**Executive committee of
the directing council**

**working group of
the regional committee**

**PAN AMERICAN
HEALTH
ORGANIZATION**

**WORLD
HEALTH
ORGANIZATION**

120th Meeting
Washington, D.C.
June 1997

Provisional Agenda Item 4.3

CE12012 (Eng.)
1 April 1997
ORIGINAL: ENGLISH

ORAL HEALTH

Oral health continues to be a critical aspect of general health conditions in the Americas and the Caribbean because of its weight in the global burden of disease, its associated treatment costs, and the potential for effective prevention. Dental caries is the most common disease among children in the Region of the Americas; approximately 90% of school-age children (5-17 years) are affected. However, with early intervention, dental caries can be either prevented or treated at a reduced cost.

A variety of systemic conditions andor their sequelae, such as diabetes and oral and pharyngeal cancer,
produce manifestations in the form of dental caries, periodontal conditions, and tooth loss. Of emerging importance are HIVAIDS and hepatitis B; besides the clinical effect, they are important for transmission in the dental care setting.

This document sets forth innovative concepts for the allocation and management of oral health resources. The groundwork for water and salt fluoridation programs has been laid by PAHO. Largely as a result of PAHO's initiatives and leadership, a number of conditions now exist which enable the success of water and salt fluoridation in the Region of the Americas. First, many countries (Chile, Colombia, Costa Rica, Jamaica, Mexico, Peru, and Uruguay) which formerly had limited capacity to implement water and salt fluoridation programs have benefited from PAHO's technical cooperation and support. Currently, these countries have mature policies, sufficient infrastructure, and programmatic capabilities that allow their programs to be consolidated, so that effectiveness in caries reduction and sustainability of the programs are predominant. Second, PAHO and these countries have accumulated a significant level of expertise and technical experience which can be transferred to other countries. Third, underpinning these developments, there is now an emerging recognition that the most promising strategy for improving the oral health of millions in the Region resides in water and salt fluoridation, the key factor in changing the epidemiological profile of oral health for the Region of the Americas in a relatively short period of time. It is expected that most countries in the Region will have reached the WHO goal of a DMFT-12 (decayedmissingfilled teeth for 12 year-old children) of 3 by the year 2000.

The Executive Committee is requested to comment on the proposed strategies aimed at supporting government efforts to improve the effectiveness and efficiency of oral health preventive programs, and to strengthen the organization and delivery of oral health services in the Region.

CONTENTS

1.   Background

1.1   Oral Health Situation in the Region

Comprehensive data on oral health in the Region are scarce; however, there are some data that allow an overall evaluation of the current status and recent trends, especially in dental caries and needs for periodontal treatment.

1.1.1 Caries Prevalence

Dental caries is the most common disease among children in the Region; approximately 90% of school-age children (5-17 years) are affected. It is a progressive, infectious disease, which if left unattended may result in tooth loss. Unless timely restorative treatment is provided, the carious lesion will continue to destroy the tooth, eventually resulting in pain, acute infection, and costly treatment. However, with early intervention dental caries can either be prevented or treated at a reduced cost. Annex A shows DMFT-12 (decayedmissingfilled teeth index for 12-year-old children) data for selected countries in the Region. Overall, there is a wide range of dental caries prevalence in the Region, from 1.08 to 8.3, with a mean of about 4.4.

1.1.2 HIVAIDS and Hepatitis B

Infections by the human immunodeficiency virus (HIV) and its associated acquired immunodeficiency syndrome (AIDS) are worldwide epidemics of serious public health concern. As of mid-1993 an estimated 1.5 million adult HIV infections had been reported in the Region, resulting in about 250,000 AIDS cases. The oral manifestations of HIV infection include oral mycosis, leukoplakia, gingivitis, periodontal diseases, and Kaposi's sarcoma.   Many HIV-seropositive persons experience very aggressive forms of destructive periodontal diseases, which can significantly compromise their nutritional status and may require hospitalization.   These conditions are important oral health concerns in countries with high HIVAIDS prevalence. Routine dental examinations can play an important role in the initial diagnosis of HIV infection and in the management of AIDS. In some instances, oral manifestations associated with HIV infection may be an initial clinical presentation of AIDS. Dental professionals should be able to make such diagnoses and refer persons for appropriate medical evaluation.

Current data suggest that the risk for transmission of HIV and hepatitis B virus (HBV) in the oral health-care setting from a health-care worker to a patient during an invasive procedure is small; a precise assessment of the risk is not yet available. International recommendations have been made for the prevention of transmission of the hepatitis B virus in health-care settings and in infection-control programs, to provide guidance for prevention of HIV and HBV transmission during those invasive procedures that are considered exposure-prone. Proper application of these principles will assist in minimizing the risk of transmission.

1.1.3 Oral and Pharyngeal Cancer

Oral and pharyngeal cancers pose a special challenge to oral health programs, considering that they are both preventable and lethal. Although these cancers are considered rare, they are more common than leukemia, skin melanoma, and other gonadal cancers. Use of tobacco products, including smokeless tobacco, and excessive alcohol use are associated with more than 70% of cancer lesions. The combined use of tobacco and alcohol has a synergistic effect. Oral and pharyngeal cancers account for about 4% of total cancer cases, resulting in a mortality rate of approximately 3% in the Region. Almost half of all patients die within five years after diagnosis, depending on the site of the primary tumor. Poor survival rates can be attributed to delayed detection and treatment.

1.2   Organization and Delivery of Oral Health Services

1.2.1 Supply Factors

A number of countries are severely limited in their ability to collect and analyze relevant oral health data for planning or evaluation purposes. Disenfranchised populations, including those with low incomes and poor education or who are geographically isolated, suffer from more prevalent and severe oral diseases as well as delayed care, if any. The inequities associated with this differential access to oral health care ought to be addressed in the design of national preventive programs. Finally, the advent of new diseases, such as HIVAIDS, has prompted the dental profession and the consumers of dental services to rethink behaviors aimed at infection control and standards for interactions necessarily attendant to care delivery. Resources for delivery of oral health care services are limited, and curative care is restricted to those with the ability to pay or those with access to social insurance schemes.

Currently, the region of Latin America and the Caribbean has over 400,000 dentists, with an average of 3.1 per 10,000 population. The actual number of dentists per 10,000 population ranges between 0.2 to 10.5. Most dentists in the region establish private practices in urban areas; as a result, there are large underserved areas. There are 202 schools of dentistry in the region, 65% of which are located in Brazil and Mexico. Dental school curricula emphasize curative interventions, and very little is offered on public health dentistry. Training is mostly geared to producing professionals for private practice. The result is a paucity of organized preventive programs in the region, despite their proven effectiveness and serious deficits in oral health service coverage.

1.2.2 Demand Factors

Dental care services in the Region, whether public or private, are provided in response to potential users' attitudes or perceptions, as well as their purchasing power, particularly in the market for private services. Most countries have no information about or mechanisms to organize and rationalize demand for dental care—or health care, for that matter. In part, this is why dental care may only be available in certain areas of a country, benefiting selected population groups. When examining demand factors, data on population characteristics such as demographics, educational level, and socioeconomic level (place of residence, family income, occupation) and on dental care service delivery characteristics (health care financing, availability of insurance) should be studied. The purpose is to determine: (a) whether some or all of the factors described exist in any one country; (b) what are the possible implications of demand on oral health status and service delivery; (c) what is the regional demand pattern; and (d) what are the potential strategic implications for the development andor consolidation of organized, rationalized, and sustainable oral health delivery systems in the Region.

2. PAHO's Regional Strategy for Oral Health

The Ninth General Program of Work of WHO establishes the global health policy framework for action of the world health community and the program framework for WHO's own work in the light of global health policy, in support to countries in improving health and health systems with particular emphasis on countries in greater need. The WHO Oral Health Program and its global oral health strategy recognize oral health as an integral component of the primary health care approach. In the Region of the Americas, PAHO supports oral health plans based on measurable goals, to be attained largely through the implementation of preventive methods and by supporting governments' efforts to strengthen their own oral health care systems. The policy orientation in the Program identifies the priorities for its own work and the types of product that should be delivered during the three biennial program budgets.

The WHO Program states: "The emphasis of both the global policy framework and the WHO program framework is on support to countries in improving health and health systems, with particular emphasis on countries in greatest need." Furthermore, under priorities for WHO's work in preventing and controlling specific health problems, WHO says: "Another example is the 80% reduction in dental caries through optimal use of fluorides."

The goals and targets of the Ninth General Program of Work and PAHO's strategic and programmatic orientations, 1995-1998, are the reference point for the objectives and strategies proposed in this document.

In line with the above, two objectives have been set forth:

-        To promote improvement of oral health conditions in the countries of the Americas, with emphasis on those with a greater burden of disease.

-        To assist countries to develop accessible, effective, and sustainable oral health services.

A regional framework that allows for recognition of individual country problems makes it possible to develop targeted strategies. The strategies presented in the following section are based on an oral health development typology that classifies countries in the Region according to their oral health development.

The first step in establishing a strategy is to adopt a typology that identifies variables relevant to a country classification. A first approximation, based on available data and a framework, indicates that the DMFT-12 may be the most important factor in grouping countries along an oral health development continuum. This index has been used extensively in the Region and current objectives for the year 2000 (DMFT-12 less than 3) have been established by WHO using this index.

The DMFT-12 is selected as the only criterion because of its ease of measurement and accessibility in most countries of the Region. This indicator allows for cross-country comparisons which are valid and reliable. However, some countries have incomplete or outdated information on DMFT, and secular trends and changes in factors associated with dental caries have occurred in the decade. Therefore, it is necessary to collect new data from countries before they can be included in this typology.

Having established this criteria, three stages of oral health development can be defined: first, emerging, defined as DMFT-12 greater than 5; second, growth, defined by a DMFT-12 of 3 to 5; and third, consolidation, defined by a DMFT-12 lower than 3.

Based on the above criterion, a strategy-oriented typology has been structured. The table below attempts to group countries along an oral health status development continuum. Using the criterion described, 14 of 28 countries are grouped in the growth category. However, it is clear that countries in this category are rather heterogeneous and may have different potential for supporting oral health activities.

Typology Table

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

The overall oral health strategy for the 1990s and beyond proposed by PAHO will drive countries along the development continuum, from the emerging category to the consolidation category. In other words, PAHO's strategy will be to develop a series of activities aimed at moving countries with high levels of disease and lacking appropriate preventive policies towards achieving improved status indicators and policies.

3.   Implementing the Oral Health Strategy

This section describes specific short- and medium-term activities.   The following strategies should serve as guidelines for the planning and implementation of oral health activities at the regional level as well as at the country level over the next biennium.

3.1   *National Preventive Oral Health Programs*

3.1.1 PAHO's Multi-Year Plan for Water and Salt Fluoridation Programs

Fluoridation of the Region of the Americas by Year 2000. In 1994, PAHO launched a multi-year plan to support the implementation of water and salt fluoridation programs. The operating principles for this regional plan include prevention, capacity building, and sustainability. Since then, through new programs in Bolivia, Chile (Metropolitan Region), and Ecuador and programs in progress in Dominican Republic, Honduras, Nicaragua, and Panama, and in already existing ones in Argentina, Brazil, Chile, Colombia, Costa Rica, Jamaica, Mexico, Peru, and Uruguay, an estimated 180 million individuals are covered by fluoridation programs. It is projected that more than 250 million individuals will have access to fluoridated water or salt by year 2000.

Programmatically, in order to implement salt or water fluoridation programs, PAHO has proposed three stages of implementation: feasibility assessment, short-term evaluation, and long-term evaluation (Annex B). Details of PAHO's activities in support of water and salt fluoridation programs are available in *PAHO's Oral Health Report for 1996* (Annex C).

Effectiveness of Salt Fluoridation. In Europe, the advantages of salt fluoridation have been acknowledged in the effective conduct of a mass dental caries prevention policy for 30 years. There is clear scientific evidence of a statistically significant reduction in caries. In Jamaica, caries reduction was 85% after eight years of program implementation. In 1987, Jamaica initiated a comprehensive salt fluoridation program. In 1995, a survey of Jamaican children was conducted to determine the effectiveness and risk of salt fluoridation. Dental examinations of 1,200 children ages 6 to 8, 12, and 15 showed a mean DMFT prevalence for 12-year-olds of 1.08, compared with the corresponding score of 6.7 DMFT for children of the same age at the baseline examinations in 1984. The mean percentage of sound permanent teeth in all

age groups was 95; 61% of the children had caries-free permanent teeth. In Costa Rica, caries reduction was 40% after five years of program implementation, a clear indicator of salt fluoridation's effectiveness.

Cost of Salt Fluoridation. Salt fluoridation is as effective as and less costly than water fluoridation. Anticipated cost-benefit analyses conducted by PAHO in various countries have revealed that, even under conservative estimates (dental services coverage to approximately 25% of the population at an average of US$ 3 per dental appointment), the cost-benefit ratio approximates 1:41. This means that for every dollar invested in salt fluoridation programs, the country will save $41 in curative dental care that would not be necessary. Under more realistic circumstances (expanding coverage to 50% of the population and at an estimate of $10 per dental appointment), the potential savings are $136 for each dollar invested in the program.

In terms of cost, it has been estimated that, even for a country with 25 fluoridation plants, the investment corresponds to about $0.50 per person for the six years of the program. This investment would cover costs of planning, execution, monitoring, evaluation, and social communication.

Short-term Goals (1-2 Years)

-        Initiate feasibility (cost-benefit) and baseline assessments for national salt and water fluoridation programs in six countries: Argentina, Dominican Republic, Honduras, Nicaragua, Panama, and Paraguay.

-        Support development of country capability to implement effective epidemiological surveillance systems in all current national programs.

-        Support development of oral health education and school program materials that are curriculum based so that schoolteachers can teach oral health while teaching curriculum areas.

Medium-term Goals (3-4 Years)

-        Continue feasibility and baseline assessments for additional national fluoridation programs.

-        Support establishment of sustainable fluoridation programs in all countries.

-        Reinforce country capability to carry out appropriate epidemiological surveillance systems.

-        Reinforce oral health education and school program materials.

3.1.2 Oral Health Policy Development in Information, Education, and Communication Programs to Address the Burden of Oral Diseases, including Oral Pharyngeal Cancer and HIVAIDS

The purpose of this strategy is to support information, education, and communication (IEC) programs aimed at improving or encouraging decision-making, community awareness, and behavioral changes to prevent caries, periodontal diseases, HIVAIDS and related oral conditions, and oral pharyngeal cancer. These are the most critical oral conditions in terms of the burden of disease in the Region. As mentioned in the background section, most of these conditions are associated with specific risk factors, such as poor oral hygiene, inadequate diet, low socioeconomic status, limited education, and pernicious behaviors such as smoking or drug abuse. Because of the complex nature of these risk factors, preventive programs also require a multidisciplinary, intersectoral approach. An IEC program has the potential to recognize key aspects related to the incidence of selected risk factors, and to design educational and communications actions to alter those risk factors.

Short-term Goals

- Promote the introduction of country policies for IEC activities for oral health in the public sector.

- Develop universal precautions guidelines appropriate for the dental community and the Region.

- Carry out regional conferences on prevention of HIVAIDS, hepatitis B, and oral pharyngeal cancer with dental schools, ministers of health, and national AIDS programs.

Medium-term Goals

- IEC policies and programs to prevent HIVAIDS and hepatitis B in place and operating in every country in the Region.

- Guidelines on universal precautions distributed throughout the Region.

- Prevention of oral pharyngeal cancer, HIVAIDS, and hepatitis B included in the curricula of all dental schools in the Region.

3.2 Improving the Efficiency, Effectiveness, and Equity of Oral Health Systems in the Public Sector and Key Aspects of System Performance that Will in Turn Lead to Better Oral Health

The purpose of this strategy is to strengthen sustainable integration of oral health services in the public sector and assist ministries of health to build the capacity of their oral health programs, an important step under the current vision of health sector reform.

Technical cooperation will be directed toward assisting countries to organize supply and demand for health care services, including comprehensive dental care, at the local level. An effective approach should make possible increased oral health coverage, a priority focus on prevention, and development of efficient and effective models for service delivery.

Short-term Goals

- Support of the development of oral health services in the countries, to improve coverage and quality of oral health. Services should be based on priorities, urgency, and potential for referral.

- Support of the use of atraumatic restorative treatment using glass ionomer-cements, a new but inexpensive and accessible technology.

- Analysis of demand for dental services, payment patterns, and national-level expenditure estimates, with case studies in three countries.

- Identification of country priorities and beginning work on expanded coverage of dental services through social financing (Argentina, Chile).

- Identification of country priorities and beginning work to expand coverage through organized plans (Bolivia, Colombia, Ecuador).

- Identification of sources, shortcomings, and major impediments of the oral health system.

Medium-term Goals

- Based on multicountry comparisons, design and implementation of oral health programs in such a way as to extract lessons from country experiences.

- Development of country activity plans that are tailored to local circumstances and conditions that are capable of facilitating the types of cross-country comparison and expand the policy community's knowledge base about how to structure and implement oral health programs.

3.3   *Human Resource Development for Oral Health*

This strategy will promote the development and training of human resources appropriate to the needs and direction of the new oral health agenda in the Region and following the other elements in this strategic plan.

Short-term Goals

- Support of accreditation of schools and establishment of international standards for dental school curricula to include HIVAIDS, hepatitis B, practice and organizational models, preventive dentistry, and information systems.

- Support of planning for production of auxiliary dental personnel.

- Continuation and strengthening of collaborative projects with WHO collaborating centers.

- Continuation of the technical advisory group to advise and support PAHO on its activities in oral health.

- Establishment of a core team for technical cooperation in areas of epidemiology, organizational development, management, finance, and preventive dentistry.

- Making WHO collaborating centers more effective as regional research and training centers.

Medium-term Goals

- Continued support and strengthening of accreditation of dental schools.

- WHO collaborating centers functioning as true regional research and training centers.

- Continued planning for increased production of dental personnel.

4.   Building Strategic Alliances

The Oral Health Program operates with core funds from the regular budget to strengthen technical cooperation and promote the mobilization of extrabudgetary funds (Annex D). A significant part of the work in salt fluoridation in the Region has been initiated by PAHO with strong support from the W. K. Kellogg Foundation over the past 12 years. During this time, work in salt fluoridation has been possible and many countries, (Colombia, Costa Rica, Jamaica, and Mexico) which formerly had limited capacity to implement salt fluoridation programs have

benefited from W. K. Kellogg support. In 1996, the Foundation awarded a $750,000 grant to PAHO in support of salt fluoridation programs for Bolivia, Dominican Republic, Honduras, Nicaragua, Panama, and Venezuela.

Additional funding was secured from Rotary International, with a grant of $30,000 for salt fluoridation in Bolivia.

The Inter-American Development Bank (IDB) has agreed to sponsor the First World Congress in Salt Fluoridation, which will take place in 1998 in Montevideo, Uruguay. A proposal to the IDB is in progress.

The WHO Collaborating Center in San Antonio, Texas, has provided active participation in the development of fluoridation programs in the Region. Specific functions of the center included program planning, cost-benefit studies, staff training, survey development, and data management and analysis. The established partnership between PAHO and the Center has set a strong foundation that ensures successful achievement of the objectives and strategies proposed in this document.

The Oral Health Program of the U.S. Centers for Disease Control and Prevention has committed resources to PAHO for the implementation of water fluoridation programs in Argentina, Chile, and Puerto Rico. Future plans include an international fluoridation training center for all the Americas, a worldwide conference on salt fluoridation, and a comprehensive state-of-the art manualdocument of fluorides and fluoridation.

5.   Key Issues for Discussion

-       Iodine and fluoride in salt for human consumption.

-       Barriers to and aids for implementing oral health preventive programs.

-       Barriers to and aids for improving coverage and quality of oral health services.

-       Approaches to redirect human resources development in oral health.

-       Key stakeholders in the countries for administering oral health strategies.

Annexes

ANNEX A
DMFT-12 INDICATORS, AVAILABLE HUMAN RESOURCES, AND
PREVENTIVE POLICIES FOR ORAL HEALTH IN SELECTED COUNTRIES

COUNTRY	DMFT-12 (yr) SURVEY	DENTISTS PER 10,000 POPULATION	NATIONAL PROGRAMS OF SALT FLUORIDATION	% NATIONAL POPULATION COVERED WITH FLUORIDATED WATER
Argentina	3.44 (87)	6.81	No	30.0
Chile	4.1 (96)	4.5	No	38.4
Paraguay	5.90 (83)	2.16	Projected	11.0
Uruguay	4.10 (92)	10.50	Yes	2.7
Brazil	6.70 (86)	6.72	No	41.0
Brazil, Sao Paulo	2.76 (94)			90.0
Bolivia	4.67 (95)	2.25	In progress	
Colombia	4.80 (80)	4.34	Yes	
Ecuador	2.94 (96)	10.10	Yes	
Peru	7.00 (90)	3.19	Yes	
Venezuela	3.60 (86)	3.93	Yes	27.2
Costa Rica	4.90 (93)	3.53	Yes	
El Salvador	5.10 (89)	1.46	Projected	
Guatemala	8.12 (87)	1.16	Projected	9.5
Honduras	8.34 (87)	0.47	In progress	
Nicaragua	5.90 (88)	1.27	In progress	
Panama	4.20 (89)	3.48	In progress	
Belize	6.00 (89)	0.80	Projected	
Cayman Islands	1.70 (95)			
Cuba	2.90 (89)	5.94	Projected	2.4
Dominican Republic	6.00 (86)	2.36	In progress	16.0
Guyana	1.33 (95)		Projected	
Jamaica	1.08 (95)	0.23	Yes	
Trinidad and Tobago	4.90 (89)	0.93	Projected	
United States of America	1.40 (91)			62.5
Mexico	Pend (96)	3.75	Yes	12.0

ANNEX B
PAHO REGIONAL ORAL HEALTH PROGRAM
Phases of National Preventive Programs of Water and Salt Fluoridation

Phase I	Phase II	Phase III
Feasibility Assessment	**First Evaluation**	**Long-term Evaluation**
Baseline levels of fluoride in the drinking water	Periodic sampling and determination of fluoride in drinking water sources	Continued periodic sampling and determination of fluoride in the drinking water
Nutritionaldietary survey in preschool children (possibly already available in some countries)	Nutritionaldietary surveys in preschool children	Nutritionaldietary surveys in preschool children
Baseline study of toothpaste use in preschool children	Periodic evaluation of toothpaste use in preschool children	Continued periodic evaluation of toothpaste use in preschool children
Baseline study on marketing and use of fluoride-containing products, e.g., dietary supplements available in the market	Periodic monitoring of fluoride-containing products in the market	Continued periodic monitoring of fluoride-containing products in the market
Development of epidemiological surveillance guidelines for quality assurance and control	Periodic monitoring and quality assurance of fluoride concentrations in water or salt	Continued periodic monitoring and quality assurance of fluoride concentrations in water or salt
Baseline DMFT and dental fluorosis surveys in 6-8, 12, and 15-year-old children	DMFT and dental fluorosis surveys in 6-8, 12, and 15-year-old children seven years after program implementation	DMFT and dental fluorosis surveys in 6-8, 12, and 15-year-old children 14 years after program implementation
Initial assessment of urine fluoride excretion in 3- to 5-year-old children (one sample24 hours) after 15 months of implementation.	Urine fluoride excretion in 3- to 5-year-old children 15 months after program implementation (one sample24 hours)	Periodic evaluation of urine fluoride excretion in 3- to 5-year-old children (one sample24 hours)

Source: PAHO, 1996

ANNEX C
1994-1996 PAHO'S ORAL HEALTH ACTIVITIES
Fluoridation in the Region of the Americas by Year 2000

EXPECTED RESULTS	INDICATORS	ACTIVITIES
Bolivia		
As of May 1996, country reports initial production and distribution of fluoridated salt Estimated population covered by program, one million	**1.** *Completed* Costbenefit study for salt fluoridation program "Análisis Institucional para el Desarrollo de un Programa Nacional de Fluoruración de la Sal en Bolivia." Proposal presented to IDB, UNICEF, AID **2.** *Completed* National survey on school children on DMFT and fluorosis **3.** *Initiated* National study on fluoride concentration in drinking water	- PAHO conducted costbenefit study - PAHO assisted in survey design for DMFT and Fluorosis and data analysis - PAHO trained resources for: national epidemiological survey for DMFT and fluorosis - PAHO trained resources for study on concentration of fluoride in drinking water
Chile		
As of May 1996, Santiago began a city-wide community water fluoridation program Estimated population covered by program, 3.6 million Projected by end of 1996: 80% of all community water fluoridated nationwide	**1.** *Completed* Design of epidemiological surveillance systems for community water fluoridation program and other fluoridation programs **2.** *Completed* Cost-benefit study "Evaluación de costos y beneficios anticipados del programa de fluoruración del agua potable propuesto para la VIII Región, Chile" **3.** *In progress* baseline studies: - DMFT and fluorosis - Fluoride excretion in urine	- PAHO designed epidemiological surveillance system for community water fluoridation programs, including biological and chemical monitoring of fluoride - PAHO completed training of 440 dental professionals, on epidemiological surveillance systems for community water fluoridation and management of fluorides - PAHOMinistry of Health conducted cost-benefit study - PAHO assisted in survey design for baseline studies
Jamaica		
As of September 1995, country reports: - DMFT-12 of 1.08	**1.** *Completed* National survey on school children on DMFT and fluorosis, as part of first evaluation of salt fluoridation program	- PAHO designed epidemiological surveillance systems for salt fluoridation program

- Percentage of sound permanent teeth of all ages 95

- Percentage of caries-free children (permanent teeth) 61

- 85% of caries reduction since 1985

2. *In progress*
Publication on "Epidemiological surveillance systems for salt fluoridation programs for Jamaica"

3. *Completed*
Design of epidemiological surveillance systems for national salt fluoridation program

4. *Ongoing*
Biological and chemical monitoring of fluorides

- PAHO assisted in survey design for DMFT and fluorosis

- PAHO trained resources for national epidemiological survey for DMFT and fluorosis

- PAHO analyzed data

Ecuador

As of April 1996, country reports:

- production and distribution of fluoridated salt of 97% of all table salt for human consumption in Ecuador

- Estimated population covered by program, 11 million

Note: Project funded by FASBASE (World Bank)

1. *Completed*
Costbenefit study for salt fluoridation program

2. *Completed*
National study on fluoride concentration in drinking water

3. *Completed*
National survey on school children on DMFT and fluorosis

4. *Completed*
Study on toothpaste consumption in preschool children

- PAHO conducted cost-benefit study

- PAHO assisted in survey design for DMFT and fluorosis and trained resources, including calibration of examiners

- PAHO trained resources for study on concentration of fluoride in drinking water

- PAHO assisted in all baseline studies and trained resources

Colombia

In progress impact evaluation of national salt fluoridation program

1. *In progress*
DMFT and fluorosis survey

2. *In progress*
Surveillance system for salt fluoridation, (October 1996)

- PAHO is designing an epidemiological surveillance system for salt fluoridation program

- PAHO is training resources for national epidemiological survey for DMFT and fluorosis

- PAHO is assisting in survey design for DMFT and fluorosis and trained resources, including calibration of examiners

Mexico

In progress impact evaluation of national salt fluoridation program

1. *In progress*
DMFT and fluorosis survey

- PAHO designed epidemiological surveillance systems for salt fluoridation

		program
Estimated population covered by program, 78 million	**2.** *Completed* Design of epidemiological surveillance systems for salt fluoridation	- PAHOMinistry of Health trained resources for DMFT and fluorosis survey
HondurasDominican RepublicNicaraguaPanama		
In progress implementation of a national fluoridation programs	**1.** *Completed* Cost-benefit study for salt fluoridation program	- PAHO conducted cost-benefit study - PAHO is assisting in project design
Cayman Islands		
As of September 1995, country reports: - DMFT-12 of 1.70 Percentage of caries-free children (permanent teeth) 60	**1.** *Completed* National survey on adults and children on DMFT and fluorosis	PAHO trained resources and assist in survey design and data analysis - PAHO analyzed data
Venezuela		
Country reports initial production of fluoridated salt program	**1.** *Completed* In progress design of epidemiological surveillance systems for salt fluoridation	- PAHO is assisting in epidemiological surveillance systems for salt fluoridation
Argentina	**1.** *In progress* Design of epidemiological surveillance systems for management of fluorides program 2. Rosario reports on preliminary results of DMFT survey on school children	- PAHO evaluated water fluoridation program in Rosario and prepared preliminary terms of reference for the design of water fluoridation program for Capital Federal and the Province of Buenos Aires
Document SILOS #42 "Vigilancia Epidemiológica para los Programs Nacionales de Fluoruración de Sal" Document SILOS #43 "Manual para el Proceso de Producción de Sal Fluorurada"	- In progress is final revision of document SILOS #42 - In progress is final revision of document SILOS #43	- PAHO prepared documents SILOS #42 and #43

ANNEX D
PAHO'S ORAL HEALTH BUDGET BY BIENNIUM

FUNDING AGENCIES	1996-1997	1998-1999	TOTAL
PAHO Regular Budget:			
Post	276,000	276,000	**552,000**
Non-Post	77,000	77,000	**154,000**
PAHO Country Support	90,000	90,000	**180,000**
Rotary International (Bolivia)	30,000		**30,000**
Kellogg Foundation	694,000	56,000	**750,000**
Lending Institutions:			
IDB regular budget	200,000		**200,000**
World Bank in-country loan (Ecuador)	46,000		**46,000**
Other institutional support (ministries of health, WHO Collaborating Centers, NIHNIDR, CDC, and intercountry collaboration)	240,000	240,000	**480,000**
GRAND TOTAL	**1,653,000**	**739,000**	**2,392,000**