
Objective 3: Multi-sectoral approach in addressing oral health and NCD				
3.1.1 Partnerships with other sectors of the society strengthened 3.1.2 Communities proactive in maintaining good oral health and general health practice 3.1.3 Communities aware of the link between oral health and NCD 3.1.4 Integrated activities in addressing oral health and NCD using common risk factors approach	3.1.1 Advocate with government, and community leaders of importance of major risk factors that affects oral health and other NCD annually for the duration of the strategy 3.1.2 Oral health care professionals proactive in undertaking health promotion strategies in preventing and controlling the determinants of NCDs for optimal oral and general health annually for the duration of this strategy	3.1.1 Number of NCD related activities conducted (e.g. referrals for smoke cessation programs) 3.1.2 Number of chair-side sessions for diet advice		$5,000 per annum Total 25,000

GOAL 2: To reduce inequalities in oral health outcomes and access to oral health				
Objective 1: To improve the delivery of oral health care to the Pa Enua				
2.1.1 Access to oral health in the Pa Enua is enhanced 2.1.2 Improved oral health outcome 2.1.3 Partnership with island communities strengthened 2.1.4 Services delivered in a timely manner 2.1.5 Financial savings from referrals from the outer islands	2.1.1 Pa Enua are adequately manned with regular flying dental visits from Rarotonga 2.1.2 Regular oral health preventive programs implemented in schools annually for the duration of this strategy 2.1.3 Adequate supply of fluoride supplements (varnish, tablets) purchased and programs implemented in schools in the Pa Enua by 2016 2.1.4 Adequate supply of equipments and instruments	2.1.1 Number of trained staff working in Te Pa Enua and number of flying dental visits made to the Pa Enua 2.1.2 School preventive programs implemented 2.1.3 Stock available and inventories updated monthly for the duration of this strategy 2.1.4 Supplies of appropriate equipment and instrument available and distributed and services biannually	6 Primary Oral Health Practitioners	Outer Is. Visit= $20,000 Biannual maintenance of equipments =$20,000

	maintained and biannual servicing of equipments conducted for all clinics 2.1.5 Conduct periodic visit to the outer islands from an oral health team from Rarotonga to supplement services provided by residential staff annually for duration of strategy	with report presented 2.1.5 Number of visits conducted and reports presented		
Goal 3: Oral health workforce strengthening and development				
Objective 1: To conduct refresher courses for the existing work force				
3.1.1 A skilled and motivated work force to deliver quality oral health services to the wider population 3.1.2 Quality services provided	3.1.1 Conduct refresher training course for existing staff biannually 3.1.2 Staff to undertake relevant courses via USP or other institutions for further development	3.1.1 Number of staff studying and courses completed 3.1.2 Number of refresher courses conducted biannually for duration of strategy		$20,000 annually =$200,000

Objective 2: To recruit and train a new cohort of dental personnel to service both Rarotonga and Te Pa Enua				
3.2.1 All Pae Enua have qualified dental therapists/personnel 3.2.2 Equitable and accessible dental care services available	3.2.1 Develop a training curriculum in 2014/15 3.2.2 Recruit candidates for training 2015/16 3.2.3 Training conducted 2016-2018 3.2.4 Re-locate qualified personnel's to their respective islands/stations 2019 3.2.5 Secure at least 2 undergraduate scholarships for dental	3.2.1 Curriculum developed 3.2.2 Training conducted 3.2.3 Number of qualified dental therapists 3.2.4 Dental therapist relocated to their respective islands/stations 3.2.5 Refresher courses conducted on a biannual basis 3.2.6 Number of scholarships secured for dental	No dentist or dental therapist at present	Curriculum $20,000 Training = $615,000 Equipments = $200,000
Objective 3: To develop capacity in the provision of advance oral health care services				
3.3.1 Strong workforce that is capable of delivering advanced oral health care and a wider scope of care in-country	3.3.1 Secure at least 2 scholarships for postgraduate studies and attachments in oral surgery, prosthodontic orthodontics,	3.3.1 Number of staff trained for postgraduate studies and attachments 3.3.2 Infrastructure developed and	3 at present	$90,000.00

	periodontics, endodontic, special needs, paediatric, oral medicine and pathology and forensic odontology 3.3.2 Plan developed for purchase of specialist dental equipment	equipment purchased		
Objective 4: To review the delivery of dental services within ministry of health by 2018				
3.4.1 Oral Health Care Services reviewed	3.4.1 Consult stakeholders and develop proposal for such undertaking by 2017	3.4.1 Consultation completed and proposal developed and outcome determined by executive		$20,000
Goal 4: Developing infrastructure to enhance service delivery				
Objective 1: To redevelop the main dental clinic facility in Rarotonga				
4.1.1 Better working facility to support provision of specialized care	4.1.1 Review the layout of Tupapa dental clinic in Rarotonga by 2018 4.1.2 Dental clinics requiring renovation/improveme	4.1.1 Infrastructure plan developed and submitted to Cook Islands Investment Corporation for		Tupapa = $300,000 Atiu: 30,000 Mauke: 10,000

	nts in the Pa Enua is carried out by 2018.	funding assistance		
GOAL 5: Developing oral health policies				
Objective 1: Enable effective and efficient service delivery for our young children				
5.1.1 Improved service delivery for young children 5.1.2 Early intervention programs developed and implemented	5.1.1 Consult stakeholders and develop appropriate policies to strengthen service delivery for our young children 2016 5.1.2 Collaborate with HHS for the management of difficult dental cases that requires hospitalization and referrals for general anesthesia.	5.1.1 Policies and guidelines developed 5.1.2 Review completed and report submitted to executives		$ 20,000

Objective 2: To strengthen service delivery for our elderly population				
5.2.1 Improved rehabilitative services provided to our elderly population both in Rarotonga and the Pa Enua 5.2.2 Oral functions restored in people with compromised dentitions 5.2.3 Improved oral and general health function and wellbeing	5.2.1 Recruit and train another dental technician by 2018 5.2.2 Redevelop dental laboratory services to cater for fix prosthetic and other laboratory services by 2018 5.2.3 Periodic visit to the Pa Enua to provide prosthetic services	5.2.1 Another technician recruited and trained 5.2.2 Equipments purchased and laboratory services provided in-house 5.2.3 Number of visits to the Pa Enua		$105,000 three years $25,000 annually for the duration of strategy = $125,000
GOAL 6: Establishing robust databases, ongoing research and monitoring				
Objective 1: Establish a system of annual collection and reporting of oral disease prevalence, severity and procedures performed				
6.1.1 Coordinated information collection and analysis system	6.1.1 Ongoing training staff to use Med-Tech technology effectively 6.1.2 Staff to ensure all	6.1.1 Staff trained and well acquainted with technology particularly dental		$5,000 per annum Total: 25,000

6.1.2 Information widely disseminated to inform decision makings 6.1.3 Progress is effectively monitored 6.1.4 Strengthened patients information recording systems both hard and soft copies and appropriately stored	relevant routine clinical information are entered on Med-Tech data base 6.1.3 Collaborate with the Health Information unit to consolidate all relevant oral health information for reporting annually	officers, dental nurses/therapist and dental technicians 6.1.2 Monthly and annual reports produced by staff for work done		
Objective 2: To conduct oral health care research to better inform future direction for oral health				
6.2.1 Informed decision making processes in planning of the oral health services 6.2.2 Capacity in research strengthened	6.2.1 Develop staff capacity in conducting structured research work in collaboration with other staff in the ministry of health 6.2.2 Acquire adequate financial and	6.1.2 Number of staff trained by 2018 6.2.2 Financial and other resources available to support research by local staff 6.2.3 Research works being conducted		$10,000 per annum $50,000

6.2.3 Researches published in international journals 6.2.4 Data base strengthened with the availability of new information	technological resources required to support research activities 6.2.3 Develop protocols for conducting and storing of research work and information	and published by 2018 6.2.4 Robust system in place to guide research work in the Cook Islands by 2018		
Objective 3: To conduct ongoing monitoring and evaluation of oral health programs				
6.3.1 The effective and efficient use of resources can be monitored 6.3.2 Success/failure of programs can be monitored 6.3.3 Failures can be identified early and appropriate measures taken to rectify problems	6.3.1 Develop capacity in monitoring and evaluation of programs 6.3.2 Conduct annual monitoring and evaluations of program annually	6.3.1 Monitoring and evaluation conducted on programs implemented annually		$ 20,000 x 2 Total=$40,000

GOAL 7: Monitoring and evaluation of strategy				
Objective 1: To conduct monitoring and evaluation of strategy and programs implemented				
7.1.1 Determine success and failures of strategy 7.1.2 Determine effective use of resources 7.1.3 Identify goals and objectives achieved	7.1.1 Conduct M&E in 2016-17 to assess progress at midpoint and 2019 fiscal year to assess the overall performance of this strategy	7.1.1 Report completed and submitted to executive		As above

Note: The cost indicated in this strategy is estimates only

References

1. Petersen, P.E., Boutgeois, D., Ogawa, H., Estupinan-Day, S., Ndiaye C., *The global burden of oral diseases and risks to oral health*. 2005, Bulletin of the World Health Organization: Geneva. p. 661-669.

2. Petersen, P.E., *World Health Organization global policy for improvement of oral health - World Health Assembly 2007.* International Dental Journal, 2008. **58**: p. 115-121.

3. The Cook Islands National Strategy and Action Plan to Prevent and Control Non-communicable Diseases 2009-2014.

4. The Cook Islands National Health Strategy 2012-2016

5. The Cook Islands Te Kaveinga Nui – National Sustainable Development Plan 2011-2015

6. Ottawa Charter for Health Promotion 1986

7. The Liverpool Declaration: Promoting Oral Health in the 21st Century 2005

8. Declaration of Alma Ata – Primary Health Care 1978

9. Oral Health Service in the Cook Islands – Review conducted by WHO 2004