



Pan American Health Organization
Division of Health Systems and Services Development
Regional Program of Oral Health
and the
Ministry of Health of Jamaica



**"Impact of Salt Fluoridation in
Preventing Caries in Jamaica"**

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Acknowledgments

This document was prepared by Saskia Estupiñán-Day, Regional Advisor in Oral Health, Pan American Health Organization (PAHO) and Dr. Ramón J. Báez, Head, WHO Collaborating Center in Oral Health, University of Texas Health Science Center at San Antonio.

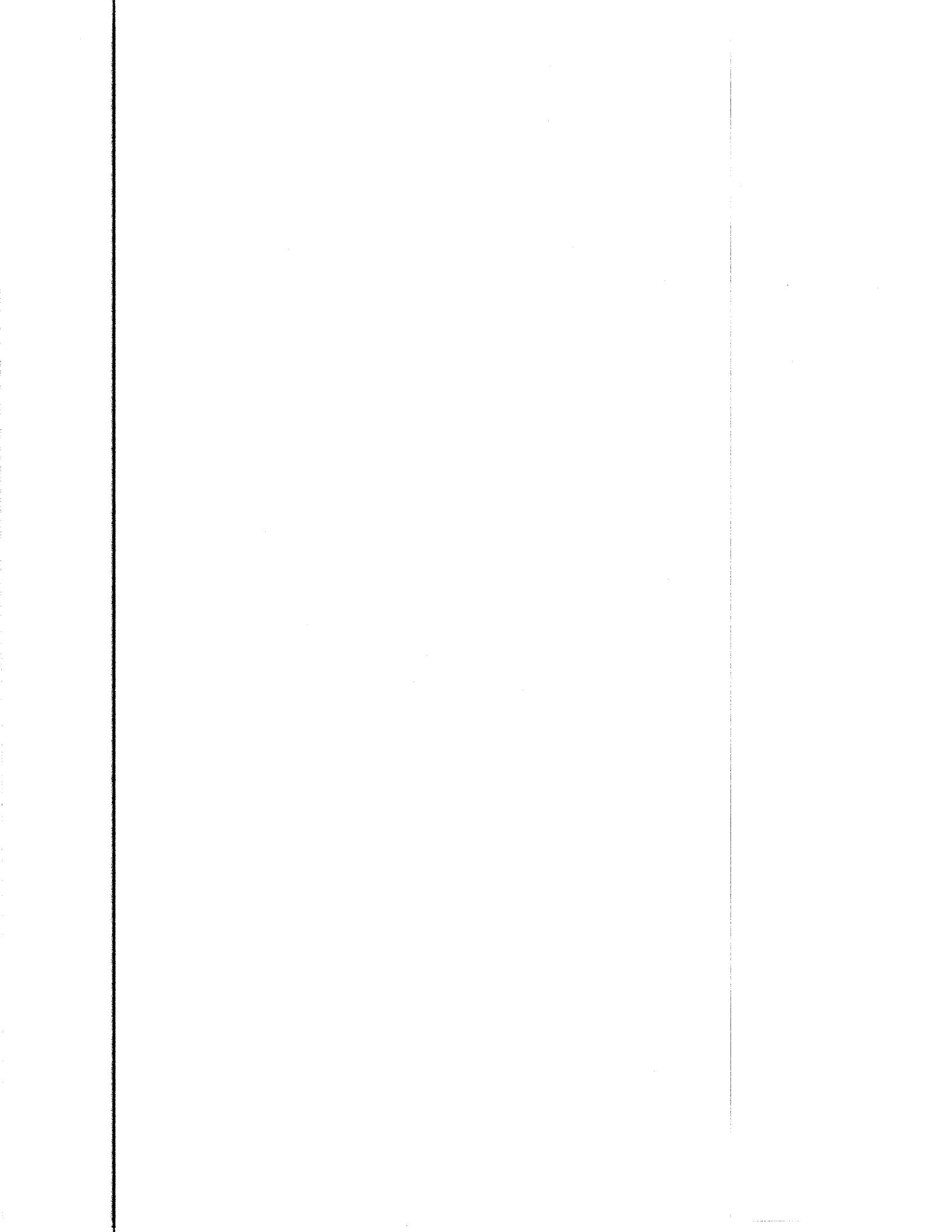
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ABSTRACT

In 1987, Jamaica initiated a comprehensive island wide salt fluoridation program. To comply with PAHO's epidemiologic surveillance system for fluoridation programs, and to determine the effectiveness and risk assessment of salt fluoridation¹, a survey was conducted in 1995 among children in Jamaica. Dental examinations of 1,200 children ages 6 to 8 and 12 and 15, showed a mean DMFT prevalence for 12 year-olds of 1.08, which was lower than the corresponding score of 6.7 DMFT for children of the same age at the baseline examinations in 1984. Baseline data for children in other age groups were not collected in 1984. Fluorosis, using Dean's criteria, was negligible. The mean percentage of sound permanent teeth of all age groups was 95. The percentage of caries free children (permanent teeth) was 61. The study was supported by the Pan American Health Organization.



INTRODUCTION

Jamaica is an island in the Caribbean Sea with a total territory of 10,991 square kilometers (4,243 square miles). The central uplands rise to 2,256 meters (7,402 feet) in the Blue mountains to the east. The population in 1990 was approximately 2,200,000.

An oral health survey conducted in Jamaica in 1984 indicated very severe caries rates (DMF 6.7) in children 12 years of age. Rampant caries was also reported as a frequent finding in children of other age groups. A high level of disease coupled with insufficient number of dentists to meet the needs (dentist/population ratio in 1984 was 1/43,478²) indicated that it was not feasible to improve the oral health conditions of the population in Jamaica, unless a more aggressive and effective public health measure was implemented in the country.

A salt fluoridation program for Jamaica was designed and presented as a recommendation of the Caribbean Conference of Ministers in 1977, and endorsed by the Medical Association of Jamaica, the Jamaican Dental Association, Jamaican Bureau of Standards, the Government Medical Laboratory, the Government Chemist, the University of West Indies, Consumers League and the Ministry of Industry and Commerce of Jamaica. The program was approved by the Ministry of Health and the Cabinet in 1985 and by the Parliament in 1986³.

An educational program using the mass media was launched in 1986 and 1987 to target the general public and training workshops for health professionals were instituted. The Pan American Health Organization (PAHO) provided technical assistance to design and implement the salt fluoridation program, and training for local personnel in salt fluoridation techniques was provided, in Switzerland and other countries. The Dental Research Institute of Zurich provided additional scientific and technical services to the program.

Initial household salt consumption and baseline studies of caries prevalence in children 10,12 and 15 years of age were conducted in 1984. Alkali Limited initiated the fluoridation process by refining salt from imported crude solar salt at the plant in Spanish Town, and has been producing it continuously since September 1987³. Alkali Limited is the only salt fluoridation company in Jamaica and has been a key factor to the implementation of the program, by providing fluoridated salt throughout Jamaica and other Caribbean countries.

EPIDEMIOLOGICAL SURVEILLANCE

The Regional Oral Health Program of PAHO, launched in 1994 a multi-year plan to implement water-salt fluoridation programs and to guide support for these programs and to achieve specific outcomes. The operating principles for this regional plan are a preventive orientation, capacity building, and sustainability. These principles are relevant to the oral epidemiological profile in the Region and the program's ability to address oral health problems¹.

The Pan American Health Organization recommends that countries engaged in fluoridation programs implement and maintain epidemiological surveillance systems⁴, including strict and continuous biological and chemical monitoring of fluoride. A summary of these recommendations is depicted on Tables 1 and 2.

TABLE 1

**PAN AMERICAN HEALTH ORGANIZATION
REGIONAL ORAL HEALTH PROGRAM
Recommendations for Epidemiological Surveillance
National Preventive Programs of Water and Salt Fluoridation**

January 1996

CHEMICAL MONITORING

Phase I Feasibility	Phase II First Evaluation	Phase III Long-Term Evaluation
Baseline levels of fluoride in the drinking water	Periodic sampling and determination of fluoride in drinking water sources	Continue periodic sampling and determination of fluoride in the drinking water
Nutritional/dietary survey in preschool children (possibly already available in some countries)	Nutritional/dietary surveys in preschool children	Nutritional/dietary surveys in preschool children
Baseline study of toothpaste use in preschool children	Periodic evaluation of toothpaste use in preschool children	Continue 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	Continue periodic monitoring of fluoride-containing products in the market
Develop epidemiologic surveillance guidelines for quality assurance and control	Periodic monitoring and quality assurance of fluoride concentrations in water or salt	Continue periodic monitoring and quality assurance of fluoride concentrations in water or salt

Source: PAHO, 1996

TABLE 2

**PAN AMERICAN HEALTH ORGANIZATION
REGIONAL ORAL HEALTH PROGRAM
Recommendations for Epidemiological Surveillance
National Preventive Programs of Water and Salt Fluoridation**

January 1996

BIOLOGIC MONITORING

Phase I Feasibility	Phase II First Evaluation	Phase III Long-Term Evaluation
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 fourteen years after program implementation
Initial assessment of urine fluoride excretion in 3-5 year-old children, one sample/24 hours, after 15 months of implementation.	Urine fluoride excretion in 3-5 year-old children 15 months after program implementation (one sample/24 hours)	Periodic evaluation of urine fluoride excretion in 3-5 year-old children (one sample/24 hours)

Source: PAHO, 1996

The Jamaica fluoridation program presently adheres to PAHO's current recommendations for epidemiological surveillance. Biologic and chemical monitoring of salt is conducted by the Department of Oral Health of the Ministry of Health. Quality control of fluoridated salt is conducted daily at Alkali Limited.

A baseline oral health survey of school children ages, 10, 12 and 15, was conducted in Jamaica in 1984. A mean DMFT of 6.7 was reported for 12 years olds³. Urinary fluoride excretion was determined in 1987, and repeated approximately 20 months later in 1989. The fluoride excretions obtained from 24-hour collections ranged from 169 to 485 $\mu\text{g}/24\text{ h}$ in 1987 and increased to 304-657 $\mu\text{g}/24\text{ h}$ in 1989⁵.

Periodic evaluations of the fluoride concentrations of water supplies indicated uniformly low fluoride concentrations (<0.3 ppm in 95% of the drinking water which was used by 99% of the population). The National Water Commission, which is in charge of central supplies of potable water in all towns and villages, rural and urban, provides periodic information on availability of fluoride in drinking water².

Availability of other fluoride supplements have been constantly monitored. Previously, Poly-vi-fluor, a vitamin-fluoride preparation, was imported through Mead Johnson Ltd. for use by infants in Jamaica. The Ministry of Health requested years ago that the prescription and importation of dietary fluoride supplements be stopped. The product is no longer available in any pharmacy in the country. The Department of Dental Health of the Ministry of Health has proposed an amendment to the Pharmacy Act to prohibit the importation of any formulation which might include fluoride in appreciable amounts in order to regulate the dosage of fluorides to all persons in the country. At the present time, there is only one source of systemic fluoride in Jamaica: salt fluoridation.

IMPACT OF SALT FLUORIDATION IN PREVENTING CARIES IN JAMAICA

To comply with the Pan American Health Organization's epidemiological surveillance system for fluoridation programs, and to determine the effectiveness and risk assessment of salt fluoridation, an oral health survey was conducted in May of 1995 among children in Jamaica.

Population sampling

The present population of Jamaica is approximately 2,500.00, about 1/3 of whom are school age children. A sample for examination was selected from children living in six regions: Kingston area (urban), St. Catherine (periurban), St. Elizabeth (rural), Trelawny (rural), St. Ann (rural) and Portland (rural). The sample was drawn from a random listing of children attending primary and high schools in ten locations. The original estimated number was 400 subjects, from three parishes, with the following distribution per school.

TABLE 3

ESTIMATED SAMPLE PER LOCATION

Kingston Urban	Portland Rural	Saint Ann Rural	Trelawny Rural	Saint Elizabeth Rural	Saint Catherine Periurban
Norman Gardens 170-185	Titchfield High 100-110	Moneague All Age 100-110	Falmouth All Age 140-154	Lacovia Secondary 100-110	Ensom City 160-176
Mico Practicing 110-121	Port Antonio 100-110			Black River 110-121	St. Jago 100-110

Source: PAHO, 1996

Difficulty was encountered in completing the required quota of children in some schools. The final sample included 1,120 subjects geographically distributed as follows: urban 264, periurban 212, and rural 562, with an approximate sex distribution of 37.2% males and 61.5% females. Demographics of the actual sample population, with distribution by sex, age and location are shown in Tables 4 and 5.

TABLE 4

**Jamaica Oral health Survey of 6-8, 12 and 15-year-old School Children, 1995
Actual Sample Population by Parish**

PARISH	Age 6	Age 7	Age 8	Age 12	Age 14	Age 15	Age 16	TOTALS BY REGION
KINGSTON	26	44	45	95	20	35		265
PORTLAND	10	20	28	82	2	56		198
ST ANN	22	12	18	0	15	35		102
TRELAWNY	23	26	2	41	17	19		128
ST ELIZABETH	26	15	19	88	8	49	1	206
ST CATHERINE	14	23	4	53	7	112	1	214
TOTALS BY AGE	121	140	116	359	69	306	2	1113*

* Number of missing observations: 7
Source: PAHO, 1996

TABLE 5
Jamaica Oral Health Survey of 6-8, 12 and 15-Year-Old School Children, 1995
Sample Population Distribution By Sex And Location

LOCATION	AGE 6 M/F	AGE 7 M/F	AGE 8 M/F	AGE 12 M/F	AGE 14 M/F	AGE 15 M/F	AGE 16 M/F	TOTALS BY LOCATION M/F
NORMAN GARDENS	9/8	14/9	9/6	12/35	5/15	11/24	0/0	60/97
MICOPRACTICING	1/8	8/13	13/16	15/33	0/0	0/0	0/0	37/70
TITCHFIELD	0/0	0/0	0/0	15/26	0/2	12/44	0/0	27/72
PORT ANTONIO	5/5	8/12	9/19	10/31	0/0	0/0	0/0	32/67
MONEAGUE ALL AGE	8/14	4/8	7/11	0/0	6/9	17/18	0/0	42/60
FALMOUTH ALL AGE	17/6	10/16	2/0	21/20	8/9	9/10	0/0	67/61
LACOVIA	0/0	0/0	0/0	13/24	1/7	16/33	0/1	30/65
BLACK RIVER	13/12	8/6	5/14	24/23	0/0	0/0	0/0	50/55
ENSOM CITY	4/10	7/14	2/2	0/0	2/5	19/33	1/0	35/64
ST JUGO HIGH	0/0	0/1	0/0	21/32	0/0	18/42	0/0	39/75
TOTALS BY AGE	57/63	59/79	47/68	131/224	22/47	102/204	1/1	419/686*

* 15 missing data
Source: PAHO, 1996

Calibration of Examiners

The Pan American Health Organization sponsored a training workshop to update participants on salt fluoridation and to calibrate examiners who would be conducting the survey. Additional support from PAHO included the design of the epidemiologic surveillance system for Jamaica (Appendix 1).

The calibration exercise was conducted in the Dental Auxiliary School in Kingston, following WHO guidelines⁶. Two dentists and seven dental auxiliaries, and nine dental assistants were calibrated as examiners and recorders, respectively.

The initial session included a review of the record form and codes, diagnostic criteria and the use of clinical examination instruments.

The first clinical exercise included examination of 12 children 6-15 years of age. All examiners examined the children and the recorders entered the clinical findings on the WHO simplified data collection form. This initial calibration exercise lasted one day (Appendix 2). Results of the initial exercise are summarized in Table 6.

TABLE 6
Initial Calibration of Examiners - Jamaica 1995
Percent Agreement and Kappa Statistics

CONDITION	PERCENT AGREEMENT	KAPPA
Tooth Status	86.45	0.785
Treatment Need	77.73	0.34
Treatment Urgency	75.00	0.66
Community Periodontal Index (CPI)	66.66	0.49
Fluorosis (Dean's)	50.00	0.38

Source: PAHO, 1996

Results indicated that it was necessary to discuss and emphasize the examination criteria for treatment need, CPI and fluorosis. The discrepancies were discussed with all examiners and recorders and some examination criteria revised. A second clinical exercise was conducted. Considering that there were four experienced consultant examiners, it was decided to vary the calibration exercise by asking each team to complete the examination and data recording, and to call one of the consultants to verify the findings of each examination. When a condition of interest was found, all examiners were called to observe and discuss it. The clinical exercise lasted all day. Unavailability of subjects to be examined at another session did not permit additional evaluation of percent agreement and Kappa statistics; however, the training team was satisfied with the level of agreement attained by the examiners.

DATA COLLECTION

The criteria for data collection recommended by WHO were followed. Data were recorded using the WHO simplified form⁷.

Ethnicity was not considered a variable in Jamaica; therefore, entry of this information was omitted.

Treatment urgency was recorded according to the following criteria⁸:

- 0 = No dental treatment needed.
- 1 = Routine dental care needed, oral hygiene needs to be emphasized.
- 2 = Frank carious lesions, but no pain or infection are present, subject needs to be seen promptly by dentist.
- 3 = Pain or infection. Subject needs to be seen immediately by dentist.

Fluorosis was recorded following Dean's criteria. The condition of the facial surfaces of all six upper anterior teeth was recorded. PAHO made this modification to the standard WHO criteria based on the fact that fluorosis is not considered a dental disease, but rather a possible cosmetic problem. The facial surfaces of the upper maxillary teeth are most important in social interactions⁴.

RESULTS

Disease Prevalence

Results for caries prevalence, contribution of each component to DMF-T, proportions of persons with untreated decay, caries free and the degree of caries experience are summarized in Tables 7, 8 and 9.

TABLE 7

Jamaica Oral Health Survey of 6-8, 12 and 15 Year-Old School children, 1995
 Age-Specific Means and Standard Deviations for Selected Indices of Dental Caries Prevalence in Both Dentitions

Age	N	df-t		dmf-t		DF-T		DMF-T	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
6	121	2.24	2.70	2.31	2.8	0.19	0.53	.22	.59
7	140	1.89	2.14	2.02	2.3	0.41	0.94	.47	1.01
8	114	1.58	1.84	1.88	2.1	0.31	0.82	.41	1.00
12	362	NA	NA	NA	NA	0.80	1.52	1.08	.73
14	69	NA	NA	NA	NA	2.12	2.6	2.94	2.97
15	310	NA	NA	NA	NA	2.32	2.56	3.03	2.98
Totals	1,116*								

* Four (4) Missing observations

Source: PAHO, 1996

TABLE 8

Jamaica Oral Health Survey of 6-8, 12 and 15 Year-Old School children, 1995
Age-Specific Relative Contribution of Each DMF-T Element Among those with DMF-T > 0
(Permanent Dentition)

Age	N (DMF-T > 0)	%D/DMFT	%M/DMF-T	%F/DMFT
6	17	92.1	7.8	0
7	32	87.0	9.9	3.1
8	25	76.6	20.5	2.9
12	148	72.6	9.9	17.5
14	46	71.1	11.8	17.2
15	233	76.9	12.6	10.5
Totals	501*	76.2	11.8	11.9

* Two 16 year-old subjects are omitted from total
Source: PAHO, 1996

TABLE 9

**Jamaica Oral Health Survey of 6-8, 12 and 15 Year-Old School Children, 1995
Age-Specific Proportion of Carie-Free Persons and with untreated Decay (d-t+D-T) in the Permanent and Both Dentitions**

Age	Caries-Free Perm		Caries-Free Both		Untreated Decay Perm		Untreated Decay Both	
	N	%	N	%	N	%	N	%
6	121	86.4	44	36.4	16	13.6	77	6.9
7	140	79.3	48	34.3	29	20.7	92	8.2
8	116	82.8	46	39.7	20	17.2	70	6.3
12	362	66.0	NA	NA	123	34.0	NA	NA
14	69	45.0	NA	NA	38	51.1	NA	NA
15	310	33.5	NA	NA	206	66.5	NA	NA
Totals	1,118*	61.1	NA	NA	432	38.9	NA	NA

* Two 16 year-old not considered

Source: PAHO, 1996

Treatment Urgency

Treatment urgency is based on the need for dental care and the presence or absence of pain or infection. Age specific treatment urgency is given in Table 10.

TABLE 10
Jamaica Oral Health Survey of 6-8, 12 and 15 Year-Old School Children, 1995.
Dental Treatment Urgency (N=1120)

No Treatment Needed	Routine Dental Care	Prompt Dental Care	Immediate Dental Care Pain or Infection
62.6%	27.2%	7.3%	1.8%

Other Oral Conditions

Presence and degree of fluorosis according to Dean's criteria are depicted in Table 11.

TABLE 11
Jamaica Oral Health Survey of 6-8, 12 and 15 Year-Old School Children, 1995
Prevalence of Dental Fluorosis In 6-8 and 12-15 Year Old Children

Location	N	None		Questionable		Very mild		Mild	
		N	%	N	%	N	%	N	%
NORMAN GARDENS	97	94	96.9	3	3.4	0	0	0	0
MICOPRACTICING	38	36	94.7	1	2.6	0	0	1	0
TITCHFIELD	92	83	90.2	9	9.8	0	0	0	2.6
PORT ANTONIO	36	36	100	0	0	0	0	0	0
MONEAGUE ALL AGE	48	42	87.5	6	12.5	0	0	0	0
FALMOUTH ALL AGE	70	70	100	0	0	0	0	0	0
LACOVIA	96	92	95.8	2	2	1	1.0	1	1.0
BLACK RIVER	43	40	93	2	4.7	1	2.3	0	0
ENSOM CITY	62	60	96.8	0	0	0	0	1	1.6
ST JUGO HIGH	113	112	99.1	1	0.9	0	0	0	0
TOTALS	695	665	99.1	24	3.5	2	0.3	3	0.4

One child in Ensom City was coded as 4
 418 subjects (37.3%) had excluded data
 Source: PAHO, 1996

The presence of pit and fissure sealants in permanent molars of children by age is shown in Table 12.

TABLE 12

**Jamaica Oral health Survey of School Children, 1995
Age-Specific Distribution of Children with Pit-and-Fissure Sealants in Permanent Molars**

AGE	N	% WITH SEALANTS
6	19	15.7
7	18	12.9
8	17	14.7
12	31	8.6
14	5	7.2
15	42	13.5
TOTALS	132	11.8

Source: PAHO, 1996

Community Periodontal Index (CPI)

Results of CPI indicate low prevalence of periodontal conditions in the children examined in the survey. A summary of these results is shown in Table 13.

TABLE 13

**Jamaica Oral Health Survey
Periodontal Conditions (CPI)
Children 15 Years of Age (n = 310), 1995**

Bleeding on Probing Mean No. of Sextants	No. of Children with Calculus	No. of Children with Shallow or Deep Pockets
0.2	0.48	Sextants, One = 35 - Two = 33

DISCUSSION

The World Health Organization (WHO) has established a goal for caries prevalence of no more than a DMF-T of 3.0 for children 12 years of age by the year 2000¹.

The overall goal of the Regional Oral Health Strategy is to ensure that PAHO and country resources are used as efficiently as possible to improve the oral health of the people of the Americas.

Assisting countries in the Region to improve their oral epidemiologic profile poses the greatest challenge to the PAHO Regional Oral Health Program for the 1990s and beyond. To address this challenge, the Program includes elements of PAHO's Strategic Orientations, including the vision of health sector reform reflected in these guidelines, as a basis for the following Regional Oral Health Objectives and Strategies.

PAHO will play an active role in assisting countries to strengthen their ability to respond to the oral health challenge and the momentum of the oral health sector reform as the year 2000 approaches. PAHO strategic objectives in support of oral health in the Region are:

1. To promote improvement of oral health conditions in the countries of the Americas building on the momentum of health sector reform.
2. To assist countries to develop accessible, effective, and sustainable oral health services.

The strategies to pursue the above objectives include:

1. Promotion of national oral health preventive programs aimed at reducing the prevalence of dental caries, periodontal diseases, and dental fluorosis including effective epidemiologic surveillance systems.
2. Strengthen sustainable integration of oral health services into Local Health Systems (SILOS).
3. Inspire training of human resources appropriate to the needs and new directions of oral health programs in the Region.
4. Support policy development in education, and communication programs aimed at improving decision making and community awareness about dental caries, periodontal diseases, HIV and related oral conditions, oral cancer, and preventive practices.
5. Development of a regional oral health information system and integration of the program into the Global Oral Health Network.

PAHO's Oral Health Strategy for the 1990s proposes to help countries reach a level where improved oral health indicators and preventive policies predominate. The strategy is based on an oral health development classification that categorizes countries in the Latin America and Caribbean Region using the most current reported level of the DMFT-12 index (decayed-missing-filled teeth at 12 years of age) and the existence of national policies to promote fluoridated water or salt as preventive interventions. This classification LAC countries in of the three categories of oral health development: Emerging, Growth, and

Consolidation. The strategy aims to support countries in all the categories, with emphasis on those in the emerging group. As these countries receive assistance they will first move to the growth category, and eventually to the consolidation category. Similarly, countries in the growth category will be assisted to move into the consolidation category. Countries in the consolidation category will be assisted to keep their programs in place. It is expected that by the end of the decade most of the countries in the LAC Region will have reached the WHO goal of a DMFT-12 of 3 by the year 2000 (WHO).

The oral health survey conducted in Jamaica in 1995 indicated that the DMFT at 12 years of age was not only much lower than the corresponding DMFT of 6.7 for children of the same age at the baseline examination in 1985, but was nearly one-third of the WHO goal for the year 2000.

The results in Jamaica confirm the cariostatic benefits of salt fluoridation observed in several other countries. As early as 1972, Colombia had reported a preventive effect of 60-65%⁹. Hungary, in 1984, reported a reduction of 60-68% after 15 years of salt fluoridation¹⁰. The experience in Switzerland had similar results, as reported by Marthaler in 1995¹¹. The caries reduction through salt fluoridation in Switzerland was 71-78% from 1974-1987. Costa Rica reported a 42% caries reduction after 5 years of salt fluoridation¹¹.

The benefits of salt fluoridation in caries reduction are clear; however, it is imperative that strict epidemiologic surveillance programs be continuously enforced. Biologic and chemical monitoring should be conducted regularly to monitor fluoride ingestion and excretion and clinical exams should be done to determine if fluorosis is occurring. Chemical monitoring permits detection of fluoride in water and salt. Fluoride determination in salt must be done periodically by government agencies to assure that the correct amount of fluoride is being added to the salt. Another important element of epidemiologic control for fluoridation programs is the surveillance of the availability of fluoride supplements, both systemic and topical. Reference data on nutrition of pre-school children are also valuable for assessing availability of nutrients, and to evaluate fluoride concentration in food products that may be characteristic of the region.

CONCLUSIONS AND RECOMMENDATIONS

1. The results of the oral health survey conducted in Jamaica indicate a significant impact of salt fluoridation in preventing caries in children, with a minimum risk of producing fluorosis.
2. Salt fluoridation is a sustainable program. The program works well, industry is exporting salt and contemplates expanding its operation to make fluoridated salt available to other countries.
3. Wide coverage can be obtained including populations from all socio-economic levels.
4. There is a good cost-benefit ratio with salt fluoridation. It has been estimated that for each dollar spent on salt fluoridation programs, around 240 dollars are saved from dental treatment in the future¹², making it the most cost-effective intervention known in the field of public health.
5. Caries reduction is obtained without changing knowledge or behavior, and without increasing the daily amount of salt ingested.
6. Where it is not feasible to fluoridate water supplies, salt fluoridation is a safe, inexpensive and effective alternative for prevention of tooth decay.

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APPENDIX I

WORKSHOP ON GUIDELINES FOR EPIDEMIOLOGICAL SURVEILLANCE SYSTEM FOR THE NATIONAL SALT FLUORIDATION PROGRAM IN JAMAICA APRIL 17-22, 1995

Monday, April 17

Arrival of Participants

Tuesday, April 18,

- | | |
|---------------|--|
| 9:00 - 9:30 | Welcome Remarks
Dr. Richard Van West Charles/PWR Jamaica |
| 9:30 - 10:00 | Purpose of workshop
Dr. Bernard Sutherland |
| 10:00 - 10:15 | Inauguration
Minister of Health Delegate |
| 10:15 - 10:30 | Coffee Break |
| 10:30 - 11:00 | Regional Oral Health Strategies for the 1990s
Dr. Saskia Estupiñán-Day |
| 11:00 - 11:30 | Presentation of the Salt Fluoridation Program in Jamaica
Dr. Bernard Sutherland |
| 11:30 - 12:00 | World wide experience of other countries
Prof. Thomas Marthaler |
| 12:00 - 13:00 | Lunch |
| 13:00 - 14:00 | Discussions to develop guidelines for program in Jamaica
Dr. Saskia Estupiñán-Day |
| 14:00 - 16:00 | Development of Guidelines |
| 16:00 - 16:15 | Coffee break |
| 16:15 - 17:00 | Development of guidelines |

Wednesday 18, 1995

- | | |
|---------------|---------------------------|
| 8:30 - 10:15 | Development of guidelines |
| 10:15 - 10:30 | Coffee break |

10:30 - 12:00	Conclusions and Recommendations
12:00 - 13:00	Lunch
13:00 - 14:00	Task Assignments for document preparation
14:00 - 17:00	Finalize document for distribution

Notes: Dr. Bernard Sutherland from the Ministry of Health will prepare a background document of the National Fluoridation Program in Jamaica for workshop participants.

APPENDIX 2

CALIBRATION EXERCISE IN JAMAICA APRIL 20-21, 1995

- 08:00 - Introductory remarks
Dr. Bernard Sutherland
- 08:15 - Oral health programs in the Region
The salt fluoridation program
Dr. Saskia Estupiñán-Day
- The oral health program in Jamaica
Dr. Bernard Sutherland
- 08:40 - Calibration Exercise
- The calibration exercise will comprise four sessions
1. Review of the clinical examination procedure
- This session includes review of the record form and codes, diagnostic criteria, use of clinical examination instruments.
- Drs. Herschel Horowitz, Thomas Marthaler,
Dr. Rosalie Warpeha and Ramon Baez
- 10:30 - Break
- 10:45 - 2. Clinical exercise
- Six children belonging to the two age groups to be included in the survey (6-8 and 12-15) and who have the conditions that will be examined during the survey. Children will be seated in the examining chairs which will be numbered 1,2,3,4,5 and 6.
- Method A**
- The dentists being calibrated examine all six children, the "calibrators" will be called to verify the diagnosis and entry to be made.
- Method B**
- The dentists being calibrated and the calibrators will examine all six children. This method facilitates comparison against a standard.
- Examiners as well as recorders and calibrators will be encouraged to discuss clinical findings, diagnostic criteria, codes, and recording errors in order to reach an acceptable level of agreement.

12:30 - Lunch

13:30 - 3. Actual Calibration Exercise

Examination of 15 children from each age group. Each team of examiners and recorders will examine all children in both age groups. Examiners and recorders will not be allowed to discuss their clinical findings with members of the other teams. After each individual examination, the record will be handed over to the activity coordinator.

15:30 - Break

15:45 - Calibration exercise continues

17:00 - Adjourn

08:00 - Calibration exercise continues

10:00 - Break

10:15 - Calibration exercise continues

12:00 - Lunch

13:00 - Calibration exercise continues

15:00 - 4. Final discussion

The last two hours of the calibration exercise will be used for making sure that the examination teams are completely familiar with all the examination and recording procedures, diagnostic criteria, record forms, handling instruments and supplies. Infection control procedures etc.

17:00 - Adjourn

NOTE: This schedule has been prepared taking into consideration the availability of subjects for the calibration exercise, the time limitation and that examiners to be calibrated have previously participated in similar oral health surveys. Based on these facts and considering that subjects will have to be examined several times, it is recommended that up to four examiners be calibrated during this activity. It should be emphasized that all examiners participating in a survey should be calibrated so that all examinations are performed in a consistent manner.

Duplicate examinations should be conducted during calibration, about half way through the survey, and at the end of the survey. WHO guidelines recommend that about 10% of the subjects should be reexamined. "Care must be taken to carry out at least 20 duplicate examinations in each age group at each period, so that a reasonable estimate of changes can be made". (Intra and Inter-examiner reliability).

It is recommended that if there are other dentists who plan to participate in the survey, they should be encouraged to attend the review and practical sessions to be conducted during April 20-21, 1995.

From the information provided, one thousand two hundred children will be examined. If six examiners are available, it will be necessary to have a minimum of twenty sets of plain mirrors and WHO probes. If twelve examiners were available, each examiner would need a minimum of ten sets so that instruments can remain in the disinfecting solution for approximately 30 minutes while the others are being used.

It is important to recognize that the form and criteria that will be followed correspond to the WHO Basic Methods Third edition, in which caries explorers were used. However, in the latest draft, only the WHO probe is utilized.

