

## **“End-of-Project Final Report”**

### **Children’s Oral Health Care Access Program**

**Project Title:** Oral Health Promotion Project for the Marshall Islands

**Grant Number:** 6 H47 MC02052-02-01

**Grantee:** Secretary of Health, Republic of Marshall Islands

**Contact Person:** Dr. Ohnmar Tut, Project Director

**Grant Year:** 09/30/04 – 08/31/07

## PROJECT ABSTRACT

Project Title: Promotion of Oral Health in the Marshall Islands

Project Number: 6H47MC02052 - 02- 01

Project Director: Ohnmar Tut, BDS.

Contact Person: Ohnmar Tut, BDS.

Grantee: Ministry of Health, Republic of the Marshall Islands

Address: Ministry of Health, PO Box 16, Majuro, Marshall Islands 96960

Phone Number: 011-692-625-3355 ext: 2102

Fax Number: 011-692-625-4372

Email Address: [ddsmohe@ntamar.net](mailto:ddsmohe@ntamar.net)

Project Period: September 30, 2003 to August 31, 2007.

**PROBLEM:** This proposal from the Ministry of Health (State Health Agency) of the Republic of the Marshall Islands (RMI) is in response to HRSA program announcement number CFDA # 93.110, State Oral Health Collaborative Systems (SOHCS) New and Competing Awards HRSA -04-084 to stabilize State oral health program activity, better integrate oral health into MCH programs, and address the cross-cutting oral health needs of women and children.

### GOALS AND OBJECTIVES:

1. Develop a strategy to better integrate oral health into MCH
  - a) Making oral health prevention and care part of prenatal care.
  - b) Making oral health education part of prenatal care for pregnant mothers
  - c) Dental preventive programs will be developed for 15% of infants and toddlers whose mothers have the greatest amount of tooth decay around the time of the eruption of the first tooth (150 young children) at well baby clinics by September 2005 and expanded in the out years of the grant if funding becomes available
2. Develop better collaboration between MCH, Public Health and Dental Services personnel in RMI.
3. Develop dental programs to reduce vertical transmission

### METHODOLOGY:

1. Screen all pregnant mothers at their first pre-natal care visit at MCH and distribute tooth brushes.
2. Reduce barriers to care by reducing co-payments for care for up to 4 visits for 150 pregnant mothers who have high caries incidence and are likely to transmit disease to their child.
3. Train dental assistants on issues in maternal and child health so that they can be integrated into MCH teams.
4. Cross-train the MCH nurses and Public Health nurses on dental health education and preventive procedures
5. Develop and duplicate 200 posters and 150 flip charts in Marshallese language with

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messages that are culturally sensitive and enhance the knowledge of the value of regular oral health care

6. Conduct workshops for pregnant mothers on effective tooth brushing, health snacking and nutrition for them and for their children
7. Distribute toothbrushes and toothpaste every 3 months during the year September 2004 for 150 pregnant mothers
8. Provide tooth brushes every 3 months in the year September 2004 for 150 children from 6 months of age
9. Apply fluoride varnish and distribute toothbrushes and fluoride tooth pastes every 3 months for 150 children from age one to three years.
10. Conduct focus group discussions in the community with pregnant mothers on preventive procedures to reduce vertical transmission of infective microorganisms to young infants.

**COORDINATION:** The coordination of this project will be within the Ministry of Health where the Dental Division will be the lead agency.

**EVALUATION:** The major purpose of the evaluation is to provide feedback to the grantee so that mid-course corrections can be made to maximize the benefit of the grant to the people of the Marshall Islands. The University of Washington will assist in the overall evaluation. The first step in the evaluation will be to sure that the Dental Division puts in place a record keeping system to keep track of the quantitative measures specified in the objectives and work plan. A meeting will be held within 2 months of the funding of the grant to be sure this is accomplished and problem-solve any difficulty. After each year of the grant, the progress toward the quantitative goals will be assessed (e.g. the number of pregnant women who receive toothbrushes and toothpaste). The meeting will be held to review and problem solve after each report. A second part of the evaluation will be to assess the extent to which the Dental Division and the other government programs work together more extensively. The minutes of meetings held will be reviewed and individuals from Head Start, MCH, parents and the Dental Division will be interviewed. Feedback will be provided. The final part of the evaluation will address the sustainability of the new programs. After two years the University of Washington will assist the grantee to assess the extent to which planning has been put in place for continuing the program after the 3<sup>rd</sup> year.

## NARRATIVE FINAL REPORT

- A. PROBLEM:
- B. PROJECT EXPERIENCE
- C. EVALUATION:
- D. REGIONAL AND NATIONAL SIGNIFICANCE:
- E. CHALLENGES AND BARRIERS:
- F. COPIES OF PUBLICATIONS AND OTHER MATERIALS:

### A. PROBLEM:

#### Early Childhood Caries Epidemic

Despite better oral health for many (in the United States), others within the maternal and child health (MCH) community continue to experience significant (oral) disease and limited access to care.<sup>1</sup> For those people in these groups, oral disease constitutes a silent epidemic, according to the 2000 report of the Surgeon general, Oral Health in America, A Report of the Surgeon General<sup>2</sup>

Women and children in the Marshall Islands are eligible for minimal fee dental services but access is very limited. This is especially true in the remote atolls and outer islands. Although dental examinations were to be done for pregnant mothers at their first pre-natal visits, there was no system set up for them and there was no program for oral health education and preventive oral health services for MCH population.

There was no collaboration between the dental department and the MCH to promote the awareness of the community on Early Childhood Caries and prevention, no local trainings for auxiliaries, teachers and other non-dental Public Health personnel on

prevention of Early Childhood Caries and to perform simple dental preventive procedures.

Marshallese children are disproportionately affected, three times more, by early childhood caries compared to U.S. children because of the lack of awareness of parents and other care givers, and deficiency of Dental Preventive Programs in the Marshall Islands. Dental care needs of women and children in the Marshall Islands far exceed the acute care and preventive resources available. As a result, there is a high level of dental caries among pregnant mothers and children.

Before 2001, there was no other active Dental Preventive Projects in the Marshall Islands except the School Sealant Program on Majuro, which was stopped in 1998. The Ministry of Health, Republic of Marshall Islands (State Health Agency) has identified and prioritized the Early Childhood Caries Prevention Program to be planned and implemented and integrated into the MCH Program

This project aims at establishing and stabilizing the state oral health program activity, better integrate oral health into MCH programs, and address the oral health needs of women and children.

## Needs Assessment

### A. Children

In 2001, a prevalence study on Early Childhood Caries (ECC) was done in Majuro and was found that 50% of children had cavities in their teeth by the age of 2 years and 92% by the age of 5 years.<sup>3</sup>

In the school year 2001 – 2002, Majuro Elementary School Children were examined by the Preventive Services Dentist and out of 1760 six year-olds, only 13% were caries free with an average of 6 cavities lesions in a child.<sup>4</sup>

In 2002, the Department of Dental Services, Majuro treated a total of 10,785 patients and 26% were under the age of 15 years and 75% of those children had cavities.<sup>5</sup>

## B. Mothers

From June 2002 to April 2004, 263 pregnant mothers between the age 15 and 41 years with the average age of 23 years were examined at the Dental Department in Majuro Hospital. 78% had active caries and 138 extractions and 128 fillings were done for these pregnant women. 54% of those pregnant women had Chronic Gingivitis.

## B. PROJECT EXPERIENCE

### Goals and Objectives

The overall goal of this project is to develop and strengthen a culturally appropriate strategy to better integrate oral health into MCH programs and to address the MCHB performance measures in oral health and stimulate action towards implementation of the Surgeon General's National Call to Action to Promote Oral Health as it affects women and children.

### Major Objectives

1. Develop a strategy to better integrate oral health into MCH
  - a) Make oral health prevention and care part of prenatal care.
    - i) All pregnant mothers will be receiving a dental examination at their first pre-natal visit at the MCH by August 2006.
    - ii) By August 2006, approximately 15% of pregnant mothers (150) will have received appropriate dental care. Appropriate treatment will be expanded in the out years of the project if the funding becomes available. These women will be selected from those with the greatest amount of tooth decay.
  - b) Make oral health education part of prenatal care for pregnant mothers

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i) Flip charts and educational posters in Marshallese language will be developed and placed in ante-natal care clinics on Majuro by August 2006

ii) Small group discussions and home visits will be organized on a regular basis by the dental assistants trained in health education on feeding habits, nutrition and oral health care and dental health education at 2 community settings by August 2006.

These activities will be coordinated with the Health Education Program in the MOH.

c) Dental preventive programs will be developed for 15% of infants and toddlers whose mothers have the greatest amount of tooth decay around the time of the eruption of the first tooth (150 young children) at well baby clinics by September 2005 and expanded in the out years of the grant if funding becomes available

i) All mothers and/or care providers in this cohort will be taught to perform oral hygiene

for the infants and young children by August 2006.

ii) Free toothbrushes for all babies over 6 months will be provided by August 2006.

iii) Dental staff will apply topical fluoride every 3 months on baby teeth starting at one year of age for this cohort of children with initial treatments completed by August 2005.

d) Develop better collaboration between MCH, Public Health and Dental Services personnel in RMI.

i) Key personnel from these agencies will meet once per month to discuss collaborative efforts. These meetings will begin by the third month of the grant.

ii) During the first three months of the grant, 8 dental assistants will be trained on maternal and child health by the MCH coordinator.

iii) During the first three months of the grant, 2 MCH nurses and 2 Public Health nurses will participate in a training course on dental health education and preventive procedures by the Dental Division.

iv) Beginning the third month of the grant, the Preventive Services Dentist and a dental assistant will see clients at the Majuro MCH center on ante-natal clinic days to work together with the MCH nurses on health education and screening

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v) Beginning the fourth month of the grant, one dental assistant will be posted to work with the Public Health nurses at well-baby clinics and to accompany zone nurses on home visits.

e) Develop dental programs to reduce vertical transmission

By the end of the third year of the grant, 20% of young mothers, those with the highest caries rates (100 mothers) will have been introduced at MCH by the Dental Department to interventions designed to reduce vertical transmission of pathogenic bacteria between parent and children, utilizing the science-based interventions appropriate for the pregnant women and mothers. The number of women covered will be expanded in the out years of the grant if funding becomes available.

2). Address Compliance with Performance Standards

a) The school sealant program in Ebeye will be implemented in the coming year with the support of the HRSA SOHCS grants 2005-2006.

b) Fluoride toothpaste distribution and topical fluoride varnish applications will be implemented on 25 Head Start/ Kindergarten sites by August 2006.

## B. PROJECT EXPERIENCE

### Operational Work

1. Screened all pregnant mothers at their first pre-natal care visit at Majuro MCH and distribution of tooth brushes and expand the program to Community Health Center in Ebeye
2. Paid for encounter forms for up to 4 visits for 200 pregnant mothers (150 in Majuro and 50 in Ebeye) who have high caries incidence for acute dental care at Majuro hospital and Ebeye hospital dental clinics
3. Involve one MCH nurse and one Public Health nurse at Ebeye CHC on dental health education and dental preventive procedures
4. Produced 200 flip charts to distribute to 200 pregnant mothers.
5. Distributed tooth brushes and tooth paste every 3 months for 200 pregnant mothers (150 in Majuro and 50 in Ebeye)

6. Provide tooth brushes every 3 months for 200 children (150 in Majuro and 50 in Ebeye) from 6 months to one year of age
7. Applied fluoride varnish and distribute tooth brushes and Fluoride tooth paste every 3 months for 200 children and their moms (150 in Majuro and 50 in Ebeye) from age one to three years.
8. Implemented a program for 40 pregnant mothers to reduce vertical transmission of cariogenic bacteria to their off springs.
9. Implemented a program at Kindergartens to prevent dental caries in the permanent first molars

#### C. EVALUATION:

The Dental Department put in place a record keeping system to keep track of the quantitative measures specified in the objectives and work plan. After each year of the grant, the progress toward the quantitative goals has been assessed.

The meetings were held to review and problem solve after each report.

The sustainability of the program by the Ministry of Health was evaluated and decisions were made to keep the program supported after the grant funding expired.

#### D. REGIONAL SIGNIFICANCE:

'The Oral Health Promotion Project in the Marshall Islands' has been presented at the Regional Conferences such as Pacific Islands Health Officers Association (PIHOA), Pacific Islands Primary Care Association (PIPCA) and Pacific Islands Continuing Training (PACT) during the project year by the project director. Republic of Marshall Islands has taken the lead in the Pacific by helping all the Territories and Jurisdictions replicate the program as the Early Childhood Caries is epidemic in the whole region.

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The Ministry of Health has also fully supported the initiative for human resources development in the region to improve the Oral Health Promotion by sharing the local expertise on Early Childhood Caries and Preventive Assistant Training. Ministry has accepted a newly graduated dentist from Yap, one of the Federated States of Micronesia to be attached to the program for 3 months and has also accepted the proposal from WHO to send the Project Director to train the dental assistants and Public Health nurses on dental prevention and oral health education in the Commonwealth of Northern Mariana Islands.

On site in-service trainings for dental staff in every USAPIJ has been conducted in the 4 years of this project with the Project Director taking the lead in collaboration with University of Washington..

### E. CHALLENGES AND BARRIERS

The major challenges were;

- to promote awareness of the mothers, and to motivate them to change oral health care habits and diet in a culturally appropriate way
- to provide essential things such as water to brush the children's teeth at school

Most of the challenges were overcome by the team work and commitment of the Dental Preventive staff trained under the grant funding and full support of the MOH for the dental preventive services.

### F. COPIES OF PUBLICATIONS AND OTHER MATERIALS:

#### 1. Oral Health Promotion Posters in Marshallese

Formatted and translated from Colgate posters

Translated posters created on joint program with UW Hygienist Training

Formatted and translated from CDC Brush up Posters

Created tooth-brushing posters in English and Marshallese

2. Oral Health Care Flip Charts in Marshallese  
Translated from UW 'Lift the Lip' Flip Charts
  
3. Oral Health Education Brochures in Marshallese  
Formatted and translated from SPC Brochure
  
4. T-shirts with health messages

## Healthy Teeth and Gums for Your Baby

### From Before Birth through Age 2



#### For Pregnant Women:

- Have a dental checkup
- Brush your teeth at least twice a day with fluoride toothpaste
- Limit the number of times you eat sweets or starchy snacks each day
- Seek pre-natal care
- Get adequate calcium



#### For Baby at ... 0 to 6 Months:

- Clean baby's gums daily
- Avoid putting baby to bed with a bottle filled with milk, juice or other sweetened liquid
- Ask your doctor or dentist about fluoride supplements for the baby at about 6 months



#### For Baby at ... 6 to 18 Months:

- Begin using "sippee" cup instead of bottle at between 6 and 12 months
- Avoid letting baby walk around with a bottle
- Wean baby from bottle by 12 months
- Clean baby's teeth daily
- Take baby for first dental checkup at around the first birthday



#### For Toddler at ... 18 to 24 Months:

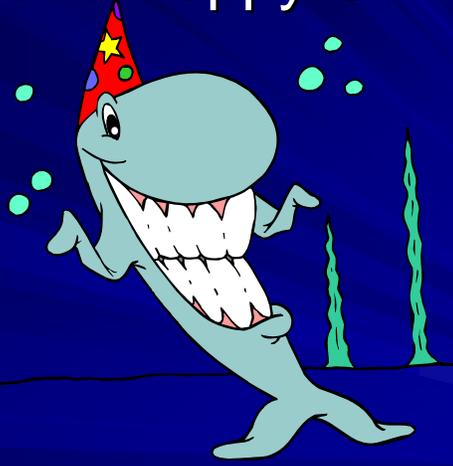
- Limit the number of times toddler eats snacks each day
- Brush toddler's teeth after breakfast and before going to bed; use a pea-sized dab of fluoride toothpaste once toddler knows to spit out, not swallow ... even though it tastes good



Health Promotion & Human Services  
Department of Health Education  
Ministry of Health, RMI  
Tel. No. 625-8365/3388



For a Happy Smile



See the Dentist for Fluoride  
Varnish

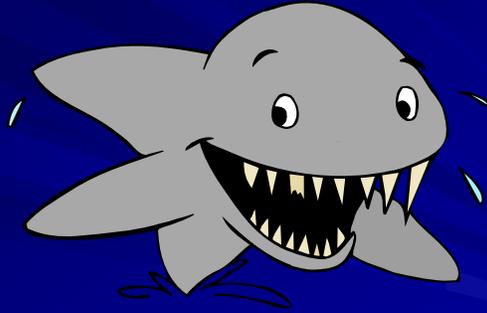
Want your child to have Happy  
Teeth?

Kwoj konan ke bwe en Emman Ni ko  
niin ajiri eo nejim?



Use Fluoride Toothpaste  
Kojerbal Bouta in Ni ko ewor Flouride ie

Want your child to have  
Happy Teeth?



See the Dentist at Majuro  
Hospital for Fluoride Varnish

T Shirts with health messages

*Dreaming of Fluoride*



Publications

O.K. Tut, M.H.K. Greer, P. Milgrom, Republic of the Marshall Islands: Planning and Implementation of a dental caries prevention program for an island nation. Pacific Health Dialog, Journal of Community Health and Clinical Medicine for the Pacific, March 2005, Vol 12, # 1,

O.K. Tut, J.R. Langidrik, P.M. Milgrom, Dental Manpower Development in the Pacific: Case study in the Republic of the Marshall Islands. Pacific Health Dialog, Journal of Community Health and Clinical Medicine for the Pacific, March 2007 Special Issue 3, Vol 13, # 2

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REFERENCES:

<sup>1</sup>Casamassimo, P. Oral Health in Maternal and Child Health, Health and Welfare for Families in the 21<sup>st</sup> Century, Wallace, H, 2<sup>nd</sup> Ed.

<sup>2</sup> USDHHS. Oral Health in America: A report of the Surgeon General. Rockville, MD: USDHHS, NIDCR, (2000).

<sup>3</sup> Tut, O & Milgrom, P, Prevalence of Early Childhood Caries on Majuro. National Oral Health Conference, Danvers, MA. (2002).

<sup>4</sup> School Dental Health Report (2001 -2002), Dental Division, Ministry of Health, RMI

<sup>5</sup> Annual Dental Department Report (2002), Ministry of Health, RMI

<sup>6</sup> (Koher et.al. Arch Aral Biol, 1994 Oct.) and Xylitol (Soderling E et al Caries Res.1991)

<sup>7</sup> Annual Dental Preventive Report on Kindergartens (2004 - 2005)