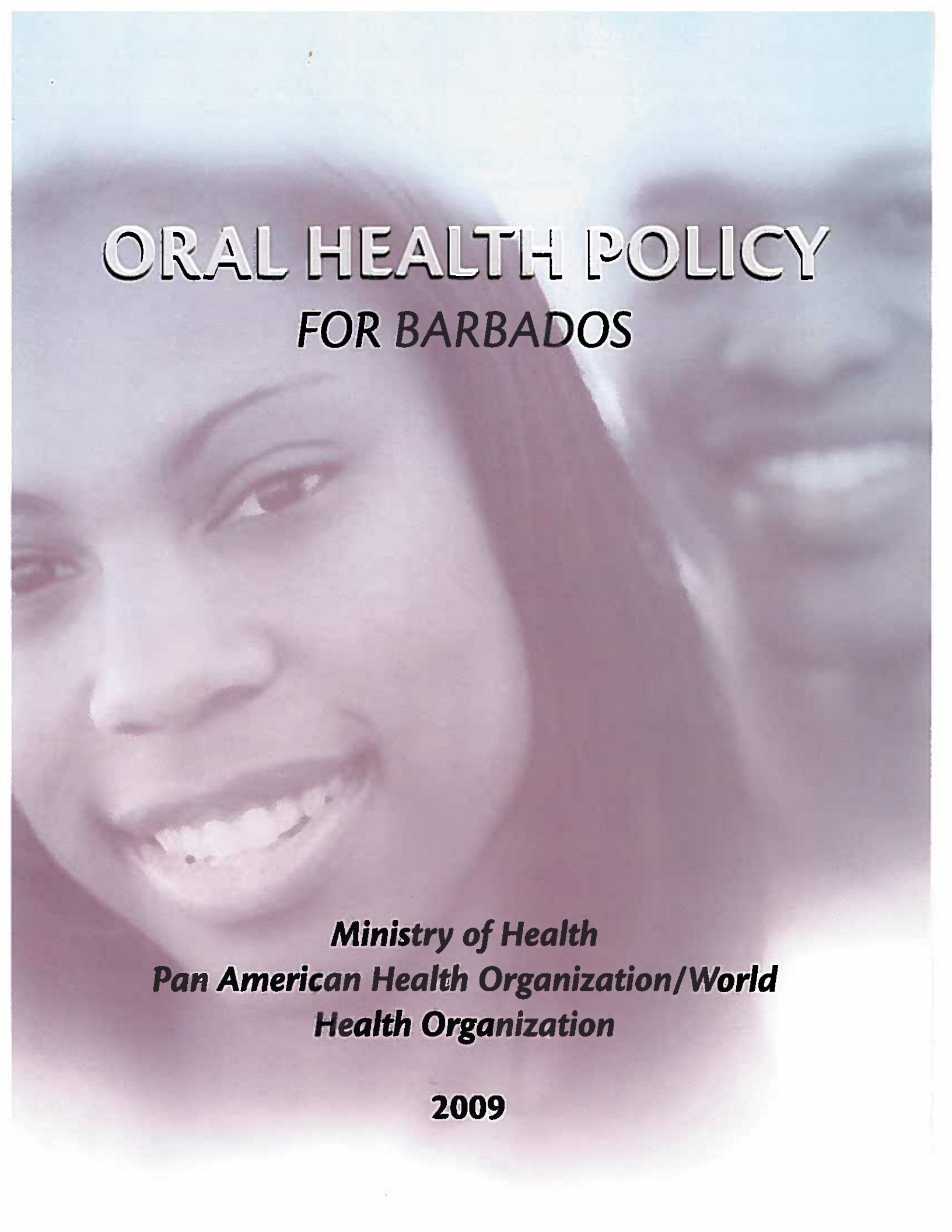

ORAL HEALTH POLICY
FOR BARBADOS

Ministry of Health
Pan American Health Organization/World Health Organization

2009

ORAL HEALTH POLICY
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CONTENTS

Foreword

Oral health is fundamental and significant to general health, and requires more than having good teeth. It means being free from diseases and disorders that affect the oral cavity, teeth and associated structures (the throat, palate, lips and craniofacial tissues). While most diseases of the mouth are not life-threatening, they do affect the quality of life. The effects of pain from oral disease significantly influence the loss of productivity (at work and school), increased expenditures on treatment and have a profound psychosocial impact on daily life. As oral diseases are, for the most part, preventable, our priority should be to advocate effective preventive measures along with oral health promotion, in order to increase early detection hence reducing the burden of oral diseases.

Thirty years ago, the Alma Ata Declaration emphasized basic health and social services as a human right. Since that time, strong correlations have been established between several oral diseases and chronic non-communicable diseases, primarily as a result of common risk factors, changing disease patterns and changing lifestyles. As a result, the demand for services for oral conditions will become a public health concern as the longevity of our population increases.

The aim of Barbados' Oral Health Policy is to further develop the oral health of our population by supporting and encouraging prevention; delivering appropriate and evidence-based treatment; and to monitor and evaluate oral diseases.

It is envisioned that this document will act as a catalyst in ensuring a balance between the individual, public and private sectors; strengthen intersectoral collaboration; improve awareness and assist in the effective coordination of programs in oral health promotion and oral disease prevention.

DONVILLE O. INNISS
Minister of Health

Preamble

The Ministry of Health has taken steps to increase the public's knowledge of measures that will foster healthy lifestyles, such as cessation of smoking, safe sex practices, and proper nutrition, however little attention has been drawn to oral health; and in recognition of:

- the role of oral health care in detecting oral cancer, STDs and HIV/AIDS, and preventing or reducing the onset of caries, and periodontal (gum) disease
- the interrelationship between poor oral health to general ill health and low birth weight in infants
- the loss of productivity at school and work due to pain and the sequelae of oral health problems
- the low self esteem experienced by individuals with malocclusions and other problems related to dental/oral malformations
- the vital role of teeth in speech development and diction.

The Ministry of Health has prepared this policy on oral health to guide the decision-making process as the government continues its efforts to provide quality oral health care that contributes to the goal of total wellness for all Barbadians.

This document has been guided by the following:

- the 1995 Caribbean Atlantic Regional Dental Association's (CARDA) meeting in which working groups comprised of auxiliary dental personnel and dentists laid the foundation for the strategic policy document - Oral Health for the Caribbean
- assistance of the Pan American Health Organization (PAHO)
- evidence and recommendations of the 1995 and 2001 Oral Health Surveys conducted in Barbados
- recommendations from the 2003 Oral Health Consultancy Report by Dr. A. Hazlewood

- the adopted 10-year Regional Plan on Oral Health from the 58th Session of the Executive Committee of the 47th Directing Council, PAHO/WHO
- the adopted WHO resolution, EB120.R5 on Oral health: action plan for promotion and integrated disease prevention of 27 Jan 2007

Introduction

The standard of oral health care in Barbados compares favorably with that available in neighboring Caribbean countries [Table 1]. However, the results of the oral health surveys carried out in 1995 and 2001, indicated that while the oral health of children in Barbados continues to improve, the combined efforts of dental care personnel in both the public and private sector are unable to treat dental disease as fast as it occurs, indicating the need for greater emphasis on preventative and primary care.

Table 1. Number of Dentists per 10,000 population in the English-speaking Caribbean, 1996[1]

Country	Dentists per 10,000 population
Anguilla	1.1
Antigua and Barbuda	1.8
Bahamas	1.9
Barbados	1.7*
Belize	1.0
Bermuda	5.2
British Virgin Islands	2.7
Dominica	0.9
Grenada	1.3
Guyana	0.3
Jamaica	0.9
Montserrat	1.8
St. Kitts and Nevis	1.9
St. Lucia	1.0
St. Vincent and the Grenadines	1.1
Turks and Caicos Islands	1.4

* This information was updated in 2007. The current ratio is 2.5.

Maintaining and improving the current standards of oral health care can only be achieved by anticipating the future needs of the population, and preparing the personnel and facilities to meet those needs.

The constraints facing the present dental care delivery system include:

- limited facilities for treatment of persons with special needs and vulnerable groups (physically and mentally challenged children and adults, persons with HIV/AIDS, pregnant women and the elderly)[2].

- lack of training opportunities and continuing education for those presently employed with the dental care delivery system (i.e. Dental Assistants, Auxiliary Dental Officers, Dental Hygienists and Dentists) in the public sector.

- lack of an Oral and Maxillo-Facial service to provide tertiary and traumatic care or hospital based dental care for persons with special needs.

- lack of preventative maintenance systems to maintain equipment in good working order to reduce the number of emergency breakdowns in the public sector.

Meeting the present constraints and preparing for the increasing demands on the health care system from the growing population and the expansion in special needs cases will require upgrading of both physical facilities and human capabilities throughout the system. The **Oral Health Policy** outlined in this document is designed to facilitate the provision of comprehensive oral health care to the population by providing a framework to guide decision-making within this vital health sub-sector.

HISTORICAL REVIEW OF DENTAL SERVICES IN BARBADOS

During the 1960s three dentists hired by the government provided public dental health care. At the weekly sessions conducted at the Queen Elizabeth Hospital, fillings and extractions were carried out. The dentists were paid 50 cents per filling, 50 cents per extraction for children under 16 years of age, and 2 dollars per tooth for adult extractions.

In the late 1960s clinic-based Dental Health Services were started at Enmore Health Centre opposite the Queen Elizabeth Hospital. The initial emphasis was on providing preventative care for school children, and three dental nurses from England carried this out, while the dentists worked on more complicated cases. The first Senior Dental Officer and Dental Officer posts were established in the early 1970s, and between 1970 and 2004 Dental Nurses (now called Auxiliary Dental Officers) were trained in Jamaica.

The establishment of polyclinics provided increased opportunities for the provision of oral health care for children since dental clinics were now located at all polyclinics. Three full-time and five Sessional Dental posts were created and Dentists employed. A van was provided to transport Auxiliary Dental Officers and school children between the Dental Clinics and schools, for dental health education, screenings (at the individual schools) and to ensure the prompt deliver of dental supplies and materials.

During the 1970s Dr. Victor Eastmond and Dr. A. Adiata conducted two local oral health surveys. Dr. R. Morris, the PAHO advisor at the time, also carried out a review of the dental health service. These activities gave rise to a number of recommendations, including:

- the addition of fluoride to the portable water supply
- the introduction of continuing education as an essential part of career development within the Dental Health Service
- the creation of additional posts within the Dental Health Service.

The proposal to add fluoride to the public water supply met with great resistance from the general public and the idea was abandoned. The recommendations for the introduction of continuing education and the creation of additional posts have been addressed over the years as the economic situations have permitted.

PRESENT DENTAL CARE DELIVERY SYSTEM IN BARBADOS

The current dental care delivery system in Barbados offers a wide range of services provided by both the public and private sector. Over 65 private dentists offer services to the private sector, and a network of government dental clinics operate from the polyclinics offering services at little or no cost to the general public. An outline of the government run dental care system is provided below.

STAFF

The dental clinics operating within the polyclinics are currently staffed as follows:

- 3 Full-time equivalent Dental Officers [including the Senior Dental Officer] - two posts vacant
- 3 Part-time equivalent Dental Officers – one post available
- 5 Sessional Dental Officers – one post vacant
- 15 Auxiliary Dental Officers – two posts vacant
- 14 Dental Assistants

The current staff list has provision for two Dental Hygienists but the positions have never been filled. Deployment of staff is shown in Appendix I.

Clientele And Services

Persons up to 18 years of age	Basic dental health care is provided. This includes fillings (composite and amalgam), preventive treatments (topical fluoride applications, sealants, oral health instruction and cleanings), root canal therapy and limited orthodontic care.
In-patients and out-patients from Government facilities	Extractions and cleanings are done at the Winston Scott Polyclinic on a referral basis.
Antenatal patients	Extractions are done at the Winston Scott Polyclinic on a referral basis.
Physically or mentally challenged patients	Those persons not seen in the outpatient clinics are referred to the general anesthesia sessions at the Q.E.H.
Geriatric and Welfare patients	Extractions for both geriatric and welfare patients are done at the Winston Scott Polyclinic and cleaning provided for geriatric patients.

1995 ORAL HEALTH SURVEY

In 1995 the Ministry of Health, with technical cooperation from PAHO, conducted an in-depth Oral Health Survey, in order to establish the Decayed, Missing and Filled Teeth [DMFT] Index for comparison with WHO/HFA targets for the year 2000 recommendations and to provide baseline data. The survey found inter alia that:[2]

- The amount of fluoride in the potable water supply was too low to be beneficial to the population.

- The mean number of decayed, missing and filled teeth of 12-year olds [DMFT] was 1.53, well below the WHO minimum target level of 3.0.

- The incidence of dental caries increased significantly between the ages of 6 and 15 years (Figures 1 and 2).

- The Periodontal Index was satisfactory. Signifying that the extent of periodontal (gum) disease within our population groups was within the acceptable epidemiological levels.

- Only 18% of the total burden of carious teeth was being treated (by either a temporary or permanent restoration).

These results indicate that, when assessed against WHO standards, Barbados is in the 'consolidation' class of countries (see Appendix II), where efforts are needed to maintain current Decayed Missing and Filled Teeth (DMFT) levels and improve them if at all possible. However, the significant increase in tooth decay between ages 6 and 15 years suggests that the Oral Health Service in its present form is not maintaining adequate levels of care through adolescence into adulthood, and greater emphasis needs to be placed on providing preventative care to all age groups.

Figure 1. Mean number of DMFT (Decayed, Missing and Filled Teeth)* by age

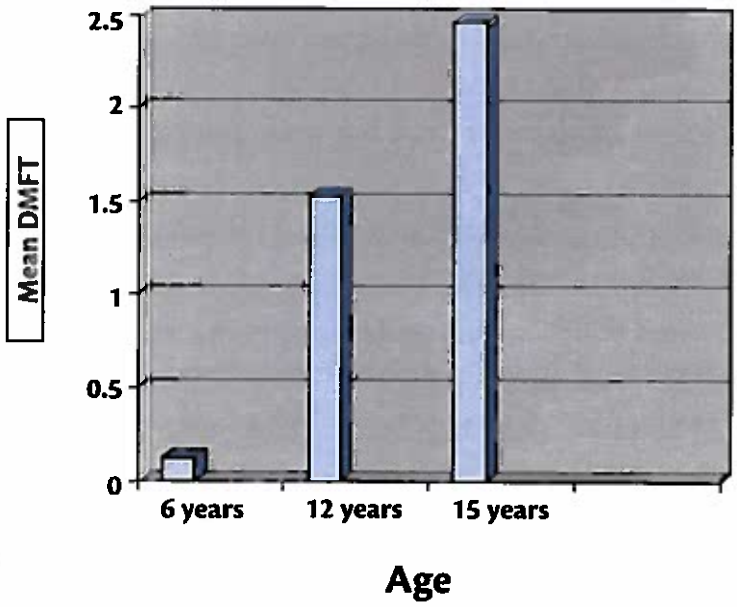
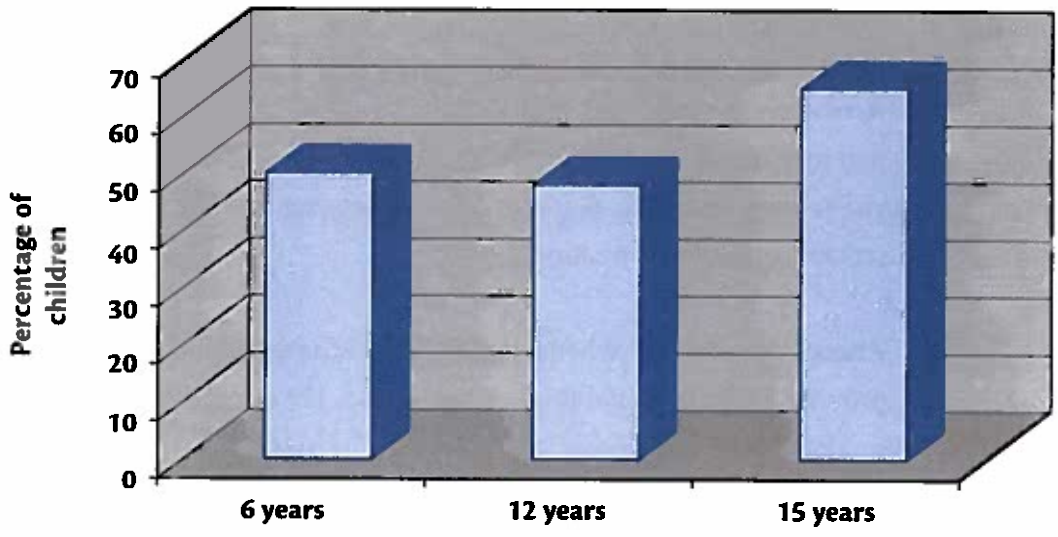


Figure 2. Percentage of children with one or more teeth affected by decay



* DMFT Index is a general indicator of the dental heath status of a population. The lower the index, the better the dental health. WHO recommends a DMFT of less than 3 at age 12.

2001 ORAL HEALTH SURVEY

In 2001, the Ministry of Health conducted their follow-up survey to update the baseline information and to provide additional information that would guide future health policy decisions. The findings of this survey showed that:[3]

- Ø The mean DMFT for 12 year olds was 0.84; again well below the WHO/HFA target.

- Ø there was an increase in the effective treatment with fillings from 9 to 12% at age 6; 21 to 31% at age 12 and from 25 to 42% at age 15.

- Ø periodontal disease (pocket depths greater than 3.5mm) affects 4% of the 15 year olds (an increase from the 1995 survey) however 34% of the children 12 and 15 year olds had calculus (as opposed to 50% in 1995).

- Ø 80% of the decay was pit and fissure caries; a substantial minority (just over 11%) of 12 year olds had more that 3 teeth affected by caries.

Oral health policy considerations that flow from these results include conducting:

1. A review of the means to maximize the impact of the Ministry's staff by ensuring that children with a higher likelihood of disease are given priority.

2. A review to determine best decision criteria on 'when to fill' since the potential for false positives is so high and if warranted, the provision of continuing education for both private dentists and the Ministry's staff to reduce unnecessary treatment.

3. Reconsideration of whether additional efforts should be undertaken to provide sealants to children at age 6 and 12, since pit and fissure caries predominates and

4. A further assessment of the problem, including examining potential programs to reduce the occurrence of calculus on the teeth of adolescents.

THE ORAL HEALTH POLICY - BARBADOS

Principles

The ORAL HEALTH POLICY for Barbados is based on the following principles:

EQUITY	Quality oral health care will be provided to all persons regardless of their ability to pay and without discrimination as to age, gender, race, colour or ethnicity of class.
ETHICS	Ethical issues will be considered in the planning, implementation of programmes and projects in oral health care. Mechanisms will be put in place to ensure that the highest ethical standards are maintained.
LEVELS OF CARE	The emphasis will be on *primary health care*, focusing on prevention. Early diagnosis and treatment with an efficient referral system to provide secondary and tertiary levels of care where appropriate will be implemented.
PARTICIPATORY PLANNING	The Ministry of Health will, to the greatest extent possible, seek to involve the providers and beneficiaries of oral health care in the planning, implementation and evaluation of all programs and projects.
EVIDENCE-BASED PLANNING	Projects and programs pertaining to oral health will be based on the best available relevant epidemiological, social economic research to include demonstrated models of best practice [4].
IMPLEMENTATION	The Ministry will institute any legal, administrative and organizational revisions needed to facilitate effective implementation of the policy.

Objectives

The **ORAL HEALTH POLICY** seeks to perpetuate and expand the mandate set out for the Dental Health Services in the Ministry of Health Development Plans, in accordance with the three Millenium Develpoment Goals (MDGs) related to health and the United Nation's Development Agenda. As such, the objectives of the policy are:

I. To ensure that all Barbadians have a basic level of quality oral health care.

II. To prevent and/or minimize the incidence of oral health problems through public education, health promotional activities, vigorous screening and early intervention

III. To ensure that all personnel within the oral health services are provided with the training, skills and facilities to enable them to deliver the highest quality of dental care.

Major Policy Areas

The policy highlights and addresses four priority areas:

- ORAL HEALTH PROMOTION AND PREVENTION
- ORAL HEALTH SERVICES
- HUMAN RESOURCE DEVELOPMENT
- ORAL HEALTH INFORMATION SYSTEMS

ORAL HEALTH PROMOTION AND PREVENTION

The priorities for Oral Health Promotion and Prevention are:

- ∅ **Provision of oral health education and intervention measures for all age groups.**
- ∅ **Prevention and early detection of dental caries and oral cancer.**
- ∅ **Prevention and early treatment of sports and other unintentional injuries.**
- ∅ **Promote the linkages of oral health to general health through planned communications and marketing to increase oral health awareness.**

The Ministry of Health will therefore:

- ***Introduce screening programs*** for children entering primary and secondary school, with special emphasis on 6-year olds, in order to assess their dental health status, determine the need for dental treatment and provide the appropriate intervention.

- ***Promote oral screening for high-risk groups*** [persons with diabetes, cardio-vascular disease, smokers, persons with HIV/AIDS], and early detection of oral cancer, as part of routine medical examinations. This due to the significant correlation of periodontal (gum) disease to the overall health status of the above named groups. This will be done through

the process of sensitization of health care professionals in the private and government sectors.

- ***Offer limited preventive dental services,*** education, instruction and treatment to the clients attending antenatal and child health government clinics. Studies have shown direct linkages of low birth weight babies to mothers with poor oral health.

- ***Promote the use of protective devices*** for the mouth, face and head during sports.

- ***Re-enforce legislation*** to minimize unintentional injuries e.g. seat belt laws, domestic abuse.

In addition to the above measures, the Ministry will continue to advocate the use of fluoride (topical and systemic applications) and will embark on a national campaign to educate the public on the benefits of fluoride use (Appendix II).

ORAL HEALTH SERVICES

The priorities for the Oral Health Services are:

- ∅ **Provision of a basic model of quality oral health care to all.**
- ∅ **Provision of timely access to oral health services**

The Ministry of Health will therefore:

- ***Provide resources and facilities*** to cater to persons with special needs and identified vulnerable groups including:
  - the disabled
  - persons with HIV/AIDS and other STDs
  - persons over age 65

Criteria will be developed to determine the eligibility of persons and the level of services to be provided.

- ***Establish an Oral and Maxillo-Facial – Hospital Dental Service*** at the QEH, with an outpatient clinic at the Winston Scott Polyclinic. Initially this service will be linked with the Ear, Nose and Throat (ENT) Department until an independent specialty service is set up. The aim to is provide the much needed care not only to QEH via the Operating Theatre, but also to provide care for those clients best managed in a hospital setting (children and adults); care for the mentally and physically challenged clients assess and treat clients in need of extensive dental treatment prior to chemo or radiation therapy and to provide an option for persons who are unable to access much needed dental procedures for persons with special needs, trauma and Oral and Maxillo-Facial procedures.

- ***Re-introduce a mobile service*** to provide regular care to those communities where access to dental services is limited (e.g. St. Joseph, St. Andrew, St. Lucy and the rural District Hospitals).

- ***Institute health and safety protocols and procedures*** including infection control; radiation safety and waste disposal measures within public and private facilities. The establishment of these goals would be in keeping with present and future health, safety and regulatory legislation along with criteria and standards for monitoring.

- ***Encourage the participation of private practitioners*** in the provision of dental services to the public. This would apply to establishment of Dental Services in the Queen Elizabeth Hospital (as a related section to the Oral and Maxillo-Facial Service) with its utilization by those practitioners with advanced dental training and to assist in the monitoring of school entrants and the adult population. The introduction of incentives such as reduction of duties on equipment and tax concessions will be actively investigated.

- ***Establish a preventive maintenance program*** for equipment within the Dental Health Service in order to ensure maximum utilization of equipment. Equipment will also be upgraded or replaced as necessary in order to keep pace with developing technology and accepted standards for delivery of care.

HUMAN RESOURCE DEVELOPMENT

The priorities for Human Resource Development are:

- ∅ **To provide adequate numbers of trained personnel to meet the current and future demands for oral health care in Barbados.**
- ∅ **To strengthen and provide the necessary structural elements for the integration of oral health care into primary health care.**

The Ministry of Health will therefore:

- ***Carry out a manpower assessment exercise*** in order to ascertain the number of personnel and the level of training required to satisfy current and future staffing needs in the public and private sector.
- ***Address the personnel needs*** of the public sector through the:
  - elevation the status of the Oral Health to a higher visibility within the Ministry of Health [2]

- creation of new posts including appointment of additional full-time and part-time dentists
- provision of consultants
- utilization of private sector dentists
- expansion of duties of Dental Assistants and Auxiliary Dental Officers (ADOs)
- revision of conditions of service in conjunction with the relevant Trade Unions.

- ***Institute training programs*** to provide:
  - ongoing training for all categories of staff including continuing education and postgraduate training.
  - cross training of personnel [for example ADOs as Dental Hygienists] in order to effectively treat a wider spectrum of clients.
  - training for entry-level personnel in various categories such as ADOs and Dental Assistants.
  - training of personnel in preventive maintenance procedures.

- ***Ensure financial sustainability:***
  - To further evaluate the feasibility of a cost recovery process, with user input, for the provision of the necessary additional funds to address the introduction of new programs established for adults as a result of this policy paper [6].

ORAL HEALTH INFORMATION SYSTEMS

The priority for Oral Health Information Systems is:

Ø **To standardize and implement information systems for the collection and retrieval of baseline and surveillance data on oral health conditions, clients and service utilization.**

The Ministry of Health will therefore:

- ***Establish a data surveillance system*** to collect epidemiological data [caries, trauma, periodontal and orthodontic conditions], and determine service needs, unit costs, client needs and client satisfaction.
- ***Provide the infrastructure,*** technology and other resources required to support the information system.

- ***Integrate data from the oral health information system*** into the national health information systems in order that such data is considered when making decisions on the health sector.

- ***Liaise with the private sector*** through the establishment the above mentioned information system, to obtain relevant adult based epidemiological data to assist the public sector in long-range national planning.

IMPLEMENTATION

Implementation of the **Oral Health Policy** for Barbados will require the development and introduction of specific programs designed to meet policy goals and carry out the recommendations put forward in the policy.

The major policy areas mentioned in this document have been incorporated in the Ministry of Health's Strategic Plan for 2002-2012, along with related work plans for implementation. A steady upgrading of the patient treatment areas has already begun in the Dental Clinics over the last four years.

To ensure and further guide the implementation of this policy an Advisory Committee, led by the Chief Medical Officer, will be set up. Members of the Committee will be drawn from professional organizations, the private sector, and other stakeholders to ensure that all major interests are represented.

CONCLUSIONS

The importance of good oral health is often forgotten in the face of growing threats from infectious diseases such as HIV/AIDS, and non-communicable diseases such as heart disease and diabetes; however optimum oral health contributes to good overall health and significantly improves the quality of life of individuals of all ages. Implementation of the **Oral Health Policy** for Barbados will go a long way towards improving the working conditions of those who serve within the dental health care delivery system, and producing a generation of Barbadians free from many of the systemic problems associated with poor oral health.

Appendix I

DEPLOYMENT OF PERSONNEL - GOVERNMENT DENTAL CLINICS

Clinic	Facilities		Personnel currently assigned	Personnel capacity
	Total No. of chairs	No. of chairs in working condition		
Winston Scott	3	3*	1 Full-time Dentist 3 Part-time Dentists 2 Auxiliary Dental Officers 3 Dental Assistants	2 Full-time Dentists 3 Part-time Dentists 2 Auxiliary Dental Officers 3 Dental Assistants
Randall Phillips	2	1	1 Part-time Dentist 1 Auxiliary Dental Officer 1 Dental Assistant	2 Part-time Dentists 1 Auxiliary Dental Officers 2 Dental Assistants
St. Philip	2	2	1 Part-time Dentist 2 Auxiliary Dental Officer 2 Dental Assistant	1 Full-time Dentist 1 Part-time Dentist 1 Auxiliary Dental Officer 2 Dental Assistants
Glebe	2	1*	1 Full-time Dentist 1 Part-time Dentist 1 Auxiliary Dental Officer 1 Dental Assistant	1 Full-time Dentist 1 Part-time Dentist 1 Auxiliary Dental Officer 2 Dental Assistants
Edgar Cochrane	1	-	1 Part-time Dentist 1 Auxiliary Dental Officer 1 Dental Assistant	2 Part-time Dentists 1 Auxiliary Dental Officer 1 Dental Assistant
Warrens	2	1*	1 Part-time Dentist 1 Auxiliary Dental Officer 1 Dental Assistant	1 Full-time Dentist 1 Part-time Dentist 1 Auxiliary Dental Officer 2 Dental Assistants
Maurice Byer	2	1	1 Full-time Dentist 1 Part-time Dentist 1 Auxiliary Dental Officer 2 Dental Assistants	2 Full-time Dentists 1 Part-time Dentist 1 Auxiliary Dental Officer 2 Dental Assistants
Gall Hill (*New St. John Polyclinic*)	2 *(proposed)*	0	1 Full-time Dentist 1 Auxiliary Dental Officer 1 Dental Assistant *(previous facility)*	1 Full-time Dentist 1 Part-time Dentist 1 Auxiliary Dental Officer 1 Dental Assistant *(proposed)*
Black Rock	3	3*	1 Full-time Dentist 2 Part-time Dentist 2 Auxiliary Dental Officer 3 Dental Assistants	2 Full-time Dentists 3 Part-time Dentists 2 Auxiliary Dental Officers 3 Dental Assistants

*New or upgraded dental units installed within last three (3) years.

Appendix II

Table 1: Typology Table in Oral Health, circa 1996

Emergent DMFT >5 9 Countries	Growth DMFT 3-5 15 Countries	Consolidation DMFT <3 8 countries
Belize	Argentina	Bahamas
Dominican Republic	Brazil	Bermuda
El Salvador	Bolivia	Canada
Guatemala	Chile	Cuba
Haiti	Columbia	Guyana
Honduras	Costa Rica	Jamaica
Nicaragua	Ecuador	Dominica
Paraguay	Mexico	United States of America
Peru	Panama	
	Puerto Rico	
	Peru	
	Suriname	
	Trinidad and Tobago	
	Uruguay	
	Venezuela	

Source: PAHO Scientific and Technical Publication No. 615.

Table 2: Typology Table in Oral Health, circa 2005

Emerging DMFT >5 2 countries	Growth DMFT 3-5 7 Countries	Consolidation DMFT <3 29 countries	
Guatemala	Argentina	Anguilla	El Salvador
St. Lucia	Bolivia	Aruba	Grenada
	Chile	Bahamas	Guyana
	Dominican Republic	Barbados	Haiti
	Honduras	Belize	Jamaica
	Panama	Bermuda	Mexico
	Paraguay	Brazil	Nicaragua
		Canada	Peru
		Cayman Islands	Suriname
		Colombia	Trinidad and Tobago
		Costa Rica	Turks and Caicos
		Cuba	Uruguay
		Curacao	United States of America
		Dominica	
		Ecuador	Venezuela

Source: PAHO Scientific and Technical Publication No. 615.

Appendix III

Fluoride: Its application and benefits [7]

What is fluoride?

Fluoride is a naturally occurring derivative of fluorine, the 17th most abundant element in the earth's crust. Fluoride exists in nature as a constituent of minerals in rocks and soil. As water passes over rock formations the fluoride compounds present are dissolved and as a result small amounts of fluoride are present in all water sources, including the oceans, and all food and beverages.

How fluoride reaches the teeth

Fluoride reaches the teeth when it is applied **topically**, to the surface of the teeth, or **systemically** when it is consumed in food and drink:

Topical fluorides are found in *toothpaste, mouthwash, and professionally applied fluoride gels and rinses*, which are applied to the tooth surface, providing local protection and increasing resistance to decay. Topical fluorides are only effective on the teeth already in the mouth at the time of application.

Systemic fluorides are fluorides present in water, food, beverages and dietary supplements, which are absorbed by the body. When such fluorides are ingested regularly during the time when teeth are developing, the fluoride is incorporated into the tooth structure, providing long lasting protection.

Systemic fluorides also provide some topical protection because the fluoride absorbed is present in saliva and is continually in contact with the tooth surface.

Maximum reduction in decay is obtained when systemic fluoride is available throughout tooth formation, and topical fluorides are applied after eruption.

What is *'water fluoridation'*?

Water fluoridation is the adjustment of the natural fluoride concentration of water in fluoride to the level recommended for optimal dental health, through supplementation of the naturally occurring fluoride present in all sources of drinking water. Based on extensive research, the United States Public Health Service established the optimum concentration for fluoride in the water in the United States in the range of 0.7 – 1.2 parts per million.

Results of studies

The effects of water fluoridation have been studied for over fifty years and the results show that:

1. Children living in areas with higher levels of naturally occurring fluoride have lower rates of decay than children consuming water low in fluoride.

2. The benefits of fluoride added under controlled conditions to water low in fluoride are the same as those obtained from naturally fluoridated water.

3. The rates of reduction in decay in fluoridated communities range from:
   - 30 – 60% in the primary dentition [baby teeth], children under 8 years of age.
   - 20 – 40% in the mixed dentition [baby teeth] and adult teeth, in those children 8 to 12 years of age,
   - 15 – 35% in the permanent dentition [adult teeth] in those persons 14 – 17 years of age.
   - 15 – 35% in the permanent dentition, adults [over 17 years of age] and seniors.

Salt fluoridation vs. water fluoridation [8]

Salt fluoridation is a widely used option for the Latin American and Caribbean Region in view of its production costs, coverage and potential for sustainability. Fluoridated salt for household consumption is used and promoted in several countries in Latin America and the Caribbean. Brazil, Columbia, Costa Rica Jamaica Mexico and Venezuela (to name a few) have launched national, regional or local salt fluoridation programs. Water fluoridation has been a staple in North American however it is not the best way to reach people without portable water sources or in remote areas. In order for salt fluoridation to be measurably effective, legislation, epidemiological surveillance and biological monitoring are necessary for carrying out a successful cost-effective program

Salt fluoridation has been found most effective in those countries designated by PAHO/WHO as "emerging" countries (i.e. those countries with a DMFT greater than 5 and an absence of a national salt fluoridation program). Barbados' status is classified as being in the "consolidation" phase (i.e. defined by a DMFT lower than 3).

Fluoride recommendations for Barbados

On the basis of our two previous DMFT surveys, the Ministry of Health advocates the use of systemic dietary fluoride supplements for children (up to the age to thirteen years). Whilst water or salt fluoridation would be the feasible option(s), our DMFT scores do not reflect the necessity to implement either of these two options at this present time. The efficacy of systemic fluoride in the adult population is of lesser value and its better use is topically, especially with clients that are medically compromised or undergoing radiation therapy. The best practice models, such as ART (A traumatic Restorative Treatment) and use of topical applications of fluoride should then be adjudged by the oral health professional and the decay status of the client.

Appendix IV

Plans for Action

Objectives	Cycle* 1	Cycle* 2	Cycle* 3	Cycle* 4
I. Oral Health Promotion and Prevention	→			
Subcomponent 1: Develop health promotional/ educational materials and programs.	→	→		
Classify and prioritize population based groups stressing linkages to general health; nutrition; impact on quality of life.	→	→	→	→
Develop media linkages, health promotion groups and private sector involvement.	→			
Subcomponent 2: Identify and prioritize specific prevention programs based on best practice models.	→			
Identify and prioritize most vulnerable groups, defining the services available for each group.	→	→		
Streamline prevention programs based on identification and maintenance a basic package of prevention models.				
II. Oral Health Services	→	→	→	
Subcomponent 1: Assess and identify vulnerable groups according to country and PAHO guidelines.	→	→		
Assess concurrent disease risk factors through indicators of overall health, HIV exposure, diabetes, nutrition, cancer, pregnancy.	→	→		
Develop guidelines for basic oral health component for the above risk factors.	→	→	→	→
Subcomponent 2: Design, develop and implement intervention models with basic components of care and prevention based on each group identified and their needs.				
Monitor and evaluate projects for program changes and/ or adjustments.	→	→	→	→
Focus and select best models of practice for promotion of supportive policies.	→	→