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In reply, please refer to:
File:

September 25, 2015

Dear Colleague:

We are pleased to provide you with a copy of the Hawaii Oral Health: Key Findings. The report highlights eight primary findings based on a review of the available oral health data that describes the oral health status of residents and the ability to access care. This publication is a summary of a larger report available on the Department of Health website publication page.

We hope the information in this report will serve as a basis for discussion and support actions to create greater organizational and system effectiveness to improve oral health outcomes. The publication also includes several recommendations for consideration to assist in these discussions.

The majority of the findings are based on self-reported survey data and not supported by clinical data. The department will be publishing results from a third oral health screening survey later this year which will help address this gap.

The department looks forward to working in collaboration with our many partners (including the families we serve) to improve the oral health of Hawaii's residents.

Sincerely,

Danette Wong Tomiyasu

DANETTE WONG TOMIYASU, M.B.A.
Deputy Director, Health Resources Administration

Enclosure

AUGUST 2015

Hawaii Oral Health:
Key Findings

This report presents key findings and recommendations from the most recent data about oral health and access to dental care.

FAMILY HEALTH SERVICES DIVISION | HAWAII STATE DEPARTMENT OF HEALTH | STATE OF HAWAII

EXECUTIVE SUMMARY

Oral health is critical to our general health and well-being. Good oral health enables us to eat properly, work productively, go to school ready to focus on learning, feel good about our appearance and enjoy life. The mouth is the gateway to the rest of the body, providing clues about overall health. It is sometimes the first place where signs and symptoms of other serious diseases such as diabetes are noticed. Unfortunately, oral health care is too often viewed as an "extra" service, and people and insurance coverage typically focus on other health care issues or problems first.

Unlike other states, Hawaii does not have an ongoing and routine system for assessing the oral health of its residents and does not have a dental public health program within the State Department of Health. Because of this, Hawaii received a failing grade of "F" in three recent oral health report cards published by The Pew Center on the States, a division of The Pew Charitable Trusts.

As the first step toward building better oral health for Hawaii's residents, the State Department of Health reviewed all current sources of oral health data to describe the oral health of its residents and their access to dental care. Eight key findings were identified (sidebar). The majority of the findings are based on self-reported survey data and are not substantiated by clinical data. To obtain better data, Hawaii must develop and implement an oral health surveillance system that provides high-quality and specific data for public health action and program evaluation.

Key Findings

1. When asked in surveys, most residents of Hawaii report they have adequate access to dental treatment and good oral health. No clinical data are available to support this self-reported information.
2. There appear to be substantial dental health disparities in Hawaii, with low-income residents more likely to have dental problems and less likely to see a dentist each year.
3. Hawaii children enrolled in the publicly funded Medicaid program, QUEST, see dentists more often than national estimates. However, Hawaii children receive more dental treatment services rather than preventive care compared to national estimates.
4. Most pregnant women in Hawaii do not see a dentist even though national health and dental groups assure that dental visits are safe and recommended to help prevent dental problems in the women and their developing babies.
5. Many Hawaii residents are seeking care at hospital emergency departments for dental problems, although dental services are generally not available there.
6. All neighbor island counties have fewer dentists per population compared to Honolulu County.
7. Although fewer children and adults enrolled in the publicly funded Medicaid program are being transported by air for dental services, nearly 2,300 still required transport in 2013.
8. Most public water systems in Hawaii are not fluoridated so residents have to rely on sources of fluoride other than drinking water to prevent tooth decay.

This report is a summary of a much larger report available on the Department of Health website. The findings are intended to inform planning and policy discussions to improve the oral health of Hawaii residents. Several potential strategies addressing the key findings are offered for consideration.

Rebuilding the state's dental public health infrastructure will enable the health department to partner with public and private entities to pursue the strategies. The strategies are:

1. Develop and implement an oral health surveillance plan to improve data collection, analysis and the use of data for program planning, evaluation and policies.
2. Develop effective, evidence-based community and school-based dental disease prevention programs for all age groups, particularly those who are experiencing oral health disparities.
3. Continue to support and expand affordable and accessible preventive dental care services to Hawaii's low-income population.
4. Expand Medicaid dental services for adults beyond the current coverage for "emergencies only" to include preventive and treatment services.

5. Consider increasing reimbursements to dental providers for key preventive or restorative procedures to increase participation in Medicaid.
6. Develop strategies to reduce barriers to finding and receiving preventive dental care services for children enrolled in the Medicaid program.
7. Use or adapt existing educational programs for pregnant women and for health and dental professionals regarding the safety and importance of dental care and preventive counseling during pregnancy and in the neonatal period.
8. Explore innovative, evidenced-based strategies to expand access to underserved, high-risk populations, including tele-dentistry.

The causes of poor oral health are complex. Reducing oral disease requires a multifaceted approach that addresses the factors that contribute to poor oral health. We hope that by recognizing and understanding the oral health needs of Hawaii's residents, we will be able to contribute to policies that will ensure all residents receive the oral health care they need.

An important statewide strategy is to support statewide public health data surveillance, planning, and prevention to achieve optimal oral health for all Hawaii residents.

QUICK FACTS

Children

- In 2011/2012, 73% of parents in Hawaii report that the health of their children's teeth is excellent or very good, and 80% report no oral health problems for their children in the past 6 months.
- Overall, based on parental report, most children 1-17 years of age in Hawaii (84%) had seen a dentist in the past year in 2011/2012. However, the percent of middle (78%) and high school (77%) students in public schools that reported having a dental visit in the past year in 2013 is lower.
- About 29% of low-income children 1-17 years of age in Hawaii had a dental problem in the past 6 months compared to only 13% of higher income children in 2011/2012.
- About 59% of the 1-18 year old children enrolled in Hawaii's Medicaid/QUEST program saw a dentist in 2013, which is above the rate for 1-18 year old Medicaid children in the United States (50%).
- About 35% of the 1-18 year old children enrolled in Hawaii's Medicaid/QUEST program received dental treatment services in 2013, which is above the rate for 1-18 year old Medicaid children in the United States (24%).

Pregnant Women

- Only 41% of pregnant women in Hawaii reported seeing a dentist during their pregnancy in 2009-2011.
- Residents of Hawaii County, young women (20-29 years), women with less than a high school education, low-income women, and women on Medicaid/QUEST health insurance are particular groups among the lowest estimates of seeing a dentist during pregnancy in 2009-2011.

Adults

- 70% of adults (> 18 years) in Hawaii reported seeing a dentist in the past year, similar to the average for adults in the rest of the United States (67%) in 2012.
- 51% of low-income adults lost teeth from dental disease compared to only 32% of higher income adults in 2012.
- While 82% of high-income adults see the dentist each year, only 52% of low-income adults reported seeing a dentist in the past year in 2012.

All Ages

- In 2012 in Hawaii, there were more than 3,000 emergency room visits due to preventable dental problems. This is a 67% increase from 2006, much higher than the 22% increase seen in the rest of the United States from 2006-2009.
- In 2013, there were 1,283 persons per dentist in Hawaii with much higher ratios among neighbor island counties.
- Over the past five years, there has been a substantial decline in the number of clients transported from neighbor islands to Honolulu for dental services from 3,633 clients in Fiscal Year (FY) 2009 to 2,266 clients in FY 2013.
- Only 11% of Hawaii's residents who get their water from public water systems have fluoridated drinking water compared to 75% for the United States as a whole in 2012.

INTRODUCTION

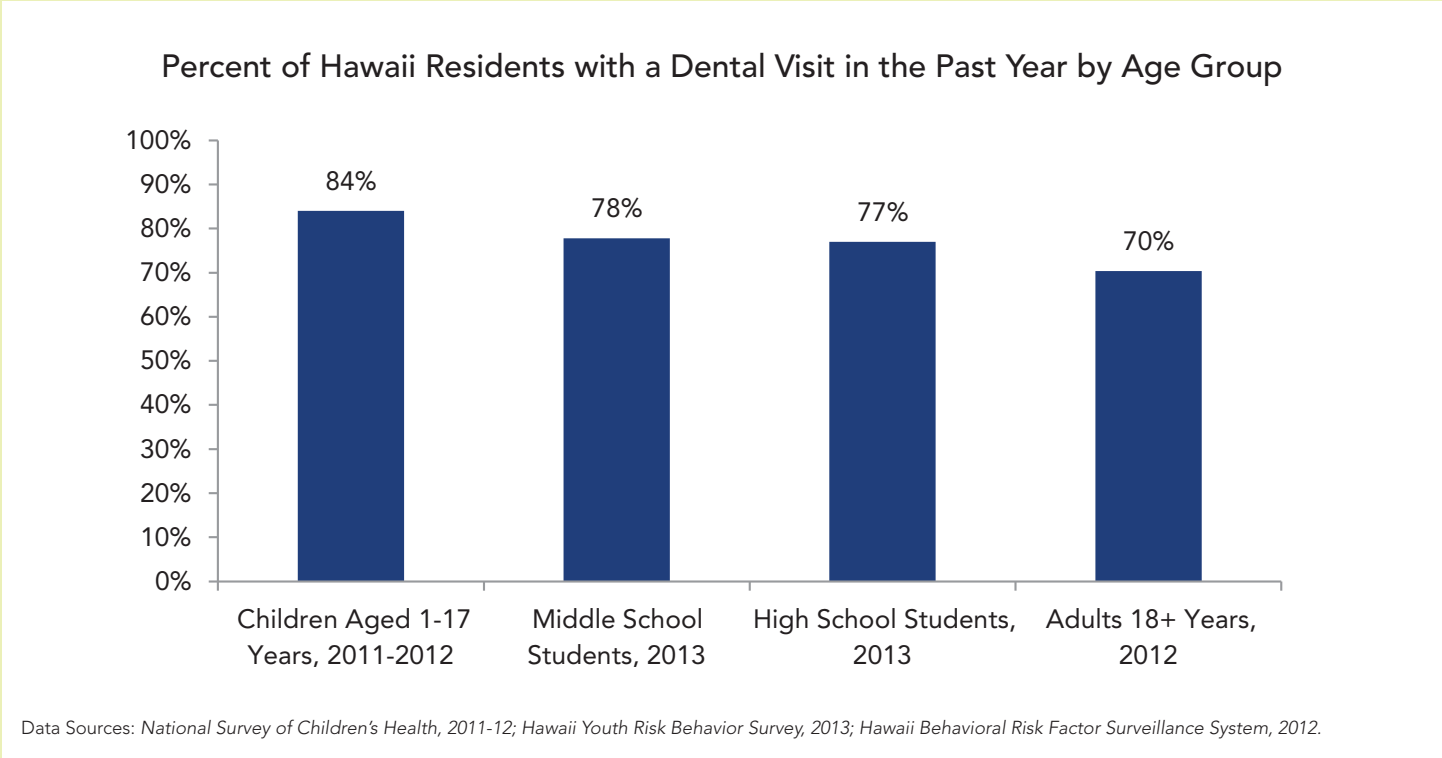
The public health implications of poor oral health are vast. Poor oral health impacts a person's ability to eat, speak, work, communicate, and learn. Although many oral diseases and conditions are preventable, virtually all adults – and many children – have experienced some oral disease. In the United States, the two most common oral diseases are dental caries (tooth decay) and periodontal (gum) disease. Although less common, mouth and throat cancers, cleft lip and cleft palate, malocclusion, oral-facial pain, oral injuries and other oral health problems can severely affect general health and quality of life. Serious oral health inequalities exist by race, age, geography, and income with most of the oral disease occurring among the low-income population. According to the Centers for Medicare & Medicaid Services, Medicaid spending for dental services in the U.S. in 2011 was $108.4 billion.[1]

The Centers for Disease Control and Prevention (CDC) recommends that health problems be closely monitored at the state level if they affect many people, require large expenditures of resources, are largely preventable, and are of public health importance. Based on these criteria, oral disease and its impact on Hawaii's population should be regularly monitored, and the data should be used to develop strategies for improving the oral health of Hawaii residents. Unfortunately, Hawaii's State Division of Oral Health was eliminated in 2009 and the state has not had the expertise nor resources to monitor oral disease within the state's population.

Because of this situation, Hawaii received a failing grade of "F" in three recent oral health report cards published by The Pew Center on the States, a division of The Pew Charitable Trusts. The Pew Charitable Trusts is a non-profit group that develops policy solutions to critical issues through collaboration of policy makers and researchers. The Pew Children's Dental Campaign is a national effort to increase dental care access among children. A part of this program is the development of dental report cards for each state including the 2010 "Cost of Delay Report", the 2011 "State of Children's Dental Health: Making Coverage Matter" report and the 2013 "Falling Short: Dental Sealants" report.[2,3,4]

To help rebuild the state's dental public health infrastructure, the State of Hawaii recently received a five-year CDC grant. As a first step in this process, the Hawaii State Department of Health reviewed all available data regarding oral health in Hawaii and generated eight key findings that describe the current oral health of Hawaii's residents.

KEY FINDING #1: WHEN ASKED IN SURVEYS, MOST RESIDENTS OF HAWAII REPORT THEY HAVE ADEQUATE ACCESS TO DENTAL TREATMENT AND GOOD ORAL HEALTH. NO CLINICAL DATA ARE AVAILABLE TO SUPPORT THIS SELF-REPORTED INFORMATION.

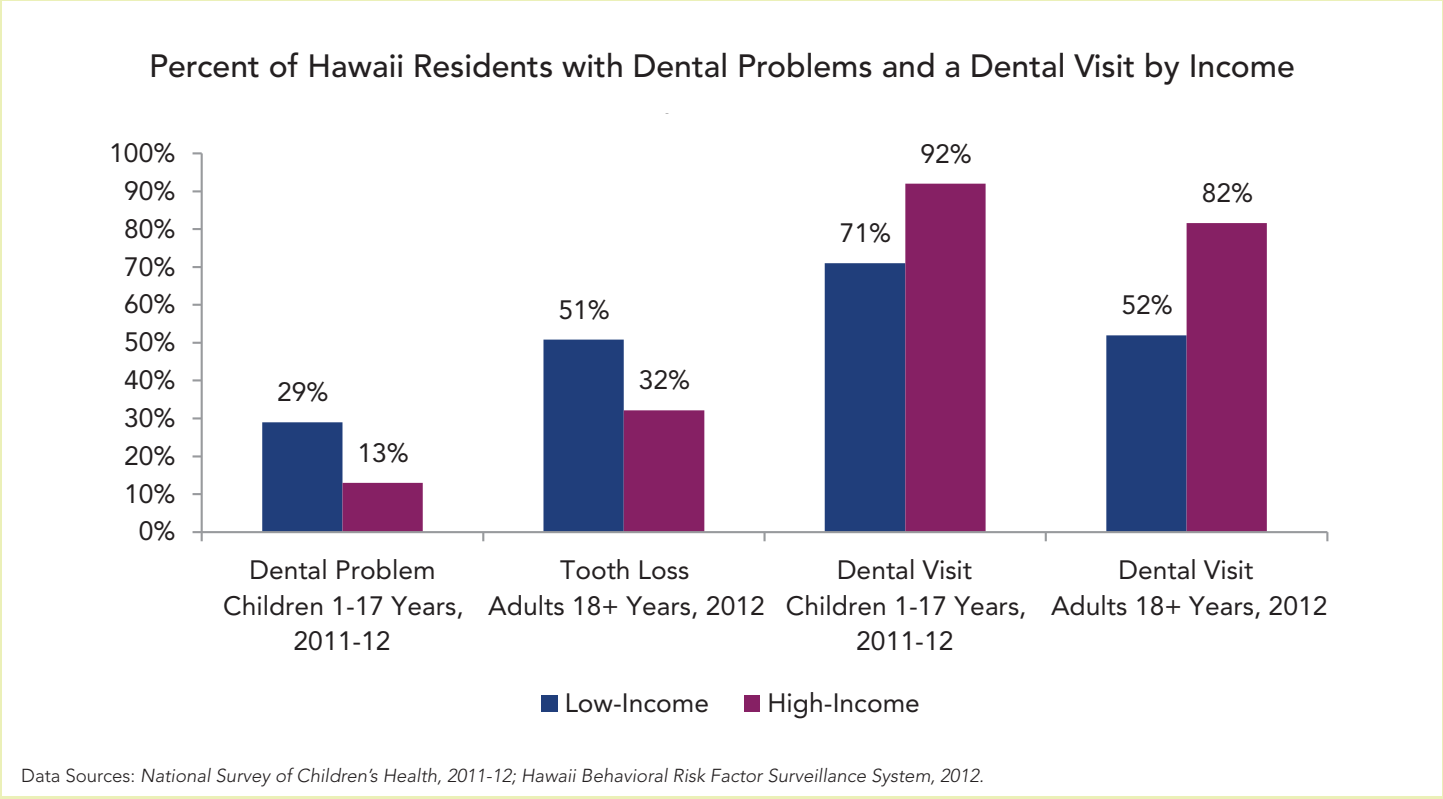


Data Sources: *National Survey of Children's Health, 2011-12; Hawaii Youth Risk Behavior Survey, 2013; Hawaii Behavioral Risk Factor Surveillance System, 2012.*

When asked to describe their child's overall health, most parents in Hawaii (86%) report that their child's health is excellent or very good.[5] When asked to describe the health of their child's teeth, 73% of parents reported excellent or very good oral health and 80% reported that their child had no oral health problems in the past 6 months.[5] About 84% of children aged 1-17 years in Hawaii have seen a dentist in the past year, slightly lower than the percent who saw a medical professional in the past year (89%).[5] The percent of public middle and high school students that report a dental visit in the last year is lower, 78% and 77% respectively.[6] For adults, 70% reported a dental visit in the past year compared to the median for the United States (67%).[7,8]

Just as access to medical care results in better general health, access to dental care results in improved oral health. Regular dental visits allow for the provision of preventive services and the detection of oral disease at an early stage. Although this report presents some self-reported information on the oral health of Hawaii's residents, we do not have a comprehensive system for tracking the actual oral health of the population.

KEY FINDING #2: THERE APPEAR TO BE SUBSTANTIAL DENTAL HEALTH DISPARITIES IN HAWAII, WITH LOW-INCOME RESIDENTS MORE LIKELY TO HAVE DENTAL PROBLEMS AND LESS LIKELY TO SEE A DENTIST EACH YEAR.

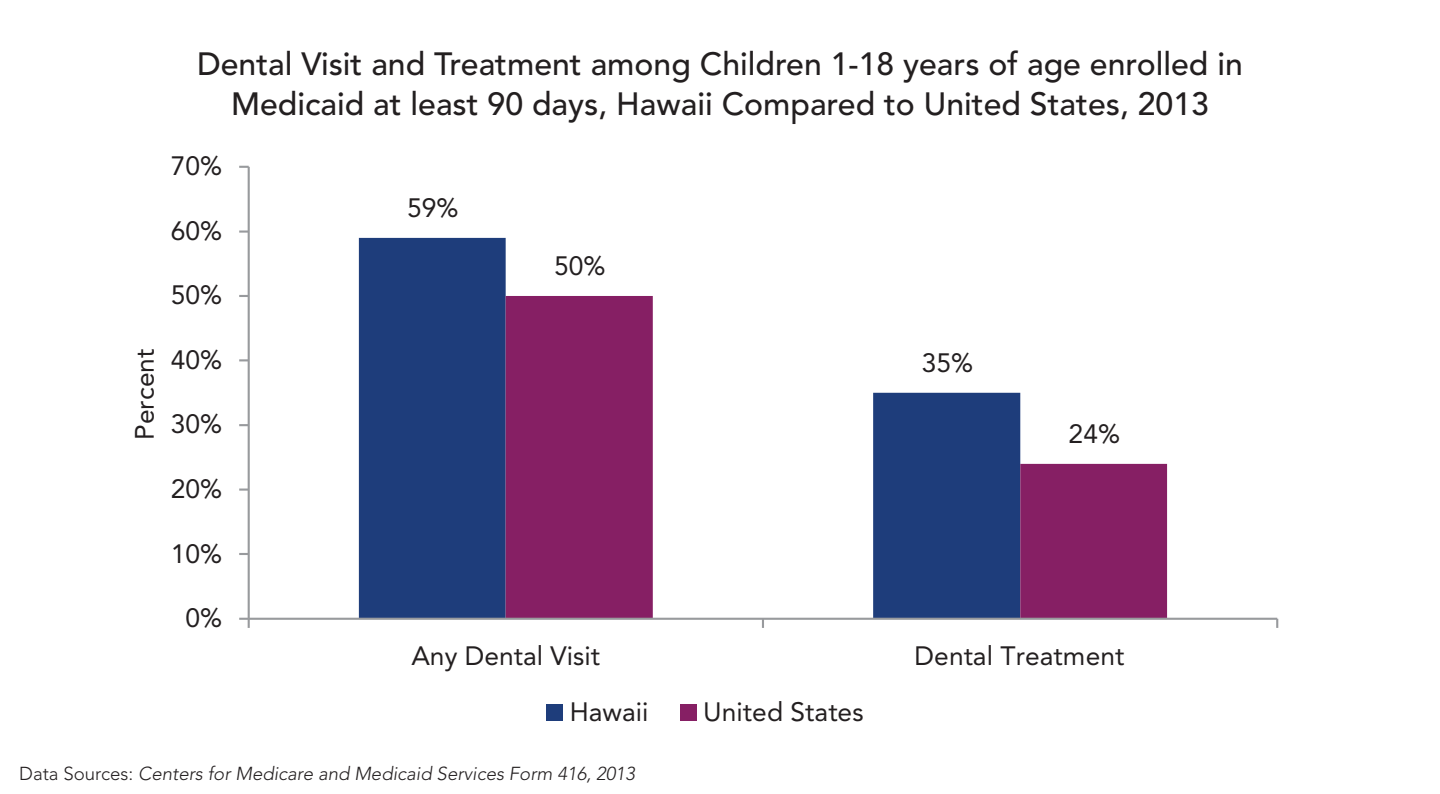


Data Sources: *National Survey of Children's Health, 2011-12; Hawaii Behavioral Risk Factor Surveillance System, 2012.*

This figure shows that if a child's family is low-income (<100% of Federal Poverty Level), they are twice as likely to have had a dental problem in the past 6 months compared to children from high-income families (>400% of Federal Poverty Level; 29% vs. 13%).[5] Similarly, low-income adults (<$15,000), compared to high-income adults (>$75,000), are more likely to have lost a permanent tooth because of dental problems (51% vs. 32%).[7] These differences may be partially explained by having access to and receiving dental care. Only 71% of low-income children and 52% of low-income adults saw a dentist during the past year.[5,7]

Education level, insurance status and where they live are other factors that affect a person's oral health. Adults with less than a high school education and those without health insurance are less likely to visit a dentist and are more likely to have tooth loss compared to those with more education and those with health insurance.[7] Adults living in Hawaii, Maui and Kauai Counties are less likely to have seen a dentist in the past year than those living in Honolulu County.[7] For specific details, refer to the Data Tables section of this report.

KEY FINDING #3: HAWAII CHILDREN ENROLLED IN THE PUBLICLY FUNDED MEDICAID PROGRAM, QUEST, SEE DENTISTS MORE OFTEN THAN NATIONAL ESTIMATES. HOWEVER, HAWAII CHILDREN RECEIVE MORE DENTAL TREATMENT SERVICES RATHER THAN PREVENTIVE CARE COMPARED TO NATIONAL ESTIMATES.

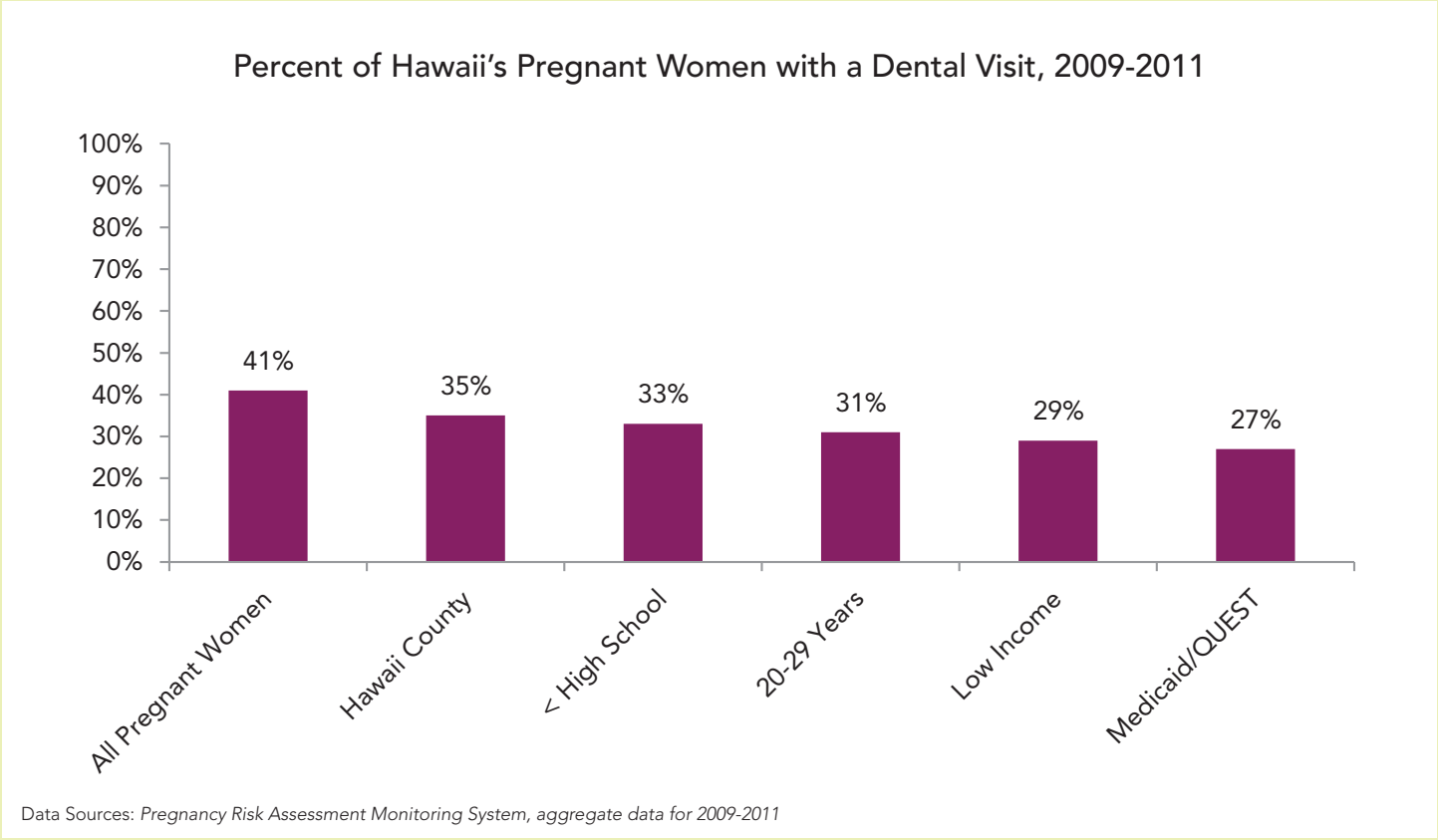


Data Sources: *Centers for Medicare and Medicaid Services Form 416, 2013*

Medicaid is a joint federal-state program that provides health insurance to low-income individuals. There were 152,427 children (under 21 years of age) enrolled at least 90 days in the Medicaid/QUEST program in 2013, which represents 43% of all children in Hawaii.[9] Dental services are a covered benefit for most Medicaid enrolled children. Although these children have dental coverage, 59% of the 1-18 year olds had seen a dentist in 2013, which is higher than the 50% found nationally.[9] Although they were more likely to have a dental visit compared to the nation, they were more likely to require treatment with 35% in Hawaii receiving dental treatment services compared to 24% from national data.[9]

This disparity in dental treatment highlights the importance of looking at preventive measures to improve the oral health of children in Hawaii. Sealant placement in high-risk groups has been shown to be effective in caries prevention.[10] Dental sealants are thin plastic coatings that are applied to the grooves on the chewing surfaces of the back teeth to protect them from tooth decay. Most tooth decay in children and teens occurs on permanent teeth. Sealants protect the chewing surfaces from tooth decay by keeping germs and food particles out of these grooves. In Hawaii, Medicaid enrolled children continue to lag behind in this preventive measure with only 11% of children 6-9 year olds having had at least one dental sealant placed on permanent molars compared to the national estimate of 16%.[9]

KEY FINDING #4: MOST PREGNANT WOMEN IN HAWAII DO NOT SEE A DENTIST EVEN THOUGH NATIONAL HEALTH AND DENTAL GROUPS ASSURE THAT DENTAL VISITS ARE SAFE AND RECOMMENDED TO HELP PREVENT DENTAL PROBLEMS IN THE WOMEN AND THEIR DEVELOPING BABIES.

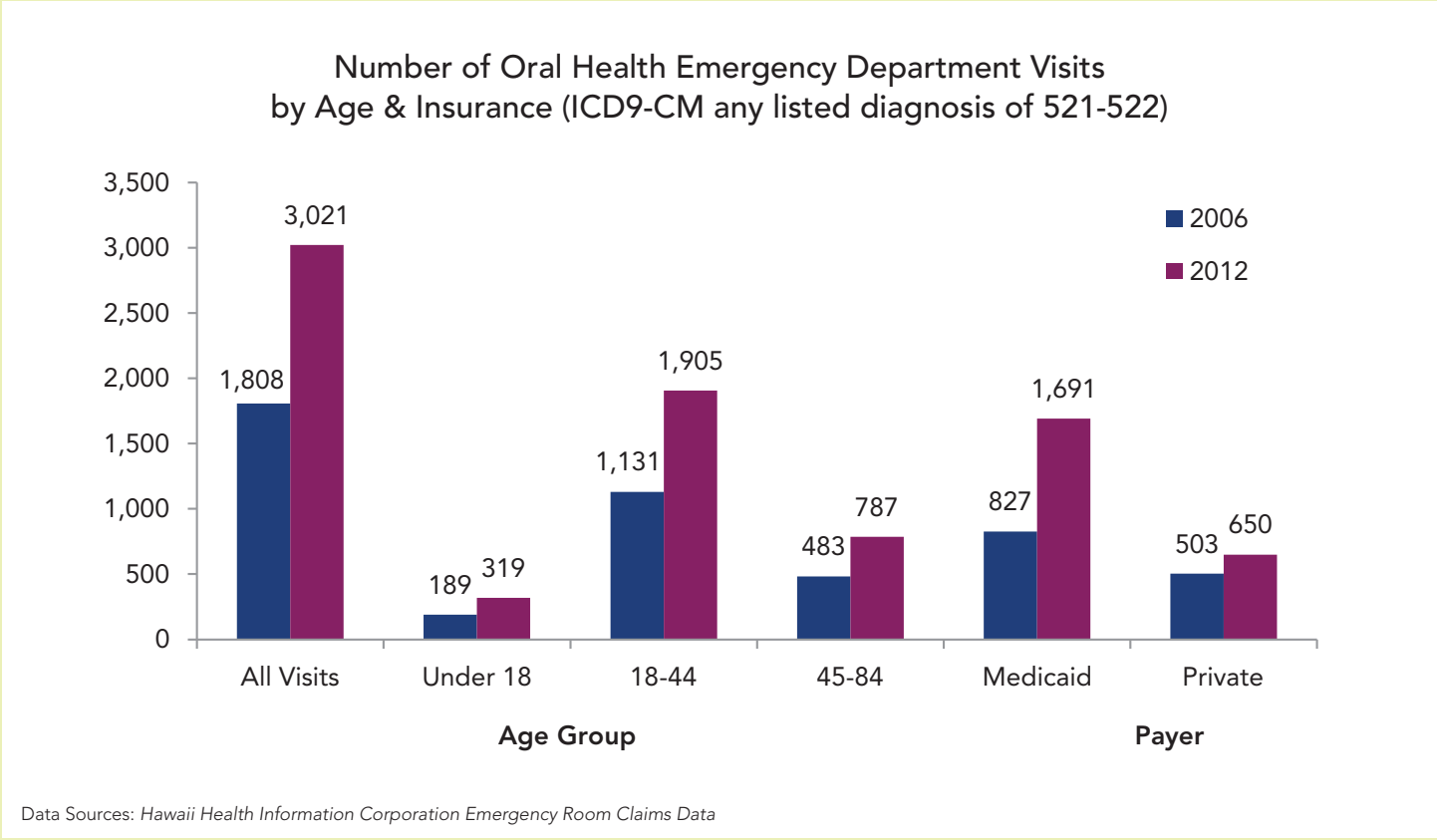


Data Sources: *Pregnancy Risk Assessment Monitoring System, aggregate data for 2009-2011*

Oral health care during pregnancy can be done safely and effectively at all stages of pregnancy. Physiological changes during pregnancy may result in noticeable changes in oral health including extra plaque build-up that may cause swelling, bleeding, redness and/or tenderness in the gums, non-cancerous oral lesions of the soft tissue surrounding the teeth, loose teeth, tooth erosion, dental caries, and periodontitis, a serious gum infection that damages the soft tissue and destroys the bone that supports your teeth.[11] Improved oral health of the woman may also decrease transmission of potentially cariogenic bacteria to infants and reduce children's future risk of caries.[11] To potentiate general health and well-being, women should routinely be counseled about the maintenance of good oral health habits throughout their lives as well as the safety and importance of oral health care during pregnancy.[11]

Unfortunately, only 41% of pregnant women in Hawaii reported seeing a dentist during their pregnancy.[12] The graphic shows some representative groups at higher risk within the various categories of county of residence, maternal education, maternal age, household federal poverty level, and health insurance status. Women who live in Hawaii County, those who have less than a high school education, young women (20-29 years), and women who are low-income (<100% of Federal Poverty Level), and have Medicaid/QUEST health insurance have among the lowest estimates of not seeing a dentist during pregnancy.[12] For additional detail, refer to the Data Tables section of this report.

KEY FINDING #5: MANY HAWAII RESIDENTS ARE SEEKING CARE AT HOSPITAL EMERGENCY DEPARTMENTS FOR DENTAL PROBLEMS, ALTHOUGH DENTAL SERVICES ARE GENERALLY NOT AVAILABLE THERE.



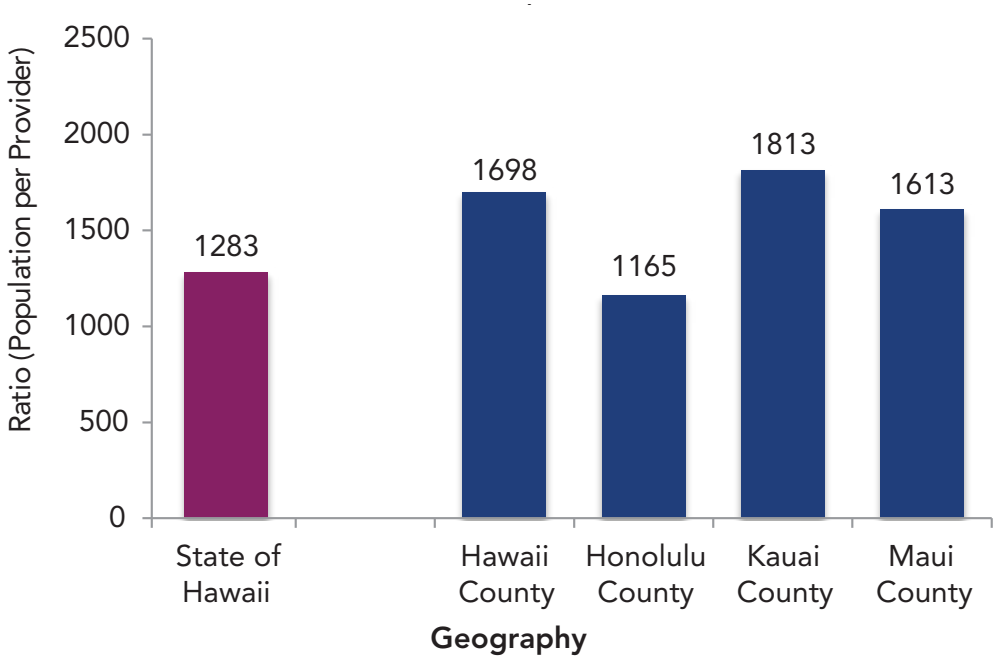
Data Sources: *Hawaii Health Information Corporation Emergency Room Claims Data*

If someone in Hawaii has a toothache or mouth injury and can't afford dental care or can't get an appointment at a dentist's office or dental clinic they may seek care at a hospital emergency department (ED). Emergency departments do not provide dental care and little can be done except to get medication for pain and be sent home. As the graphic shows, in 2012, there were more than 3,000 ED visits in Hawaii for preventable dental problems. This is a 67% increase from 2006, much higher than the 22% increase seen in the rest of the United States from 2006-2009.[13,14] This represented more than $8.5 million dollars in hospital charges in 2012 compared to about $4 million in 2006.[14] In 2012, the average charge for a preventable oral health ED visit was $2,854.[14] Strategies that promote prevention and access to providers may help reduce these hospital related costs.

Residents covered by Medicaid/QUEST accounted for more than half of the ED visits; most were adults 18-44 years of age for whom Medicaid/QUEST does not pay for most dental care. For additional detail, refer to the Data Tables section of this report.

KEY FINDING #6: ALL NEIGHBOR ISLAND COUNTIES HAVE FEWER DENTISTS PER POPULATION COMPARED TO HONOLULU COUNTY.

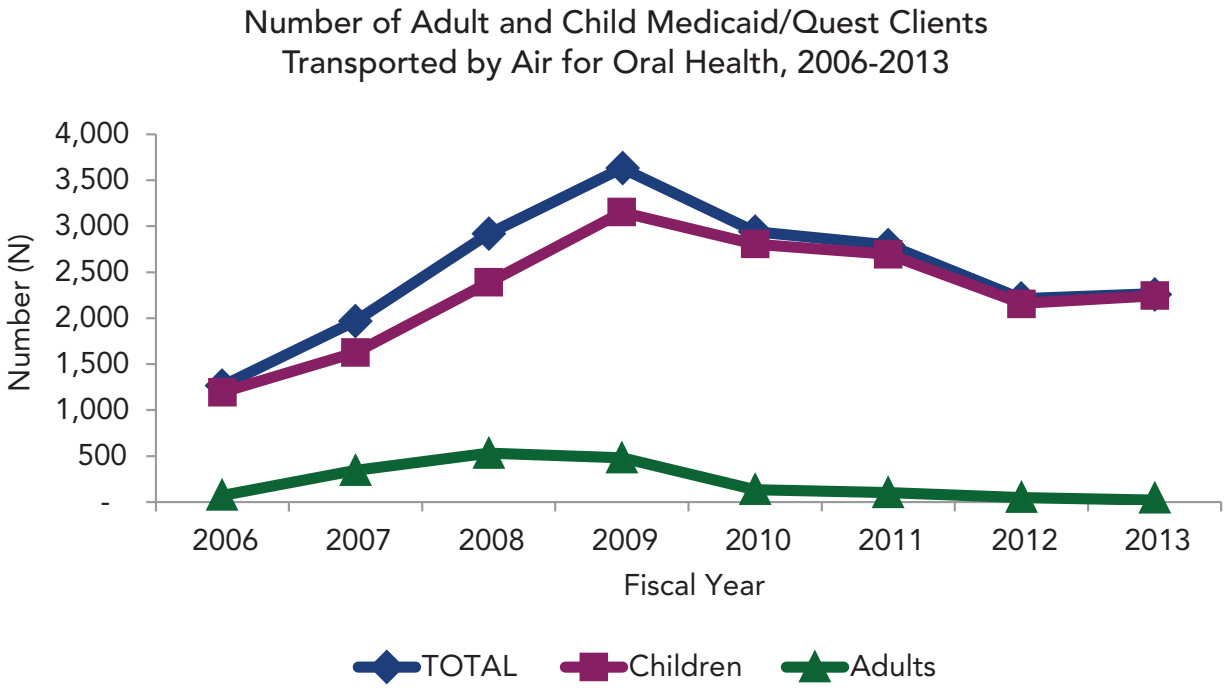
Population Ratio per Current Dental License Hawaii and Hawaii Counties, 2013.



Data Sources: *Hawaii Department of Commerce and Consumer Affairs, U.S. Bureau of Labor Statistics, U.S. Census Bureau*

Overall for the State of Hawaii, the estimated ratio of persons for every dentist is 1,283:1 with some variation by county.[15] Honolulu County, where the vast majority of the population lives, has a ratio of 1,165:1, which was significantly lower than seen in other counties in the state. The highest ratio was found in Kauai County (1,813:1), followed by Hawaii County (1,698:1), and Maui County (1,613:1). Poor dental health is a serious health issue for the neighbor islands. People living in such rural areas face a multitude of structural barriers when seeking dental care. These barriers can include dentist availability, ability to pay, and transportation issues, along with other issues. Not only are there fewer dentists per capita in the neighbor islands, but many dentists serving these communities may have many patients and can limit their practices to private insurance and private pay patients. As a result, patients who seek dental care through the Quest program may not be able to find a participating provider in their immediate service area. Many steps need to be taken to improve oral health care for residents in neighbor island communities. One step is to improve the number of dental providers in low-income areas.

KEY FINDING #7: ALTHOUGH FEWER CHILDREN AND ADULTS ENROLLED IN THE PUBLICLY FUNDED MEDICAID PROGRAM ARE BEING TRANSPORTED BY AIR FOR DENTAL SERVICES, NEARLY 2,300 STILL REQUIRED TRANSPORT IN 2013.

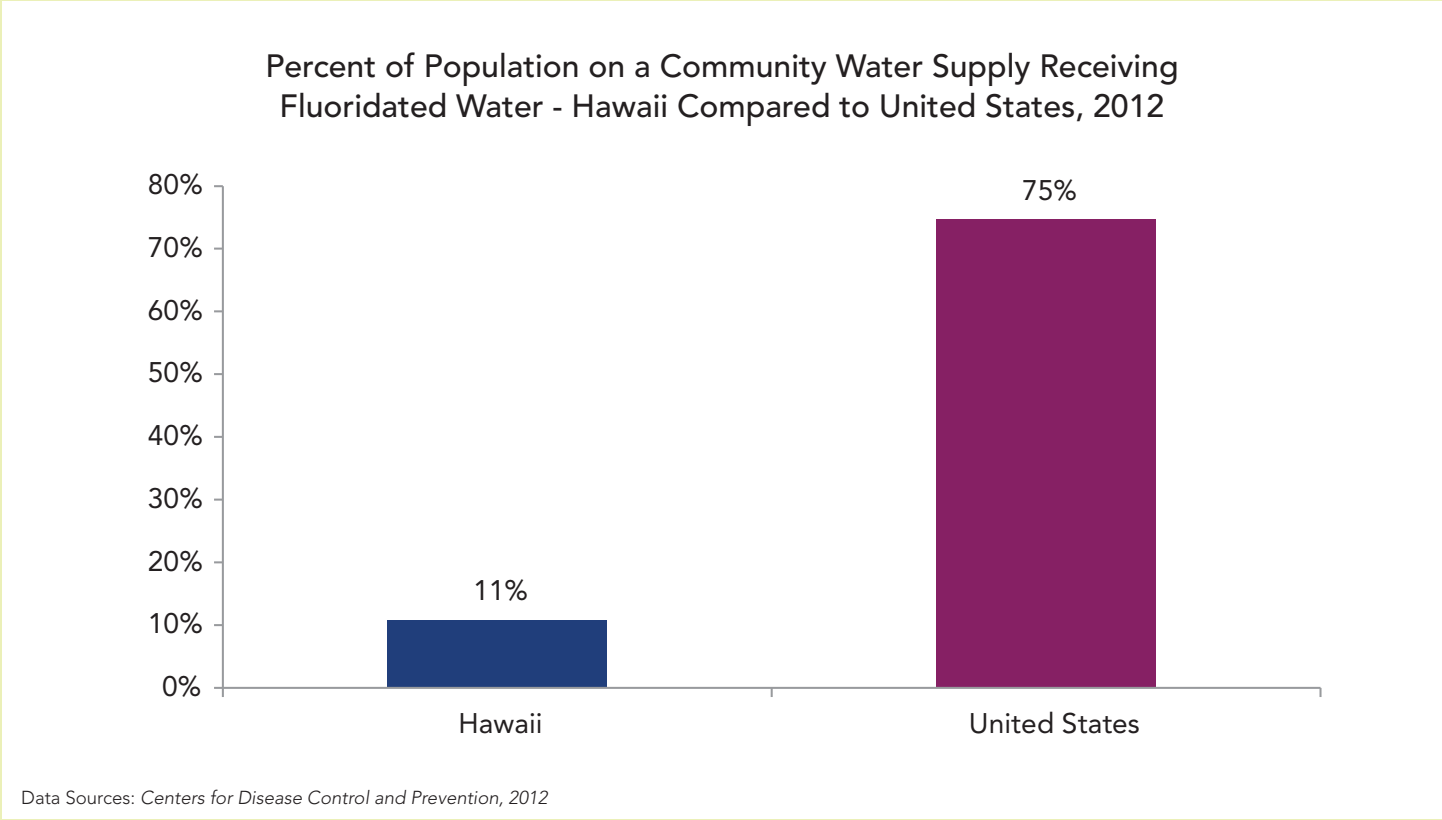


Data Sources: *Community Case Management. Air Transport Costs for Children and Adults due to Dental Services among Medicaid/QUEST clients, Hawaii 2006-2013. Family Health Services Division, Hawaii Department of Health Data Request.*

Costs to transport clients from neighbor island counties to Honolulu for services is one measure to start to quantify the impact of low access. There are many reasons why transport was required, and the costs listed reflect transport for one minor child and one attendant or just the client if 18 years and older.[17] The most common referrals are made for the purpose of treatment by a "specialist" (i.e., pedodontist, endodontist, oral surgeon, etc.) with specific procedures varying from simple fillings to complicated procedures such as treatment under general anesthesia.[16]

In FY 2009, 3,633 clients were transported off their home island with the vast majority being children under the age of 21 (3,153). Over the past five years, this number has steadily declined with 2,266 clients (2,244 children and 22 adults) being transported in FY 2013. Without accounting for changes in the value of the dollar over the time period, these transports accounted for a peak cost of $1.2 million in FY 2009, a low of $401,000 in FY 2006, and amounted to $848,000 in FY 2013.[16] Increasing access to services on neighbor island counties may help improve oral health and result in lower transportation costs to access dental services.

KEY FINDING #8: MOST PUBLIC WATER SYSTEMS IN HAWAII ARE NOT FLUORIDATED SO RESIDENTS HAVE TO RELY ON SOURCES OF FLUORIDE OTHER THAN DRINKING WATER TO PREVENT TOOTH DECAY.



Data Sources: *Centers for Disease Control and Prevention, 2012*

Fluoride added to community drinking water sources at levels recommended by the federal government has repeatedly been shown to be a safe, inexpensive, and extremely effective method of preventing tooth decay in all age groups.[17] Only 11% of Hawaii's residents who get their water from public water systems have fluoridated drinking water compared to 75% for the United States as a whole.[18] Other somewhat less effective ways to achieve the benefits of fluoride include use of toothpaste, mouth rinses, prescribed tablets, or professionally applied varnish, gels or foams.[19] Some of these products can be used at home while others are prescribed or applied by health or dental professionals. These are the only options for families who are not on public water systems or whose systems are not fluoridated.

STRATEGIES TO ADDRESS KEY FINDINGS

Given the extent of the problems, the disparities observed, and the large number of people affected, oral diseases in Hawaii are a major public health problem. Their impact on individuals and communities include pain, suffering, impairment in function, and reduced quality of life. Several key strategies have been identified that, if implemented, could improve the oral health of Hawaii's residents.

Determinants of Oral Health: The ability to access oral health care is associated with gender, age, education level, income, race and ethnicity, access to dental insurance, and geographic location. Addressing these determinants is key in reducing health disparities and improving the health of all Hawaii residents. Efforts are needed to overcome barriers to access oral health care caused by geographic isolation, poverty, insufficient education, and lack of communication skills.

- Develop and implement an oral health surveillance plan to improve data collection, analysis and use of data for program planning, evaluation, and policies.
- Develop effective, evidence-based community and school-based dental disease prevention programs for all age groups, particularly those who are experiencing oral health disparities. These should include age appropriate fluoride and dental sealant programs.
- Continue to support and expand affordable and accessible preventive dental care services to Hawaii's low-income population.
- Expand Medicaid dental services for adults beyond the current coverage for emergencies only to include preventive and treatment services.
- Consider increasing reimbursements to dental providers for key preventive or restorative procedures to increase participation in Medicaid.
- Develop strategies to reduce barriers to finding and receiving preventive dental care services for children enrolled in the Medicaid program.
- Use or adapt existing educational programs for pregnant women, and for health and dental professionals regarding the safety and importance of dental care and preventive counseling during pregnancy and in the neonatal period.
- Explore innovative, evidence-based strategies to expand access to underserved, high-risk populations including tele-dentistry.

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Table 1: Percent of children (1-17 years of age) with a dental visit, one or more oral health problems, and oral health status by selected characteristics, 2011-2012 (Source: National Survey of Children's Health)

Characteristic	Dental Visit in the Past Year		One or More Oral Health Problems in the Past Six Months		Excellent/Very Good Oral Health Status	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
Survey Year and Location						
State of Hawaii	83.6	81.2-86.0	19.6	17.0-22.2	73.1	70.3-76.0
United States	77.5	76.9-78.2	18.7	18.1-19.4	71.3	70.6-72.0
Federal Poverty Level						
0-99%	70.8	63.4-78.2	29.3	21.9-36.7	57.3	49.2-65.0
100-199%	81.1	75.9-86.3	26.6	20.2-32.9	68.2	61.5-74.2
200-399%	86.9	83.4-90.3	14.2	10.5-17.8	78.7	73.9-82.9
400+%	91.6	88.2-95.0	12.8	9.0-16.6	82.7	78.3-86.3

Table 2: Percent of Hawaii's public middle and high school students with a dental visit in the past 12 months by selected characteristics, 2013 (Source: Youth Risk Behavior Survey)

Characteristic	Had Dental Visit in Last 12 Months			
	Middle School Students		High School Students	
	Percent	95% CI	Percent	95% CI
State of Hawaii	77.8	74.5-81.1	77.0	74.9-79.2

Table 3: Percent of *children enrolled in Hawaii's Medicaid program aged 1-18 years* that had a dental visit, received dental treatment services, or received protectant sealants, 2013 (Source: Early Periodic Screening, Diagnosis and Treatment (EPSDT) Program, CMS-416 report)

Characteristic	% with Dental Visit	% Receiving Dental Treatment Services	% Receiving Protective Sealants (6-9 year olds)
State of Hawaii	58.6	34.9	11.4
United States	49.8	23.5	16.1

Note: Denominator is total number of individuals aged 1-18 years eligible for EPSDT for 90 continuous days during reporting year

Table 4: Percent of women with a dental visit during pregnancy by selected characteristics (Source: Pregnancy Risk Assessment Monitoring System, 2009-2011)

Characteristic	Dental Visit During Pregnancy (%)	Dental Visit During Pregnancy (95% CI)
State of Hawaii	41.0	39.2-42.9
County		
Hawaii	34.9	32.2-37.8
Honolulu	41.7	39.3-44.2
Kauai	44.9	41.4-48.4
Maui	42.2	39.5-44.9
Age		
<20	40.1	33.6-46.9
20-24	31.2	27.7-34.9
25-29	30.6	36.2-43.1
30-34	48.2	42.8-51.6
35+	47.2	42.8-51.6
Education		
< High School	32.6	26.3-39.5
High School Graduate/GED	34.5	31.8-37.4
Some College	38.2	34.6-41.9
College+	55.4	51.9-58.8
Federal Poverty Level		
0-100%	28.9	25.8-32.2
100-200%	33.3	29.8-37.0
201+%	55.1	52.2-57.9
Pre-Pregnancy Health Insurance		
Medicaid/QUEST	26.6	23.5-30.0
Tricare	49.6	44.2-55.0
Private	48.7	46.3-51.0
Uninsured	21.7	15.9-26.4

Table 5: Percent of adults 18+ years with a dental visit in past year and with 1+ teeth extracted by selected characteristics, 2012 (Source: Behavioral Risk Factor Surveillance System)

Characteristic	Dental Visit During Pregnancy (%)		Adults with at least one tooth extracted	
	% Yes	95% CI	% Yes	95% CI
State of Hawaii	70.4	68.8-71.9	41.4	39.7 - 43.1
United States	67.2	n/a	44.5	n/a
County				
Hawaii	66.3	62.6-69.8	45.1	41.4 - 48.9
Honolulu	71.5	69.4-73.4	39.5	37.3 - 41.7
Kauai	65.7	59.9-71.1	47.5	41.6 - 53.4
Maui	70.5	66.5-74.3	45.9	41.6 - 50.2
Income				
<$15,000	51.9	45.5-58.3	50.8	44.3 - 57.3
$15,000-$24,999	54.0	49.2-58.7	53.6	48.8 - 58.4)
$25,000-$49,999	69.2	66.1-72.2	43.4	40.0 - 46.9
$50,000-$74,999	74.7	70.6-78.5	40.9	36.6 - 45.2
$75,000 and higher	81.6	79.1-84.0	32.2	29.4 - 35.0
Education				
< High School	52.9	45.4-60.3	56.3	48.6 - 63.8
High School Graduate/GED	63.8	60.1-74.6	46.0	42.8 - 49.2
Some College	71.9	69.1-74.6	40.8	37.8 - 43.9
College+	82.2	81.2-84.0	31.7	29.4 - 34.0
Health Insurance				
Insured	73.2	71.6-74.8	41.3	39.5 - 43.1
Uninsured	45.9	40.0-51.9	42.2	36.3 - 48.4

Note: Only median reported for United States so no confidence intervals are available.

Table 6: Number of emergency room visits with preventable oral health problems listed as any diagnosis (ICD-9 CM Codes 521-522) and relative change by selected characteristics, 2006 and 2012 (Source: Hawaii Health Information Corporation)

Characteristic	2006 Any-Listed Diagnosis	2012 Any-Listed Diagnosis	Relative Change Any-Listed Diagnosis(%)
United States	1,116,569	1,357,217 (2009 data)	21.6
State of Hawaii	1,808	3,021	67.1
Age group			
1-17	189	319	68.8
18-44	1131	1905	68.4
45-84	483	787	62.9
Payer			
Medicare	104	262	151.9
Medicaid/QUEST	827	1,691	104.5
Private Insurance	503	650	29.2
Uninsured	335	354	5.7
Other	39	64	64.1
Total Charges	**$4,116,683**	**$8,622,212**	**109.4**
Mean Charge	$2,276.93	$2,854.09	25.3

Note: Data does not include Tripler Medical Center for the State of Hawaii
Note: Data from the United States is limited to the time frames 2006 and 2009.

Table 7: Number of Current Dental Licensures, Population, and Population Ratio per Provider, 2013 (Source: Bureau of Labor Statistics, DCCA 2014, US Census 2010)

Population	Dentists	Population	Ratio
State of Hawaii	1,060	1,360301	1,283:1
County			
Hawaii	109	185,079	1,698:1
Honolulu	818	953,207	1,165:1
Kauai	37	6,154	1,813:1
Maui	96	154,834	1,613:1

Table 8: Number of adult and child Medicaid/QUEST clients and Costs transported by Air for Oral Health, FY 2006-2013 (Source: Community Case Management)

Population	2006	2007	2008	2009	2010	2011	2012	2013
State of Hawaii	1,266	1,970	2,919	3,633	2,940	2,796	2,213	2,266
Children	1,193	1,627	2,388	3,153	2,806	2,694	2,163	2,244
Adults	73	343	531	480	134	102	50	22
Total Costs	$401,507	$606,504	$893,917	$1,202,507	$884,194	$900,877	$736,798	$848,675

Table 9: Percent of Population of Public Water Supply Systems Receiving Fluoridated Water, Hawaii and US, 2012 (Source: Centers for Disease Control and Prevention. 2012 Water Fluoridation Statistics)

Characteristic	Percent (%)
United States	74.6
State of Hawaii	10.8

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