Oral Health in Palau

Disease Burden & Plan

MINISTRY OF HEALTH
BUREAU OF PUBLIC HEALTH

Division of Oral health
March 2006 (update)

Oral Health in Palau

Bureau of Public Health Vision: Healthy people in the healthy islands of Palau

Bureau of Public Health Mission: Develop a holistic system of health care to improve, promote and protect the health of the people of Palau.

Division of Oral Health Mission: To improve the general oral health status of the residents of the Republic of Palau through the provision of a broad spectrum of quality preventive and restorative oral health services.

Executive Summary

The Division of Oral Health was tasked to develop a dynamic and comprehensive oral health plan for the Republic of Palau. This plan was developed through a coalition of partners and collaborators in Palau along with regional meetings and summits. Additionally, this plan was developed, recognizing that the Bureau of Public Health is in the process of decentralizing health care and developing community-linked and community-based health care programs throughout Palau. Acknowledging that oral diseases affect health and well being throughout life, the US Surgeon General's Report on Oral Health outlines a framework for action for States and US affiliated territories and jurisdictions:

- Change perceptions (public, policy makers, and health providers) regarding oral health and disease so that oral health becomes an accepted component of general health
- Accelerate the building of the science and evidence based and apply science effectively to improve oral health
- Build and effective health infrastructure that meets the oral health needs of all and integrates oral health effectively into overall health
- Remove known barrier between people and oral health services
- Use public-private partnerships to improve the oral health of those who suffer disproportionately from oral disease.

The Palau Oral Health Plan contains the following Goals:

1. **Develop capacity and implement evidence-based primary prevention programs in oral health**

2. **Develop an oral health surveillance system that includes HP2010, US National and local oral health indicators**

3. **Improve programs, share and leverage resources through a coalition of collaborators partners, stakeholders and the community.**

4. **Improve access to oral health care in all communities and for all residents of Palau**

5. **Develop program infrastructure and resources for oral health to meet the needs of the population**

6. **Provide quality, comprehensive hospital or outpatient oral health care services for the general public**

PLANNING PROCESS

The Division of Oral Health is represented on a broad range of committees and groups. This working group of collaborators serves as the oral health coalition for Palau and oral health planning is accomplished with their broad input and support. This network is also used to identify policies and prevention opportunities for systemic change to improve oral health. The Pacific Basin Dental Association (PBDA) and associated e-mail discussion list serve is used as a coalition in the planning process and best practices sharing. This association represents all U.S. affiliated Pacific dental directors and chiefs and is formally affiliated with the Pacific Island Health Officers Association (health leaders) to convey needs and issues. Palau has taken the lead in the association by hosting the first two meetings in Palau, while the current President is the Palau Chief of the Division of Oral Health. Additionally, an e-mail discussion list (PACDENT) has been developed for discussion and planning in oral health across the entire Pacific.

<u>Regional meetings</u>:

1999 Meeting of Pacific Dental Directors (MCH Coordinators Meeting), Honolulu HI
2001 Pacific Oral Health Summit, Noumea, New Caledonia
2001 Regional Meeting of Dental Directors in the Western Pacific / PBDA Charter Meeting, Koror, Palau
2002 Region IX Head Start Oral Health Forum, "Enhancing Partnerships for Head Start and Oral Health" Oakland, CA
2002 Pacific Early Head Start/Head Start Oral Health Forum, Pohnpei, FSM
2003 PBDA Meeting, Koror, Palau
2001-05 CDC Technical Assistance Workshops, Atlanta
2005 1st Public Health Convention- " Bridging the Gap"

<u>Local meetings/committees:</u>

Family Health / MCH Planning Committee
Health Planning Committee
Coalition for a Tobacco Free Palau
Palau Diabetes Collaborative
Ministry of Health Management Team
Early Childhood Comprehensive System Planning Group
Interagency
Ministry of Education
Palau Community Action Agency / Head Start
Milad 'l dil (Community women's organization)
Palau Cancer Prevention and Control Task Force (planned)

<u>Other partners/resources</u>:

University of Washington
University of Kentucky
University of Otago
Hawaii Department of Health, Dental Division
ASTDD Best Practices Project
US Surgeons General Report on Oral Health
Region IX Dental Consultant
CDC Project Officer
CDC Guidelines for developing Oral Health Plans
Vice President for Palau
Primary care program managers
Division Chiefs in Public Health
Palau Bureau of PH, essential elements of infrastructure

BACKGROUND

The Republic of Palau is a U.S. affiliated Pacific Island country comprised of over 300 islands in the far southwestern corner of the North Pacific. The population is approximately 20,000 and is dispersed among the 16 states. 75% of the population resides in the economic capital of Koror and the neighboring state of Airai, while the remaining population is isolated on outer islands or villages. The Division of Oral Health, under the Bureau of Public Health, is the primary provider of oral health services for all residents of Palau. The division serves the public through a hospital-based dental clinic that has approximately 9,000 patient encounters per year, a small preventive clinic and through primary prevention programs that reach out to schools and the community.

The only permanent residents of Palau (by law) are indigenous Palauans who comprise 74% of the population. Philippine workers compose 16% of the population while the remaining 10% is a mixture of Asian, Micronesian and Caucasian. Non-Palauan residents reside in Palau only through work contracts with businesses, the government, NGOs or with families as domestic helpers or farmers.

ORAL HEALTH PROGRAMS AND CAPACITY

The Division of Oral Health employs 21 full time employees in hospital and public health settings. 15 of these employees work in a 6 chair hospital-based dental clinic with lab and radiology to provide general outpatient care for the public in the state of Koror. The remaining 6 employees focus efforts on preventive programs through a 2 chair Preventive Clinic, the School Dental Program, the ECC Prevention Program and community outreach. Of the five dentists working in the Division of Oral Health, 2 are expatriates and three are local Palauans. For the past 30 years, dental nurses have been the primary preventive oral health care providers in the Pacific and Palau. Dental nurses were trained in the 1970's and 80's and have the skills and ability to provide a broad range of basic clinical services, especially focusing on children. With limited resources in Palau, mid-level oral health professionals such as dental nurses command lower salaries and focus in prevention in communities and schools, which will have the greatest long-term effect on the population. Current dental assistants have been trained over the past 15 years in 3 separate Ministry of Health Training Programs. Assistants provide expanded services such as sealant placement, scaling and root planning and radiology services. Dental laboratory technicians have been trained both on and off-island and are skilled at a wide variety of services, including ceramics. However, some lab services are required to be provided off-island. Licensure for oral health care providers does not pose a barrier, as credential requirements are minimal and there are no board exam requirements.

Oral Health Encounter Reports

Site / Activity	# Encounters 2001	# Encounters 2002	# Encounters 2005
BNH	7,494	8,927	8,621
MCH	1,988	1,370	1,761
School / Outreach	3,794	4,920	6,438
PH Clinic (quonset) *	N/A	480	320
Total	13,266	15,697	17,140

Source: MOH Health Information System, Outreach Reports
Quonset clinic not-fully functional during said years

The Division of Oral Health is primarily supported with Palau National Government funds. A 5-year CDC cooperative agreement and MCHB grant account for about 25% of the division budget. Additionally, the Palau CHC grant has earmarked funding for primary care programs in oral health. It has become policy that all dental services provided in the context of an established preventive program are provided at no cost to all recipients. Clinical care at the hospital-based dental clinic is provided on a sliding fee schedule according to income for Palauans, while non-Palauans are required to pay full cost (US fees) because of legislative mandate. Dental insurance is not available or utilized in Palau.

The per capita income in Palau is approximately $3,500 and 85% of the population lives below the 200% poverty level. There is no free lunch program to determine family income, but as income levels are so low and caries rates high, the primary population of focus has become the entire child population.

Palau has a population to dentist ratio of 4,000:1, which has designated all of Palau a Dental Health Professional Shortage Area (HPSA) as determined by the Human Resources and Services Administration. A HPSA is defined as a population to dentist ratio of at least 5000:1 or greater than 4000:1 when the population needs are high. Palau is eligible for the NHSC scholar and loan repayment program because of this designation.

PROGRAM DEVELOPMENT

There is little written record of preventive oral health programs before 1988. However, interview with senior dental staff reveals that preventive programs in schools first started in the early 1970s. Dental health outreach, school classroom dental health education and fluoride mouth-rinsing were all components of the program. These programs were not evaluated for effectiveness and were often disrupted from lack of equipment, staff, supplies and transportation to schools. Guidelines for these programs were developed with the assistance of the Micronesian Dental Association and the Trust Territory Headquarters in Guam. With the purchase of modern portable dental equipment, a more formal school dental program that included sealant placement began was piloted in 1991 and fully implemented in the 1992-93 school year. The School Dental Program serves approximately 3000 students (grade 1-8) in all 18 elementary schools (16 public, 2 private) throughout Palau. Six of these schools are accessible by paved road, while the remaining twelve are accessible only by boat or 4wd vehicle with travel time of 1-4 hours. Annually, division employees establish mobile clinics to serve all students for a period of 2 days to 4 weeks per school. These clinics are established "on-site" at the school, at adjacent meeting houses, the four outer Community Health Centers or village dispensaries, depending on the situation. During this time, all students receive dental exams and students requiring sealants have them placed on permanent molars and premolars. Additionally, principals and teachers are encouraged to promote daily school brushing and fluoride supplement use in school, however compliance and quality assurance for this requires improvement, as interviews with students yield varying compliance. Restorative care became an additional component to the school program in the 1998-9 school year and all students at 16 public schools and 1 private school are provided on-site restorative care for permanent teeth with caries. If students are not compliant or require additional or more extensive care, their parents are informed of appointments arranged at the hospital or preventive clinic. Although there is no formal agreement with the Ministry of Education, school visits to provide dental services are officially on the school calendar each year.

The Ministry of Health has an informal agreement with the Head Start Agency to examine and provide dental services for the 509 students who attend. The division cannot complete required dental care, as the needs in this population are very high and oral health manpower is limited. A collaborative strategic plan has recently been developed at the 2002 Pacific EHS/HS Oral Health Forum to address this issue, primarily through increased and improved prevention. Implementation of much of these plans is planned to be accomplished through the collaborative Pacific Early Childhood Caries Prevention Project being funded through Administration for Children and Families (ACF). This project is formally in the planning phase. In response to high caries rates, the MCH ECC Prevention Program began in 1999 with the core component being the provision of preventive oral health services (counseling, early screening and fluoride varnish application) as a part of all regular MCH prenatal and postnatal care. A strong partnership with the MCH and Primary Care and developing policies for the above has fostered this program. An important component to the program involves improving the awareness of the public and collaborating with others to encourage healthy, responsible parenting and lifestyles. In 2002 ongoing Basic Screening Surveys (BSS) were started in the centralized MCH clinics for all children 18 months to 3 years of age. Additionally in 2002 a PRAMS-like survey ("Healthy Mothers, Healthy Babies" survey) with an oral health component was started for mothers of children who are 6 months of age. The Division of Primary Care, under the Bureau of Public Health, has a well established framework of a centralized MCH clinic, four community health centers and four dispensaries to improve access throughout Palau. Healthcare workers at these rural sites are being trained in preventive oral health (fluoride varnish application, counseling and screening) in anticipation of decentralization of the MCH clinics. It is envisioned that they may be cross-trained in other areas of oral health to improve access in rural areas. There are no long-term care or geriatric facilities, so primary care programs focus on outreach to the geriatric population.

BARRIERS AND GAPS IN INFRASTRUCTURE

Geography poses a significant barrier to oral health care for the 25% living in distant rural areas. The adult population in these areas has little access to dental care and all are required to travel on tortuous roads or waterways and stay overnight in Koror in order to receive any type of dental care. A new compact road project connecting many of the rural states is commencing and this will greatly improve access to dental care in Palau. It is anticipated that this road will be completed by 2006 and that the Division of Oral Health will continue to reach out to these underserved populations.

One unique cultural barrier in Palau is the broad acceptance of betel nut and tobacco use by employees within the Ministry of Health, the Division of Oral Health and within all sectors of the population, including leadership (see oral health status indicators section). As betel nut use is woven into the culture and society of Palau, the issue of advocating "non-use" is not culturally acceptable at this time. Although betel nut use can cause serious oral health problems, the Tobacco Control Program advocates for chewers to use betel nut without tobacco and does not strongly discourage betel nut use.

Public water system fluoridation for Palau is not feasible or appropriate at this time. The Koror-Airai water system (river source) which serves 75% of the population has a long history of unpredictable quality and this has fostered deep seeded public distrust of the system. The water system has improved greatly in the past couple of years, but the overwhelming majority of residents in Palau drink rainwater through catchments and tanks. Drought and water rationing in the past has also been a factor in water catchment use. There are 13 other non-potable water systems in Palau, all serving less than 500 people each. Over 15 different brands of imported bottled water are available at 2-3 times the cost of that in the US. One of the imported bottled water (.5L) contains fluoride at .7ppm. There are also three local water bottlers on the island who price their bottled water at approximately twice that of the U.S.. Fluoridation of one of these companies's water is being pursued at this time, so consumers may have a choice. Fluoride supplement use is promoted for all children starting at age 6 mos. of age, but is not being advocated as a broad public health measure because of low compliance for such programs. It is policy that all parents with children presenting to the centralized MCH clinics are offered fluoride supplements at no cost, as compliance with new mothers is purportedly better. A fluoride varnish program serves all children age 1-3 years and students attending Head Start programs. Fluoridated toothpaste is distributed for daily use and brushing in elementary schools. Fluoridated milk and salt use have been investigated by WHO and locally as possible population-based interventions for Palau. However, it is not in the Palauan culture to drink milk, while multiple sources/brands of salt makes these types of fluoridation impractical. Additionally, Asian influence has brought soy sauce as a salt substitute in food preparation and seasoning.

Palau lacks many of the traditional oral health stakeholders who could be potential partners in program planning, support and implementation. Palau lacks SCHIP, dental insurance, Medicaid, dental or hygiene schools, large corporations, philanthropic organizations, universities, research departments, advocacy groups, foundations or health organizations. Lack of 501C3 designation by the Palau Health Ministry makes it ineligible for funding through many US grant foundations.

Lack of technical expertise within the Ministry of Health makes it is very difficult to query the networked Health Information System (HIS) for needed data on health/dental encounters. Currently, the system can only report number count summaries for encounters by provider and site. Encounter reports cannot be generated to show breakdown by demographics or by the service code. Although the system is new, it is planned to adopt a more user friendly system that can be better managed with the limited local expertise in computer technology. With this in mind, log books and "stand alone" databases are being created within the division in the short term to track program data until such a time that a oral health information system and a new overall HIS can be developed and accurately and reliably queried for information.

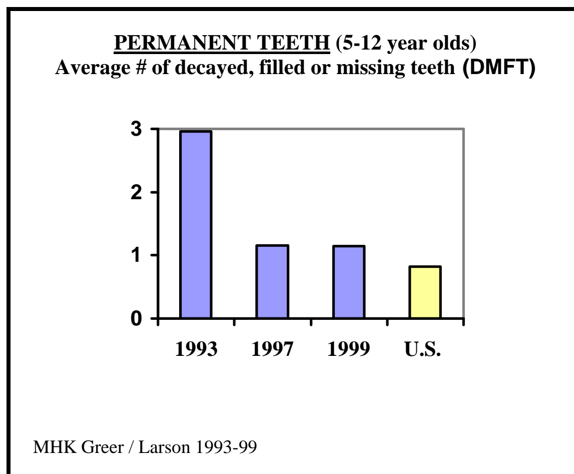
The oral health workforce in Palau is limited to division employees and there are no other trained oral health professionals available for hire. Lack of providers limits provision of more oral health care services at community health centers or within primary care programs for the community. All remaining dental nurses in Palau are schedule to retire within the next 5-8 years, leaving a large gap in oral health program capacity. Workforce analysis shows that at least an additional 6 dental nurses are required to manage programs over the next 5-10 years. The Pacific Basin Dental Association is currently doing a regional human resource needs assessment for oral health and working closely with the Pacific Islands Health Officers Association to address the issue. It is hoped that a regional training center may be developed to

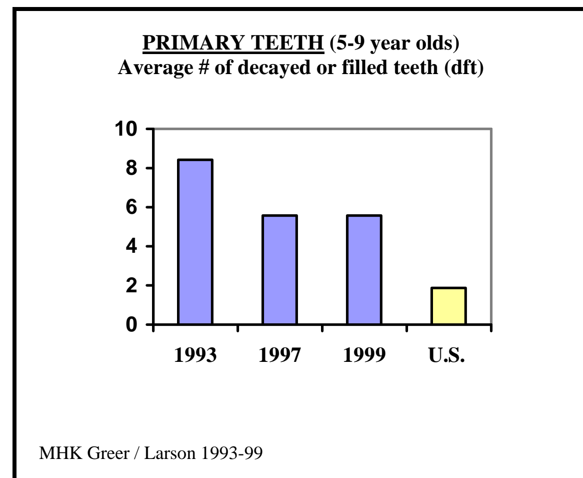
address workforce issues for the Pacific and Palau. Additionally, Palau has limited trained and competent human resources for overall organized health promotion, education, marketing, communication grant writing, epidemiology and evaluation..

ORAL HEALTH STATUS INDICATORS

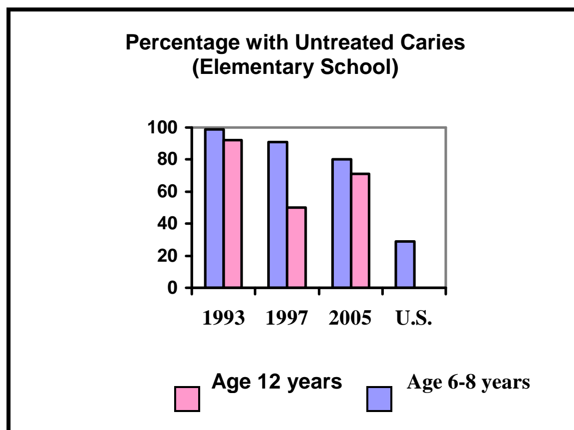
Dental Caries

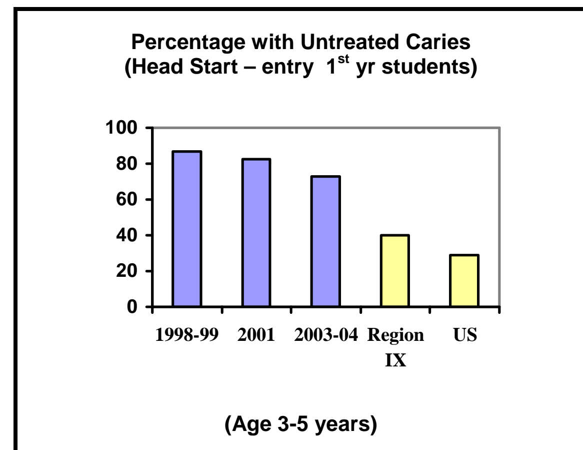
Comprehensive dental surveys were completed for all middle schools (grade 1-8) in collaboration with the Hawaii Department of Health, Dental Health Division, in 1993-99. During this time, the decay rates in teeth of children were reduced dramatically, because of increased preventive activity and the School Dental Program. The average number of decayed, missing or filled permanent teeth (DMFT) for children age 5-12 years in 1993 was 2.9 and then dropped to 1.15 by 1999. In spite of these reductions, the decay rates in permanent teeth are still 30% higher than US counterparts (NHANES III). The decay rate for primary teeth (dft) is exceedingly high. The average number of decayed or filled primary teeth for children age 5-9 was 8.4 in 1993 and by 1999 it was 5.5. This is still triple that of the U.S. counterparts (NHANES III).



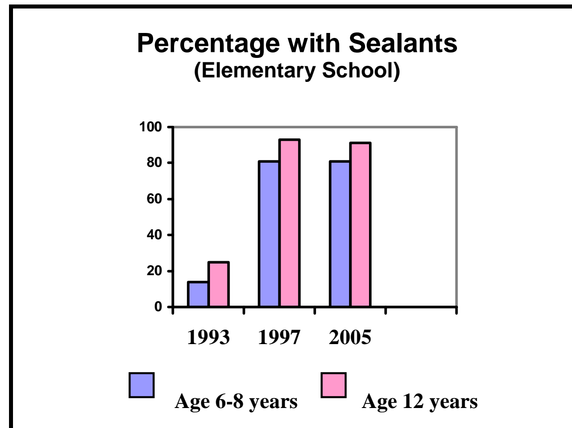


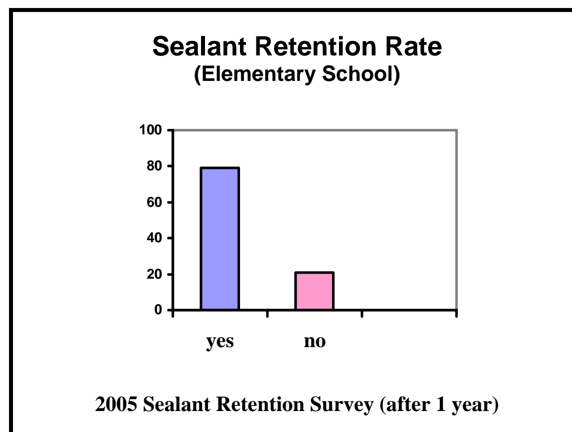
The percentage of children with untreated caries is very high, as compared to the U.S. average. In 1993 the percentage of 6-8 year old children with untreated caries was 99% and this has been reduced to 79%, which is still almost triple that of U.S. counterparts (NHANES). A Head Start Survey in 1998-99 showed that 86.7% of 1st year students (age 3-5 years) have untreated dental caries. Findings from these helped justify the development of the current ECC Prevention Program. Approximately 70% of Palau children in this age group attend Head Start. Additional surveys done with Head Start show decay rates at 74% in 2003, nearly triple that of U.S. Head Start students.





With the development of the Palau School Dental Program, the percentage of children with dental sealants has risen dramatically meeting the HP2010 objectives. As pit and fissure decay accounts for approximately 80-90% of childhood caries, sealant placement in these sites has been proven to be an effective public health intervention. In 1993, the percentage of 8 year old children with sealants was 14% and this rate has risen to 81% by 1999. Approximately 91% of 12 year old children in 1999 had dental sealants. This increase in sealants accounts for the decrease in caries rates in the permanent teeth of children. Sealant retention surveys have indicated that quality of sealant placement is adequate.

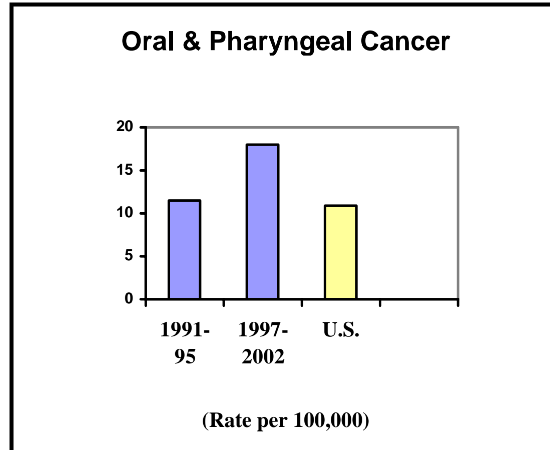




In 2003, the Division of Oral Health provided oral exams for all private high schools and freshmen students in the large public high school. These exams show that 53% of these students (ages 15-18 years) have untreated caries.

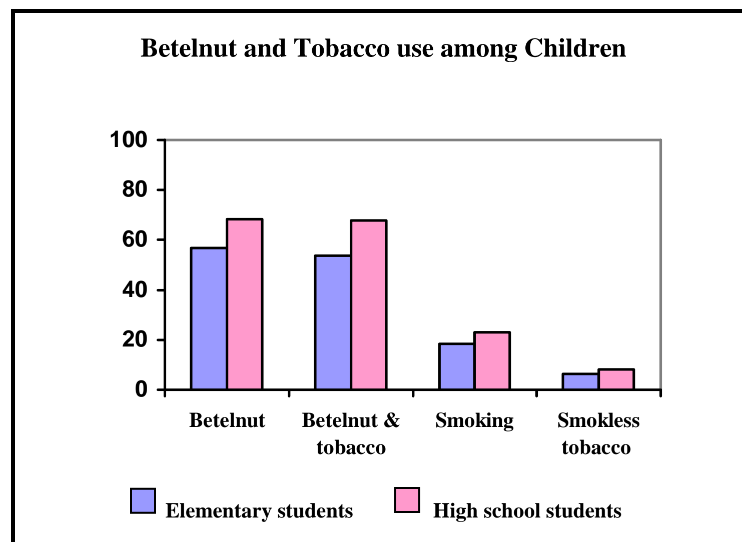
Oral and Pharyngeal Cancer:

As documented by the Palau Cancer Registry, the oral cancer incidence rate per 100,000 from 1991-1995 was 11.5. In 1997-2002, this figure rose to 18.0. This rate is nearly double the rate in the U.S., which is 10.9 per 100,000. These figures may be under-estimates, as the Oral Health Division is aware of a number of oral and pharyngeal cancer cases that have not shown on registry reports. Cases are only registered if there is a formal oral cancer diagnosis in the islands of Palau. Those suspected cases referred off-island for treatment and later formally diagnosed with oral or pharyngeal cancer off-island are not always captured in the registry.

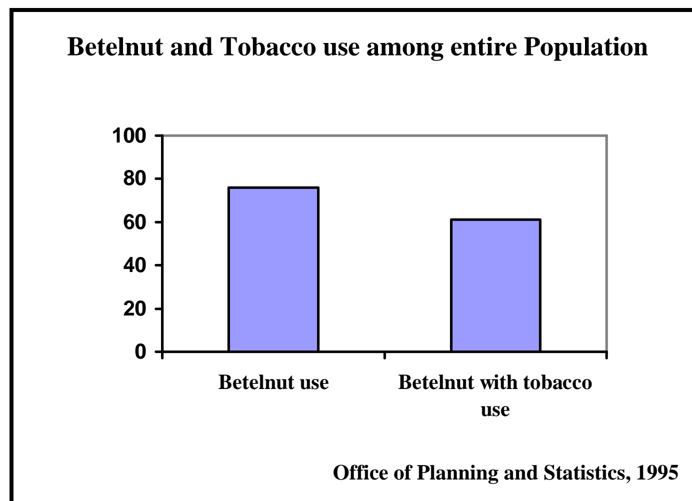


Betel Nut and Tobacco Use

Betel nut chewing is common in Palau and is very much a part of the culture. This practice is addictive and is very common throughout the Pacific and South East Asia. Chewing involves the mastication of the areca nut (small palm nut) combined with powdered lime, pepper leaf and other ingredients such as ginger, spice or tobacco. In Palau, most betel nut chewers add cigarette to their betel nut quid. The 2001 Youth Tobacco Survey indicates that 68% of high school students chew betel nut with tobacco products on a daily basis and that 54% of middle school students chew betel nut with tobacco on a daily basis. Approximately 76% of all residents chew betel nut and 80% of these chew with tobacco (1995, Office of Planning and Statistics). Surprisingly, 74% of Ministry of Health and 79% of Division of Oral Heath employees chew betel nut and tobacco (2001 MOH Tobacco Survey). Chewing betel nut (without tobacco added) has been independently shown to contain a carcinogen (arecoline) and be a risk factor for oral submucous fibrosis (pre-malignant condition), oral cancer and severe attrition of the teeth.



Betelnut and tobacco chewing is also very popular with adult Palauans. According to surveys done by the Office of Planning and Statistics (1995), 76% of the entire population chews betelnut and 80% of these chewers add cigarette to the betelnut quid.



Periodontal Disease

As the vast majority of the population uses tobacco products (smoked or chewed with betel nut), the entire population in Palau is considered to be at very high risk for development of periodontal disease. Exams focusing on 10% of the diabetic population in 2002-3 show that 92% examined were afflicted with moderate or severe periodontal disease (pockets of >5mm). In 1999, the Palau Diabetes Registry indicates that 5% of persons on the diabetes registry received a dental exam within the past year. Recent collaboration with the Palau Diabetes Collaborative has increased the number to 19%.

Maternal Practices & Behaviors

Maternal parenting practices and behaviors are currently being monitored through a PRAMS-like survey (Healthy Mothers, Healthy Babies Survey) in the centralized MCH clinic. New mothers of children 6 months of age are given this survey. Preliminary analysis reveals that 59% of new mothers claimed to have received an oral exam during pregnancy as a result of prenatal care, while 68% received an oral exam during pregnancy overall. This shows good access to oral health care for the pregnant women population in Palau. However, other practices still require significant improvement. Tobacco use is very high among the pregnant women population, as 71% of mothers claimed to have used tobacco (smoked or chewed with betelnut) during their most recent pregnancy. Baby bottle use and misuse is also very common - 39% of mothers claim to give their child a baby bottle with formula to pacify them or to put them to sleep. 30% of mothers claim to brush/clean their child's gums and teeth only once per week or less frequently. It is the culture in Palau that birth parents do not necessarily have to raise their own children. Approximately 50% of children age 6 months of age are being cared for by someone other than the birth parents (ie. other relatives, domestic helpers).

Palau Oral Health Action Plan

GOAL 1: Develop capacity to implement evidence-based primary prevention programs in oral health

OBJECTIVE 1: Develop a comprehensive and integrated ECC Prevention Program

Strategy:

A. Improve the oral health awareness and oral health of pregnant women and new mothers through direct services.
1. **Provide oral health counseling and preventive services for mothers as an integrated part of prenatal and Well Child care (prenatal, 0-3 years Well Child and immunization visits)**
2. **Provide oral exams and dental services for all pregnant women as a part prenatal care.**
3. **Improve QA and evaluation for activities.**

B. Improve oral health preventive services at targeting young children (age 0-5 years)
1. **Provide early periodic oral exams and appropriate referral for all children as a part of Well Child care (concurrent with immunization)**
2. **Provide fluoride supplements and varnish applications for all children as a part of Well Child care (concurrent with immunization)**
3. **Expand preventive oral health care services serving Head Start and families (Pacific Islands ECC Prevention Project)**
4. **Improve QA and evaluation for activities.**

OUTCOME:

- ***100% of pregnant women and children age 0-3 years receive preventive oral health services.***

OBJECTIVE 2: Develop infrastructure and capacity to develop and implement health education and promotion activities.

Strategy:

A. To have available health education and promotion materials for use with programs and the public.
1. **Develop culturally appropriate posters, news articles, brochures, fact sheets, presentations, flip charts etc. for a broad range of oral health issues.**
2. **Develop promotional give-away items to utilize as incentives and to increase oral health awareness**

B. Partner with providers, organizations and programs to implement oral health education and promotion activities within the Ministry and community.

C. Improve modeling and policies for MOH and dental employees to promote good oral health and professionalism (no tobacco/betel chewing, healthy diet/snacking, uniforms etc.)

D. Improve social marketing in the community

OUTCOME:

- *Culturally appropriate educational and promotional materials available in Palauan language*
- *Strong partnerships developed*
- *Improved policies within MOH and the Division of Oral Health to promote health*
- *Social marketing plan developed and implemented*

OBJECTIVE 3 : Develop a School Sealant and Dental Health Program

Strategy:

A. Provide annual oral exams for all Head Start, preschool and elementary school students

B. Provide restorative care for all Head Start, preschool, elementary and high school students and/or arrange for referral.

E. Provide sealants on the teeth of all elementary school students who require them

F. Promote and support daily preventive activities and oral health promotion policies in school (healthy diet, school brushing etc.)

OUTCOMES:

- *100% of students receive oral exams every year*
- *100% of students requiring sealants, receive them*
- *20% improvement in restorative treatment coverage for all students.*
- *100% of students participate in supervised tooth brushing at school*
- *Strong policies that are followed in school (no chewing on campus and healthful diet).*

OBJECTIVE 4: Coordinate the fluoridation of local water supplies

Strategy:

A. Promote the fluoridation of locally bottled water

B. Determine the feasibility of fluoridation of the K-A public water system.

OUTCOMES:

- *Commercially available bottled fluoridated water*
- *Fluoridated Public water system (if feasible)*

Goal 2: Develop an oral health surveillance system to include HP2010, U.S. National and local oral health indicators

OBJECTIVE 1: Improve capacity to collect and manage data related to oral health

A. Develop oral health HIS for programs within the division to track oral health indicators by site (26 schools, head start, home visits, CHC's, preventive clinic) (link to overall HIS)

- **Decay experience**
- **Untreated decay**
- **Sealant Prevalence**

- **Urgency Need**
- **ECC Prevalence**
- **Fluoride varnish application**
- **Fluoride supplement use**
- **Oral Exams**
- **Oral health counseling**
- **Restorative care**

B. Improve hospital dental encounter form and overall HIS so that oral health service indicators may be tracked at select hospital Sites (dental clinic, wards, ER)

- **Urgent / Walk-in care**
- **Routine care**
- **Preventive care**

G. Develop knowledge, practices and beliefs databases relating to oral health

H. Utilize other available databases relating to oral health

- **Diabetes Collaborative Database (oral exams for diabetics)**
- **Palau Youth Tobacco Survey / Tobacco Control Program (tobacco/betel nut prevalence)**
- **Primary Care Encounter database –CHC's and MCH (oral health counseling, varnish application, exams)**
- **Healthy Mothers, Healthy Baby's Survey (9 oral health related questions)**
- **Cancer Registry (oral and pharyngeal cancer)**
- **DMFT database (1993-99)**
- **Chart audit (access/utilization/edentulism/periodontal disease)**

OUTCOMES:

- ***Fully operational surveillance system, tracking the above indicators***

Goal 3: Improve programs, share and leverage resources through a coalition of collaborators, partners, stakeholders and the community.

OBJECTIVE 1: Leverage resources and support through outside sources

Strategy:

A. Maintain support from US Federal and other outside resources and organizations

- **CDC cooperative agreement**
- **MCHB Oral Health Grant**
- **CHC Oral Health Expansion**
- **MCH Block grant funding for programs in oral health**
- **PBDA / Pacific Islands ECC Prevention Program**
- **PACT**
- **PIPCA**
- **PIHOA**
- **WHO / SPC / Ausaid /HRSA / UW / UK / UO / OHA**
- **Specialist Network**

OBJECTIVE 2: Improve capacity of through partnerships and membership to special groups

Strategy:

A. Improve programs, surveillance, policies and access by having the division be represented in the following:

Program / Partnership	Focus area of improvement
Tobacco Control program	• *Education/promotion in schools & community* • *Surveillance of betel nut and tobacco use*
Cancer Task Force	• *Cancer prevention education in clinics and the community* • *Surveillance of oral and pharyngeal cancer* • *Early detection and screening protocol*
Division of Environmental Health	• *Collaboration with collection of survey data*
Early Childhood Comprehensive System Planning Committee	• *Oral health education for parents, families and in early childhood,* • *MCH and preschool policy*
Interagency Committee	• *Improving access to oral healthcare for disabled*
MCH program	• *MCH policy development for oral health* • *Oral and MCH health education and promotion Integration into MCH program*
Health Planning Committee	• *Policies* • *Planning and minimizing duplication*
Diabetes Collaborative	• *Oral screening and referral program*
Family Health Planning Committee	• *Program integration* • *Policy Development in Family Health*
CHC Program	• *Improving access to oral health care* • *Oral health care in community health centers*
Primary Care Programs (Geriatric, Home Health, Health Promotion, Outreach, NCD, HIV	• *Improving integration of oral health* • *Improving access to oral health care*
Head Start Program	• *Improving health policies for young children* • *Pacific ECC Prevention Project* • *Preventive, screening and treatment program*
Ministry of Education	• *Integrating dental program into school calendar* • *Improving policies relating to oral health* • *Improving oral health education in school and curriculum)*
Division of Behavioral Health	• *Referral services for behavioral health clients* • *Early Detection of Abuse and Neglect (PANDA program)*
MOH leadership team	• *Policies* • *Planning and minimizing duplication*

Goal 4: Improve access to dental care in all communities and for all residents of Palau

Objective 1: Improve access to dental care in all states

A. Ensure inclusion of a dental clinic in the planned Central Community Health Center in Koror.
   1. **Become a part of planning group for the new CHC**

B. Expand direct oral health care services for all Community Health Centers and states for all age groups
   1. **Develop regular rotations and clinics at CHCs to provide services**
   2. **Integrate into CHC Primary Care Programs for surrounding communities**

C. Establish oral health components to primary care medical and outreach programs

   1. **Include oral health component to HIV, Geriatrics, Home-bound care, NCD programs, perinatal programs, CSHCN etc.**

   2 **Through training, enable primary care workers to provide basic oral health diagnosis and preventive oral health services while participating in access programs & at CHCs**

   3. **Develop a referral system for primary care programs**

   4. **Expand direct participation in primary care access programs when human resources permit.**

Goal 5: Develop human resources for oral health to meet the needs of the population

Strategy:

OBJECTIVE 1: Increase key human resources in oral health

A. Do human resource needs assessment in Palau and participate in Pacific HRD needs assessment done by PBDA.
B. Develop HRD and workforce plan with priority area being training of mid to low-level oral health professionals who can work in prevention and in the community.
C. Be involved in making HRD recommendations for Pacific to PIHOA, HRSA and other potential stakeholders.
D. Development of regional or local oral health training center (dental assistants, dental nurses) or identification of alternative training for new community oral health providers

OBJECTIVE 2: Enhance professional development in oral health

A. Develop a continuing and advanced education program for division employees (lab, dentists, assistants, dental nurses).
B. Identify and secure advanced training for local dentists (Fiji graduates).
C. Ensure primary care workers who encounter "at risk" populations are trained on issues relating to oral health

OBJECTIVE 3: Build linkages with dental specialists to provide care in Palau.

A. Establish e-mail consultation network with dental specialists
B. Establish volunteer specialist program (to provide limited care and for staff training in specialty areas.

Goal 6: Continue providing affordable, quality, comprehensive outpatient dental services at BNH

Strategy

OBJECTIVE 1: Ensure adequate staffing and equitable positions at BNH dental clinic

- **A. Ensure adequate dental lab staffing to provide comprehensive dental laboratory services, including porcelain work**
- **B. Ensure adequate provider staffing (dentist/dental nurse/ assistants) to meet patient and division requirements.**
- **C. Ensure adequate administrative staffing (reception, data management, administrator)**
- **D. Review, update and reclassify division positions as a part of MAP.**

OBJECTIVE 2: Implement quality assurance measures

- **A. Ensure safe infection control**
- **B. Ensure proper dental radiology activity**
- **E. Ensure proper procedural protocol and documentation**

OBJECTIVE 3: Ensure adequate physical infrastructure

- **A. Improve BNH & Preventive Clinic treatment room infrastructure (renovate or replace dental chairs)**
- **B. Increase number of intra-oral x-ray machines @ BNH, including one panorex**
- **C. Renovate Preventive Dental Clinic (flooring, walls, shelving, sterilization)**
- **D. Replace worn and broken dental outreach equipment**
- **E. Obtain a compressor designated for BNH Dental clinic**
- **D. Improve centralized air conditioning at BNH Dental clinic**
- **E. Obtain porcelain oven and burnout furnace & porcelain room**
- **F. Establish dental resource (AV) room and staff lounge w/ lockers**

OBJECTIVE 4: Ensure adequate supplies

- **A. Maintain budget request of HTF allocation, but with earmarked line-item for division.**
- **B. Continue soliciting supplies donations from outside organizations and individuals**
- **C. Leverage supplies resources through Federal dollars, where appropriate.**