Oral Health in Maine
A Background Report

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The Center for Health Workforce Studies is a not-for-profit research organization whose mission is to provide timely, accurate data and conduct policy-relevant research about the health workforce. The Center's work assists health, professional, and education organizations; policy makers and planners; and other stakeholders to understand issues related to the supply, demand, distribution, and use of health workers.

Preface

In recent years, oral health stakeholders in Maine including provider organizations and policymakers have expressed concern about the oral health status of the state's population and the need to improve access to oral health services in certain geographic areas of the state. In 2005, a group of stakeholders met to consider issues that impeded access to oral health services and make recommendations on strategies to address gaps in service delivery. The result of this effort was the development of an oral health plan for Maine in 2007.

Identifying effective strategies to increase access to oral health services in Maine is complicated by the many factors that adversely affect access to care including limited resources to pay for oral health services, lack of oral health infrastructure and workforce, and limited oral health literacy of patients. To date, Maine's strategies to increase access to care have included dental loan repayment programs, funding for a dental school in the state, and expansions in the scopes of practice for dental assistants and dental hygienists. Little is known, however, about the impact of these interventions on access to oral health services for Maine residents.

In 2011, the Maine Legislature passed Legislative Document No. 1105 "Resolve, To Study Oral Health Care in Maine and Make Recommendations Regarding How to Address Maine's Oral Health Care Needs". The resolve called for a study of Maine's oral health care needs to include a review of public and private financial resources for oral health services, a description of limitations on oral health access in the state, a discussion of the sustainability of public financing for oral health programs, and an enumeration of the current oral health workforce in Maine. The legislature requested that this review be completed expeditiously and that it be financed through funding other than public resources.

The Center for Health Workforce Studies (CHWS) has contracted with several stakeholder groups in Maine to conduct a comprehensive study of oral health needs and oral health workforce in Maine. This report is the first report in a series on oral health access in Maine.[1] This report is an environmental scan describing available data and literature about oral health in Maine. It will provide context and direction to further study activities. In addition to a literature review and extensive secondary data analysis, CHWS will survey the oral health workforce in Maine and safety net oral health service providers across the state.

This paper was written by Margaret Langelier of the Center for Health Workforce Studies at the School of Public Health, University at Albany, with the assistance of Jean Moore, Simona Surdu and David Armstrong. The authors can be contacted with any questions regarding its content at (518) 402-0250. The authors acknowledge the contributions of the stakeholders of Maine whose work is cited in this report for their research and analysis of oral health issues in the state.

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EXECUTIVE SUMMARY

Introduction

Over the last decade, oral health stakeholders in Maine have focused their efforts on expanding access to oral health services for residents of the state. Identifying effective strategies to increase access to oral health services is complicated by many factors that adversely affect access, including limited resources to pay for oral health services, lack of oral health infrastructure and workforce, and limited oral health literacy of patients. In an effort to improve the availability of oral health services the Maine legislature has authorized numerous innovations including:

- Supporting the establishment of Maine's first dental school;
- Expanding oral health infrastructure in community clinics across the state; and
- Developing new oral health workforce strategies, including expansions in scope of practices for dental auxiliaries and providing legislative endorsement for licensure of denturists;

The impacts of these interventions on access to oral health services for Maine residents have not been fully assessed.

In 2011, the Maine Legislature passed Legislative Document No. 1105 "Resolve, To Study Oral Health Care in Maine and Make Recommendations Regarding How to Address Maine's Oral Health Care Needs" (LD 1105). The resolve called for a study of Maine's oral health care needs to include a review of public and private financial resources for oral health services, a description of limitations on oral health access in the state, a discussion of the sustainability of public financing for oral health programs, and an enumeration of current oral health workforce in Maine. The legislature requested that this review be completed expeditiously and that it be financed through funding from other sources than public resources.

The Center for Health Workforce Studies (CHWS), with support from stakeholder groups in Maine, is conducting a comprehensive study of oral health needs and oral health workforce in Maine as described in LD 1105. This is the first report of the full study and is based on an environmental scan and contextual assessment of oral health services in Maine. This report is based on information collected during an extensive literature review about oral health in Maine and in the U.S. Available state and national data sets were analyzed to gain a better understanding of the oral health status of the population as well as expenditures for oral health in Maine. The report includes a description of Maine's oral health workforce based mainly on data from the 2010 re-registration surveys of Maine dentists and dental hygienists, which are fielded biennially by the Maine Office of Data, Research, and Vital Statistics in conjunction with the Maine Board of Dental Examiners. Findings from this work will inform future research conducted by CHWS about oral health in Maine.

The review of prior work of Maine oral health stakeholders, which includes policymakers, providers, and advocacy groups, reveals a long-term commitment to identifying key oral health issues in the state and to recommending policies with the greatest potential to remove access barriers to oral health services for Maine's residents. Since 2001, consistent themes have emerged and been identified as priorities that must be addressed The goal of promoting oral health and providing accessible oral health services to all people seeking dental care was

common to stakeholder efforts over the past decade. The common concerns identified in the previous work of stakeholders included: adequacy of the supply and distribution of oral health professionals, low MaineCare reimbursement rates for oral health services and limits on eligibility for oral health coverage, capacity limitations of oral health safety net providers, and lack of oral health literacy.

Key findings from the full environmental scan are summarized below.

Key Findings

Compared to other states and the U.S. as a whole, the supply of dentists in Maine is relatively small.

A preliminary analysis found that there were fewer dentists per capita in Maine than in most other states. The ratio of active dentists per 10,000 population in the U.S. was 6.0 dentists per 10,000 population in 2007 (Health, U.S., 2010). In that year, the ratio of dentists per 10,000 population in Maine was 5.0; and in New Hampshire 6.3, in Massachusetts 8.2, in Vermont 5.8, in Connecticut 7.7, and in Rhode Island 5.4 (Health, U.S., 2010). In 2011, the ratio of dentists per 10,000 population in Maine rose slightly to 5.1.

In addition, Maine had fewer general practice dentists than other New England states. In 2011, there were 4.1 general dentists per 10,000 population in Maine. New Hampshire, which has a comparably sized population, had a ratio of 5.8 general dentists per 10,000 people in 2010. In that same year, Vermont had 5.5 general dentists per 10,000 population and Massachusetts had 7.1 general dentists per 10,000 people (NHCPPS, 2010).

Currently, more dentists in Maine are from states other than Maine. The supply of dentists in Maine will likely increase once the new dental school at the University of New England is operating. The community education model chosen for the dental school curriculum should also produce dentists with public health training and focus. This has the potential to increase the supply of dental providers in underserved areas of the state. There is consensus among oral health stakeholders in Maine that more of the current supply of dental professionals should work with underserved populations in the state. In addition, the need to increase the number of dentists participating in MaineCare is key to better access to oral health services.

Active dentists in Maine are unevenly distributed across the state, with more practicing in urban areas than in rural areas.

Maine's dentists practice mainly in metropolitan areas of the state. This distribution is common across the U.S. The number of people per active dentist varies considerably by county in Maine. In 2011, there were 1,361 people per active dentist in Cumberland County. At the same time, there were 4,018 people per active dentist in Somerset County.

The number of dental health professional shortage areas (DHPSAs) in the state is evidence of the uneven distribution of dentists in the state. All or part of each of 15 counties in Maine has designation as a DHPSA. Sagadahoc County is the only county with no DHPSA designations (HRSA, 2011). In 2011, there were 212,858 people in Maine (16.0% of the state's population)

living in a DHPSA (Kaiser, 2011), which was the 10th highest percentage of all states. Nationally, just 10.1% of the U.S. population lives in a DPHSA (Kaiser, 2011).

The table below shows the variation in county ratios of dentists to 10,000 population.

Table 1. Actively Practicing Dentists to 10,000 Population in Maine by County, November, 2011

County in Maine	Actively Practicing Dentists/ 10,000 Population
Androscoggin	4.18
Aroostook	3.34
Cumberland	7.35
Franklin	3.90
Hancock	4.59
Kennebec	6.47
Knox	6.29
Lincoln	3.48
Oxford	2.25
Penobscot	5.33
Piscataquis	3.42
Sagadahoc	6.80
Somerset	2.49
Waldo	2.58
Washington	3.96
York	3.96
State Totals	**5.07**

Source: CHWS, ME Licensure Data, 2011

Impacts of Maine's oral health workforce initiatives are not fully understood.

Alternative workforce models are considered an important strategy to address unmet need for oral health services in Maine. Some states have chosen to support the establishment of new oral health workforce models in which new categories of oral health professionals are permitted to provide basic preventive and/or basic restorative services to populations with high needs. Maine's oral health workforce initiatives to date have enabled dental auxiliary personnel in the state to practice in less restrictive supervisory environments. Dental hygienists in Maine are now permitted to work in settings other than traditional dental practices and to provide services, particularly for children, in settings where underserved populations are commonly found. However, there are little data available to fully assess the impacts of these workforce initiatives on oral health access in Maine.

Resources to cover the cost of oral health services for underserved populations in Maine are limited.

A higher percentage of Maine's population is enrolled in the state's MaineCare program than the percentage of the U.S. population enrolled in Medicaid. MaineCare enrollees also use 18% more health services on average than Medicaid enrollees nationally. In 2009, Maine had one of the highest Medicaid shares of total personal health care spending in the U.S. (Cuckler, 2011).

MaineCare expenditures for health services including oral health to eligible patients totaled $2.5 billion in 2009 (Kaiser, 2011). Dental care services for MaineCare eligible children and adults represented a small percentage of total MaineCare costs. Dental expenditures totaled $32,368,226, about 1.3% of total MaineCare spending.

Similarly, resources to support dental services are relatively limited across the U.S. In 2009, dental expenditures in the U.S. totaled $102.2 billion, including $42.5 billion in out-of-pocket payments and $50 billion in private dental insurance payments. Medicaid spending on dental services in the U.S. totaled $7.1 billion. Dental expenditures were a relatively small portion of total health care spending in the U.S., which totaled $2.5 trillion in 2009. Spending for health services amounted to $8,086 per person in the U.S. while spending for dental services was $332 per person (ADA News, 2011).

MaineCare reimbursement rates for dental services are low compared to both regional and national reimbursement rates for Medicaid funded dental services. In 2008, Maine ranked 38th among states in dental reimbursement (ME DHHS, 2008). MaineCare reimbursement rates are about 25% of regional rates for dental services (Governor's TF, 2008), which may contribute to limited provider participation in the program.

The poor economy is increasing the number of Maine residents without financial resources to pay for dental services due to loss of employment, loss of dental insurance, or rising costs of co-pays or co-insurance for dental care. In fact, the number of people eligible for public insurance programs may be increasing at the same time that public resources to support those programs remain limited.

While it is difficult to determine the exact percentage of the population with some form of dental insurance coverage, it is apparent that a large percentage of the population does not have a dental benefit available to cover all or even a portion of the cost of dental services. In 2010, the National Association of Dental Plans (NADP) indicated that 482,474 people in Maine (about 36.3% of the state's population) were enrolled in private dental plans (NADP, 2010).

Access to oral health services appears to be uneven, with some groups having much less access to care in ambulatory settings.

In 2010, Maine ranked 34th out of the 50 states in the percentage of residents (68.7%) who reported seeing any dental provider in the previous year (BRFSS, 2010). While Maine continues to encourage its population to receive oral health services through its programs and policies, there are still residents of the state who are underserved especially children, low income adults,

the elderly, and patients with special health care needs. Maine has made considerable progress in improving the oral health status of children in the state, yet there are still children with unmet dental needs. MaineCare covers about 20% of the state's population. However, adults covered by MaineCare do not have a benefit for routine dental treatment so they do not have coverage for preventive and basic restorative dental care. Moreover, the longstanding difficulty of finding ways to improve the oral health status of the adult population continues to challenge stakeholders in the state.

The percentage of children in Maine receiving any dental service through the Early Periodic Screening and Diagnostic Treatment (EPSDT) benefit required in Medicaid has increased over time. In 2000, Maine reported that 35.3% of MaineCare eligible children received a dental service in the previous year. By 2009, 37.1% of MaineCare eligible children had received a dental service in the prior year. Despite this progress, Maine still placed in the lowest quartile of states reporting to the Centers for Medicare and Medicaid Services (CMS) on dental benefit utilization by Medicaid eligible children in 2009. In 2010, MaineCare reported further improvement with 45% of eligible children receiving a dental service in the prior year (ME DHHS, 2011).

MaineCare eligible patients have limited access to oral health services, especially private dental practices.

Many MaineCare eligible patients do not have access to dental care in private dental practices. In the 2010 reregistration survey of Maine dentists, 94.8% of dentists indicated they were accepting new patients into their dental practices (CHWS, 2012). About half of specialty dentists who responded to the survey (49.1%) and 45.2% of general dentist respondents indicated they treated MaineCare patients in their practices. Only 23.9% of general dentists and 45.6% of specialty dentists indicated they were accepting any new MaineCare eligible patients into their practices. In addition, two-thirds of MaineCare participating general dentists (67.3%) and half of participating specialists (50%) indicated they were limiting the number of MaineCare patients in their caseloads.

Dentists in small towns and rural areas were significantly more likely (p-value<0.0001) than dentists in metropolitan or micropolitan areas of Maine to be treating MaineCare patients and to also be accepting new MaineCare patients. Low MaineCare reimbursement rates are particularly problematic in rural areas where there are fewer dental providers and higher percentages of the population who are MaineCare eligible. Practices with large MaineCare caseloads are challenged to meet the costs of providing care.

While there is an oral health safety net in Maine, the safety net is limited in size and in resources available to provide care.

Maine has established and supported a large safety net for the provision of oral health services. There are a number of federally qualified health centers, community dental clinics, and public health programs that provide oral health services to Maine residents who lack access to traditional oral health providers or private dental practices. In addition, state government, school districts, and other community stakeholders fund school oral health programs that reach a

substantial number of children in Maine and provide preventive education and prophylactic oral health services that improve the oral health status of Maine's students. Physicians and other health care professionals also contribute to improved oral health for Maine's youngest residents by providing oral health screening and preventive services in their medical practices.

Workforce legislation that has expanded scope of practice for dental auxiliaries and reduced required levels of supervision has enabled oral health professionals other than dentists to treat patients in community settings in the safety net where dentists are not traditionally found. This is especially true for children's oral health services that can now be provided in schools, pediatric practices, WIC centers, Head Start programs, and other settings.

However, while the oral health safety net is substantial in Maine, it does not appear to be sufficient to meet the oral health needs of all Maine residents for accessible and affordable dental care. Increasing use of emergency department (ED) services by Maine residents with dental complaints, especially those on MaineCare or the uninsured, is symptomatic of the limitations of the current oral health care delivery system and the safety net in the state as well as the need for better access to oral health care.

In 2006, dental complaints were the number one reason why MaineCare patients or uninsured patients between the ages of 15 and 44 years went to an ED for services (Kilbreth et al., 2010). In that year, there were 3,430 ED visits related to a dental diagnosis among ED patients age 15 years to 24 years (Kilbreth et al., 2010). Forty-five percent of visits for dental problems in this age cohort were by frequent users of ED services (Kilbreth et al., 2009). Also in 2006, there were 4,949 visits for dental problems among ED patients age 25 years to 44 years, and a dental problem was also the primary reason for an ED visit for this age cohort. In all, there were 8,379 visits to EDs in Maine in 2006 for dental pain and related diagnosis by people age 15 to 44 years.

MaineCare patients are more likely to use ED services. MaineCare insured about 17% of the state's population, but MaineCare insured individuals generated 32% of all ED visits in 2006 (Kilbreth et al., 2010). While 56% of the state's population is privately insured, only 33% of ED visits were made by privately insured individuals in that year (Kilbreth et al., 2010). ED care is more expensive than dental care provided in other outpatient settings. The various reasons for the disproportionate use of EDs by MaineCare eligible patients include patient preference, lack of knowledge about appropriate ED use, lack of dental insurance or patient resources to cover the cost of care, and lack of availability of routine dental care.

There is a lack of oral health literacy, particularly among underserved populations that affects personal oral health behaviors.

There is a growing emphasis on individual and community education about the impact of positive oral health behavior on general health. Some Maine residents may not utilize available resources appropriately. Dentists indicate there are high rates of missed appointments among MaineCare eligible patients, which are costly to providers. In the 2010 re-registration survey of dentists licensed in the state, two-thirds of actively practicing dentists (66.2%) who did not currently participate in MaineCare indicated they might be willing to participate if they were compensated for missed appointments by MaineCare patients.

MaineCare staff inform eligible people about the availability of dental services and contact people who repeatedly miss appointments without notification to discuss the importance of keeping scheduled visits (ME DHHS, 2010, 2011). MaineCare nurses also contact and work with repeat users of EDs to discuss alternative strategies for obtaining needed oral health services (ME DHHS, 2011). In addition, MaineCare is working with some community providers and hospitals to divert patients from ED use for dental services by creating community dental referral networks for patients in need of dental services.

Discussion

In its efforts to expand access to oral health care services, Maine is challenged by rural geography, an aging population, and a weak economy. Maine‘s population has the oldest median age of any state in the U.S. and the second lowest percentage of children younger than age 18 (ME State Planning Office, 2010). Maine is the sixth most rural state in the U.S. and the least densely populated state east of the Mississippi River (Rural, 2008). Per capita income in the state is relatively low at $33,991, placing Maine at 34th among the 50 states in per person income. Loss of manufacturing jobs in the state and the move to employment in service industries has affected the dental insurance status of the population (Kaiser, 2005). The state of the national and state economies impact the public resources available for provision of oral health services and limit oral health initiatives for underserved populations, particularly those that rely exclusively on public funding.

Maine stakeholders have made concerted efforts to identify and remove access barriers to oral health services for residents of the state. Stakeholders have implemented policies and programs aimed at supporting an oral health safety net infrastructure, expanding roles for the oral health workforce, promoting oral health literacy, reducing administrative burden for billing MaineCare, and many other initiatives. However, while some of these programs have been evaluated, the impacts of some, like the expansion of roles for some oral health professionals, have not yet been assessed.

Next Steps

Future research activities include:

1) A survey of safety net providers in Maine to understand capacity to provide oral health services and identify barriers to expanding delivery of oral health services.
2) Analysis of administrative claims data sets from Maine to understand patient commuting distances to obtain both general and specialty dental care to create rational service areas for obtaining dental services.
3) Surveys of oral health professionals in Maine to understand their contributions to patient care.

CHAPTER 1: The State of Maine

The state of Maine is unique in geography and population demographics. Maine is the largest of the six New England States in land mass, comprising almost half of the New England Region. It is also the easternmost state in the U.S. Maine is the only state in the nation to share just one border with a neighboring state, New Hampshire, at its western perimeter. Maine is otherwise bordered by the Atlantic Ocean to the east and by Canada to the north. Much of the state is covered by Acadian forest. The coast is rocky and parts of the state are mountainous including a segment of the Appalachian Scenic Trail. Maine is also the least densely populated state east of the Mississippi River (U.S. Census, 2011). Although Maine does have urban centers, it is the sixth most rural state in the U.S. (Rural, 2008).

In 2010, the population of Maine was 1,328,361 people (U.S. Census, 2011). The state's population is unevenly distributed with 20 percent of the overall population residing in the Greater Portland area (Wikipedia, 2011). The state has the highest percentage of non-Hispanic Whites of any state in the U.S. (94.4% White) (U.S. Census, 2011). Maine was heavily settled by people of French Canadian heritage and French-speaking communities remain today. Maine has six federally recognized American Indian areas, including four reservations two of which are on trust lands and two of which are off-reservation trust lands (U.S. Census, 2011).

While Maine continues to gain population, it is undergoing slower than average population growth (4.2%) than the U.S as a whole (9.7%) (ME State Planning Office, 2010). Maine is experiencing out migration, particularly of younger age groups, which is adversely affecting the birth rate. While there is still a net population increase in the state, this may not continue in future years as Maine becomes increasingly reliant on in-migration for population growth (ME State Planning Office, 2010). Population projections for Maine show variation in expected population size by county over the coming two decades. Only Oxford, Kennebec, Lincoln, Somerset, and York counties are projected to have a higher population in 2028 compared to 2008.

Table 2. Characteristics of the Maine Population, 2005-2009

Population Characteristics	Maine	United States
Total Population	1,328,361	308,745,538
Persons < 5 years	5.4%	6.9%
Persons < 18 years	20.6%	24.3%
Persons > 65 years	15.6%	12.9%
Females	51.2%	50.7%
White	95.2%	72.4%
Black	1.2%	12.6%
American Indian/Alaska Native	0.6%	0.9%
Asian	1.0%	4.8%
Other Race or Races	1.6%	3.1%
Non-Hispanic White	94.4%	63.7%
Foreign Born Persons	3.3%	12.4%
Population Density Per Sq. Mile	43.0	87.3
High School Graduates (Age >25)	89.4%	84.6%
Bachelor's Degree Or Higher (Age > 25)	26.1%	27.5%
Median Household Income	$45,708	$50,221
Persons Living Below Poverty Level	12.6%	14.3%

Source: U.S. Census, 2010, American Community Survey 2005-2009

Maine's population has the oldest median age of any state in the U.S. and the second lowest percentage of children younger than age 18 (ME State Planning Office, 2010). An older, aging population will challenge the state's health care system as the elderly disproportionately consume health care resources with increased demand for services related to declining health. Maine ranks second in the U.S. (Vermont is first) in the percentage of the population (30% in 2006) born during the "baby boom" (between 1946 and 1964). In the U.S. population in 2006, 26% of all people were born during that time period (ME State Planning Office, 2010).

An aging baby boomer population means an aging workforce with increasing numbers of retirements from active employment. These departures will affect the available supply of health workers. The high number of baby boomers in Maine also impacts the birth rate since this age group is beyond their reproductive years (ME State Planning Office, 2010).

Per capita income is relatively low at $33,991, placing Maine 34th among states. Maine's overall poverty rate (12.6% of the population) is lower than the poverty rate in the U.S. (14.3%) (U.S. Census QuickFacts, 2011). However, median household income in Maine in 2009 was $45,708 while median household income in the U.S. was $50,221 (U.S. Census QuickFacts, 2011).

In 2008, there were regional differences in rates of poverty by county in the state with Washington County having the highest rate of poverty (20.1%) and York (9.4%) and Sagadahoc (9.8%) the lowest. The childhood poverty rate is higher (16.5% of children age 17 and younger)

than the overall poverty rate in Maine, but still lower than the national rate (18.2% of children age 17 and younger) (Rural, 2008).

The educational attainment of the population in Maine varies compared to the U.S. population. A larger percentage of the Maine population age 25 years and older graduated from high school (35.5%) than in the U.S. population (29.3%) (U.S. Census, American FactFinder, 2011). While fewer people in Maine who are age 25 years or older have some college education (18.8%) than in the U.S. (20.3%) as a whole (U.S. Census, American FactFinder, 2011), a larger percentage of the population in Maine has an associate degree (8.9%) than in the U.S. population (7.4%) (U.S. Census, American FactFinder, 2011). The percentage of Maine residents age 25 and older with a bachelor's degree (17.1%) is similar to the rate for the U.S. (17.4%) (U.S. Census, American FactFinder, 2011). Smaller percentages of people in Maine have a graduate or professional degree (9.0%) than in the U.S. population (10.1%) (U.S. Census, American FactFinder, 2011).

Maine is an agricultural state producing blueberries, maple sugar products, and potatoes. Commercial fishing, particularly lobstering, is also important to the economy. The state is known for its shipbuilding facilities at Bath Iron Works and the Portsmouth Naval Shipyard located in Kittery, Maine. Maine is also a large producer of toothpicks and bottled water. The state's industries include paper, lumber, textiles, and electronic equipment (Wikipedia, 2011). Many of Maine's towns were former mill towns for the paper and pulp industries and for shoes, textiles, furniture, etc. While many of these industries still operate in Maine, they do so on a much smaller scale than in earlier years. Tourism is also an important part of the economy (Wikipedia, 2011).

There are 16 counties in the state. The smallest county, Sagadahoc, is 370 square miles and has 2.8% of the Maine population. The largest county, Aroostook, is 6,829 square miles but has only 5.8% of the state's population. Cumberland is the most populous county with nearly 21% of the population followed by York County (14.6% of the population) and Penobscot County (11.4% of the population). Piscataquis County with 1.35% of the population and Franklin County with 2.31% of the population are the least populous counties in the state (Wikipedia, 2011).

Maine has both organized and unorganized areas. The organized municipalities in Maine include 22 cities, 433 towns, and 34 plantations covering less than half of the state's area (Wikipedia, 2011, U.S. Census, 2011). There are also four American Indian reservations in the state. The remainder of Maine consists of unorganized territories which have no local government and occupy just over half of the state's area. These territories have small year round populations (1.3% of the total state population) but the population increases with seasonal residents. Unorganized areas in Maine are found in 12 of the 16 counties. Only Androscoggin, Cumberland, Waldo, and York Counties are totally incorporated. Much of the unorganized territory in the state is in the northern forested areas of Maine (Wikipedia, 2011).

The Maine legislature is bicameral and includes 151 members of the House of Representatives and 35 members of the Senate.

CHAPTER 2: The History of Maine's Interest in Oral Health

Maine stakeholders have shown a long-standing commitment to improving the oral health status of the state's population. Over the last decade a number of reports about oral health were commissioned by the governor and/or the legislature and a number of forums were convened that focused on oral health. The following summarizes these efforts.

2001

In January 2001, a report, *The Status of Access to Oral Health Care in Maine* , was developed by the Maine Department of Human Services and submitted to the Joint Standing Committee on Health and Human Services of the Maine Legislature. The report recommended integration of oral health into the health care system, better access to dental insurance, expansion in scope of practice for dental auxiliaries, and strengthening of the public health infrastructure and the oral health safety net to improve access to oral health care. Specific recommendations included:

- strengthening the state's public health infrastructure;
- incorporating oral health as an integral component of an enhanced health system;
- directing resources for data collection about the oral health status of Maine residents;
- improving access to public and private dental insurance;
- directing resources to improve access to oral health screening, prevention, and treatment services for all Maine residents;
- supporting expansion of the roles, training, and functions of dental hygienists;
- directing resources to community prevention and intervention strategies including school based programs;
- continuing development, support, and improvement of the dental safety net;
- supporting the growth of the dental professional workforce with particular attention to safety net providers; and
- using Medicaid as a financial resource to achieve some of these goals (Status, 2001).

2003

In April 2003, a summit was organized by the Oral Health Program of the Maine Department of Human Services to develop an action agenda to improve the oral health of Maine's population. The summit was convened as a result of Maine's participation in a National Governor's Association program focused on best practices for improving oral health care for children and at the urging of a number of foundations in Maine that were interested in efforts to improve access to oral health care (Summit, 2005). A summary report, *Maine's Oral Health Crisis: Developing an Action Agenda for 2003-2004* outlined several objectives for the summit including:

- increasing the understanding of oral health as a primary health care issue;
- broadening and strengthening the engagement of stakeholders and policy makers in supporting oral health initiatives;
- sustaining the focus on improved oral health access for state residents; and
- enhancing overall population health through improved oral health (Summit, 2005).

The summit was viewed as a first step in the process of developing an oral health plan for the state. The conference was organized around four workgroups that focused on 1) workforce development, 2) increasing access to oral health services, 3) enhancing participation in MaineCare, and 4) data and surveillance activities (Summit, 2005).

The four workgroups were originally convened in April 2003 and met again in the summer of 2003. The groups recommended follow-up activities in the state including:

- Oral health surveillance activities to monitor the burden of oral disease in the state, describe the use of the oral health care delivery system by state residents, and monitor the status of community water fluoridation;
- Activities to achieve expanded access to oral health care including increasing the settings where oral health services are provided, promoting the case management approach to service delivery for certain populations, expanding functions permitted to dental hygienists and dental assistants, and developing strategies to increase awareness of dental careers among students in Maine; and
- Advocacy activities that promote inclusion of oral health coverage as a wraparound package in the Dirigo plan,[2] increase dentists' awareness of improvements in MaineCare processes, track dental needs of patients in emergency rooms, and match dental clinic funding with federal Medicaid dollars (Summit, 2005).

2005

By 2005, several of the activities suggested in 2003 were underway. The Maine Oral Health Program developed a surveillance plan for oral health data collection. A program was developed in cooperation with the Maine Department of Education to improve students' knowledge and understanding of the importance of oral health (Summit, 2005) and personal behaviors that fostered oral health. An early caries intervention and prevention program (Maine Smiles Matter) and a regional program to increase awareness of the importance of oral health and improve the availability and quality of oral health called Watch Your Mouth were in place. Efforts to increase the awareness of middle and high school students about dental careers were in process. In addition, an information campaign for Maine dentists about administrative changes in MaineCare was underway (Summit, 2005).

In April 2005 the Maine Department of Health and Human Services, Office of Child Care and Head Start, and the Oral Health Program co-sponsored a forum for Maine Head Start and Early Head Start stakeholders to develop strategies to improve the oral health of young children in the state. The report of the conveners, *Oral Health Forum Report and Action Steps*, discusses the recommendations of the group. The report suggested that future action focus on three fronts: prevention and education, increasing access to oral health care, and financing and policy development. The forum recommended the following:

1. Prevention and education initiatives should include

- maximizing the use of public health dental hygienists;
- using mobile oral health services where available;
- accessing dental hygiene education programs as resources for early childhood programs;
- incorporating dental health and daily tooth brushing into the classroom;
- continuing programs such as Maine Smiles Matter and Early Smiles;

[2] Dirigo Health is a subsidized health program available to individuals, people who are self-employed, or small businesses in Maine with fewer than 50 employees. The program began in 2005 with a one-time subsidy from state, employer, and employee contributions. The program is currently managed by Harvard Pilgrim Health Care (Wikipedia, 2011).

- coordinating oral health education with other school programs like nutrition education; and
- collaborating with community dental providers to offer services to early childhood programs (Head Start, 2005).

2. Access to oral health care should be increased
   - by building relationships and collaborations between Head Start programs and local dental providers;
   - encouraging expansion of the safety net; and
   - providing parental education about the importance of oral health and oral health interventions (Head Start, 2005).

3. Development of financing and oral health policy should include
   - encouraging programs such as Maine Oral Health Solutions (a nonprofit agency in Augusta, Maine)[3];
   - changing state law governing public health supervision status for dental hygienists;
   - encouraging dentists to donate services or equipment;
   - establishing preventive programs that could travel to various sites where children are found;
   - supporting school based oral health programs;
   - maximizing the impact of WIC programs on oral health;
   - permitting child health medical providers to provide oral health services; and
   - allowing for payment of oral health services by medical providers through MaineCare (Head Start, 2005).

In November 2005, a broad group of stakeholders was convened with the goal of outlining a statewide oral health plan that described specific actions required to create desired improvements in the oral health status of the population (Good Group, 2005). The deliberations of the group are found in a report titled *Oral Health in Maine Planning for the Future, Conference Report*. A draft outline of a state oral health plan developed by an advisory committee was submitted to the stakeholder group for review and comment. After review of current programs related to oral health in the state and after identifying desired outcomes, the stakeholder group identified a list of prioritized outcomes:

- Maintain the State Oral Health Program;
- Provide fluoride rinses and sealants in all schools;
- Assure that every child up to 4 years of age receives at least one preventive oral health visit;
- Provide MaineCare coverage for pregnant women;
- Enable preventive education and care in nontraditional settings including schools, WIC clinics, etc. (Good Group, 2005).

The forum also identified other priorities including the need to:

- acquire better data and surveillance of oral health status;

[3] Maine Oral Health Solutions is no longer in operation.

- encourage public and private partnerships for oral health funding or initiatives;
- expand oral health coverage under Dirigo Insurance and MaineCare;
- educate the general public about the impact of oral health on general health;
- offer dental and preventive oral health care and oral health education in non-traditional settings;
- increase the supply of dentists and other oral health professionals in Maine; and
- explore opportunities to use telemedicine in oral health (Good Group, 2005).

Systems improvements were identified to enhance the oral health status of the population. These improvements included:

- creating better infrastructure for service delivery in oral health;
- improving health professional and parent education about the importance of oral health;
- utilizing available resources in innovative ways, e.g., cross training of professionals, training health professionals to provide oral health screenings and sealants, recruiting more oral health professionals to provide volunteer oral health services, and expanding existing programs in oral health including school based sealant and screening programs; and
- evaluating the effectiveness of oral health programs and interventions and applying evidence based approaches to care (Good Group, 2005).

The group also identified workforce initiatives that could contribute to improved oral health outcomes including:

- Maximizing the productivity of the existing oral health workforce by shifting roles from dentists to other oral health workers including expanded function dental assistants or by upgrading the roles of dental hygienists;
- Permitting health professionals to provide cost effective preventive oral health care;
- Encouraging more oral health professionals to practice in the state through recruitment of out of state professionals, encouraging students to consider dental careers, providing in state externships for out of state dental students, and through loan forgiveness programs;
- Increasing the capacity of private dental practices to serve underserved patients through changes in MaineCare administrative processes and providing financial incentives for dental auxiliaries to upgrade their skills to work as EFDAs or in public health settings; and
- Expanding the safety net through changes in MaineCare reimbursement and by emphasizing retention of oral health professionals currently working in the safety net (Good Group, 2005).

The need for both professional and public education about oral health was acknowledged by the group. The group recommended a media campaign on oral hygiene and prenatal care, oral health and general health, the importance of water fluoridation, and removing access barriers to oral health services. It was suggested that the media campaigns be mounted on radio and television and in newspapers to target diverse audiences including health professionals, parents, educators, and community leaders. The group also recognized a need to educate legislators about critical issues in oral health and educate dental professionals about care to very young children, the disabled, and pregnant women (Good Group, 2005).

In December 2005, the Maine Center for Disease Control and Prevention (ME CDC), Division of Chronic Disease released a report describing results from the *Maine Child Health Survey 2003/2004*, which was a cross-sectional survey of kindergarteners and third-graders in Maine schools. Parents of potential participants were required to provide permission for a dental screening and for measurements of height and weight and to complete a questionnaire about their child's health. The survey gathered data about asthma and allergies in children; dental care and dental insurance status; use of car restraints; prescription drug use; other medical or mental health issues; special medical or learning needs; developmental, emotional, or behavioral issues; nutrition; exposure to environmental tobacco smoke; TV watching; and health insurance status.

The survey asked several questions about oral health:

- How long has it been since your child last visited a dentist or dental specialist or dental hygienist?
- What was the main reason for the last visit to an oral health provider?
- During the last 12 months, was there a time when your child needed dental care but could not get it?
- If your child could not get care, what was the main reason why not?
- Do you have any kind of insurance that pays for some or all of your child's dental care?
- Has your child ever had dental sealants placed on teeth?
- During the past four weeks, how many days of school did your child miss because of dental problems? (Survey, 2005).

The survey revealed that 70% of children had seen a dental provider within the prior six months and another 12% had seen one during the prior 12 months. Seven percent of children had never been to a dentist. Two thirds of children (63%) went to the dentist at their own (parent) request and 16% were called by a dentist for a visit. Thirteen percent of parents indicated that their child had needed dental care but was unable to get that care within the past 12 months. There were a number of reasons why dental care was not accessed, but the most prominent were that the patient could not afford care or that the dentist did not accept Medicaid. Seventy-seven percent of children were covered by some form of dental insurance. Thirty five percent of children in the survey had received dental sealants (Survey, 2005).

2007

In September 2007, the Oral Health Program of the Maine CDC was notified of federal funding for a four-year project, the Maine Preventive Oral Health Partnerships Project (MPOHPP), to:

- educate, build awareness, and integrate oral health into existing health delivery systems in the state;
- enable non-dental providers to better recognize and understand oral diseases and conditions; and
- enable non-dental providers to better engage in anticipatory guidance, preventive interventions, and appropriate referral for improved oral health and oral health access.

The Oral Health Program (OHP) expected to work with other partners to capitalize on existing resources and relationships to improve the oral health of young children and integrate oral health initiatives into overall health care. The project expected to focus on two major areas. The first was the promotion, implementation, and evaluation of "Maine Smiles Matter," a curriculum

developed for non-dental health professionals to enhance their skills in early oral health education and dental disease prevention. The second focus was to increase and support collaborative networks throughout Maine to promote effective relationships between medical and dental providers concerning the oral health of young children. There were a number of expected outcomes including that more children would receive earlier preventive care, parents/caregivers would have better access to appropriate education, and dental and non-dental health providers would better coordinate their interactions so that children were appropriately referred. The long-term goals of the project were to reduce demand for early restorative services as a consequence of early interventions and decrease the overall incidence of dental disease in Maine's children (Initiatives, 2008).

In November 2007, the ME CDC issued the *Maine Oral Health Improvement Plan*, which described the oral health plan for the state. The plan was developed over a two-year period with the help of stakeholder forums and an Oral Health Advisory Committee convened for the purpose. The plan was devised as a flexible guide to improving oral health in the state through coordination and collaboration of partners in oral health care (Plan, 2007).

The plan was organized into four key goals:

- Change perception and increase awareness:
  - Inform policymakers and elected officials about the importance of oral health and the needs of the population.
  - Increase awareness in the general public about the impact of good oral health and the importance of prevention and early intervention, and change negative perceptions about dental care.
- Increase prevention and expand access:
  - Expand prevention programs in schools and communities to include use of topical fluoride rinses and other preventive services and promote community water fluoridation.
  - Promote dental care for pregnant women who don't have dental insurance regardless of their age.
  - Ensure early childhood preventive care so that every child receives at least one preventive visit by one year of age to identify early problems and also educate parents and other caregivers about the importance of oral health.
  - Use nontraditional settings and innovative approaches to reach underserved groups and expand capacity to provide preventive oral health care and oral health education to underserved individuals at any age.
- Improve service delivery:
  - Improve current oral health infrastructure to advance the delivery of oral health services and also expand public- and community-based oral health services to better meet the needs of Maine residents.
  - Increase the oral health knowledge through dissemination of current, evidence-based information to improve oral health delivery and outcomes.
  - Conduct evidence-based evaluations to understand the impact of programs and services on access to oral health services and oral health outcomes and inform best practices.

    - Increase partnerships in oral health through collaborations with other state departments and agencies and through public private partnerships that improve the oral health of Maine residents.
- Expand the dental workforce:
    - Redefine and expand scope of practices for dental and medical professionals to increase their effectiveness in delivering oral health services.
    - Recruit and retain an adequate supply of dental professionals to meet the oral health needs of the population.
    - Expand the breadth and diversity of education available to oral health professionals to enable them to provide services to at-risk populations of all ages (Plan, 2007).

2008

In September of 2007, the governor of Maine convened a task force of stakeholders in oral health to explore novel ways to eliminate barriers to oral health services and expand access to dental care for Maine residents (Governor's TF, 2008). The task force included broad representation from state agencies, the public, community provider organizations, and the insurance industry as well as representatives of licensed oral health professionals and professional associations (dentists, dental hygienists, and denturists) and educators in those professions. The task force met numerous times from November 2007 to November 2008 and issued a report, *2008 Report of the Governor's Task Force on Expanding Access to Oral Health Care for Maine People*, which included the following recommendations:

- Increase the MaineCare reimbursement rates to the 75th percentile of fees listed in the New England regional survey of dental fees conducted by the American Dental Association;
- Establish a program to financially reward providers who serve a high volume of MaineCare patients;
- Integrate comprehensive oral health care into general health care;
- Develop and maintain a coordinated public education campaign on oral health;
- Support efforts to enhance student loan and loan repayment programs for dental professionals;
- Support and enhance opportunities for training more dental professionals in the state;
- Develop financial strategies that enhance access to comprehensive oral health services including direct reimbursement to all dental professionals;
- Develop a tax incentive to encourage dental providers to offer the full range of oral health services to underserved populations;
- Provide dental care for pre-school children;
- Facilitate school-based or school-linked oral health promotion and prevention programs;
- Support dental screenings as part of required health screenings for children entering school;
- Encourage adoption and implementation of community water fluoridation programs;
- Expand MaineCare eligibility for dental services for preventive and restorative care for patients who reside in nursing facilities; and
- Expand Maine Care eligibility for dental services to cover preventive and restorative care for pregnant women age 21 and older (Governor's TF, 2008).

In January 2008, a report was issued by The Commissioner's Office of the Maine Department of Health and Human Services to the Legislature's Joint Committee on Health and Human Services called *Initiatives for Children's Oral Health Care* and focused on the long standing concerns of policymakers about access to oral health services for children in Maine. The report described the need to develop private/public partnerships to improve oral health status and also identified the significant challenges experienced by MaineCare because of the financial limitations of the program. While programs to improve the oral health of Maine's children existed, any new initiatives in oral health were constrained by the potential fiscal impacts on state government. Without resources to increase MaineCare reimbursement rates to dentists, engaging more dentists to provide care to MaineCare eligible children could be problematic.

The report stated that the difficulty recruiting more dentists to MaineCare was compounded by an inadequate supply of dentists in the state. In addition, complex administrative systems in MaineCare adversely affected participation of dentists (ME DHHS Initiatives, 2008).

The report provided four main recommendations:

- Improve MaineCare reimbursement rates and consider enhanced payments to dentists who provide a high volume of services to MaineCare patients. Provide coverage for preventive and routine restorative oral health services for pregnant women age 21 and older.
- Encourage and support prevention programs focusing on improving oral health literacy and changing personal oral health behaviors.
- Address the issue of inadequate supply and maldistribution of the dental workforce in Maine.
- Consider primary medical providers as key resources to deliver early childhood preventive oral health services

The report discusses some continuing challenges to the oral health care system in Maine:

- There is an inadequate supply of dentists in the state to address unmet need for oral health services.
- The reimbursement rates for dental services covered by MaineCare are inadequate.
- Despite the rise in MaineCare participation by general private practice dentists during the calendar year, further increasing participation by dentists remains a goal.
- While 41% of MaineCare eligible children received a preventive service in the prior year, the rate for treatment/restorative services is low (14%) (ME DHHS Initiatives, 2008).

The report describes planned initiatives including:

- Recruiting more dentists to participate in MaineCare;
- Increasing outreach education for dentists on the new integrated claims management system;
- Exploring the possibility of funding dental benefits for pregnant women age 21 and older;
- Continuing efforts to improve the ability of MaineCare insured patients to keep dental appointments;
- Increasing the number of oral health assessments provided to MaineCare eligible patients;

- Supporting and encouraging programs that educate the population about the importance of good personal oral health behaviors; and
- Continuing work with the Advisory Committee to identify and remove access barriers to dental services ((ME DHHS Initiatives, 2008).).

2010

In response to legislation in Maine focused on assuring access to dental services for children under MaineCare, The Maine Department of Health and Human Services, Office of MaineCare Services issued a report to the legislature on February 22, 2010 titled *12th Annual Report to the Joint Standing Committee on Health and Human Services, the Office of MaineCare Services, Improving MaineCare Dental Access for Maine Children.*

The report described outreach and referral services to MaineCare families and dental providers in the prior year. This outreach focused on raising awareness about coverage for children's oral health services under MaineCare, providing families help finding a participating dentist, and outreach to increase dental participation in MaineCare. The report described targeted direct mailings from 2002 to 2009, resource and referral telephone service, activities of regional WIC programs related to oral health education and outreach, the program focusing on follow-up with patients about missed appointments, and providing education about the importance of keeping appointments. The report also described provider relations efforts to help dental providers with billing and claims issues as well as the work of the MaineCare Dental Advisory Committee during 2009.

The report reviewed 2009 MaineCare dental expenditures and the number of patients seen by MaineCare dental providers. MaineCare dental expenditures increased in 2009 over 2008. There was an increase in the number of MaineCare members who received a dental service in 2009 as well as an increase in the number of dentists providing dental services to MaineCare patients.

Table 3. Maine Care Expenditures and Utilization for Dental Services, 2008 and 2009

	2009	2008
MaineCare Dental Expenditures	$33,621,807	$28,800,313
Number of MaineCare Members Receiving a Dental Service	85,713	80,712
Number of Maine Dentists Who Submitted At Least One Claim for Dental Services to MaineCare	350	333
Type of Provider Supplying Dental Service, 2009	**Number of MaineCare Members Seen by Dental Providers, 2009**	
Dental Clinics	19,278	
Federally Qualified Health Clinic, Rural Health Clinic, Indian Health Clinic	11,885	
Community Dentists and Dental Specialists	48,741	
Dental Hygienists	5,809	

Source: Maine DHHS, Office of Maine Care Services, 12th Annual Report to Joint Standing Committee, 2010

2011

The Maine Department of Health and Human Services, Division of Health Care Management, Office of MaineCare Services and the Maine Oral Health Program published a report to the Maine Legislature in February 2011 titled *Report of the Resolve to Study Expenditures for Oral Health Care in the MaineCare Program (Public Law Chapter 146), Working Group.* The working group was convened to review MaineCare dental coverage, reimbursement, and utilization. The group was charged with identifying ways to reduce or redirect expenditures to provide more cost effective, high quality dental care. The group was also asked to review expenditures for emergency and urgent care and the costs of hospitalization related to dental services. The group commissioned an analysis of emergency department (ED) data linked to dental diagnosis codes to understand ED use by different groups, especially MaineCare members. As part of the work of the group, consumer survey and focus groups were also conducted. MaineCare eligible people who participated in these groups identified dental care as one of the most important benefits that could improve their health (Expenditures, 2011).

In making their recommendations, the group quoted Burton Edelstein, a dental advocate, who said that three things are needed to improve oral health – "sufficiency of payment, sufficiency of provider availability, and strong program oversight." The working group in Maine made the following recommendations to the legislature:

- MaineCare should be expanded to provide preventive and basic restorative dental services for adults;
- MaineCare reimbursement rates for dental services should be increased;
- Member support services including targeted mailings and other outreach services should be continued and expanded and there should also be outreach to dental providers;
- Strategies should be developed to address the lack of an adequate dental workforce
- There should be assurances that managed care administrators contracting with MaineCare to provide dental services will cover the costs of those services; and
- Collaborative community initiatives in Maine to reduce ED use for dental services should be reviewed and perhaps implemented by MaineCare as a way to facilitate more appropriate access (Expenditures, 2011).

On February 15, 2011 the Maine Department of Health and Human Services published its legislatively mandated annual report on dental care for MaineCare eligible children, titled, *Annual Report to the Joint Standing Committee on Health and Human Services regarding Improving Access to Dental Care for Children with MaineCare Coverage* (Annual, 2011).

In 2010, there were 152,951 children in Maine who were eligible for MaineCare at some point in that year; 68,813 or 45% of eligible children received a dental service. Among the 116,031 children in Maine who were insured by MaineCare for at least 11 months of the year, 62,552 or 53.9% received a dental service in 2010. The following table shows the number of MaineCare insured people who received any dental service in 2010 by the type of provider organization that provided the care.

Table 4. Number of MaineCare Eligible People Who Received a Dental Service in 2010 by Type of Provider Organization Where That Service Was Received

Type of Provider	Unduplicated Number of Enrollees Receiving Oral Health Services	Total Paid by MaineCare for Dental Services
General Dentists	29,416	$9,338,547
Non-Dental Provider	15,476	$8,312,086
Dental Clinic	15,834	$4,172,379
Federally Qualified Health Clinic	6,162	$2,012,359
Dental Other	7,920	$871,885
Rural Health Clinic	381	$223,016
Indian Health Clinic	229	$28,966
Totals	**75,418**	**$24,959,238**

Source: Maine DHHS Office of Maine Care Services, Annual Report to the Joint Standing Committee, 2011

As in previous years, the report provided information about:

- the number of MaineCare recipients who received dental services;
- the participation rates of dentists and physicians providing oral health services to MaineCare children;
- the continuing outreach efforts to families about services under the early and periodic screening, diagnostic, and treatment (EPSDT) benefit available to children younger than age 21;
- the member services telephone referral system to help MaineCare families find general or specialty dentists in their geographic area;
- the ongoing education campaign about the importance of keeping dental appointments;
- an update of the resource guide which lists dentists across the state who are accepting MaineCare patients;
- the 2010 implementation of a new HIPPA compliant MaineCare claims system; and
- the outcomes for the year related to the From the First Tooth Program and the WIC Oral Health Promotion Program (Annual, 2011).

A recent MaineCare initiative targeted avoidable ED visits by MaineCare patients for treatment of dental pain and infection. MaineCare was working with the dental community to find more effective ways to manage untreated dental pain and infection among MaineCare adult members. A pilot project to review records of MaineCare patients who were repeat users of EDs for ambulatory care sensitive conditions had begun at Maine General Medical Center.

The report concluded with identification of persistent dental access issues that were linked, as in the previous year, to a number of challenges for MaineCare including:

- An uneven distribution of dentists in Maine affecting the availability of professionals to meet the demands of the population;
- Inadequate MaineCare reimbursement rates for dental services compared to comparable commercial insurance rates; and
- The need to increase the state's dentists' participation in MaineCare (Annual, 2011).

The report identified goals for MaineCare for the next year including:

- Increasing outreach to inform dentists about the new and improved administrative claims system in an effort to increase dentist participation in MaineCare;
- Continuing education efforts with members to reduce the number of missed dental appointments;
- Support for and encouragement of prevention programs that include education on oral health literacy and changing personal oral health behaviors; and
- Increasing opportunities for provision of oral health preventive services in nontraditional settings (Annual, 2011).

CHAPTER 3: The Oral Health of Maine's Population

There are several indicators of oral health that are predictive of the oral health status of a population over time. Those predictors include the prevalence of water fluoridation in public water supplies; oral health behaviors of the population reported in surveillance data; the supply and distribution of the oral health workforce in the state; and demographic characteristics of the population including insurance status, age, disability status, socioeconomic characteristics, and proximity to community dental providers. These data can serve as indicators of access to oral health services. The following summarizes what is currently known about the oral health of residents of Maine, based on available indicators.

Water Fluoridation

Fluoride is effective in preventing or controlling dental caries, especially for children. The benefit of fluoridation is a reduction of between 18% and 40% in the rate of tooth decay for children who consume fluoridated water (Maine CDC, 2011). Earlier in this decade, recommended levels of fluoride in drinking water varied from 0.7 parts per million (ppm) for people living in warmer climates to 1.2 ppm for people living in cooler climates. The difference in recommended levels based on climate was to accommodate the tendency for people in warmer locations to drink more water (CDC, 2011). The natural level of fluoride in public water systems is assessed prior to supplementation to determine the amount of additional fluoride needed to meet optimal levels (CDC, 2011).

In January 2011, federal guidelines for baseline fluoride levels were revised to 0.7 ppm. It was determined that this lower concentration offered sufficient protection while reducing the risk of fluorosis (Jordan, 2011). In January 2011, Maine's Department of Health and Human Services authorized local water districts to reduce the amount of fluoride in their water supplies to conform to new federal guidelines that recommended the reduced level (Jordan, 2011).

In 2008, the CDC listed a total of 378 water systems in Maine ranging in size from large public water districts to very small private water systems serving a concentrated population (CDC, 2011). In 2009, fluoridated water was supplied through 67 public water systems (84% of public water systems in Maine) to residents of 132 communities (Maine CDC, 2009). However, fewer than half of the state's residents (49%) use public water systems, with the rest relying on private sources and wells. While some of these wells supply naturally fluoridated water (fluoride is a plentiful, naturally occurring mineral), there is no systematic assessment of private water supplies to determine the extent to which they offer sufficiently fluoridated drinking water. It is estimated that currently about 37% of Maine's population has fluoridated drinking water available in their homes (Maine CDC, 2011). In 2009, the CDC reported that 501,290 Maine residents received fluoridated water (CDC, 2011).

The first community in Maine to fluoridate its water was Norway in 1951. The most recent communities to fluoridate all or parts of their water systems did so in 2004, including York, Biddeford, Arundel, Kennebunk, Kennebunkport, and Ogunquit (Maine CDC, 2009). There was an appreciable increase (23.8%) in fluoridated water systems in Maine between 1996 and 2004 when local referenda were passed in 29 communities to permit water fluoridation (CDC, 2008).

In an effort to reach children in Maine who do not have access to publicly fluoridated water, many of Maine's school oral health programs deliver fluoride rinses to eligible students participating in the school oral health program on a weekly basis.

Oral Health Status of Maine Residents

It is difficult to accurately describe the current oral health status of a state's population since surveillance data are not systematically collected at the local level and available data are dated. The most widely cited source of data for describing the oral health status of the population is the Behavioral Risk Factor Surveillance System (BRFSS) maintained by the U.S. Centers for Disease Control and Prevention (CDC). The BRFSS data are compiled from a state-based system of annual health surveys, which collect information about health status and health behaviors of the population. The BRFSS is a telephone survey that contains fixed core questions (asked annually), rotating core questions (asked at varying intervals), and optional modules (asked at state's prerogative) (CDC, BRFSS, 2012). Questions about oral health status and behavior are contained in the rotating core and are therefore, not usually asked annually.

When benchmarked to other states and Washington, D.C. using data collected by the 2008 BRFSS, Maine ranks 25th in the nation for the percent of the population that received any dental service in the prior year, 14th for the percent of the population that had a teeth cleaning in the past year, and 40th for the percent of the adult population with no teeth removed due to decay or disease (BRFSS, 2008).

Table 5. Percent of Population by State Receiving a Dental Service or with All Teeth, 2008

STATE	Percent who last visited a dentist within the past year	STATE	Percent who had their teeth cleaned within the past year	STATE	Percent who had no teeth removed due to decay or disease
Connecticut	78.6%	Connecticut	79.9%	Utah	66.9%
Massachusetts	77.8%	Massachusetts	79.3%	Minnesota	65.0%
Rhode Island	77.7%	Rhode Island	78.8%	Colorado	64.1%
New Hampshire	75.9%	New Hampshire	77.1%	Washington	63.0%
Delaware	75.3%	Delaware	76.3%	Wisconsin	61.9%
Michigan	74.6%	Vermont	75.7%	Oregon	60.8%
Minnesota	74.5%	Virginia	75.4%	Alaska	60.7%
Vermont	74.4%	New Jersey	74.9%	Nebraska	60.6%
Virginia	74.0%	Michigan	75.0%	Kansas	60.0%
New Jersey	73.8%	Minnesota	74.3%	DC	59.4%
Hawaii	73.4%	Iowa	74.1%	Iowa	59.3%
North Dakota	72.9%	Hawaii	73.4%	Connecticut	59.3%
Washington	72.6%	New York	73.1%	Delaware	59.3%
New York	72.5%	Maine	72.1%	Michigan	58.9%
Wisconsin	72.4%	North Dakota	71.4%	Hawaii	58.9%
Iowa	72.4%	Wisconsin	72.2%	Virginia	58.8%
South Dakota	72.1%	Ohio	71.9%	Idaho	58.3%
Utah	71.5%	Washington	71.6%	New Hampshire	57.6%
Utah	71.4%	DC	71.3%	Massachusetts	57.5%
Ohio	71.2%	South Dakota	70.8%	Rhode Island	57.5%
DC	70.5%	Kansas	70.7%	California	57.3%
Kansas	70.5%	Maryland	71.0%	Illinois	57.0%
Oregon	70.4%	Pennsylvania	70.9%	Maryland	57.0%
Nebraska	70.4%	Oregon	70.1%	South Dakota	56.8%
Maine	70.2%	Nebraska	70.1%	Texas	56.1%
Georgia	70.0%	Utah	70.1%	Arizona	56.1%
Pennsylvania	69.9%	Georgia	70.0%	Wyoming	56.0%
California	67.6%	Louisiana	69.0%	Montana	55.9%
Idaho	68.0%	California	68.8%	Nevada	55.8%
Louisiana	67.7%	North Carolina	68.3%	New Mexico	55.6%
Florida	67.3%	Indiana	68.1%	Georgia	55.4%
Illinois	67.6%	Florida	67.4%	Vermont	54.9%
North Carolina	67.2%	Idaho	67.4%	Ohio	54.6%
Colorado	67.2%	South Carolina	66,5%	North Dakota	54.3%
Wyoming	66.7%	Colorado	66.6%	Louisiana	54.1%
Indiana	66.5%	Illinois	66.3%	New Jersey	52.6%
Arizona	66.4%	Arizona	66.2%	North Carolina	52.2%
South Carolina	65.7%	Wyoming	65.7%	Florida	52.1%
Alaska	65.3%	Tennessee	65.5%	Indiana	51.8%
Montana	64.6%	New Mexico	64.3%	Maine	51.8%
Tennessee	64.4%	Alabama	64.0%	Missouri	50.7%
New Mexico	64.0%	Kentucky	62.5%	Oklahoma	49.9%
Kentucky	63.9%	Nevada	62.4%	Kentucky	49.3%
Alabama	63.4%	Alaska	62.3%	Pennsylvania	49.2%
Nevada	61.5%	Montana	62.2%	New York	49.1%
Arkansas	61.5%	Arkansas	62.1%	South Carolina	49.1%
Missouri	61.1%	West Virginia	61.6%	Alabama	46.9%
Texas	59.8%	Missouri	61.6%	Arkansas	46.1%
West Virginia	59.9%	Texas	60.2%	Tennessee	45.2%
Mississippi	57.5%	Mississippi	57.2%	Mississippi	41.9%
Oklahoma	56.7%	Oklahoma	56.6%	West Virginia	39.7%

Source: BRFSS, 2008

In the 2010 BRFSS, Maine was 34th among states and Washington, D.C. in the number of residents that reported seeing a dental provider or visiting a dental clinic in the previous year.

Table 5. Percent of Population Visiting a Dentist or with Tooth Extraction or Loss, 2010

State	Visited Dentist or Clinic in Past Year, 2010	State	Adults that have any permanent teeth extracted, 2010	State	Edentulism[4] in Adult Population 65 Years or Older, 2010
United States	**70.1%**	**United States**	**43.6%**	**United States**	**16.9%**
Massachusetts	81.7%	Minnesota	32.6%	West Virginia	36.0%
Connecticut	81.6%	Utah	32.8%	Tennessee	33.7%
Minnesota	78.9%	Colorado	35.4%	Kentucky	27.4%
Virginia	78.4%	Washington	36.6%	Mississippi	27.1%
Rhode Island	78.1%	Oregon	37.2%	Louisiana	25.6%
New Hampshire	76.7%	Alaska	37.7%	Alabama	25.5%
Iowa	76.0%	Connecticut	37.8%	Oklahoma	24.6%
New Jersey	76.0%	Iowa	37.8%	Arkansas	23.3%
Vermont	75.6%	Wisconsin	37.9%	South Carolina	21.6%
Maryland	75.5%	Virginia	38.6%	North Carolina	21.5%
District of Columbia	75.3%	Hawaii	39.6%	Indiana	21.3%
Wisconsin	75.1%	Nebraska	39.8%	Georgia	21.0%
Utah	74.3%	Maryland	40.3%	**Maine**	**20.7%**
Delaware	74.2%	Massachusetts	40.3%	Ohio	19.8%
South Dakota	73.5%	Michigan	40.6%	Missouri	19.5%
Kansas	72.9%	Kansas	40.9%	North Dakota	18.8%
Hawaii	72.6%	California	41.5%	Wyoming	18.6%
North Dakota	72.6%	New Hampshire	41.7%	New Mexico	18.5%
Michigan	72.5%	New Mexico	41.9%	South Dakota	18.2%
New York	72.5%	Delaware	42.1%	Pennsylvania	18.0%
Pennsylvania	72.3%	Rhode Island	42.2%	Kansas	17.9%
Washington	72.1%	South Dakota	42.6%	Montana	17.6%
Ohio	71.5%	Wyoming	42.8%	Vermont	17.5%
Oregon	70.4%	Nevada	43.2%	Nevada	17.2%
Georgia	70.2%	Georgia	43.6%	New Hampshire	17.2%
Arizona	70.1%	Illinois	43.6%	Iowa	16.9%
Illinois	69.7%	Idaho	43.8%	Rhode Island	16.5%
California	69.6%	Vermont	44.1%	Delaware	16.4%
Nebraska	69.5%	Montana	44.3%	Wisconsin	16.3%
Alaska	69.4%	Ohio	45.0%	Alaska	16.2%
Idaho	69.3%	North Dakota	45.2%	Idaho	15.7%
Wyoming	69.0%	Texas	45.4%	Illinois	15.2%
Indiana	68.8%	New Jersey	46.5%	Massachusetts	15.2%
Maine	**68.7%**	Missouri	46.7%	Nebraska	15.2%
North Carolina	68.4%	North Carolina	46.7%	Virginia	15.0%
Colorado	68.0%	District of Columbia	48.2%	New York	14.7%
Nevada	67.2%	Indiana	48.3%	New Jersey	14.1%
New Mexico	67.2%	Oklahoma	49.5%	Texas	14.1%
Florida	66.4%	**Maine**	**50.6%**	Oregon	13.7%
Tennessee	66.3%	Louisiana	50.9%	Maryland	13.6%
Alabama	64.7%	South Carolina	50.9%	Arizona	13.4%
Missouri	64.3%	New York	51.1%	Colorado	13.4%
Louisiana	63.9%	Arizona	51.3%	Florida	13.3%
South Carolina	63.4%	Pennsylvania	51.5%	Michigan	13.1%
Kentucky	63.2%	Florida	53.0%	Utah	12.8%
Texas	61.7%	Kentucky	53.1%	Washington	12.0%
Arkansas	61.1%	Arkansas	54.1%	District of Columbia	11.2%
Montana	61.1%	Tennessee	54.9%	Minnesota	11.2%
West Virginia	60.5%	Mississippi	56.1%	California	10.6%
Mississippi	58.1%	Alabama	56.5%	Connecticut	9.2%
Oklahoma	57.2%	West Virginia	60.1%	Hawaii	7.4%

Source: BRFSS, 2010

[4] Edentulism is defined as the absence or complete loss of all natural dentition (teeth).

An analysis of current and historical BRFSS data shows state trend data of population rates for visiting a dentist or dental clinic within the previous year for any reason. The following table shows the percent of Maine's population with a visit to a dental provider in 2010 declined from 1999.

Table 6. 10-Year Trends of Visits to a Dental Provider in the Prior Year, by State, 2010

State	1999	2002	2004	2006	2008	2010	% Change 1999 to 2010
United States	**69.8%**	**70.9%**	**70.8%**	**70.3%**	**71.3%**	**70.1%**	**0.3%**
Nevada	59.1%	65.4%	64.5%	66.2%	63.7%	67.2%	8.1%
South Dakota	67.8%	72.4%	72.1%	69.5%	72.6%	73.5%	5.7%
North Dakota	67.1%	70.3%	69.6%	72.2%	74.1%	72.6%	5.5%
Virginia	73.8%	70.8%	73.5%	73.2%	75.2%	78.4%	4.6%
Washington	67.6%	71.2%	71.0%	71.6%	73.3%	72.1%	4.5%
New Mexico	63.1%	67.4%	67.9%	64.9%	66.0%	67.2%	4.1%
Iowa	72.1%	75.8%	75.1%	73.7%	73.4%	76.0%	3.9%
Massachusetts	78.2%	78.3%	79.5%	78.1%	79.3%	81.7%	3.5%
Wyoming	65.5%	68.5%	68.1%	68.2%	68.0%	69.0%	3.5%
Minnesota	75.5%	76.4%	79.7%	78.7%	75.3%	78.9%	3.4%
New Hampshire	73.3%	77.9%	77.5%	77.1%	76.8%	76.7%	3.4%
Idaho	65.9%	68.5%	67.7%	66.9%	69.5%	69.3%	3.4%
West Virginia	57.8%	61.2%	62.5%	61.4%	60.7%	60.5%	2.7%
Kansas	70.5%	74.0%	74.5%	70.4%	71.9%	72.9%	2.4%
Oregon	68.1%	69.9%	68.5%	68.6%	71.4%	70.4%	2.3%
Georgia	68.0%	67.0%	68.2%	70.7%	71.8%	70.2%	2.2%
New Jersey	73.9%	75.3%	75.8%	74.5%	75.9%	76.0%	2.1%
Missouri	62.4%	66.5%	64.0%	61.7%	62.7%	64.3%	1.9%
Arizona	68.3%	69.5%	68.6%	68.5%	68.3%	70.1%	1.8%
Connecticut	79.9%	81.6%	80.6%	80.5%	80.3%	81.6%	1.7%
Alabama	63.1%	69.1%	69.2%	68.0%	65.0%	64.7%	1.6%
Maryland	73.9%	76.0%	75.8%	75.0%	72.6%	75.5%	1.6%
Vermont	74.0%	75.6%	74.3%	73.5%	75.5%	75.6%	1.6%
Rhode Island	76.8%	78.5%	78.5%	80.4%	79.0%	78.1%	1.3%
California	68.3%	70.3%	70.5%	68.5%	70.3%	69.6%	1.3%
Delaware	73.0%	75.2%	77.2%	76.3%	76.9%	74.2%	1.2%
Ohio	70.3%	74.7%	72.2%	73.4%	72.2%	71.5%	1.2%
Indiana	68.3%	68.9%	66.6%	68.0%	68.3%	68.8%	0.5%
New York	72.0%	73.4%	71.7%	71.8%	74.2%	72.5%	0.5%
Utah	73.9%	74.2%	72.3%	70.6%	72.7%	74.3%	0.4%
Arkansas	61.0%	62.2%	60.9%	60.2%	63.5%	61.1%	0.1%
Louisiana	64.3%	68.5%	68.2%	63.5%	69.8%	63.9%	-0.4%
Wisconsin	75.6%	78.1%	77.5%	76.3%	73.3%	75.1%	-0.5%
North Carolina	69.0%	69.3%	69.4%	67.0%	68.5%	68.4%	-0.6%
Pennsylvania	73.0%	72.4%	69.9%	71.3%	71.1%	72.3%	-0.7%
District of Columbia	76.1%	75.1%	72.2%	71.4%	72.6%	75.3%	-0.8%
Texas	62.5%	61.7%	61.3%	63.5%	62.6%	61.7%	-0.8%
Maine	**69.8%**	**71.9%**	**69.6%**	**70.9%**	**71.5%**	**68.7%**	**-1.1%**
Kentucky	64.4%	68.2%	71.3%	63.3%	64.4%	63.2%	-1.2%
Colorado	69.5%	68.5%	72.3%	70.3%	68.5%	68.0%	-1.5%
Alaska	71.9%	66.6%	69.6%	66.9%	66.3%	69.4%	-2.5%
Illinois	72.4%	74.9%	72.6%	68.8%	68.9%	69.7%	-2.7%
Florida	69.3%	71.2%	68.2%	68.7%	69.1%	66.4%	-2.9%
Mississippi	61.5%	62.1%	59.4%	59.4%	59.5%	58.1%	-3.4%
Montana	65.0%	68.4%	65.9%	68.3%	66.0%	61.1%	-3.9%
Hawaii	77.0%	67.6%	N/A	73.7%	75.4%	72.6%	-4.4%
Nebraska	74.5%	75.2%	75.3%	72.6%	71.3%	69.5%	-5.0%
Oklahoma	62.3%	62.8%	61.3%	58.0%	57.9%	57.2%	-5.1%
Tennessee	72.0%	72.1%	71.5%	64.8%	66.8%	66.3%	-5.7%
Michigan	78.9%	76.9%	76.9%	75.1%	76.0%	72.5%	-6.4%
South Carolina	71.3%	70.9%	68.7%	66.2%	67.7%	63.4%	-7.9%

Source: BRFSS, 2011

While surveillance data indicate that the majority of Maine's residents access dental services during any year, there is a portion of the population who do not appear to receive care. There are several predictors of a lack of access to dental services in the state, including the geographic location of the population in comparison to dental professionals and the use of EDs for ambulatory care sensitive dental conditions that could be treated more effectively and less expensively by outpatient providers, such as community dental clinics and private dental practices.

Dental Health Professional Shortage Areas

A health professional shortage area (HPSA) is a geographic area, population group, or facility determined by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Office of Shortage Designation to have a shortage of health professionals. A HPSA may be designated for a shortage of primary care physicians, dentists, or mental health providers. These designations are defined in the following ways:

- Geographic – This designation covers one or more counties or a sub-county area with a shortage of providers. In a geographic HPSA, the entire residential civilian population is considered underserved.
- Special Population – This designation covers a special population residing in a geographic area with limited access to providers. Special populations include: Medicaid eligibles, low income populations, migrant and seasonal farm workers, homeless populations, American Indians, Alaska Natives, and other populations isolated by linguistic and/or cultural barriers.
- Facility - This designation covers a facility with insufficient capacity to meet the needs of the area or population group it serves. Facilities include federal and state correctional institutions, youth detention facilities, public or nonprofit outpatient facilities, and state or county mental health hospitals. A number of facility types receive automatic designation, including federally qualified health centers (FQHCs), FQHC look-alikes, rural health clinics, and outpatient health programs or facilities run by tribal organizations or urban American Indian organizations.

The qualifying dental HPSA population to dental full-time equivalent (FTE) ratio varies by type of designation.

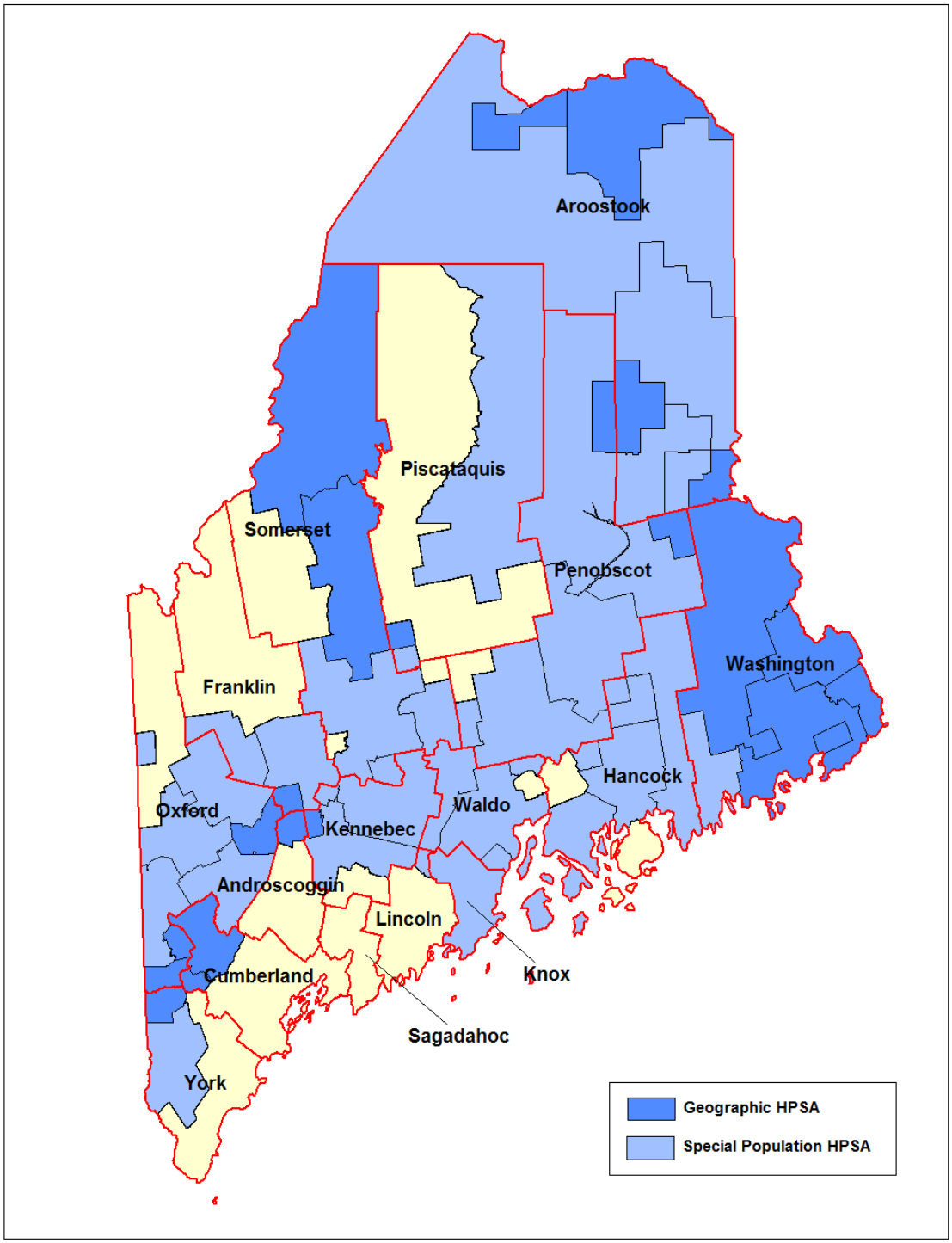
- Geographic dental HPSA designations require a population to dental FTE ratio of at least 5,000:1.
- A special population or geographic high need designation requires a ratio of at least 4,000:1.
- Public or nonprofit outpatient facility designations must document insufficient capacity (5,000 outpatient dental visits per 1 dental FTE or a wait time of at least six weeks for routine dental services) and access to the population or area designated as a dental HPSA.
- Correctional facilities or youth detention facilities must have at least 250 residents and an inmate to dental FTE ratio of 1,500:1 in order to qualify for designation.

HRSA has established formulas for counting dental professionals, which include the contributions of dental auxiliaries and also account for differences in productivity due to differences in age of dental professionals. HPSA designation is used by a variety of federal and state health professional recruitment and retention programs, including the National Health Service Corp, Maine Health Professions Loan Program, and programs that grant a waiver of the two-year home return requirement for physicians with an expiring exchange visitor visa (HRSA, 2011).

In November 2011, there were 4,383 dental health professional shortage areas (DHPSAs) in the U.S. with a total population of 47 million people (HRSA, 2011). HRSA estimates that it would require 9,266 additional oral health professionals to meet the needs of those who are currently underserved in those designated geographic areas, facilities, or special populations (HRSA, 2011). All or part of each of 15 counties in Maine has designation as DHPSAs. Sagadahoc County is the only county with no DHPSA designations (HRSA, 2011). In 2011, there were 212,858 people in Maine (16.0% of the state's population) living in a DHPSA (Kaiser, 2011), which is the 10th highest percentage of all states. Nationally, just 10.1% of the U.S. population lives in a DPHSA (Kaiser, 2011).

In November 2011, the DHPSA designations in Maine included 35 facilities (18 comprehensive health centers, one FQHC look-alike clinic, two psychiatric clinics, 14 rural health clinics), 39 special population groups, and 23 geographic areas (HRSA, 2011). There is one tribal designation for the Penobscot Indian Nation. There were no geographic designations in Hancock, Knox, Lincoln, or Waldo Counties. There were no population DHPSAs in Androscoggin or York Counties and no facility designations in Franklin and Oxford Counties (HRSA, 2011).

Figure 1. Map of DHPSAs in Maine, 2011



Source: HRSA, Division of Shortage Designation, 2011

Health clinics and providers of homeless services that receive HRSA money through any of their grant programs are required to submit data annually about the services they provide and about the patients they serve. In 2010, 18 community clinics across Maine, many of them FQHCs designated as DHPSAs, submitted data to HRSA that included information about dental services

provided to patients in various areas of Maine. In total, there were 21.47 FTE dentists in the 18 clinics who provided 46,169 clinic visits for dental services in 2010 (HRSA, 2011). There were 19.89 FTE dental hygienists who provided an additional 34,090 clinic visits (HRSA, 2011). In total, 31,567 individual patients were seen in 2010 in these 18 clinics by either dentists or dental hygienists (HRSA, 2011). The oral health professionals in these clinics were assisted by 38.29 FTE dental assistants and other aides (HRSA, 2011). The services provided to patients in 2010 are described in the following table.

Table 7. Dental Services Provided to Patients by 18 Provider Organizations in Maine, 2010

Type of Dental Service Provided	Number of Dental Related Visits, 2010	Number of Patients Receiving Dental Services, 2010	Dental Visits Per Patient, 2010
Emergency Services	741	635	1.17
Oral Exams	29814	22073	1.35
Prophylaxis	22403	15963	1.4
Sealants	3081	2214	1.39
Fluoride Treatment (Adult or Child)	12978	9285	1.4
Restorative Services	19220	10443	1.84
Oral Surgery (Extractions and Other)	5989	4340	1.38
Rehabilitative Services (Ortho, Endo, Perio, Prostho)	5407	3287	1.64

Source: HRSA Data Warehouse, 2011

Rural Populations

Maine is a very rural state with all but five of 16 Maine counties considered rural. Only five other states in the U.S. have a higher percentage of population living in nonmetropolitan areas (Rural, 2008). The characteristics of rural populations are especially salient when designing initiatives to increase access to oral health care.

In 2006, a work group was established to develop a rural health plan for Maine. The work of the group culminated in a 2008 report titled, *A Plan for Improving Rural Health in Maine.* While much of the report focused on general health, oral health is integrated with the suggested objectives for improving systemic health in rural Maine. The report contains a disclaimer stating that the workgroup did not delve deeply into specific health issues like behavioral or oral health which were acknowledged to be critical issues for rural residents. The factors that limited access to medical services in rural areas were described in the report as magnified for delivery of oral and behavioral health in rural locations (Rural, 2008).

The report concluded that rural residents in Maine should have better access to preventive dental services including prophylaxis, sealants, appropriate fluoride levels or supplemental fluoride treatments, oral health education, oral health promotion, basic restorative treatment services, and referral mechanisms for specialized dental care (Rural, 2008).

Demographic Characteristics of Maine's Rural Residents
According to the report, Maine's rural residents were more likely to live in poverty, be unemployed, and have lower levels of education than populations living in urban areas of the state. Maine's rural residents were, on average, older and reported poorer health status than urban residents, had less access to health care services, were less likely to be insured and more likely to rely on MaineCare (Rural, 2008).

Maine's rural residents were also disproportionately affected by chronic illnesses, including mental illness, and had higher rates of substance abuse than residents in urban areas. Poor health literacy among rural populations and personal behaviors that affected health were also issues. Transportation issues, including lack of public transportation and the high cost of gasoline to travel long distances to health care providers for routine, non-emergency services or acute care, were found to complicate efforts to increase access to services (Rural, 2008).

Access to Health and Oral Health Care in Rural Areas
Thousands of rural residents in Maine do not have geographic or financial access to health services. In addition, there are systemic and structural issues that affect access. The health, oral health, behavioral health, and public health services that comprise the rural health system are fragmented. This fragmentation, which is characterized by a lack of coordination, may result in discontinuity of care, reduced efficiency, and in some cases, diminished quality of care (Rural, 2008).

Health Insurance Status of the Population
The poor economy has eroded rates of insurance coverage for rural residents placing rural populations at increased risk for being either uninsured or underinsured. Small employers in rural areas face difficulties in financing or even finding health insurance options for their employees. Rates of dental insurance are already lower than rates of health insurance across the state so it is reasonable to assume that rates of dental insurance in rural areas are also quite low (Rural, 2008). Utilization of dental services declines when people cannot afford to pay for dental care.

Rural residents are disproportionately insured by MaineCare and Medicare. Currently, Maine finances the health care of over 20% of its rural population through MaineCare with Medicare financing an additional 50% of health care to rural residents (Rural, 2008). Dependence on public insurance by many rural residents of Maine impacts the oral health status of the population since neither MaineCare nor Medicare provide coverage for ongoing dental treatment for adults insured by these plans. To complicate the picture, a percentage of rural residents are ineligible for either public or private insurance coverage (Rural, 2008). If the uninsured are also unable to pay for dental services, they are at risk for poor oral health.

The delivery and financing of general health and oral health services in rural areas are also threatened by current economic conditions, which positions rural health care providers at considerable risk for limited sustainability. Rural dental practices may have a disproportionate number of patients on public insurance or without dental coverage.

Availability of Health Care Providers in Rural Areas of Maine
Residents of rural Maine are more acutely affected by health workforce maldistribution than are residents of the state's urban areas. In addition to the economic stresses within rural health care systems, there are the added stresses of uneven distribution of health and dental professionals. Workforce maldistribution limits access to care for all rural residents, even those who have insurance to help pay for needed care. A sufficient, appropriately trained, and strategically placed workforce is essential to provision of general health and oral health services.

Recruiting primary care providers, including physicians and dentists, is increasingly difficult for all health care organizations in the national marketplace. Those difficulties are compounded for rural provider organizations across the U.S. as organizations compete with high demand for general health and oral health professionals in urban markets, which reduces the availability of those providers for rural employment (Rural, 2008).

Not only is the population in rural Maine older than their urban counterparts, but general health and oral health professionals in rural areas are also aging. Replacing these health workforces in rural areas is a challenge. One strategy is to recruit health professions students from the rural population since those who grow up in rural communities are more likely to work in a rural community after graduation. Encouraging rural residents in Maine to pursue careers in general health or oral health care is one strategy to compensate for retirements and departures from the workforce. Workforce development is important to achieving improved access to services in rural areas (Rural, 2008).

Acknowledging that rural populations will likely be required to rely on a limited number of physicians and dentists to provide care for the foreseeable future, the report on rural health in Maine calls for a team-based approach to care, which is organized so that physicians and dentists manage teams of other professionals with expanded roles, such as advanced practice nurses and advanced practice dental hygienists. Telehealth systems are also essential to linking rural residents to extended networks of remote providers and to managing general health and oral health care in the future. Implementation of telehealth programs would augment the efficacy and efficiency of team-based care in remote locations in Maine (Rural, 2008).

Conclusions
The report suggests that innovative use of resources will be necessary to provide access to general health and oral health services in rural areas of Maine moving forward. Structural redesign or more creative deployment of current resources may be required. Use of developing technologies and expanded partnerships with community resources are also important tools that could be useful in addressing delivery of general health and oral health care to rural residents in the future. The goals for rural Maine discussed in the report included:

- Building health system capacity in Maine's rural areas; and
- Integrating systems and services (general health, oral health, behavioral health, and public health) to increase access, create efficiency, deliver quality care, and moderate costs (Rural, 2008).

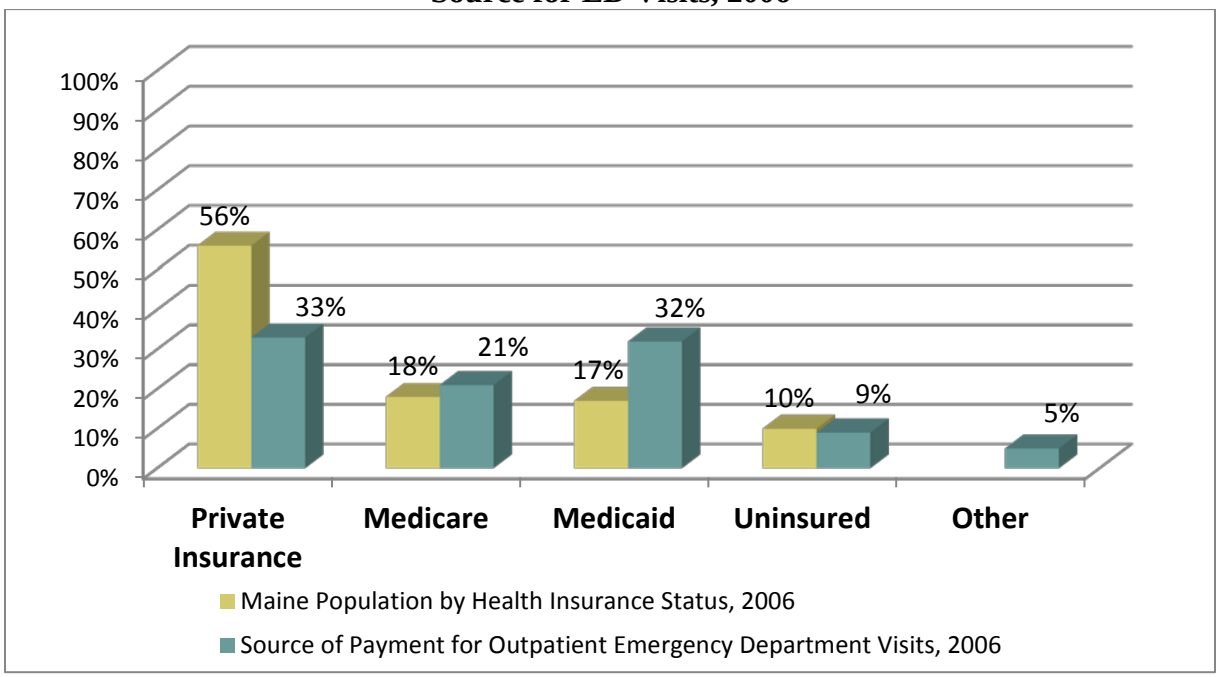
Use of Emergency Departments for Dental Services

EDs are often considered safety net providers because in addition to providing care for acute and emergent medical conditions of patients, they are also used by some patients for ambulatory conditions that could be more appropriately treated in other outpatient settings. Patients who access EDs for ambulatory care sensitive conditions often lack access to care from other medical or dental providers.

In 2006, people in Maine used EDs for health services more often than the U.S. population as a whole. In that year, there were 532 ED visits per 1,000 persons in Maine which was 30% higher than the national rate. The national rate for use of EDs was 405 visits per 1,000 persons (Kilbreth et al., 2009). In 2006, 390,709 people in Maine had ED visits for outpatient services not resulting in a hospitalization (Kilbreth et al., 2009). Some of these ED visits were for avoidable dental conditions.

MaineCare patients are disproportionately frequent users of ED services. The privately insured (commercially) population in Maine had the lowest rates of outpatient ED visits (284.4/1,000), while MaineCare insured patients had the highest rates of ED visits (918.7/1,000) (Kilbreth et al., 2009). While MaineCare insured about 17% of the state's population, MaineCare insured individuals represented 32% of all ED visits in 2006 (Kilbreth et al., 2010). While 56% of the state's population is privately insured, only 33% of ED visits were made by privately insured individuals (Kilbreth et al., 2010).

Figure 2. Percentages of Total State Population by Health Insurance Source and by Payer Source for ED Visits, 2006



Source: Kilbreth et al., 2009

Visiting an ED for dental pain or disease, while expedient, is not the most efficient choice for dental treatment. While medical staff in EDs may provide palliative therapy for dental conditions by prescribing antibiotics or pain medications and may extract teeth, ED staff are usually unable

to provide appropriate dental treatment services. Dentists are not commonly available in hospital EDs unless there is a dental residency program within the hospital that can be consulted. In addition, the cost of treatment for ambulatory care sensitive conditions like dental pain or caries is higher in EDs than in outpatient settings (Kilbreth et al., 2009).

The high rate of MaineCare eligible patients visiting EDs suggests the presence of barriers to obtaining care in other settings. These barriers may include transportation difficulties, jobs without flexible work hours or with strict attendance requirements that inhibit care seeking during the workday, provider preferences that limit the number of MaineCare patients in physicians' or dentists' caseloads, or people's preference to seek treatment in ED settings rather than private medical or dental practices (Kilbreth et al., 2009).

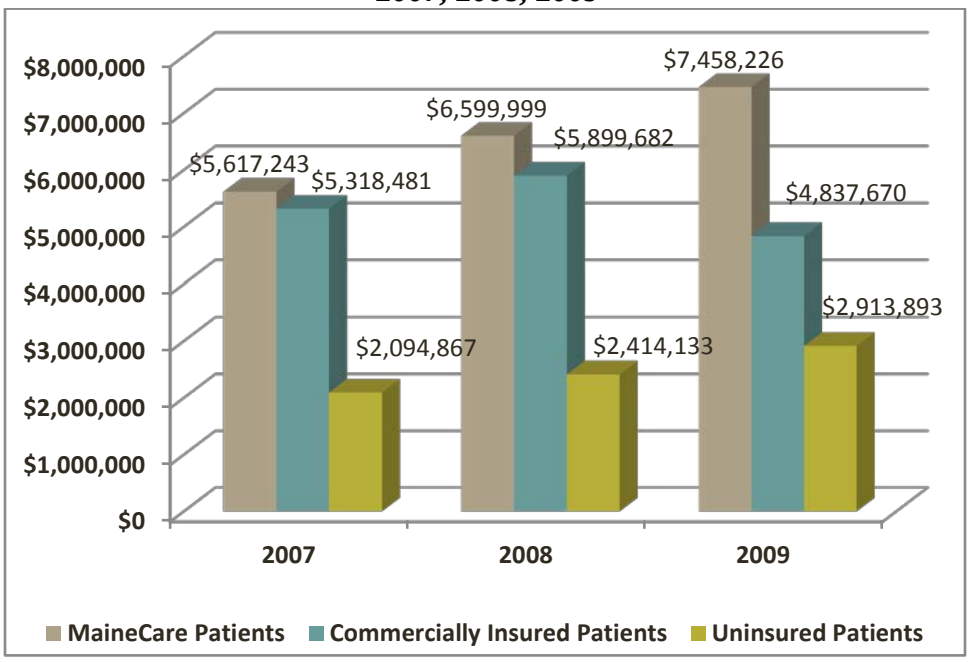
The number of people seeking care in EDs has increased over the decade as has the number of patients seeking care for dental pain or disease. In 2003, there were 132,027 visits to EDs throughout Maine by MaineCare insured individuals (ME DHS, 2004). Of those visits 2,238 were for dental pain and diseases of the teeth. This represented a 21% increase in ED visits for dental conditions from the previous year (ME DHS, 2004). The cost of care for these ED visits was $254,681, an average of $114 per patient (ME DHS, 2004). By 2006, dental pain was identified as one the top five reasons for avoidable ED visits by MaineCare beneficiaries (Expenditures, 2011).

In 2006, dental complaints for avoidable oral health conditions was the top reason why MaineCare patients or uninsured patients between the ages of 15 and 44 years went to an ED for services (Kilbreth et al., 2010). In that year, there were 3,430 ED visits related to a dental diagnosis among ED patients age 15 to 24 years (Kilbreth et al., 2010). Forty-five percent of ED visits for dental complaints in this age cohort were by frequent users of ED services (Kilbreth et al., 2010). In that same year, there were 4,949 visits for dental problems among ED patients age 25 to 44 years, also the primary reason for an ED visit for this age cohort. In all, there were 8,379 visits to EDs in Maine in 2006 for dental pain and related diagnosis by persons age 15 to 44 years.

In 2009, 8,091 MaineCare beneficiaries went to an ED or other outpatient provider for relief of acute dental pain at a cost of $6,590,888 (Expenditures, 2011). Treatment services included dispensing antibiotics and pain medication to address infection and palliate. Among those treated for dental pain in EDs, 2,256 were younger than age 21 and eligible for dental benefits and could have received covered treatment by an outpatient dental provider. The remaining 5,835 visits were for dental conditions of adults covered by MaineCare who were not eligible for a dental benefit for routine care. The cost of that ED care was $4,104,938.

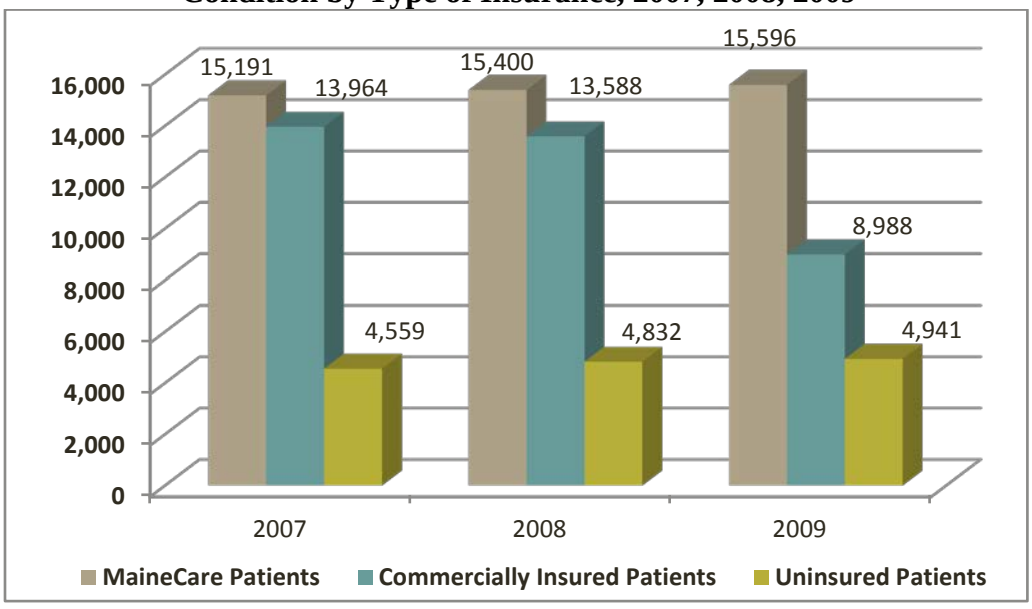
From 2007 to 2009, there was a slight increase in the number of MaineCare patients seeking treatment for dental conditions in EDs with a noticeable rise in MaineCare expenditures for ED services related to a dental diagnosis. Over the same time period, there was a decrease in both the number of commercially insured patients seeking treatment for dental conditions in EDs and payments by commercial insurers to EDs for treatment of dental conditions. The number of uninsured persons seeking care for dental conditions in EDs also rose slightly during this time period as did the cost of providing services to this population.

Figure 3. Source of Payment for ED Services Related to a Dental Diagnosis, Maine, 2007, 2008, 2009



Source: MaineCare Services, 2011

Figure 4. Number of Total Patients (All Age Cohorts) Seeking Care in an ED for a Dental Condition by Type of Insurance, 2007, 2008, 2009



Source: MaineCare Services, 2011

The Office on Health Policy and Finance of Maine Care issued a recommendation to "develop an initiative with the Maine Dental Association, dental surgeons, and other dental providers to create urgent care access for patients in settings other than EDs" (Expenditures, 2011). While this is a commendable suggestion, it still does not address the need for coverage of dental services for adults who are insured by MaineCare.

One reason often given by patients seeking care in EDs for ambulatory care sensitive dental conditions is a lack of available or accessible community dental professionals to provide services for MaineCare patients. In the 2006 study of ED use in Maine by patients seeking care for dental complaints, the authors examined the supply of dentists in six hospital service areas where there were both high and low use of EDs for dental complaints. The data did not show a direct association between ratios of dentists in an area and rates of ED use. The study did find, however, that there was a limited supply of dentists generally in all six areas studied and there were, in particular, few dentists accepting MaineCare insurance (Kilbreth et al., 2010). This may at least partially explain the use of EDs in those areas for treatment of dental conditions.

Table 8. Ratio of General Practice Dentists to 100,000 Population in Six Hospital Service Areas in Maine with Above or Below Average ED Use for Dental Diagnosis, 2006

	Location	Active General Practice Dentists Per 100,000 Population	Dentists in General Practice Treating MaineCare Patients Per 100,000 Population	Dentists in General Practice Accepting New Maine Care Patients Per 100,000 Population
State Ratios	***Maine***	35.3	15.7	6.1
Locations with Above Average ED Use For Dental Diagnosis	***Caribou***	25.0	20.8	11.1
	Calais	30.5	24.4	18.3
	Lewiston	32.7	6.5	1.9
Locations with Below Average ED Use for Dental Diagnosis	***Bangor***	36.8	19.9	10.4
	Farmington	24.6	9.8	3.7
	Damariscotta	34.5	11.5	2.9

Source: Kilbreth et al., 2010

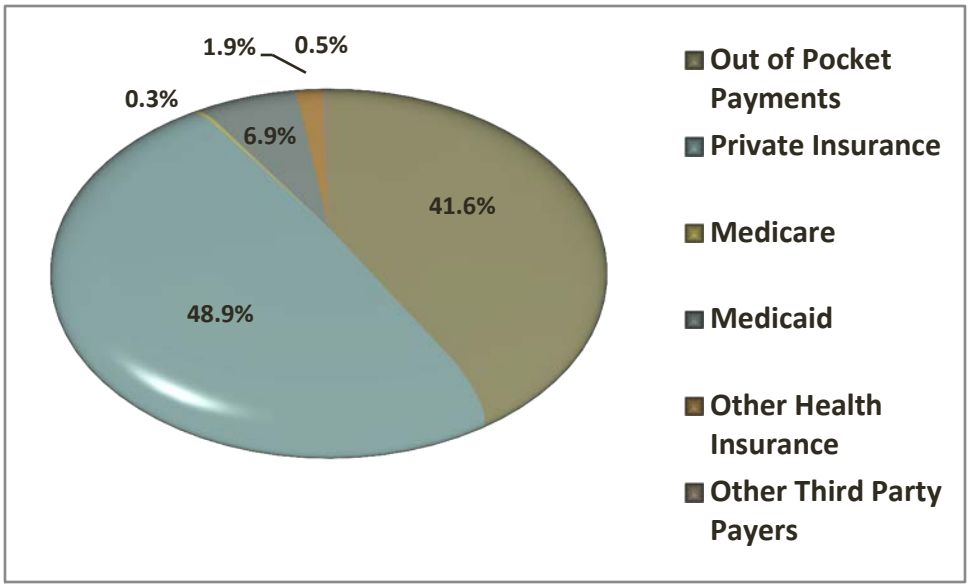
CHAPTER 4: Financing Oral Health Care in Maine

Dental Insurance Status of the U.S. Population

In 2009, oral health expenditures in the U.S. totaled $102.2 billion of which out-of-pocket payments accounted for $42.5 billion and private dental insurance paid $50 billion. The remainder was covered by public insurers and other third-party payers like the Department of Defense, the Department of Veterans' Affairs, Indian Health, Workers' Compensation insurance, etc. (CMS, Actuary, 2010). Medicaid spending on oral health services in 2009 was $7.1 billion. Medicare expenses for dental services totaled $300 million. However, dental expenditures represented a small portion of total health care expenditures in the U.S. In 2009, total health care spending was $2.5 trillion or $8,086 per person, while spending for dental services was $332 per person (Palmer, 2011).

In 2009, there was a 5.5% decrease from the prior year in the amount of out of pocket payments by self-pay patients using dental services (CMS, Actuary, 2010) in the U.S (41.6% of dental payments in that year). During the same period there was a 4.1% increase in dental payments by private and public insurers for dental services nationally (48.9% of dental payments in 2009).

Figure 5. Allocation of Expenses for Dental Services in the U.S., 2009



Source: CMS, Office of the Actuary, 2010

The implementation of the Affordable Care Act (ACA) in 2014 is expected to improve the health insurance status of many U.S. residents with a related shift in allocation of dental payments also expected. Personal out-of-pocket spending for oral health care is projected to decrease by 5.7% under ACA. This contrasts with expected increases in personal out-of-pocket spending in the three years preceding the effective date of the ACA (CMS, Actuary, 2010).

In addition, the ACA will affect cost shifting such that dental insurer expenses are projected to increase by 14.4% in 2014 despite projections of more modest 4% to 5% increases in each of the three years prior to the effective date of ACA (CMS, Actuary, 2010). Much of this increase

(10.9%) will be absorbed by private dental insurance companies whose $55.7 billion in dental expenses in 2013 are expected to increase to $61.7 billion in 2014 (CMS, Actuary, 2010).

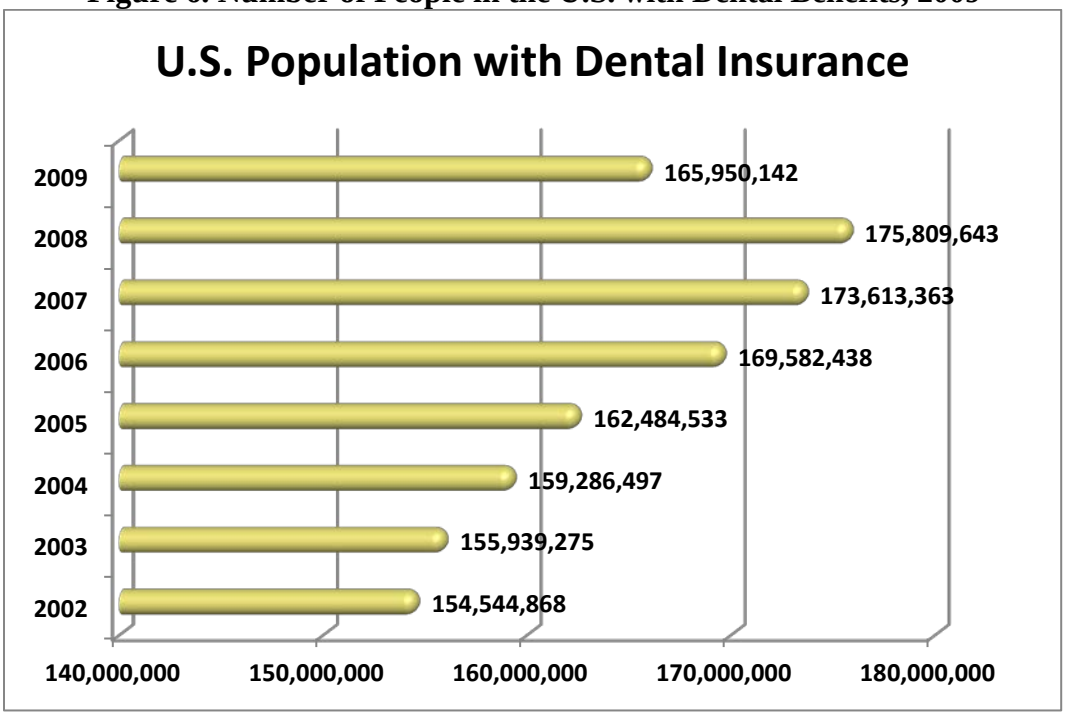
Public insurers are likely to be affected a bit differently under ACA. While Medicare is projected to experience a 4.4% decrease in expenses for dental care in 2014, the Medicaid program in the U.S. is expected to experience a 34.1% increase in expenses for dental care over the previous year. Medicaid's $10 billion in dental expenses in 2013 is expected to increase to $13.4 billion in 2014 (CMS, Actuary, 2010). This is due in part to the ACA mandate that all children in the U.S. have access to dental care.

Access to dental care is directly linked to having dental insurance to partly or fully pay for dental services. According to a telephone survey of consumers between the ages of 25 and 65 years conducted by the Long Group for Delta Dental in September 2009, 81% of those with dental benefits visit a dentist twice a year or more while only 34% of the uninsured do so (Delta Dental).

Dental insurance benefits are generally not included in health insurance plans. In 2010, only 1% of health insurance plans provided coverage for dental care (NADP, 2011). Most dental coverage (98%) is provided through dental insurance purchased separately from medical insurance (NADP, 2011). The majority of dental insurance available across the U.S. is purchased by employers as an employee benefit. Dental insurance coverage can also be purchased by individuals, however, in 2010, only 1% of dental insurance coverage was purchased by individuals (NADP, 2010).

The source of dental benefits is mainly large group insurance plans (56%), small group insurance plans (36%), and public insurance plans like Medicaid and Medicare (16%). The National Association of Dental Plans (NADP) reported that in 2010 the cost of dental benefits was mainly shared by employers and employees (62% of plans) with only a small number of dental benefit plans paid in full by employers (18%). Employee paid dental benefit plans constituted 21% of the market in 2010. The number of people enrolled in a dental insurance plan in the U.S. decreased in 2009 to pre-2006 levels.

Figure 6. Number of People in the U.S. with Dental Benefits, 2009

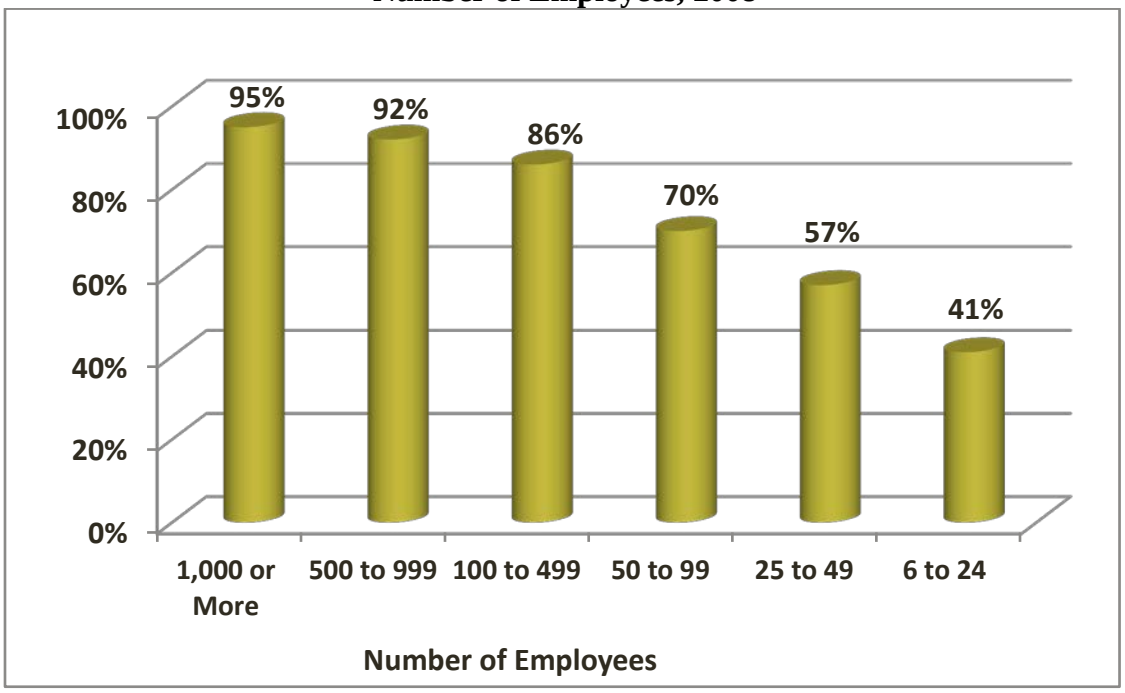


Source: NADP, 2010

While most large employers still offer dental insurance, the number of employers offering dental plans is decreasing and there has been erosion in dental benefits over time. In 1984, 77% of large and medium sized employers offered a dental insurance benefit to their employees (Snyder et al., 2008). Over succeeding years, the percentage of employers offering dental coverage changed. A 2006 survey conducted by the U.S. Bureau of Labor Statistics found only 46% of private sector employees had access to dental insurance coverage and only 36% actually participated in a dental plan (Snyder et al., 2008, citing National Compensation Survey, 2006). The requirements for a patient's financial participation in dental insurance vary considerably from the requirements for co-pays and co-insurance for health insurance. Dental benefit programs often require substantial patient participation in the cost of dental care. In addition, many dental insurance plans also cap the annual dental benefit at around $1,500 (Snyder et al., 2008).

The likelihood of an employer offering dental benefits decreases with the size of the company. A 2008 survey by the NADP found that 95% of employers with 1,000 or more employees offered a dental benefit while only 41% of companies with between six and 24 employees offered their employees a dental benefit (NADP, 2011).

Figure 7. Percentage of Companies in the U.S. Offering a Dental Plan to Employees by Number of Employees, 2008



Source: NADP, 2011

The Medical Expenditure Panel Survey (MEPS) of 2007 found that:

- 59.5% of the adult population age 21 to 64 years had private dental insurance coverage;
- 5.0% had public dental insurance coverage; and
- 35.5% of adults age 21 to 64 years had no dental insurance coverage (Manski et al., 2010).

People between the ages of 21 and 64 were more likely to be employed and therefore have access to employer supported dental insurance plans.

Sources vary on rates of dental insurance in the U.S. but all suggest that only a portion of the population has dental insurance. In 2009, about 130 million Americans lacked dental insurance (Delta Dental, 2009). In 2010, NADP indicated that 57% of the U.S. population was enrolled in some dental plan (NADP, 2010).

According to research focused on the dental insurance status of the population, economic status is a determinant of dental insurance status. Higher income groups were more likely to have a larger percentage of people with a dental benefit. Poor adults were less likely than adults with middle or high incomes to have dental coverage. Among poor adults age 21 to 64 years,

- 15.8% had private dental insurance;
- 23.6% had some level of public dental coverage; and
- 60.6% had no dental coverage (Manski et al., 2010).

In 2009, 55% of the U.S. population had an annual household income of $50,000 or less. About 44% of those with dental insurance in 2009 fell into this income category (NADP, 2011). At the same time, 29% of the U.S. population had an annual household income of between $50,000 and

$99,000, yet 35% of all individuals with dental insurance fell into this income category (NADP, 2011).

A comparison of dental coverage for children and young adults age 21 or younger in the U.S. found that dental coverage status had improved in the period between 1996 and 2006. This was the time period when State Children's Health Insurance Programs (SCHIP) were created. The comparison found a decrease in the percentage of children and young adults without dental insurance coverage from 1996 (28.8% were uninsured) to 2006 (18.7% had no dental coverage) (Manski et al., 2008). At the same time, a larger proportion of children and young adults had a dental visit in 2006 than in 1996 (Manski et al., 2008).

Dental Insurance Status of Maine's Population

In 2010, the NADP indicated that 482,474 people in Maine (about 36.3% of the state's population) were enrolled in private dental plans (NADP, 2010). Most were insured through either a dental preferred provider organization plan (248,078) or through a dental indemnity plan (231,741) (NAPD, 2010). The remainder (2,656) was insured through a dental health maintenance organization plan (NADP, 2010). The percentage of the population covered by government or public programs or other third party payers (e.g., Worker's Compensation, Indian Health, etc.) was not available.

Dental coverage is available through public insurance programs like Medicaid and SCHIP. However, Maine limits routine dental benefits under Medicaid to only children who are covered for dental care under the mandatory EPSDT program. Adult dental benefits from MaineCare are limited to traumatic injury or acute dental pain. In addition, Medicare rarely covers dental expenses, except costs related to oral surgery in hospitals under very specific circumstances (Snyder et al., 2008). However, some Medicare Advantage programs, such as those managed through private insurance carriers, may provide limited coverage for dental services in some locations.

It is likely, considering current economic conditions in Maine and across the U.S., that there are increasing numbers of adults without dental insurance due to unemployment, the high cost of dental insurance, and benefit cutbacks by employers during the recent economic recession (Public Sector, 2010).

Table 9. Number of States and Washington, D.C. by Level of Coverage for Dental Services for Adults and Pregnant Women in Medicaid and CHIP Programs, 2011

Level of Coverage for Dental Services	Benefits for Adults in Medicaid	Benefits for Pregnant Women in Medicaid	Benefits for Adults in CHIP
No Coverage	7	14	38
Emergency Only	15	5	2
Limited	15	14	3
Comprehensive	13	16	7
Not Reported	1	2	1

Source: ADA, 2011 citing ASTDD, 2011

While comprehensive data about the dental insurance status of Maine's population is neither readily available nor timely, data about the health insurance status of the state's population are more accessible. Health insurance status is useful as a proxy for dental insurance for several reasons. People without health insurance are generally also without dental insurance. Older and disabled people insured by Medicare do not generally have dental insurance unless they purchase it separately from another carrier. Adults in MaineCare are effectively uninsured for dental services since the plan provides coverage only for emergent or acute dental problems. Ongoing comprehensive dental care is not covered by MaineCare (Expenditures, 2011). In addition, even those who have health insurance through an employer sponsored health plan may not have dental insurance. It can, therefore, be assumed that Maine residents without health insurance coverage are also without dental coverage and also that many of those on public insurance plans and some with commercial health insurance do not have dental insurance.

In July 2002, the Maine Department of Human Services used a HRSA planning grant to conduct a telephone survey of Maine households to estimate the size and characteristics of the insured and uninsured population in the state. While the survey focused mainly on health insurance status, some measures of dental insurance were collected and reported in *Health Insurance Coverage among Maine Residents, The Results of a Household Survey, 2002* which was published in May 2003. An estimated 13% of Maine's residents younger than age 65 lacked health insurance coverage at the time of the survey, while about 17% of Maine's non-elderly residents had been uninsured at some time during the year prior to the survey. Two-thirds of state residents younger than age 65 had private employer based coverage (66%) and another 6% of individuals had purchased individual health plans. Thirteen percent of adults between the ages of 18 and 64 years were on a public insurance plan, either Medicare or Medicaid, and 14% of adults in that age cohort had no health insurance. Many of the uninsured in the adult cohort were employed by small businesses that could not afford to offer health insurance coverage or to support the high costs of insurance (Coverage, 2003).

Seventy percent of Maine residents with employer based health insurance coverage also had dental insurance supplied by that employer (Coverage, 2003). In addition, 22% of Maine residents with nongroup health insurance coverage (individual plan) also had a dental benefit. Elderly Maine residents (older than age 65) were less likely than younger adults to have dental insurance coverage. Only 16% of Maine's older adults had coverage for dental care compared to more than half of younger adults (Coverage, 2003).

The survey found that Maine's uninsured residents were more likely than residents with health insurance to visit an ED. Higher usage of EDs by the uninsured may be related to the decreased probability of having a regular health care provider or receiving preventive care (Coverage, 2003). The same may be said for those without dental insurance since the likelihood of receiving ongoing preventive or dental treatment services is decreased for the uninsured.

The 2009 American Community Survey one-year estimate of the percent of the non-institutionalized civilian population in Maine without health insurance was 10.5%. Maine ranked 29th among the 50 states and Washington, D.C. for the proportion of state residents without health insurance. Texas was 1st with 23.8% of the state's population lacking health insurance and

Massachusetts ranked 51st with only 4.2% of the state's population lacking health insurance. Rhode Island was the only New England state with a higher percent of uninsured in the population (11.3%) than Maine (10.5%) (ACS, 2009)

Table 10. One Year Estimates of Percent of Population without Health Insurance by New England State, 2009

New England State	Percent of Population That is Uninsured, 2009	Rank among all states and D.C.
Massachusetts	4.2%	51st
Vermont	8.6%	47th
Connecticut	8.8%	46th
New Hampshire	10.2%	40th
Maine	10.5%	39th
Rhode Island	11.3%	37th

Source: ACS, 2009

The U.S. Census Bureau's Small Area Health Insurance Estimates (SAHIE) program models health insurance coverage by combining survey data from sources like the American Community Survey, Medicaid, and Children's Health Insurance Program records, the decennial census, aggregated tax return data, and the Supplemental Nutrition Assistance Program (formerly the food stamp program) with population estimates and administrative records. The following table describes SAHIE estimates of lack of health insurance coverage for Maine residents younger than age 65 at all income levels and for both sexes by county. In general, only those with health insurance have dental insurance coverage and even among those who are medically insured, some have no coverage for dental care. Thus, the rates of those without health insurance in Maine likely understate the percent of the population without dental insurance.

Table 11. Percent of Population Younger Than Age 65 without Health Insurance by County, 2009

County	Number of Uninsured Younger than Age 65	Population Younger than Age 65	Percent Uninsured
Androscoggin	11,168	88,090	12.7%
Aroostook	8,101	56,780	14.3%
Cumberland	26,050	232,700	11.2%
Franklin	3,157	24,658	12.8%
Hancock	6,120	43,031	14.2%
Kennebec	11,937	99,480	12.0%
Knox	4,522	32,175	14.1%
Lincoln	3,947	26,935	14.7%
Oxford	6,231	45,843	13.6%
Penobscot	15,168	124,119	12.2%
Piscataquis	1,912	13,320	14.4%
Sagadahoc	3,251	30,029	10.8%
Somerset	5,593	41,591	13.4%
Waldo	4,222	31,453	13.4%
Washington	4,328	25,363	17.1%
York	19,348	167,087	11.6%
Total	**135,055**	**1,082,654**	**12.5%**

Source: ACS, SAHIE, 2009

In Maine, health insurance status varied by income. Just over one-fifth of the population (20.6%) younger than age 65 with incomes less than or equal to 138% of the poverty level were uninsured. At the same time, 16.3% of the adult population with incomes less than or equal to 400% of poverty had no health insurance in 2009 (SAHIE, 2011). The impacts of being uninsured for dental care include lack of ongoing preventive services or treatment for emergent dental conditions. People with private insurance are more likely to visit a dentist, have more frequent encounters with a dental provider, and have higher expenditures than people without dental insurance (Manski et al., 2002). Having private dental insurance is one of several determinants of dental care used (Manski et al., 2002). Those without insurance are at risk for poor oral health. The repercussions of untreated dental conditions on overall health are substantial. While people with lower incomes are less likely to have private dental coverage than higher income groups, people without coverage regardless of income are less likely to report having a dental visit than those with dental insurance (Manski et al., 2002).

Dental insurance status also affects a population's perception of the importance of oral health and ultimately their care seeking behavior. In a 2008 survey of U.S. consumers by the Long Group for Delta Dental, more than two-thirds of all consumer respondents (68%) strongly agreed that oral health affected overall health status (Delta Dental, 2009). When that survey data was examined by the dental insurance status of survey participants, there were noticeable differences.

Among consumers who had dental insurance coverage through an employer sponsored or government insurance program, 71% agreed that good oral health was important to systemic health. In addition, 70% of consumers who paid individually for a dental insurance plan or paid directly for their dental care also acknowledged the importance of oral health to overall good health. However, among respondents who were not covered by dental insurance and also did not either receive or pay for dental care, only 50% strongly agreed that oral health affected overall health status (Delta Dental, 2009). Dental insurance status made a difference in the ability of survey participants to recognize the important linkage between oral health and systemic well-being.

MaineCare

MaineCare, which is the Medicaid program in Maine, provides a comprehensive dental benefit for eligible children and young adults up to age 21 under the EPSDT benefit as mandated by the U.S. government. Adult MaineCare beneficiaries who are older than age 21 are covered only for dental services necessary to relieve pain, treat infection, or prevent imminent tooth loss (Expenditures, 2011). MaineCare funds dental treatment for adult beneficiaries for acutely painful teeth and restorations necessary to restore previously endodontically treated teeth. The adult MaineCare dental benefit does not cover the final restoration of teeth following a root canal (Expenditures, 2011). Ongoing dental and preventive care is also not a covered benefit (Expenditures, 2011). The adult dental benefit meets the mandatory coverage requirements of the U.S. Social Security Act, Title X1X and successive legislation requiring coverage to eligible adults age 21 and older for acute surgical care following traumatic injury or for extraction of teeth that are severely decayed.

The state Medicaid system in Maine is the second largest in the country on a per capita basis with 19% more Maine residents in MaineCare than the U.S. average (Davis, 2009). The rate of Medicaid eligibility in Maine is high relative to national rates and also relative to most New England States (Kaiser, 2005). MaineCare covers one of every five citizens in the state (Kaiser, 2005). Maine's economy has been in transition for several decades. During the 1990s, there was a sharp reduction in the number of manufacturing jobs available in the state (Kaiser, 2005). Manufacturing jobs often carried health insurance benefits (Kaiser, 2005). With a shift to more service related jobs and a greater reliance on small businesses, the rate of employer based insurance coverage available to Maine residents has been declining (Kaiser, 2005). In addition, many service industry jobs are low paying and as a result more families and individuals become eligible for MaineCare benefits (Kaiser, 2005). In 2003, the percent of uninsured persons in manufacturing jobs was 16.6%, while the percent of uninsured working in service industries was 35.7% (Kaiser, 2005).

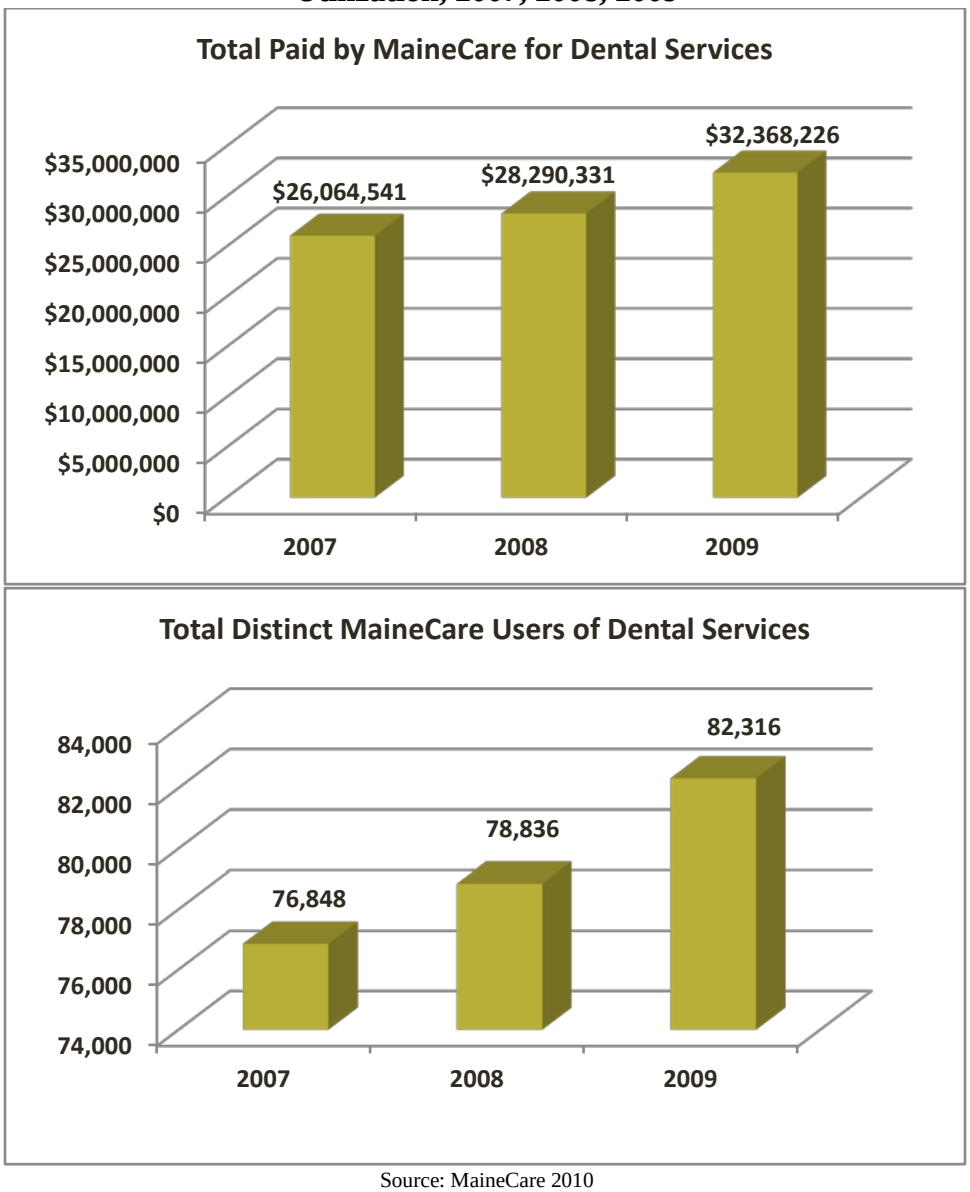
Table 12. Medicaid Dollars for Dental Care as a Percent of Total Medicaid Spending by State, 2005

State	Medicaid Dollars Spent for Dental Care, 2005	Dental Spending as a Percent of Total Medicaid Spending, 2005
United States	3,385,607,920	1.13%
Georgia	189,276,432	2.58%
Idaho	25,237,753	2.50%
South Carolina	99,716,989	2.45%
Indiana	126,197,113	2.41%
North Carolina	210,139,844	2.38%
Oklahoma	58,276,186	2.15%
Texas	369,399,521	2.14%
Tennessee	156,683,153	2.07%
California	690,981,612	2.05%
Wyoming	7,961,811	1.96%
West Virginia	40,936,967	1.89%
Alaska	18,156,497	1.80%
Washington	102,317,685	1.79%
Vermont	14,364,105	1.67%
Hawaii	15,484,005	1.50%
Utah	20,034,728	1.49%
Colorado	41,477,295	1.48%
Iowa	35,276,751	1.48%
Delaware	11,852,713	1.36%
Alabama	48,335,404	1.30%
Kansas	25,026,165	1.27%
Nevada	14,176,869	1.20%
Kentucky	49,595,541	1.17%
Nebraska	15,955,561	1.16%
New Hampshire	14,293,348	1.15%
North Dakota	5,780,656	1.14%
Montana	7,566,106	1.09%
Ohio	120,622,624	1.04%
Rhode Island	14,611,393	0.87%
Michigan	74,685,683	0.86%
Louisiana	43,933,904	0.83%
Illinois	79,772,674	0.74%
Maine	16,328,214	0.73%
Massachusetts	68,938,393	0.72%
Arkansas	18,318,971	0.70%
New York	280,974,367	0.66%
Wisconsin	29,166,995	0.61%
Missouri	38,221,797	0.59%
Florida	62,080,239	0.47%
Minnesota	25,904,335	0.47%
New Mexico	10,963,943	0.46%
Virginia	19,366,794	0.44%
New Jersey	22,608,029	0.30%
Mississippi	7,338,688	0.22%
Pennsylvania	30,605,704	0.19%
Connecticut	3,198,573	0.08%
Oregon	774,392	0.03%
Maryland	434,996	0.01%
Arizona	289,799	0.01%
South Dakota	0	0.00%

Source: CMS Medicaid Financial Management Report, 2005; DocStop, 2011

Dental expenditures constitute a small portion of MaineCare expenditures which totaled $2.5 billion in 2009 for all health services (Kaiser, 2011). Dental expenditures in that year totaled $32,368,226, of which $9,746,772 was spent on dental related services to adult MaineCare members. More than 90% of dental expenditures for oral health treatment services to MaineCare eligible patients in 2009 were paid to dental offices.

Figure 8. Total MaineCare Reimbursement for Dental Claims and MaineCare Dental Utilization, 2007, 2008, 2009



Source: MaineCare 2010

Table 13. MaineCare Dental Expenditures, 2009

	All Ages		Age < 21 Years		Age> 21 Years	
Source of MaineCare Dental Claim	**Total Distinct Users (MaineCare Insureds)**	**Total Paid**	**Total Distinct Users (MaineCare Insureds)**	**Total Paid**	**Total Distinct Users (MaineCare Insureds)**	**Total Paid**
Dental Claims	74,540	$30,093,674	53,901	$21,257,033	20,639	$8,836,641
FQHC Claims	9,464	$2,014,124	5,279	$1,218,138	4,185	$795,986
Indian Health Service Claims	281	$145,261	181	$106,797	100	$38,464
Rural Health Clinic Claims	973	$115,167	300	$39,486	673	$75,681
Totals	**82,316**	**$32,368,226**	**58,221**	**$22,621,454**	**24,095**	**$9,746,772**
Other Providers' Claims^	7,908	$615,912	3,725	$320,393	4,183	$295,519

^Includes physicians, NPs, pharmacy, laboratory, DME supplies, etc.
Source: Maine Care 2011, Data Source: Muskie 7, MaineCare CY, 2009

In 2009, 37.1% of eligible children received some dental service under the MaineCare EPSDT benefit. This percentage positioned Maine in the lowest quartile of states reporting to the Centers for Medicare and Medicaid Services about the EPSDT services provided to children. While the overall percentage of eligible children receiving services was low compared to other states, the percent of eligible children receiving a dental treatment service in 2009 was in the top quartile of states. However, within that quartile there was a significant difference between the top ranked state, New Mexico, where 44.9% of eligible children received a treatment service and Maine, where 27.1% of children in Maine received a treatment service. While Maine provided 34.6% of eligible children with a preventive service in 2009, the top ranked state, Idaho, provided 52.7% of Medicaid eligible children with a preventive service in 2009.

Table 14. Dental Services Provided to Children Under EPSDT Benefit by State, 2009

State	Total Any EPSDT Dental Service 2009	State	Any EPSDT Preventive Service 2009	State	Any EPSDT Dental Treatment Service 2009
Idaho	62.3%	Idaho	52.7%	New Mexico	44.9%
Texas	53.8%	Vermont	51.6%	West Virginia	43.4%
Vermont	52.8%	New Hampshire	45.9%	Arizona	42.6%
Iowa	49.9%	Arizona	44.9%	Idaho	33.8%
New Hampshire	49.9%	Washington	44.7%	Texas	28.2%
Nebraska	48.4%	Texas	44.3%	Maine	27.1%
Washington	48.0%	Nebraska	44.3%	Massachusetts	25.4%
Arizona	47.4%	South Carolina	44.2%	Hawaii	23.7%
North Carolina	47.3%	Iowa	43.7%	South Carolina	22.6%
Massachusetts	47.2%	North Carolina	43.6%	Nebraska	22.4%
South Carolina	46.8%	Massachusetts	42.6%	New Hampshire	22.0%
New Mexico	45.7%	Alabama	42.2%	Washington	21.9%
Alabama	45.2%	New Mexico	41.7%	Vermont	21.9%
West Virginia	43.4%	Rhode Island	40.1%	Arkansas	21.6%
Indiana	43.1%	Illinois	39.5%	Virginia	21.6%
Rhode Island	42.8%	Indiana	39.3%	Alaska	21.0%
Arkansas	42.6%	Oklahoma	38.9%	Tennessee	20.9%
Illinois	42.4%	South Dakota	38.4%	Indiana	20.8%
Colorado	42.2%	Virginia	38.2%	North Carolina	20.5%
South Dakota	42.2%	West Virginia	38.1%	New Jersey	20.5%
Oklahoma	41.9%	Kansas	37.6%	Wyoming	20.4%
Tennessee	41.6%	Tennessee	37.5%	Iowa	20.4%
Mississippi	41.4%	Arkansas	37.2%	Oklahoma	20.3%
Virginia	41.4%	Colorado	37.1%	Colorado	20.2%
Hawaii	40.9%	Utah	36.5%	Louisiana	20.1%
Kansas	40.4%	D.C.	35.8%	Nevada	19.7%
D.C.	39.8%	Wyoming	35.4%	Kentucky	19.2%
Wyoming	39.4%	Hawaii	35.3%	Utah	19.0%
Ohio	39.1%	Georgia	34.9%	D.C.	19.0%
Maryland	38.9%	Mississippi	34.8%	Rhode Island	18.9%
Connecticut	38.8%	Maine	34.6%	Alabama	18.6%
Louisiana	38.4%	Ohio	34.4%	Mississippi	18.2%
Alaska	38.3%	Connecticut	34.3%	Connecticut	18.2%
Minnesota	38.2%	Louisiana	34.3%	Delaware	17.9%
Georgia	37.9%	Minnesota	34.2%	Kansas	17.8%
New Jersey	37.6%	Delaware	34.2%	Georgia	17.7%
Delaware	37.4%	Maryland	33.8%	South Dakota	17.6%
Utah	37.4%	New Jersey	32.5%	Minnesota	17.1%
Maine	37.1%	Alaska	31.8%	Illinois	16.6%
Nevada	36.9%	New York	31.4%	Pennsylvania	16.4%
Kentucky	36.8%	Nevada	31.4%	New York	16.4%
California	35.4%	Kentucky	31.0%	Maryland	16.1%
New York	34.7%	Pennsylvania	29.3%	Ohio	16.1%
Pennsylvania	33.8%	California	28.6%	California	15.7%
North Dakota	32.9%	North Dakota	26.8%	Montana	14.7%
Missouri	27.4%	Missouri	24.3%	Missouri	13.9%
Montana	26.9%	Montana	23.8%	North Dakota	12.7%
Wisconsin	26.7%	Wisconsin	23.6%	Wisconsin	11.2%
Florida	23.1%	Florida	14.0%	Florida	7.7%
Michigan	N/A	Michigan	N/A	Michigan	N/A
Oregon	N/A	Oregon	N/A	Oregon	N/A

Source: CMS, Annual EPSDT Participation Report, Form CMS-416, 2009

Provider Participation in MaineCare
In 2007, approximately 30% of general dentists in the state provided at least one dental service to a MaineCare eligible patient (Initiatives, 2008).

Table 15. Number of Providers of Dental Services and Number of MaineCare Patients Served, 2007

MaineCare Dental Services 2007		
Provider Type	**Number of Providers**	**Number of MaineCare Members Served**
Private Practice Dentists	201	33,449
Dental Hygienists (Preventive Services)	11	7,141
Private Non-Profit Dental Clinics	9	19,480
Federally Qualified Health Clinics	9	11,987

Source: DHH, ME DHHS Initiatives, 2008

In 2010, Maine ranked in the top 16 states for dentists' participation in the state Medicaid program with 48% of actively practicing dentists in Maine participating in MaineCare. Among the 323 dentists and the various clinics that treated MaineCare beneficiaries in 2010, 45% of providers billed MaineCare over $100,000 each for dental services (MaineCare, 2010) provided to eligible patients (Expenditures, 2011).

Maine conducts a biennial re-registration survey of dentists and dental hygienists. The survey asks dentists about their willingness to accept new patients and especially about their interest in accepting MaineCare beneficiaries. In the 2008 re-registration survey, 87% of Maine's dentists reported that they were accepting new patients, but only 26% indicated they were accepting MaineCare beneficiaries (Expenditures, 2011). In addition, among dentists who were treating MaineCare patients, 58% reported limiting the proportion of MaineCare beneficiaries seen in their practices (Expenditures, 2011). In 2008, 47% of Maine dentists reported treating MaineCare patients; 42% reported treating MaineCare patients younger than age 21 and 26% treated MaineCare patients age 21 and older (Expenditures, 2011).

In the 2010 dentist reregistration survey, 93.3% of responding dentists indicated that they were accepting new patients, but only 30% indicated they were accepting new patients who were MaineCare beneficiaries. Almost half of survey respondents (47.2%) were treating MaineCare patients in their practices. Forty-five percent of survey respondents were treating MaineCare patients who were younger than age 21, but only 29.4% were treating adult MaineCare patients (age 21 and older). Many dentists who treated MaineCare patients (60.3%) limited the percentage of MaineCare patients in their caseloads (CHWS, 2011).

Table 16. Number of MaineCare Members Receiving Dental Services in 2010 by Type of Provider and Amount Paid for Dental Services

Type of Provider	Distinct Members Receiving Oral Health Services	Total Paid by MaineCare for Dental Services
General Dentists	29,416	$9,338,547
Non Dental Provider	15,476	$8,312,086
Dental Clinic	15,834	$4,172,379
Federally Qualified Health Clinic	6,162	$2,012,359
Dental Other	7,920	$871,885
Rural Health Clinic	381	$223,016
Indian Health Clinic	229	$28,966
Totals	**75,418**	**$24,959,238**

Source: Maine Care Services, 2011

The number of children receiving preventive care services paid by MaineCare has risen over time with 41% of eligible children receiving a preventive dental service in 2008. However, the rate of treatment and restorative care remains low with just under 14% of MaineCare eligible children receiving a treatment service in 2010 (Expenditures, 2011, MaineCare, 2010).

Increased Reimbursement

Nationally, only about one in four dentists treats at least 100 Medicaid patients annually (California Foundation, 2008). While there are many reasons that dentists do not more actively participate with Medicaid, a chief complaint among dental providers is the low reimbursement rates and cumbersome administrative requirements attached to providing services to Medicaid eligible people (California Foundation, 2008). Many dentists provide services in private practices and therefore, have overhead costs for office expenses estimated to be 60% to 65% of dental income. In many states across the U.S., Medicaid reimbursement rates are less than 50% of dentists' usual and customary fees (California Foundation, 2008).

The level of reimbursement provided by MaineCare for preventive and restorative services is problematic (Governor's TF, 2008). The low reimbursement rates have been a concern for the last 20 years. Erosion in the level of payment has occurred over time due to inflation and the increased costs of providing oral health services with no associated increase in rates (Governor's TF, 2008). Increased Medicaid reimbursement rates are important to building and maintaining a provider base adequate to serve those with demonstrable need for oral health services, especially children (Governor's TF, 2008). Changes in administrative processes are also important to streamline the payment procedure (Governor's TF, 2008).

Currently MaineCare reimbursement for dental services is less than the 25th percentile of regional dental fees (Governor's TF, 2008) making participation in the program relatively

unappealing. An increase in rates to the 50th percentile of regional fees would cost the state about $14.3 million over a two-year period based on 2008 expenditures in MaineCare. An increase in rates to the 75th percentile would result in increased costs of $16.5 million in a two-year time frame (Governor's TF, 2008). There would likely be greater expenditures for services immediately following a rate increase due to pent up demand. However, the growth in expenditures should level off over time.

Several of the past reports about oral health in Maine discussed earlier in this paper described strategies to improve access to oral health care in Maine including recommendations to increase MaineCare reimbursement rates for dental providers. This suggested strategy to improve dental access is not unique to Maine. Policymakers across the U.S. agree that increasing access to and utilization of available oral health services requires multipronged initiatives, one of which is increasing public reimbursement for dental services. However, while offering adequate reimbursement for oral health services is an important tactic to improve availability of services, it may be just one strategy among many in a comprehensive plan to address access.

A review of the impact of increasing Medicaid reimbursement for oral health services in six states was published by the National Academy for State Health Policy in 2008 (Borchgrevink et al., 2008). Each of the six states took an individual approach to setting its Medicaid rate, but all increased reimbursement rates over previous levels. The authors of the study found the following:

- Medicaid rate increases are necessary but insufficient on their own to substantially improve access to oral health services.
- Streamlining administrative processes required by state Medicaid programs is also essential to increase the interest of dentists in participating in public programs.
- States should work with dentists and state dental societies in making program improvements.
- While dental providers may prefer Medicaid reimbursement rates that mirror those of commercial plans, states found that even rate increases that did not meet that threshold still increased dental participation with Medicaid.
- Educating families about how to use dental services is a core element of successful reform. Case management and patient support services reduced barriers to obtaining care and addressed dentists' concerns about patients keeping appointments.
- Rate increases not only have the effect of increasing dental participation but also increase the number of patients served. Increased numbers of patient services following Medicaid rate increases suggest improved patient access.
- While meaningful gains in dental participation in Medicaid and in the number of patients served following rate increases were observed in the study states, the percentage of children served in the study states still remained below that of privately insured children (Borchgrevink et al., 2008).

Examples of states that have seen increased dentist participation in their Medicaid program after increasing the level of reimbursement for dental services include the following:

- The state of Alabama adjusted Medicaid dental rates to 100% of commercial rates of Blue Cross in the state. There was a 239% increase in dentist participation in the 24 months after the rate increase and a 117% increase in participation within 44 months.

- Delaware increased Medicaid reimbursement rates to 85% of dentists' submitted charges but saw an increase in participation by only one dentist in four years.
- Georgia raised Medicaid reimbursement rates to the 75th percentile of regional dental fees with a 546% increase in dental participation in 27 months and an 825% increase in four years so that 60% of dentists in the state are now participating in Medicaid.
- Indiana also raised rates to the 75th percentile of dentists' usual and customary fees and saw an increase of 58% in dental participation in four and a half years.
- Michigan's Medicaid program began reimbursing at 100% of the Delta Dental Premier rate for services in the state and saw a 300% increase in dental participation in one year.
- South Carolina raised rates to the 75th percentile of dental fees and experienced a 73% increase in dental participation in the Medicaid program over three years and an 88% increase in dental participation in three and a half years.
- Tennessee also raised rates to the 75th percentile of dentists' fees and saw a 60% increase in provider participation in four months and an 81% increase in participation in 20 months (Crall, 2007).

While low Medicaid reimbursement rates are problematic for all providers, they are particularly challenging for rural providers who generally have a larger volume of Medicaid patients in their caseloads than urban or metropolitan providers (Rural, 2008). As a result, rural providers may have lower profit margins and a less diverse patient mix limiting their ability to cost shift expenses to other payers and forcing decisions about limiting the number of MaineCare patients in their practices (Rural, 2008). Low reimbursement rates are especially consequential for rural providers because they threaten the long-term sustainability of a practice that is heavily dependent on MaineCare for revenue.

The following table lists MaineCare reimbursement rates for some common dental procedures in 2010.

Table 17. MaineCare Allowances for Certain Dental Procedures, 2010

CDT	Description of Procedure	Maximum Allowance
D0120	Periodic Oral Evaluation	$30.00
D0140	Problem Focused (Limited) Oral Evaluation	$20.00
D0150	Comprehensive Oral Evaluation	$55.00
D0274	Radiographs - Bitewings (4 Films)	$20.00
D0330	Radiographs - Panoramic Film	$43.00
D1110	Prophylaxis - Adult	$40.00
D1120	Prophylaxis - Child	$30.00
D1203	Topical Fluoride Application - Child	$12.00
D1330	Oral Hygiene Instructions	$13.00
D2140	Amalgam Restoration - One Surface	$38.00
D2330	Composite Restoration - Resin Based - One Surface	$68.00
D2710	Resin Based Composite Crown	$300.00
D2931	Prefabricated Stainless Steel Crown	$120.00
D2970	Temporary Crown	$40.00
D3220	Therapeutic Pulpotomy	$50.00
D3348	Retreatment of Previous Root Canal - Molar	$320.00
D5110	Complete Denture - Maxillary	$393.00
D5510	Repair Broken Complete Denture Base	$50.00
D5750	Reline Complete Maxillary Denture Laboratory	$150.00
D7210	Surgical Removal of Erupted Tooth	$110.00
D7510	Incision and Drainage of Abscess - Intraoral Soft Tissue	$75.00
D9110	Palliative (Emergency) Treatment of Dental Pain	$35.00

Source: Maine Care Benefits Manual, Chapter III, 08/08/10

A study which compared the effect of state Medicaid dental fees in 2000 and 2008 on children receiving care found that increases in the level of state Medicaid payments for dental services were associated with increased use of dental care by children and adolescents who were covered by state Medicaid plans (Decker, 2011). The study found that an increase of $10 in the Medicaid fee paid for a prophylactic dental service resulted in a 4% increase in the probability that a Medicaid insured child or adolescent would receive a dental service. Changes in Medicaid fees were positively associated with increased usage of dental services (Decker, 2011).

The following tables comparing Medicaid rates for dental services to children across states were compiled by the American Dental Association in 2008 for some common dental procedures (ADA Compendium, 2008). They are presented to allow comparison of Maine's 2008 reimbursement rates with those of other states at a point in time. While some of the rates listed for Maine have changed over the intervening years, the tables are valuable to understand the variation by state in Medicaid reimbursement for dental serves.

Table 18. State Medicaid Dental Payment Rates for Selected Procedures for Children, 2008

Medicaid Dental Payment Rates for Children - Compiled by ADA 2008												
CDT	**Description**	**AL**	**AK**	**AZ**	**AR**	**CA**	**CO**	**CT**	**DE**	**FL**	**GA**	**HI**
D0120	Periodic oral evaluation	18.00	38.50	29.50	26.60	15.00	20.80	35.00	85% OF BILL	15.00	22.77	29.12
D0140	Limited oral evaluation – problem focused	29.00	56.00	39.00	34.20	35.00	31.20	48.00	85% OF BILL	8.00	38.29	29.12
D0150	Comprehensive oral evaluation	22.00	63.00	43.30	0.00	25.00	35.88	65.00	85% OF BILL	16.00	39.33	29.12
D0210	Intraoral - complete series (including bitewings)	60.00	87.50	77.00	18.50	40.00	53.04	101.00	85% OF BILL	32.00	72.45	58.24
D0272	Bitewings - two films	18.00	32.90	25.30	24.70	10.00	19.24	32.00	85% OF BILL	9.00	21.73	18.93
D0330	Panoramic film	49.00	79.10	65.40	62.70	25.00	47.84	87.00	85% OF BILL	30.00	56.92	47.32
D1120	Prophylaxis – child	28.00	62.40	45.40	36.10	30.00	28.60	46.00	85% OF BILL	14.00	32.08	26.00
D1203	Topical application of fluoride (prophylaxis not included) - child	15.00	25.90	21.00	19.95	8.00	15.60	29.00	85% OF BILL	11.00	17.59	4.16
D1206	Topical application of fluoride (including prophylaxis) - adult	15.00	25.90	21.00	0.00	0.00	0.00	29.00	85% OF BILL	11.00	0.00	4.16
D1351	Sealant - per tooth	26.00	41.30	28.50	28.50	22.00	23.40	40.00	85% OF BILL	13.00	27.94	24.32
D2150	Amalgam - two surfaces, primary or permanent*	60.00	131.60	92.80	79.80	48.00	71.60	114.00	85% OF BILL	41.00	77.62	40.40
D2331	Resin - two surfaces, anterior*	72.00	141.40	116.10	95.00	60.00	83.20	136.00	85% OF BILL	39.00	91.08	0.00
D2751	Crown-Porcelain fused to predominately metal base	472.00	680.00	600.30	0.00	340.00	426.40	805.00	85% OF BILL	228.00	0.00	0.00
D2930	Prefabricated stainless steel crown - primary tooth	73.00	196.00	142.40	139.65	75.00	116.48	230.00	85% OF BILL	68.00	143.86	74.36
D2932	Prefabricated resin crown	97.00	197.00	140.30	0.00	45.00	145.60	0.00	85% OF BILL	68.00	176.98	46.80
D3220	Therapeutic pulpotomy	49.00	126.00	85.50	85.50	71.00	80.60	133.00	85% OF BILL	50.00	90.04	67.60
D3310	Anterior (excluding final restoration)	365.00	478.80	390.40	400.90	216.00	301.60	589.00	85% OF BILL	148.00	379.84	260.00
D3330	Molar (excluding final restoration)	516.00	686.70	591.90	593.75	331.00	430.04	875.00	85% OF BILL	235.00	0.00	416.00
D7140	Extraction, erupted tooth or exposed root (elevation and/or forceps removal)	53.00	115.50	88.00	71.25	41.00	68.12	115.00	85% OF BILL	27.00	64.17	0.00
D9248	Non-intravenous conscious sedation	0.00	185.00	63.30	96.74	25.00	130.00	0.00	85% OF BILL	40.00	50.00	0.00

Source: ADA, 2008

State Medicaid Dental Payment Rates for Selected Procedures for Children, 2008 (Continued)

Medicaid Dental Payment Rates for Children - Compiled by ADA 2008												
CDT	**Description**	**ID**	**IL**	**IN**	**IA**	**KS**	**KY**	**LA**	**ME**	**MD**	**MA**	**MI**
D0120	Periodic oral evaluation	17.76	28.00	22.58	16.63	21.00	0.00	24.80	13.00	29.08	27.00	14.89
D0140	Limited oral evaluation – problem focused	28.58	16.20	37.08	25.99	29.35	33.00	0.00	20.00	43.20	49.00	14.89
D0150	Comprehensive oral evaluation	29.37	21.05	35.50	23.91	29.00	26.00	41.45	55.00/ 150.00*	51.50	54.00	18.90
D0210	Intraoral - complete series (including bitewings)	62.28	30.10	72.25	51.97	60.00	63.70	62.18	43.50	57.00	88.00	40.95
D0272	Bitewings - two films	16.71	9.40	24.81	16.63	20.00	18.20	21.91	15.00	15.00	28.00	12.60
D0330	Panoramic film	41.78	22.60	64.52	46.77	57.00	39.00	54.48	43.00	42.00	82.00	17.56
D1120	Prophylaxis – child	30.70	41.00	34.50	24.95	30.00	48.10	32.57	30.00	42.37	47.00	19.53
D1203	Topical application of fluoride (prophylaxis not included) - child	14.26	26.00	22.25	14.55	17.00	15.00	18.36	12.00	21.60	24.00	13.23
D1206	Topical application of fluoride (including prophylaxis) - adult	0.00	26.00	0.00	14.55	0.00	0.00	24.28	12.00	24.92	26.00	9.00
D1351	Sealant - per tooth	21.93	36.00	29.35	20.79	24.92	19.50	26.65	16.00	33.23	38.00	15.12
D2150	Amalgam - two surfaces, primary or permanent*	59.29	48.15	81.14	59.25	64.00	65.00	82.90	48.00	88.00	95.00	48.41
D2331	Resin - two surfaces, anterior*	70.06	51.90	96.47	67.56	80.00	71.50	94.74	81.00	102.00	109.00	60.48
D2751	Crown-Porcelain fused to predominately metal base	332.14	235.20	0.00	426.14	450.00	0.00	0.00	0.00	375.00	723.00	0.00
D2930	Prefabricated stainless steel crown - primary tooth	93.22	73.40	155.86	103.94	120.00	119.60	135.00	120.00	154.00	191.00	84.00
D2932	Prefabricated resin crown	99.23	56.45	138.75	119.53	0.00	113.10	175.28	120.00	75.00	224.00	0.00
D3220	Therapeutic pulpotomy	52.22	52.70	105.11	60.29	60.00	67.60	94.74	50.00	60.00	105.00	66.15
D3310	Anterior (excluding final restoration)	219.34	136.40	377.52	259.84	250.00	274.30	354.70	220.00	230.00	478.00	239.40
D3330	Molar (excluding final restoration)	329.01	202.30	569.32	400.15	350.00	481.00	503.33	338.00	325.00	727.00	378.00
D7140	Extraction, erupted tooth or exposed root (elevation and/or forceps removal)	46.35	39.12	77.24	51.97	42.50	49.40	77.57	67.00	103.01	93.00	44.47
D9248	Non-intravenous conscious sedation	61.20	35.00	38.50	155.91	0.00	0.00	159.29	0.00	186.91	Individual consideration	44.56

Source: ADA, 2008. *Note: In 2003, MaineCare created a supplemental payment program for general dentists who accepted a new MaineCare patient younger than age 21 through a one-time per member enhanced payment billable under D050 for $150 with the expectation that the new patient would become a patient of record.

State Medicaid Dental Payment Rates for Selected Procedures for Children, 2008 (Continued)

Medicaid Dental Payment Rates for Children - Compiled by ADA 2008											
CDT	**Description**	**MN**	**MS**	**MO**	**MT**	**NE**	**NV**	**NH**	**NJ**	**NM**	**NY**
D0120	Periodic oral evaluation	18.70	0.00	24.00	21.89	16.00	33.24	29.00	37.00	22.97	29.00
D0140	Limited oral evaluation – problem focused	24.65	30.60	21.18	31.27	16.00	33.24	45.00	55.00	29.85	14.00
D0150	Comprehensive oral evaluation	25.50	33.00	38.50	31.27	16.00	33.24	54.50	64.00	35.33	0.00
D0210	Intraoral - complete series (including bitewings)	57.80	52.20	37.73	62.54	45.00	58.94	58.00	98.00	62.02	58.00
D0272	Bitewings - two films	17.00	17.40	13.09	18.76	12.00	21.22	26.00	22.00	20.67	17.00
D0330	Panoramic film	46.75	47.40	32.73	50.03	34.00	41.25	37.00	85.00	53.98	40.00
D1120	Prophylaxis – child	18.34	25.20	19.25	31.27	21.00	57.28	38.00	50.00	32.15	43.00
D1203	Topical application of fluoride (prophylaxis not included) - child	14.00	13.20	10.78	15.64	9.00	18.39	18.00	28.00	18.37	14.00
D1206	Topical application of fluoride (including prophylaxis) - adult	14.00	19.20	12.71	28.16	9.00	53.30	0.00	33.00	0.00	0.00
D1351	Sealant - per tooth	17.30	22.20	19.00	25.02	20.00	23.58	30.00	41.00	24.32	43.00
D2150	Amalgam – two surfaces, primary or permanent*	41.65	67.80	48.51	68.79	63.00	86.04	109.00	126.00	74.66	84.00
D2331	Resin - two surfaces, anterior*	48.95	74.40	56.60	93.81	77.00	75.85	97.00	147.00	88.44	87.00
D2751	Crown-Porcelain fused to predominately metal base	0.00	440.40	315.00	500.32	350.00	328.00	200.00	780.00	461.71	580.00
D2930	Prefabricated stainless steel crown – primary tooth	76.51	110.40	79.70	125.08	123.00	92.25	220.00	207.00	120.11	116.00
D2932	Prefabricated resin crown	86.74	0.00	102.03	150.10	110.00	61.50	80.00	265.00	135.53	116.00
D3220	Therapeutic Pulpotomy	40.80	73.80	57.37	93.81	70.00	61.50	91.00	149.00	81.55	87.00
D3310	Anterior (excluding final restoration)	178.55	311.40	211.75	318.95	234.00	205.00	370.00	550.00	311.26	250.00
D3330	Molar (excluding final restoration)	271.40	490.80	306.08	437.78	354.00	328.00	552.00	795.00	501.60	406.00
D7140	Extraction, erupted tooth or exposed root (elevation and/or forceps removal)	44.70	58.80	46.59	68.79	52.00	45.10	82.00	121.00	67.76	45.00
D9248	Non-intravenous conscious sedation	25.40	0.00	87.40	139.15	150.00	91.23	35.00	227.00	24.11	0.00

Source: ADA, 2008

State Medicaid Dental Payment Rates for Selected Procedures for Children, 2008 (Continued)

Medicaid Dental Payment Rates for Children - Compiled by ADA 2008											
CDT	**Description**	**NC**	**ND**	**OH**	**OK**	**OR**	**PA**	**RI**	**SC**	**SD**	**TN**
D0120	Periodic oral evaluation	27.01	24.10	17.08	23.50	24.07	20.00	10.00	23.40	34.00	25.00
D0140	Limited oral evaluation – problem focused	38.50	33.39	22.58	33.57	32.08	0.00	10.00	38.34	35.00	24.00
D0150	Comprehensive oral evaluation	46.72	36.00	26.35	33.57	37.44	20.00	20.00	40.94	26.00	35.00
D0210	Intraoral - complete series (including bitewings)	75.19	75.47	60.00	67.14	31.07	45.00	40.00	0.00	74.00	75.00
D0272	Bitewings - two films	19.38	23.22	10.00	20.14	11.10	16.00	14.00	20.15	22.00	22.00
D0330	Panoramic film	62.05	58.19	46.32	53.71	23.31	37.00	32.00	53.29	58.00	60.00
D1120	Prophylaxis – child	28.50	30.92	20.00	33.57	29.07	30.00	22.00	29.90	32.00	35.00
D1203	Topical application of fluoride (prophylaxis not included) - child	16.80	21.14	15.00	16.79	13.19	18.00	18.00	14.95	19.00	20.00
D1206	Topical application of fluoride (including prophylaxis) - adult	16.80	19.43	0.00	0.00	13.19	18.00	0.00	22.10	19.00	20.00
D1351	Sealant - per tooth	29.93	24.73	22.00	26.86	19.64	25.00	18.00	24.05	26.00	28.00
D2150	Amalgam - two surfaces, primary or permanent*	85.68	75.03	54.00	73.85	47.39	55.00	37.00	84.49	77.00	75.00
D2331	Resin - two surfaces, anterior*	85.26	91.85	63.49	100.71	54.28	60.00	44.00	92.29	91.00	90.00
D2751	Crown-Porcelain fused to predominately metal base	0.00	516.50	0.00	537.12	266.35	500.00	450.00	0.00	491.00	552.00
D2930	Prefabricated stainless steel crown - primary tooth	151.11	116.02	101.92	134.28	74.37	99.00	88.00	134.53	133.00	125.00
D2932	Prefabricated resin crown	177.55	237.98	0.00	161.14	62.15	50.00	88.00	162.48	139.00	165.00
D3220	Therapeutic pulpotomy	84.93	78.21	63.49	100.71	50.07	75.00	59.00	87.09	70.00	95.00
D3310	Anterior (excluding final restoration)	297.00	348.78	247.63	342.41	149.82	275.00	175.00	368.49	337.00	355.00
D3330	Molar (excluding final restoration)	429.30	526.36	379.02	469.98	216.40	500.00	300.00	581.66	526.00	519.00
D7140	Extraction, erupted tooth or exposed root (elevation and/or forceps removal)	66.55	63.63	52.45	73.85	77.90	65.00	39.00	73.44	69.00	68.00
D9248	Non-intravenous conscious sedation	0.00	0.00	0.00	149.39	77.70	184.00	0.00	70.00	0.00	89.00

Source: ADA, 2008

State Medicaid Dental Payment Rates for Selected Procedures for Children, 2008 (Continued)

Medicaid Dental Payment Rates for Children - Compiled by ADA 2008										
CDT	**Description**	**TX**	**UT**	**VT**	**VA**	**WA**	**WV**	**WI**	**WY**	**DC**
D0120	Periodic oral evaluation	29.44	17.55	20.00	20.15	22.44	20.00	15.92	32.00	35.00
D0140	Limited oral evaluation – problem focused	19.16	20.37	40.00	24.83	20.40	25.00	20.25	45.00	50.00
D0150	Comprehensive oral evaluation	36.04	26.03	32.00	31.31	34.68	30.00	21.17	35.00	77.50
D0210	Intraoral - complete series (including bitewings)	72.08	58.58	56.00	71.91	45.90	62.00	46.11	48.00	91.00
D0272	Bitewings - two films	23.86	17.55	17.00	20.15	10.61	19.00	13.39	24.00	40.00
D0330	Panoramic film	65.08	46.12	48.00	53.99	43.86	55.00	40.45	60.00	80.00
D1120	Prophylaxis – child	37.50	28.20	32.00	33.52	23.69	30.00	21.82	35.00	47.00
D1203	Topical application of fluoride (prophylaxis not included) - child	15.00	11.19	15.00	20.79	13.66	15.00	13.47	20.00	29.00
D1206	Topical application of fluoride (including prophylaxis) - adult	15.00	0.00	15.00	20.79	0.00	0.00	12.89	35.00	0.00
D1351	Sealant - per tooth	28.82	21.50	35.00	32.28	22.66	24.00	17.16	28.00	38.00
D2150	Amalgam - two surfaces, primary or permanent*	87.46	52.06	73.00	75.53	63.88	72.00	45.00	82.00	115.00
D2331	Resin - two surfaces, anterior*	105.14	50.91	99.00	89.18	66.97	85.00	52.47	98.00	135.00
D2751	Crown-Porcelain fused to predominately metal base	528.00	271.57	420.00	500.00	659.96	510.00	0.00	600.00	0.00
D2930	Prefabricated stainless steel crown – primary tooth	156.06	81.16	160.00	136.93	91.81	120.00	88.17	136.00	0.00
D2932	Prefabricated resin crown	68.75	0.00	136.00	128.22	100.00	122.00	116.68	127.00	0.00
D3220	Therapeutic pulpotomy	87.96	27.16	75.00	83.19	45.33	42.00	48.06	86.00	134.00
D3310	Anterior (excluding final restoration)	355.98	140.90	400.00	375.00	416.52	168.00	209.64	335.00	498.00
D3330	Molar (excluding final restoration)	624.26	254.60	650.00	679.00	571.69	0.00	330.93	520.00	728.00
D7140	Extraction, erupted tooth or exposed root (elevation and/or forceps removal)	67.04	52.06	88.00	69.00	59.43	44.00	42.22	70.00	110.00
D9248	Non-intravenous conscious sedation	187.50	93.00	125.00	110.00	51.01	0.00	104.06	100.00	0.00

Source: ADA, 2008

CHAPTER 5: Providers of Oral Health Services

Safety Net Programs and Providers in Maine

The safety net for oral health services is a valuable resource for underserved populations that are unable to access care in mainstream dental settings. The underserved population in the U.S. is estimated to be more than 80 million people, of which only about one-quarter visit a dentist each year (Bailit et al., 2006). The oral health safety net provides needed preventive, prophylactic, therapeutic, restorative, and emergency dental services for people without established access to dental services. However, the safety net is ill defined and restricted by available resources.

> "Within the public health community, the general definition of safety net is the sum of the individuals, organizations, public and private agencies, and programs involved in delivering oral health services to people who, for reasons of poverty, culture, language, health status, geography, or education, are unable to secure those services on their own. But the sum of these entities does not constitute a whole. Referring to them collectively facilitates discussion, but they cannot realistically be called a system" (ADA, 2011).

The oral health safety net across the U.S. and in Maine includes FQHCs; rural health clinics; free or reduced fee dental clinics; community hospitals and EDs; school-based programs; dental residency programs housed in hospitals, clinics, and academic institutions; dental and dental hygiene clinics attached to professional education programs; Indian Health clinics and programs; dental programs in nursing homes and other institutional settings including correctional facilities; health professionals such as physicians, nurses, and physician assistants who may be providing oral health screening and prevention services in health care settings; and private dental providers. Some dentists and dental hygienists in Maine provide free or uncompensated care in volunteer programs or in private practices to patients unable to afford oral health care. The Maine Dental Association estimates that dentists provide more than $8 million in free care annually in clinics, during special events, or in off-hour clinics on weekends and evenings (Huang, 2011).

Safety net providers rely on a variety of funding sources to support care provided to underserved populations. State funding for safety net oral health programs in Maine has remained flat or been reduced over recent years causing programs to struggle with maintaining previous levels of service while experiencing increased costs of care. Many oral health programs in Maine continue to be threatened by a lack of predictable funding sources. Due to the constrained financial resources available for state programs, Maine's stakeholders have shifted their focus on oral health away from funding initiatives to reorienting oral health policy and service delivery (Governor's TF, 2008).

There are state funded programs that help to support the oral health safety net in Maine. The ME CDC has supported a program that coordinates free care offered by volunteer dentists to low-income uninsured, disabled elderly, or medically compromised individuals in the state. A dental education loan repayment program is administered by the Finance Authority of Maine (FAME) and supported by the Fund for a Healthy Maine (Governor's TF, 2008).

The Fund for a Healthy Maine, which was established to disburse Maine's tobacco settlement money, originally provided about $1.2 million in funding annually to improve oral health care

access through a variety of programs (MCD, 2011). Dental care to low income people who lack adequate dental coverage was one of eight priorities listed in the Maine statute for allocation of these tobacco settlement funds (Legislature, 2011). More than $677,000 of the funds allotted to oral health were targeted for dental services to underserved populations in state fiscal year 2011 (MCD, 2011) through subsidies to private nonprofit dental clinics in the safety net that offered dental services to low income people (Governor's TF, 2008).

In 2011, proposed cuts to the Fund for a Healthy Maine included removal of the budget lines for oral health. These cuts would have resulted in the elimination of the state's donated dental services program, the dental services subsidy program, the schools' oral health programs, and the dental education loan and loan repayment programs that are currently supported with tobacco money (MDAC, 2011). These cuts were not implemented for state fiscal year 2012.

Cuts such as these would adversely impact provision of oral health services in the safety net. In 13 subsidized safety net clinics operating in 19 locations in Maine, 44% of patients qualified for a sliding fee scale (MDAC, 2011). Almost three-quarters of those who qualified (74%) were adults on MaineCare, which does not provide a routine dental benefit (MDAC, 2011). The cost of these oral health services is subsidized by the Fund for a Healthy Maine dental allocation (MDAC, 2011).

Children in schools across Maine who participate in fluoride rinse and sealant programs are also at risk for losing services if the Fund allocation disappears. Currently two-thirds of the 30,000 students enrolled in 236 schools participate in a fluoride rinse program supported by the Fund. Dental sealants are also provided to many second-graders in 105 schools with additional support from the Fund (MDAC, 2011). Despite the reach of these school-based initiatives, there are still almost 10,000 children in Maine who qualify for school-based oral health programs who do not receive services currently because of insufficient funding for these programs (MDAC, 2011).

The safety net "system" for oral health care across the U.S. has limited capacity due to a variety of structural and financial constraints. Although there is some opportunity for expansion within the safety net to increase capacity (Bailit et al., 2006), depending solely on safety net providers to meet the needs of the underserved would be unrealistic. Strategies to address the needs of those currently not served or underserved by the existing oral health system should include a range of policy and program initiatives that engage both mainstream and safety net resources to achieve improved access.

In 2009, the National Center for Chronic Disease Prevention and Health Promotion in the CDC reported that there were 23 low income, community-based dental clinics in Maine, up from 19 clinics in 2005 (CDC, 2011). The following tables describe some of the known safety net providers in Maine including FQHCs, not-for-profit community dental clinics, private dental hygiene practices providing preventive oral health services, and Indian health clinics.

Table 19. Dental Safety Net Providers in Maine, 2011

Characteristics	Name of Provider Organization						
	B Street Dental Program	Community Dental	Eagle Lake Health Center	City of Portland Clinical Services	City of Portland Homeless Health Dental Clinic	Community Dental	University of New England Dental Hygiene Clinic
City/Town	Lewiston	Lewiston	Eagle Lake	Portland	Portland	Portland	Portland
County	Androscoggin	Androscoggin	Aroostook	Cumberland	Cumberland	Cumberland	Cumberland
FQHC	X		X		X		
Nonprofit Community Dental Center		X				X	
Free Clinic							
City Clinic				X	X		
State Clinic							
Indian Health/Federal Clinic							
Clinic of Educational Program							X
School-based Dental Program							
Voucher Program							
Preventive Services Program							
Mobile Dental Clinic							
Preventive Services	X	X	X	X	X	X	X
Restorative Services	X	X	Community Referrals	X	X	X	
Serves Children	X	X	X			X	X
Serves Adults		X	X			X	X
Serves Particular Patient Community				Patients with Mental Retardation, Chronically Mentally Ill	Homeless		

Source: ME DHHS, 2010, ME Dental Access Coalition, 2011, Clinic websites, 2011.

Dental Safety Net Providers in Maine, 2011 (Continued)

Characteristics	Name of Provider Organization							
	Community Dental	Strong Dental Center	Bucksport Regional Health Center	Caring Hands Of Maine Dental Center	Maine Coast Community Dental Clinic	Capitol Community Clinic	The Community Dental Center	Kennebec Valley Dental Center, Inc.
City/Town	Farmington	Strong	Bucksport	Ellsworth	Ellsworth	Augusta	Waterville	Augusta
County	Franklin	Franklin	Hancock	Hancock	Hancock	Kennebec	Kennebec	Kennebec
FQHC		X	X					
Nonprofit Community Dental Center	X			X	X		X	X
Free Clinic								
City Clinic								
State Clinic						X		
Indian Health/Federal Clinic								
Clinic of Educational Program								
School-based Dental Program					X			
Voucher Program								
Preventive Services Program								
Mobile Dental Clinic				X				
Preventive Services	X	X	X	X	X	X	X	X
Restorative Services	X	X	X	X	X	X	X	X
Serves Children	X	X	X	X	X		X	X
Serves Adults	X	X	X	X	X		X	X
Serves Particular Patient Community				Also Mobile Services at Mill Pond Health Center		Persons in Psychiatric Treatment		

Source: ME DHHS, 2010, ME Dental Access Coalition, 2011, Clinic websites, 2011.

Dental Safety Net Providers in Maine, 2011 (Continued)

Characteristics	Name of Provider Organization						
	Knox County Health Clinic Dental Program	Islands Community Dental Services	Community Dental	Dorothea Dix Psychiatric Center	Dental Health Program at Univ. College, University of Maine	Health Access Network	Katahdin Valley Health Center Dental Clinic
City/Town	Rockland	Vinalhaven	Rumford	Bangor	Bangor	Lincoln	Millinocket
County	Knox	Knox	Oxford	Penobscot	Penobscot	Penobscot	Penobscot
FQHC						X	X
Nonprofit Community Dental Center		X	X				
Free Clinic							
City Clinic							
State Clinic				X			
Indian Health/Federal Clinic							
Clinic of Educational Program					X		
School-based Dental Program							
Voucher Program	X						
Preventive Services Program							
Mobile Dental Clinic							
Preventive Services	Referral to Provider	X	X	X	X	X	X
Restorative Services	Referral to Provider	X	X	X		X	X
Serves Children	X	X	X		X	X	X
Serves Adults	X	X	X	X	X	X	X
Serves Particular Patient Community	Limited to Residents of County and Contiguous Towns			Mentally Ill Patients		Limited to Residents of Penobscot County	Offers General and Specialty Dentistry

Source: ME DHHS, 2010, ME Dental Access Coalition, 2011, Clinic websites, 2011.

Dental Safety Net Providers in Maine, 2011 (Continued)

Characteristics	Name of Provider Organization							
	Penobscot Community Dental Clinic	Penobscot Community Health Center Mobile Dental Clinic	Jesse Albert Dental and Orthodontic Center/ Oasis Dental Clinic	Bingham Area Dental Center	Sebasticook Valley Health Center Dental Clinic	Eastport Health Care Inc.	Harrington Family Health Center	Regional Medical Center at Lubec
City/Town	Bangor and Old Town		Bath	Bingham Area Dental Center	Pittsfield	Eastport Health Care Inc.	Harrington	Lubec
County	Penobscot	Penobscot	Sagadahoc	Somerset	Somerset	Washington	Washington	Washington
FQHC	X	X		X	X	X	X	X
Nonprofit Community Dental Center			X					
Free Clinic			X					
City Clinic								
State Clinic								
Indian Health/Federal Clinic								
Clinic of Educational Program								
School-based Dental Program								
Voucher Program								
Preventive Services Program								
Mobile Dental Clinic		X						
Preventive Services	X	X	X	X	X	X	X	X
Restorative Services	X	X	X	X	X	X	X	X
Serves Children	X	X	X	X	X	X	X	X
Serves Adults	X	X	X	X	X	X	X	X
Serves Particular Patient Community	Limited to Residents of Penobscot and Piscataquis Counties	Limited to Residents of Penobscot and Piscataquis Counties	Free Care Limited to Residents of the Bath/ Brunswick Area who Qualify				Priority to Residents of Washington and Eastern Hancock Counties	Limited to Patients Living Within Service Area

Source: ME DHHS, 2010, ME Dental Access Coalition, 2011, Clinic websites, 2011.

Dental Safety Net Providers in Maine, 2011 (Continued)

Characteristics	Name of Provider Organization							
	Community Dental	York County Community Health/ Spruce Street Dental Center	Leavitt's Mill Free Health Center	Micmac Service Unit	Houlton Band of Maliset Indians, Tribal Health Program	Passamaquoddy Tribe of Pleasant Point, Pleasant Point Health Center	Passamaquoddy Tribe of Pleasant Point, Indian Township Health Center	Penobscot Nation Health Department
City/Town	Biddeford	Sanford	Bar Mills	Presque Isle	Littleton	Perry	Princetown	Old Town
County	York	York	York	Aroostook	Aroostook	Washington	Washington	Penobscot
FQHC		X						
Nonprofit Community Dental Center	X							
Free Clinic			X					
City Clinic								
State Clinic								
Indian Health/Federal Clinic				X	X	X	X	X
Clinic of Educational Program								
School-based Dental Program								
Voucher Program								
Preventive Services Program								
Mobile Dental Clinic								
Preventive Services	X	X	X	Referral to Provider	Referral to Provider	X	Referral to Provider	X
Restorative Services	X	X		Referral to Provider	Referral to Provider	X	Referral to Provider	x
Serves Children	X	X		X	X	X	X	X
Serves Adults	X	X	X	X	X	X	X	X
Serves Particular Patient Community			Serves Patients from Surrounding Towns with No Insurance	Must be from a Federally Recognized Tribe	Must be from a Federally Recognized Tribe	Must be from a Federally Recognized Tribe	Must be from a Federally Recognized Tribe	Must be from a Federally Recognized Tribe

Source: ME DHHS, 2010, ME Dental Access Coalition, 2011, Clinic websites, 2011.

Dental Safety Net Providers in Maine, 2011 (Continued)

Characteristics	Name of Provider Organization						
	Tooth Fairy, Inc.	Tooth Fairies, Inc.	Tooth Protectors, Inc.	Maine Dental Health Out-Reach, Inc.	Washington County Children's Program	Waterville Pediatrics	Aroostook County Action Program
City/Town	Lewiston	Southwestern Maine	Throughout Maine	Central and Coastal Maine	Machias	Waterville	Presque Isle
County	Androscoggin and Oxford				Washington	Kennebec	Aroostook
FQHC							
Nonprofit Community Dental Center							
Free Clinic							
City Clinic							
State Clinic							
Indian Health/Federal Clinic							
Clinic of Educational Program							
School-based Dental Program	X	X	X	X	X		
Voucher Program							
Preventive Services Program	X	X	X	X	X	X	X
Mobile Dental Clinic	X	X	X	X			
Preventive Services	X	X	X	X			
Restorative Services	Referral to Provider	Referral to Provider	Referral to Provider	Referral to Provider			
Serves Children	X	X	X	X	X	X	X
Serves Adults			X	X			
Serves Particular Patient Community			Schools, WIC Clinics, Nursing Homes, Preschools, Medical Offices, Etc.	Mobile Dental Van	Tooth Ferry, Mobile Dental Unit to Schools, Preschools, and Other Locations	Employs Part Time Dental Hygienist	Services to Eligible Children in WIC Program, Sealants to Eligible Children in Schools

Source: ME DHHS, 2010, ME Dental Access Coalition, 2011, Clinic websites, 2011.

School-based Oral Health Programs

The Department of Health and Human Services in Maine has supported oral health programs in schools since 1979. These programs provide a range of services including oral health education, oral health assessment and screening, fluoride mouth rinses, and dental sealants (Maine DHHS, Oral Health, 2009). These school-based programs are partially supported through a competitive grant program managed by Maine Department of Health and Human Services (ME DHHS), which is open to schools in Maine, their administrative units, and agencies working on their behalf (ME DHHS, Oral Health, 2009). Each school oral health program is locally designed to meet the unique needs of the students in the particular district (ME DHHS, Programs, 2011).

Many of the school oral health programs in Maine were also partly funded through grants from the Maternal and Child Health Block Grant available to the state (Initiatives, 2008). As mentioned above, these programs are now funded through allocations from the Fund for a Healthy Maine. In 2007, there were 79 grants for oral health programs operating in 242 schools with a total student population of 45,146 students in kindergarten through sixth-grade (Initiatives, 2008). About two-thirds of the students in these schools participated in a weekly fluoride mouth rinse program (Initiatives, 2008). In addition, in 2007, about 125 schools participated in a dental sealant program which provided about 1,400 children, mostly second-graders, with sealants (Initiatives, 2008). State expenditures for these programs totaled $251,000 in 2008, at an average cost per child of $5.56 per participant. Expansion of these programs is limited by available funding for school-based care (Initiatives, 2008). According to the CDC, the number of children served by a fluoride mouth rinse program in Maine increased from 22,720 in 2005 to 25,606 children in 2009 (CDC, 2011). Additionally, the number of children served by dental sealant programs in Maine increased from 1,462 in 2005 to 1,663 in 2009 (CDC, 2011).

Changes in scope of practice for dental auxiliaries in Maine have made it possible for dental hygienists to practice under public health supervision status or in independent dental hygiene practice. Some dental hygienists have built mobile practices to travel to schools, WIC clinics, and other settings to provide preventive hygiene education and prophylactic services to children and others in Maine. These preventive dental hygiene practices are described in the tables about the safety net in Maine presented above. While dental hygienists practicing in public school programs, Head Start programs, and other public health settings are effective in providing preventive care and reducing disease, dentists are needed for restorative care (Initiatives, 2008). Children should also have a dental home that serves as a source of regular comprehensive dental care (Initiatives, 2008).

Physicians and Other Providers of Oral Health Services in Maine

In July 2007, the Sadie and Harry Davis Foundation, a private family foundation dedicated to advancement of children's health in Maine, launched the From the First Tooth program focused on children up to 3½ years of age (Initiatives, 2008). The program is modeled after the North Carolina program called Into the Mouths of Babes, which trains medical providers to deliver preventive oral health services to young children in their practices. The Sadie and Harry Davis Foundation provided funding to train medical and social service organizations that represented a large number of Maine's communities in oral risk assessment and fluoride varnish application. A dental hygienist provided support and coordination for the state program (Initiatives, 2008).

In September 2007, the Maine CDC Oral Health Program initiated a new four-year project with funding from the federal Maternal Child Health Bureau in its Targeted State MCH Oral Health Service Systems (TOHSS) grant program. At implementation the program was renamed the Kids Oral Health Partnership (KOHP). Its primary focus was training providers who served very young children in oral health. The goals of the program were to increase the number of children younger than age 3 with a dental home, decrease the incidence of dental disease, and reduce demand for early restorative services. To accomplish these goals, KOHP provided training to non-dental health providers and early childhood professionals highlighting the importance of early dental care and encouraged collaboration between non-dental and dental providers. Over four years, KOHP developed and tested training models and held sessions across the state educating 1,750 professionals. The project objectives were to educate and build awareness of oral health and integrate oral health into existing health delivery systems; enable non-dental providers to better recognize and understand oral diseases and conditions; and empower non-dental providers to better engage in anticipatory guidance, preventive interventions, and appropriate referrals for improved oral health and oral health access (Feinstein, 2011).

In addition, the Maine Chapter of the American Academy of Pediatrics competed for and was awarded a Healthy People 2010 grant for "oral health risk assessment in the pediatric practice." The initiative, which began in 2008, was a two-year project that provided training to pediatricians and Early Head Start personnel in oral health risk assessment (Initiatives, 2008). The project complemented the From the First Tooth program and built bridges that connected infants and toddlers in pediatric practices with dental professionals (Initiatives, 2008).

During the same time period, money from a three-year HRSA grant supported the development of a series of continuing education courses for general dentists and their staff that focused on dental disease risk assessment and behavior management of children up to 3 years of age (Initiatives, 2008).

In 2010, 71 primary care practices in Maine had been trained in the application of fluoride varnish and to perform oral examinations for young children in their practices (ME DHHS, 2011)

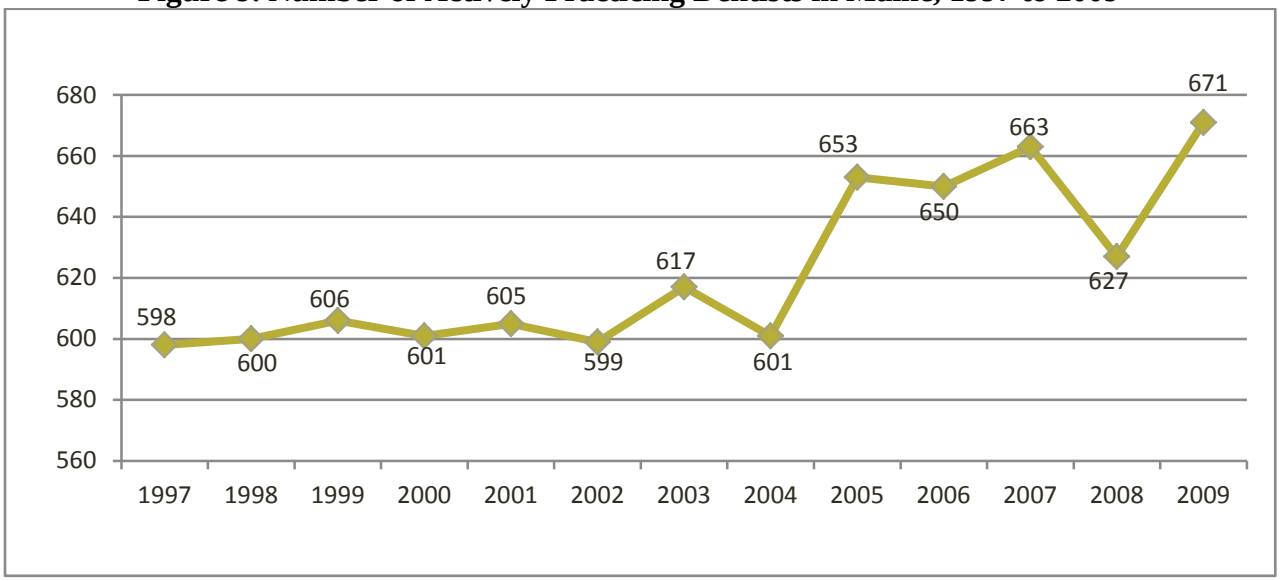
CHAPTER 6: The Oral Health Workforce in Maine

Dentists

The Maine Office of Data, Research and Vital Statistics reported that out of 627 licensed dentists, there were 585 actively practicing dentists in Maine in 2006, 79% of whom (464) were general practitioners. There were 40 orthodontists, 32 dental oral surgeons, and 11 pediatric dentists (several had specialty training). Of these dentists, 86% were accepting new patients, 49% served patients insured by MaineCare, 65% limited the proportion of MaineCare patients in their practices, and only 24% were accepting new MaineCare patients (Initiatives, 2008).

By 2011, there were 674 licensed dentists who were actively practicing in Maine (ME Licensure Data, 2011). There were an additional 128 dentists licensed in Maine who were principally practicing in other states, 49 of whom were actively practicing in contiguous New England states including New Hampshire (26), Massachusetts (22) and Vermont (1) (ME Licensure Data, 2011). The number of dentists in Maine has increased over the last decade.[5]

Figure 9. Number of Actively Practicing Dentists in Maine, 1997 to 2009

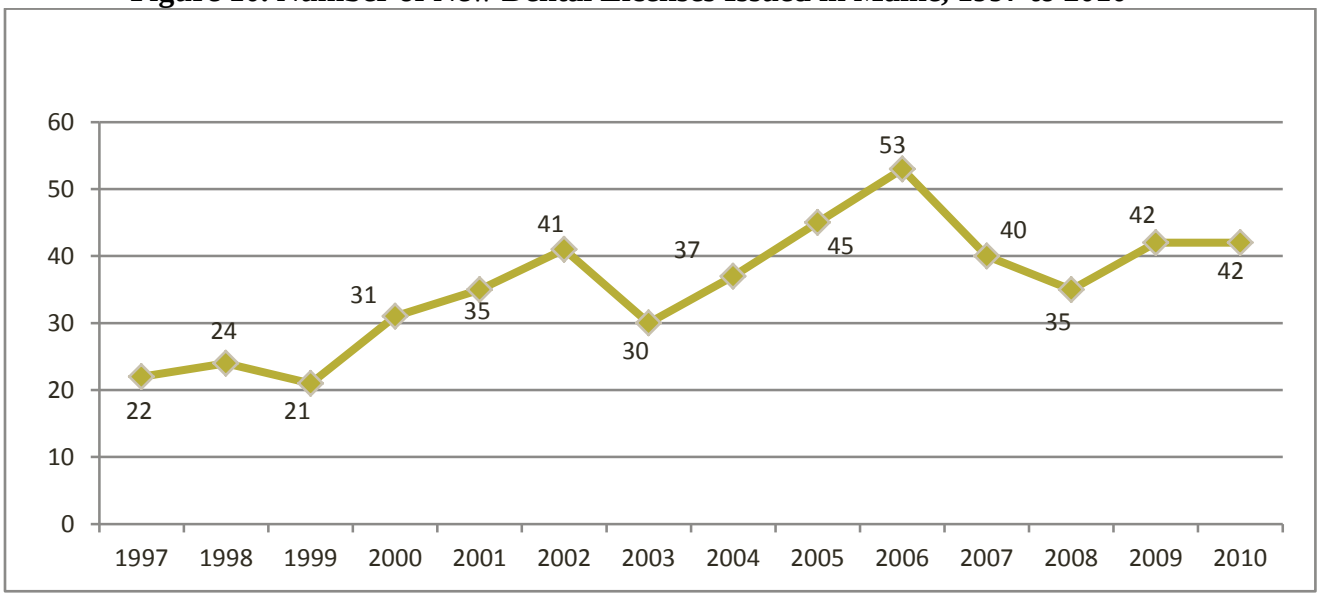


Source: MDA, 2011 and ADA, 2010
Note: There are differences in the 2006 data cited in an earlier paragraph about dentists due to different data sources.

There was also an increase in the number of licenses issued annually by the Maine Board of Dental Examiners from 1997 to 2010. The number of new licenses issued annually has leveled off in recent years.

[5] There was a sharp increase in the number of dentists in Maine between 2004 and 2005 that is difficult to explain. The reason for this increase will be discussed with state informants in subsequent project activities to understand trends in Maine's dental supply.

Figure 10. Number of New Dental Licenses Issued in Maine, 1997 to 2010

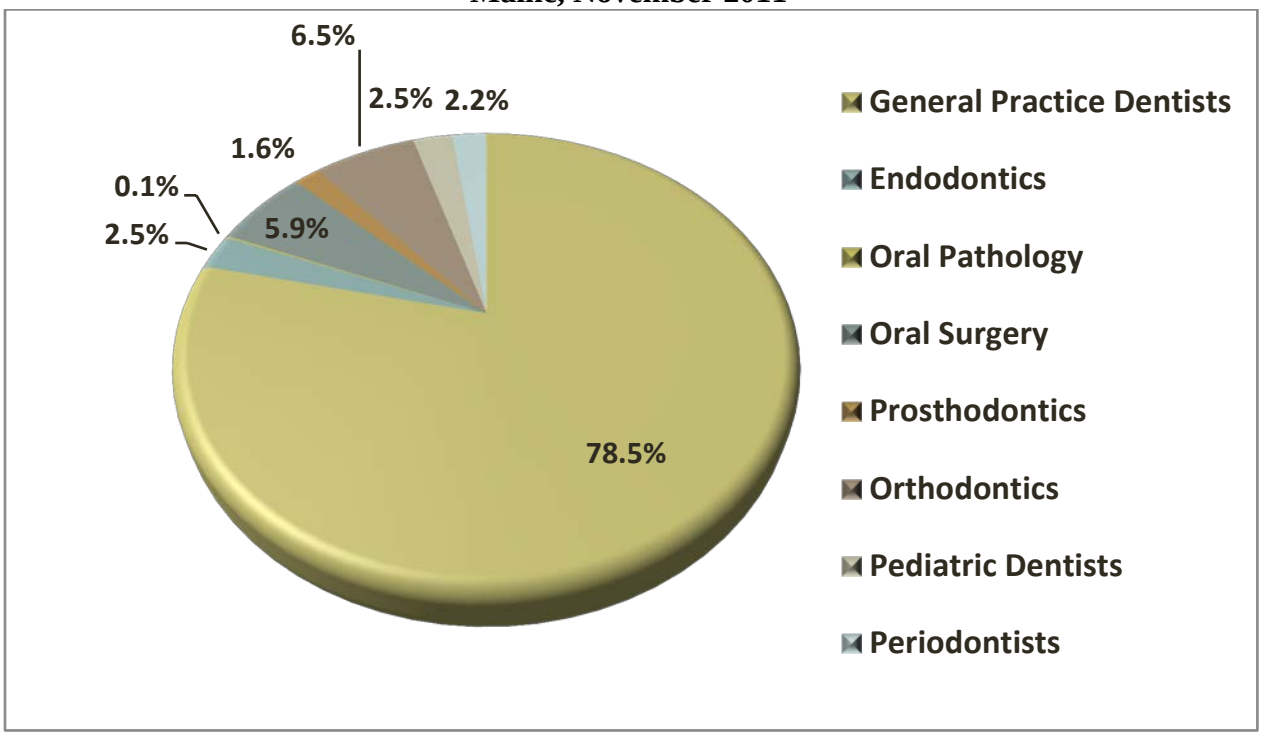


Source: MDA, 2011

Among the 674 actively practicing dentists in Maine in November 2011, 529 dentists indicated no dental specialty on license renewals and are assumed to be practicing general dentistry. There were 17 endodontists, 11 prosthodontists, one oral pathologist, 40 oral and maxillofacial surgeons, 44 orthodontists, 17 pedodontists, and 15 periodontists in 2011. The mean age of active dentists in Maine in 2011 was 51.5 years (ME Licensure Data, 2011).

Many of the out-of-state dentists who held a license in Maine practiced in a dental specialty. Among the 26 dentists who were licensed in Maine but principally practicing in New Hampshire, 10 practiced in a dental specialty (five in orthodontics, two in periodontics, two in oral surgery, and one in endodontics). Of the 22 dentists licensed in Maine who were principally practicing in Massachusetts, 11 practiced in a dental specialty (one in orthodontics, three in periodontics, one in oral surgery, two in oral medicine, two in endodontics, one in pediatric dentistry, and one in prosthodontics). The only dentist licensed in Maine who was principally practicing in Vermont had a specialty in oral surgery.

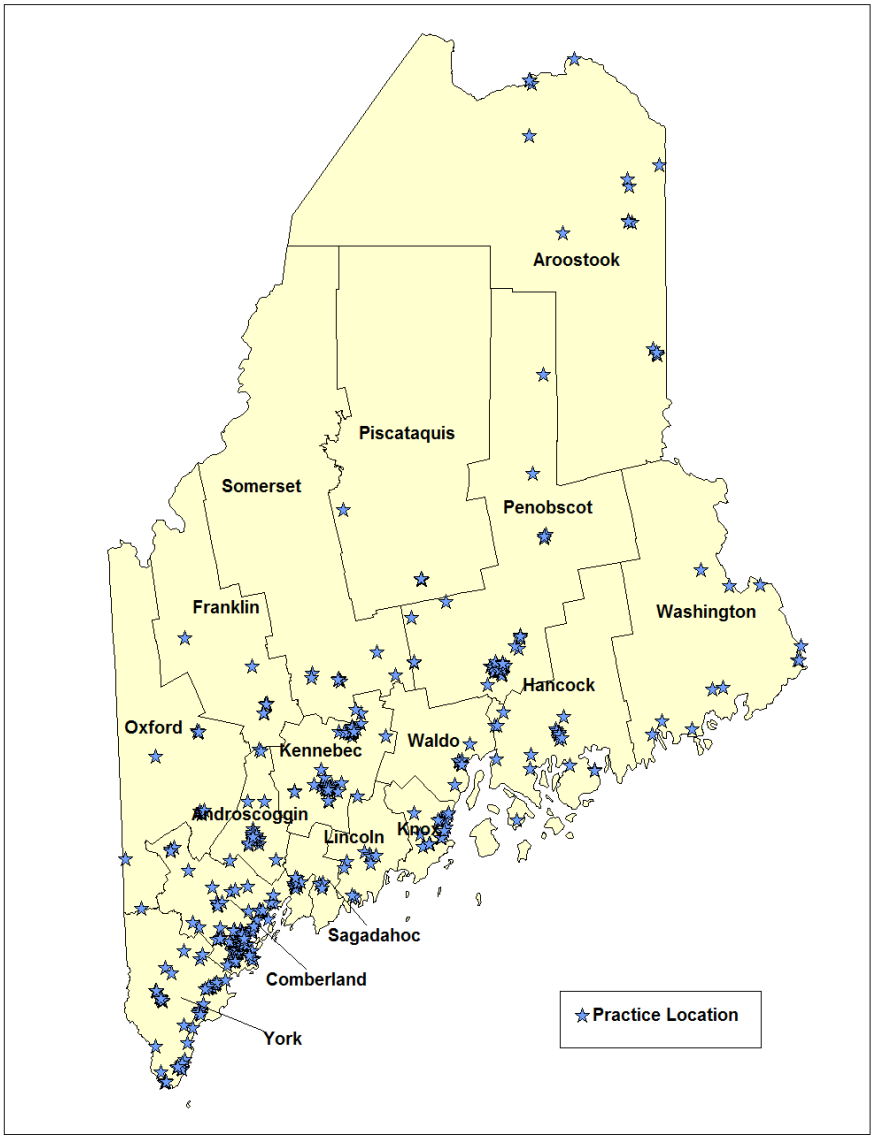
Figure 11. Percent of General and Specialty Dentists among Actively Practicing Dentists in Maine, November 2011



Source: Maine Licensure Data, 2011

The dental workforce is not evenly distributed across Maine with many dentists located in population centers like Portland and Augusta. Dentists are largely practicing in the southern tier of the state.

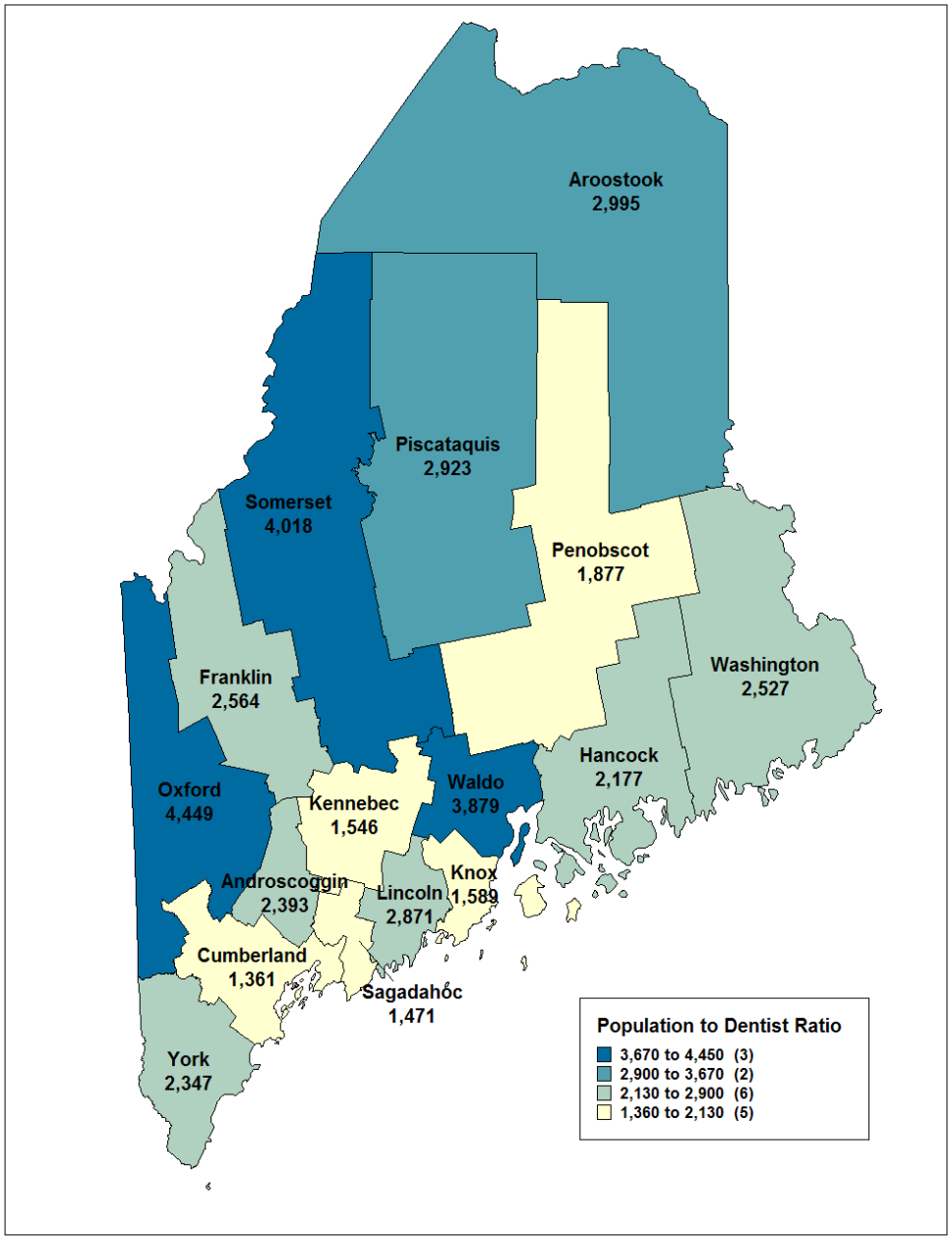
Figure 12. Practice Locations of Dentists in Maine, November 2011



Source: CHWS, 2012, ME Licensure Data, 2011

There was significant variation in the population to dentist ratios across counties in Maine. In 2011, there were 1,361 people per active dentist in Cumberland County. At the same time, there were 4,018 people per active dentist in Somerset County (CHWS, 2011). While not all oral health stakeholders agree that there is a shortage of dentists in Maine, there is agreement that the current supply of dentists in unevenly distributed across the state. Further, the number of dentists who treat publicly-funded patients or those with special health care needs is not sufficient to meet their need for oral health services (Initiatives, 2008).

Figure 13. Population to Dentist Ratio by County in ME, November 2011



Source: CHWS, 2012, ME Licensure Data 2011

Regulation of Dentists in Maine

Dentists in Maine are governed by legislative statute (M.R.S.A. Title 32, Chapter 16) and the regulations of the Maine Board of Dental Examiners (ME BDE) (MBDE, 2011). To qualify for licensure as a dentist in the state, a candidate must be at least 18 years of age, be a graduate of an accredited dental college, and show evidence of passing a national board in dentistry or pass a ME BDE designed examination. The ME BDE may require the dental applicant to demonstrate clinical skills prior to issuing a dental license. A licensed dentist is required to re-register biennially (MBDE, 2011). A dentist in Maine may provide dental services of any kind including

dental operations or dental surgery, prescribe drugs or medicines, administer local anesthetics, and use any necessary appliances for dental treatment (MBDE, 2011). To the extent necessary to provide needed care, the dentist is also permitted to perform physical examinations and to take case histories. A special permit is required for the dentist to administer general anesthetics and conscious sedation to patients (MBDE, 2011).

Dental Education

The absence of a dental school in Maine has adversely affected the supply of dentists in the state. Nationally, the presence of a dental school in a state is significantly correlated with both the number of applicants to dental education programs from that state and also with the supply of dentists in a state (Mentasti et al., 2008). The variation in dental workforce distribution is directly correlated to the rate at which people from an area attend dental school (Mentasti et al., 2008). Dental school graduates are most likely to establish a dental practice in their community of origin, defined as where they were raised or schooled (Mentasti et al., 2008).

In a 2008 study comparing the number of dental applicants from each state with the population of the state and the supply of dentists in the state, Maine was among the five states with the fewest applicants (15 applicants from Maine to dental schools in 2008) to dental schools in the U.S. Maine was the third lowest state in number of applicants per population at a ratio of one applicant to 88,100 people in the state. Vermont had the lowest ratio with one applicant to 103,842 people (Mentasti et al., 2008).

Currently, Maine depends on out-of-state dental schools for new dentists who practice in the state. In 2013, the University of New England (UNE) expects to enroll 40 dental students annually in a new dental school providing dental education in a community-based education model (UNE, 2011). More than 20 regional organizations, including some in Vermont and New Hampshire, have endorsed and supported the establishment of a dental school at UNE (UNE, 2011).

The educational model chosen for the new dental school has a substantial public health orientation with dental students required to complete rotations or externships in community settings and with community providers throughout Maine and neighboring states. The objectives of the program are to train dentists with an interest in providing services in underserved communities and for populations with limited access to oral health services. Current UNE plans include establishing a Portland-based dental center by 2016 where third-year dental students can treat patients (UNE, 2011). External clinical rotations for the first class of dental students will begin in 2017 (UNE, 2011).

Loan Repayment Programs Available to Maine Dentists and Dental Students

One strategy commonly used by both state and federal governments to encourage dentists to practice in geographic areas with an insufficient number of dentists or with underserved population groups is loan repayment. Maine's Dental Education Loan and Loan Repayment Program administered by FAME was established to support 12 slots either for dental students to receive loans or for actively practicing dentists to participate in loan repayment (Initiatives, 2008). In 2008, the program was full with more applicants than could be accommodated with available funding (Initiatives, 2008). Participating dentists signed a contract agreeing to work at

least 40 hours per week and to accept all patients regardless of the patient's ability to pay for services. The dentist must also accept Medicaid patients and offer a sliding fee scale to qualified patients who can't fully pay for services (Initiatives, 2008).

The Maine Dental Education Loan and Loan Repayment Program does not require that the area served by the dentist be a designated DHPSA, but the area must be designated by the Office of Rural Health Primary Care as an area of need. The program offers up to $20,000 annually in loan repayment which can be renewed for up to four years (a total of $80,000 per dentist) (Initiatives, 2008). The program also offers dental students from Maine $20,000 in forgivable loans per year for up to four years of dental school provided that the student commits to serving in an area of need in the state after graduation (Initiatives, 2008). Loan forgiveness occurs at 25% per year of service. Again, the recipient must agree to serve all patients regardless of ability to pay.

Initially this program was entirely supported with tobacco settlement monies (Initiatives, 2008). In 2009, Northeast Delta Dental offered funding to FAME to support an additional two positions for several years. In that year, the Maine CDC Oral Health Program was awarded a three-year grant from HRSA's Bureau of Health Professions that provided additional support for loan repayment positions, allowing three more dentists to participate. The Dental Education Loan and Loan Repayment Program has provided educational loans to 23 dental students and loan repayment benefits for 12 practicing dentists in the time the program has been in place (Feinstein, 2011).

There is also a federal loan repayment program which is part of the National Health Service Corps. Program awards are for $25,000 a year with a minimum two-year contract from the dental professional. These awards are exempt from income taxes. A third and fourth year commitment are available at $35,000 per year. The dentist must be working in a DHPSA to qualify for participation in the program (Initiatives, 2008).

Maine also had a state loan repayment program that offered $25,000 a year for two years to a dentist working in a DHPSA. This program, which is not in place currently, offered the opportunity for participating dentists to sign a subsequent second contract for a total of four years or $100,000. The dentist was required to sign a document certifying that there were outstanding educational loans to be paid and the award was to be claimed on tax forms (Feinstein, 2011).

Dentist Re-registration Survey in Maine

The Maine Office of Data, Research and Vital Statistics in conjunction with the Maine Board of Dental Examiners conducts a biennial survey of dentists as part of license renewal. In 2010, 611 dentists responded to the survey. Of the 611 survey respondents, 574 were actively practicing dentistry. This is a high response rate based on historical numbers of actively practicing dentists in Maine (e.g., 671 in 2009).

Among the 574 actively practicing dentists, 499 indicated either primary or secondary employment in Maine with the remainder reporting only out-of-state employment. For the following analysis, only dentists with either active primary or secondary employment in Maine were considered.

Among survey respondents there were 422 dentists with primary employment in Maine, 71 dentists with both primary and secondary employment in Maine, and three dentists with only secondary employment in Maine (N=499). Ninety-eight percent of dentists practicing in Maine resided or practiced in Maine during the 12 months prior to completing the survey. Dentists in Maine were mostly male and non-Hispanic White. The mean age of dentists responding to the survey was 54 years and the median age was 55 years.

Table 20. Demographic Characteristics of Actively Practicing Dentists in Maine, 2010

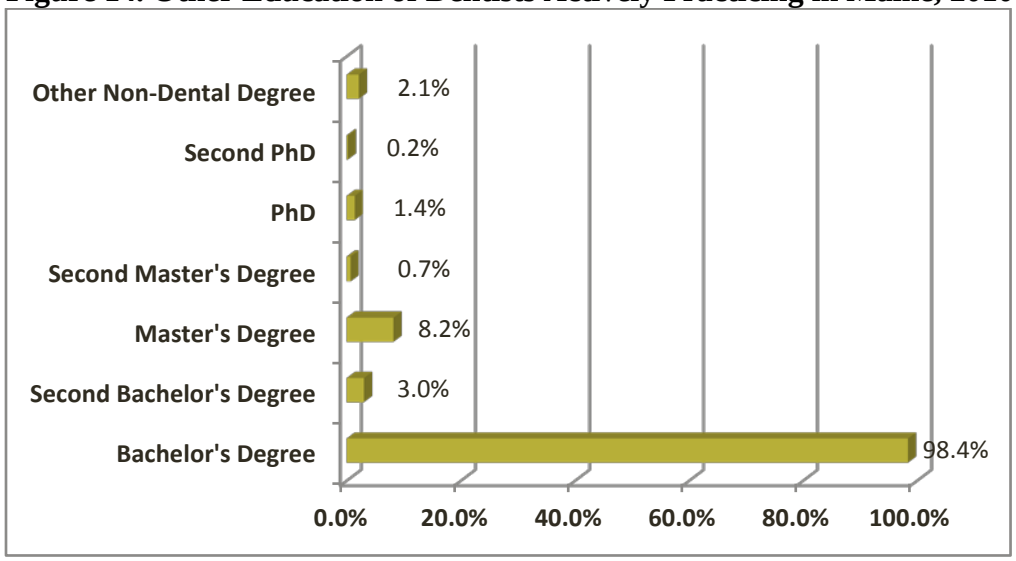
Male	84.4%
Female	15.6%
White	91.9%
Asian	3.2%
Other Race	4.9%
Non-Hispanic	97.1%
Hispanic	2.9%

Source: Dentist Reregistration Survey, ME, 2010

Education of Dentists in Maine

Dentists were asked about their educational backgrounds including the year in which they obtained a degree, the state where the educational program was located, and the field of study.

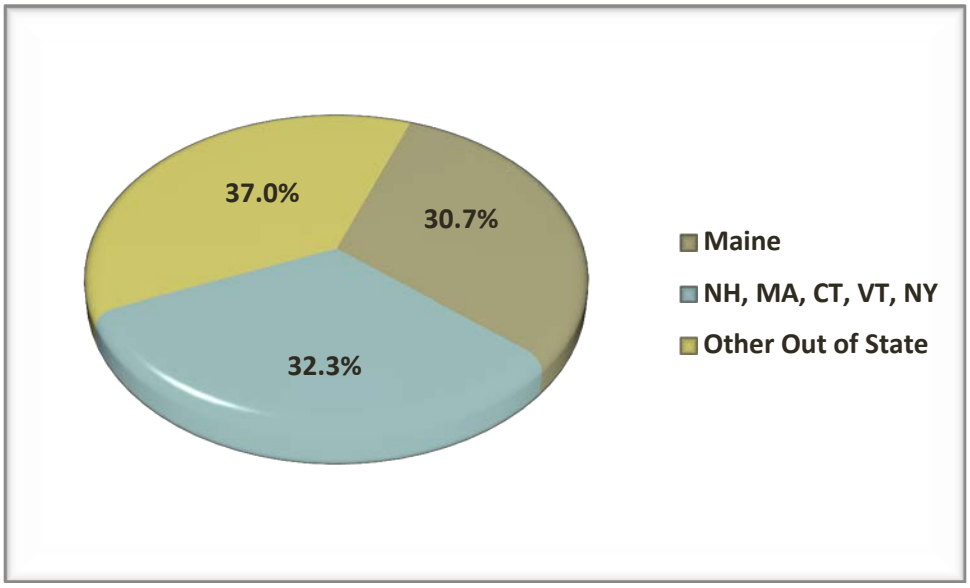
Figure 14. Other Education of Dentists Actively Practicing in Maine, 2010



Source: Dentist re-registration survey, ME, 2010

About 30% of responding dentists indicated that they received their bachelor's degree education in Maine. About one-third (32.3%) of the active dentists in Maine who responded to the survey received their baccalaureate education in another New England state or New York.

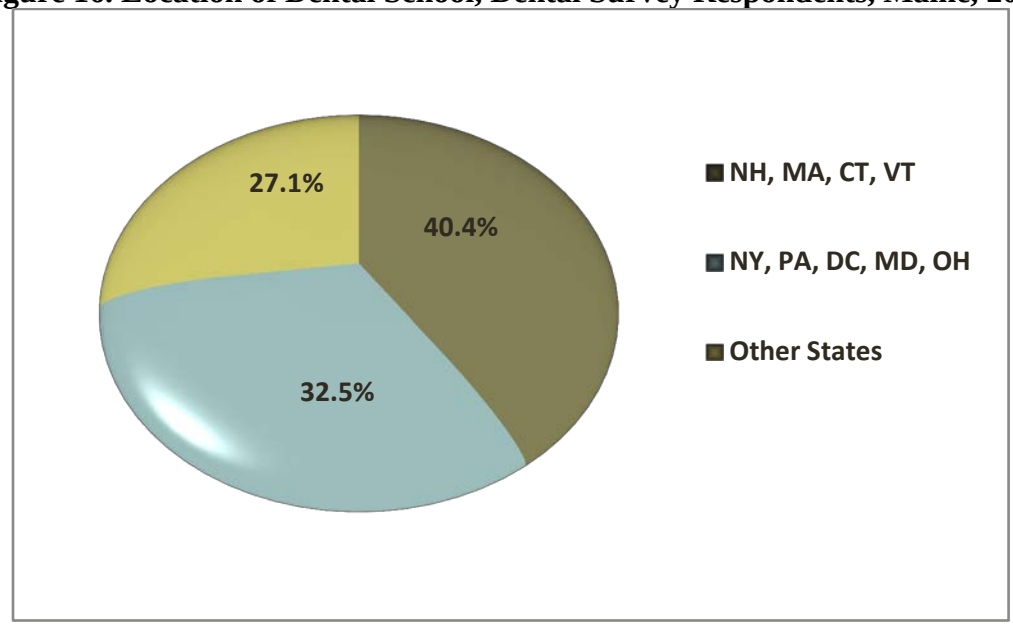
Figure 15. Location of Baccalaureate Degree Program, Dentists Actively Practicing in Maine, 2010



Source: Dentist reregistration survey, ME, 2010

All dentists in practice in Maine attended a dental program out-of-state. Many survey respondents (72.9%) attended dental school in a New England state (40.4%) or in the Atlantic or Mid-Atlantic region of the U.S (32.5%).

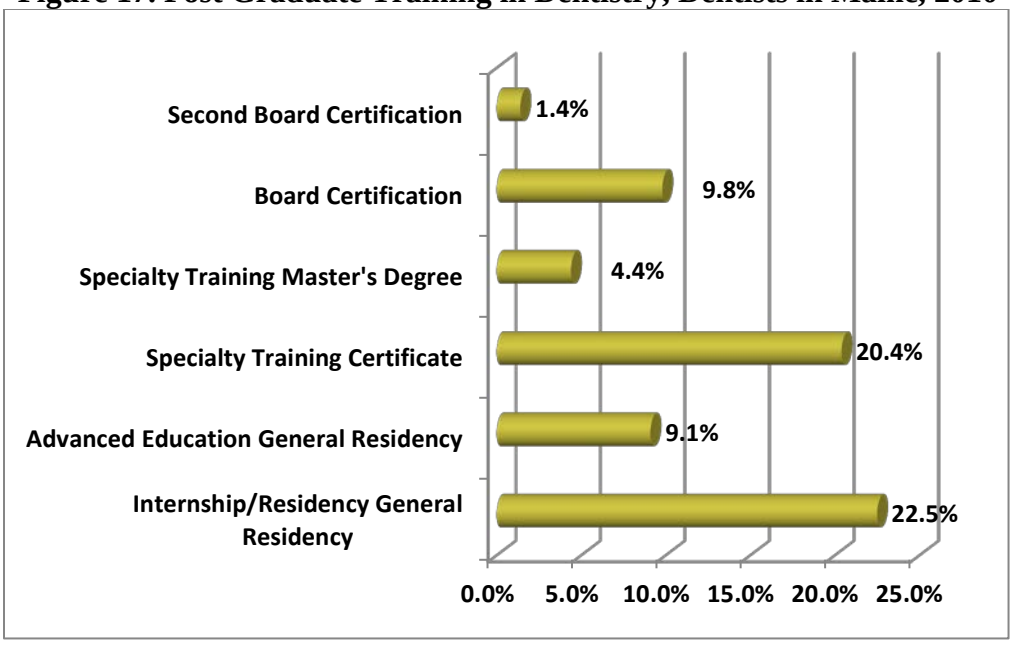
Figure 16. Location of Dental School, Dental Survey Respondents, Maine, 2010



Source: Dentist re-registration survey, ME, 2010

Dentists were asked about post graduate training in dentistry and about specialty board certification. Among survey respondents, 31.6 % had completed an internship, residency, or advanced education in general dentistry and 20.4% had completed specialty training.

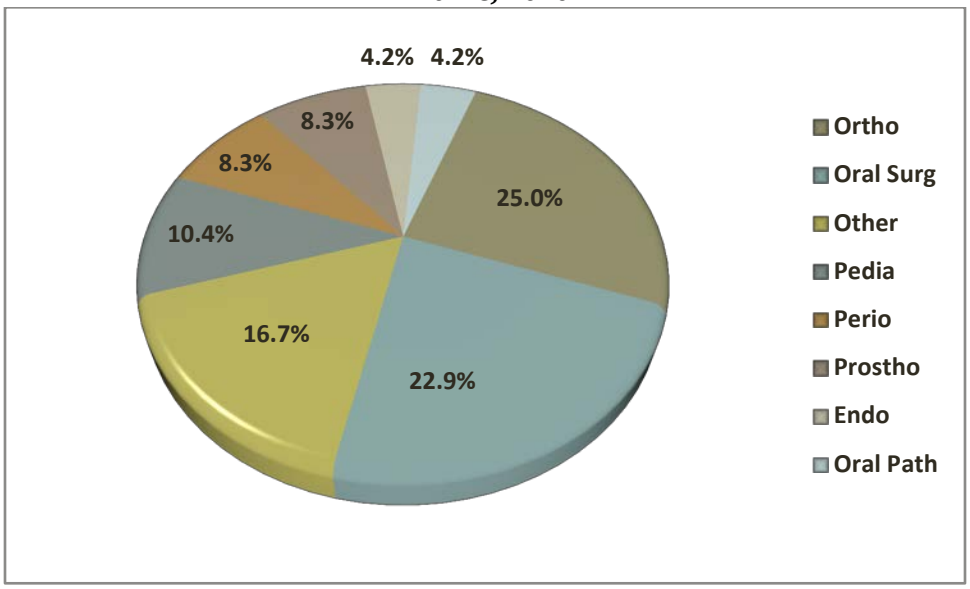
Figure 17. Post Graduate Training in Dentistry, Dentists in Maine, 2010



Source: Dentist reregistration survey, ME, 2010

Among the 9.8% of Maine dentists who were board certified in a dental specialty, one-quarter (25%) were certified in orthodontics and 22.9% were certified in oral and maxillofacial surgery.

Figure 18. Percent of Board Certified Dental Survey Respondents by Specialty Board, Maine, 2010



Source: Dentist reregistration survey, ME, 2010

Employment of Dentists in Maine

Most dentists in Maine worked in either a private solo or group practice (90.3%) and were self-employed (86.5% of all dentists in private practice and 78.1% of all dentists in the state).

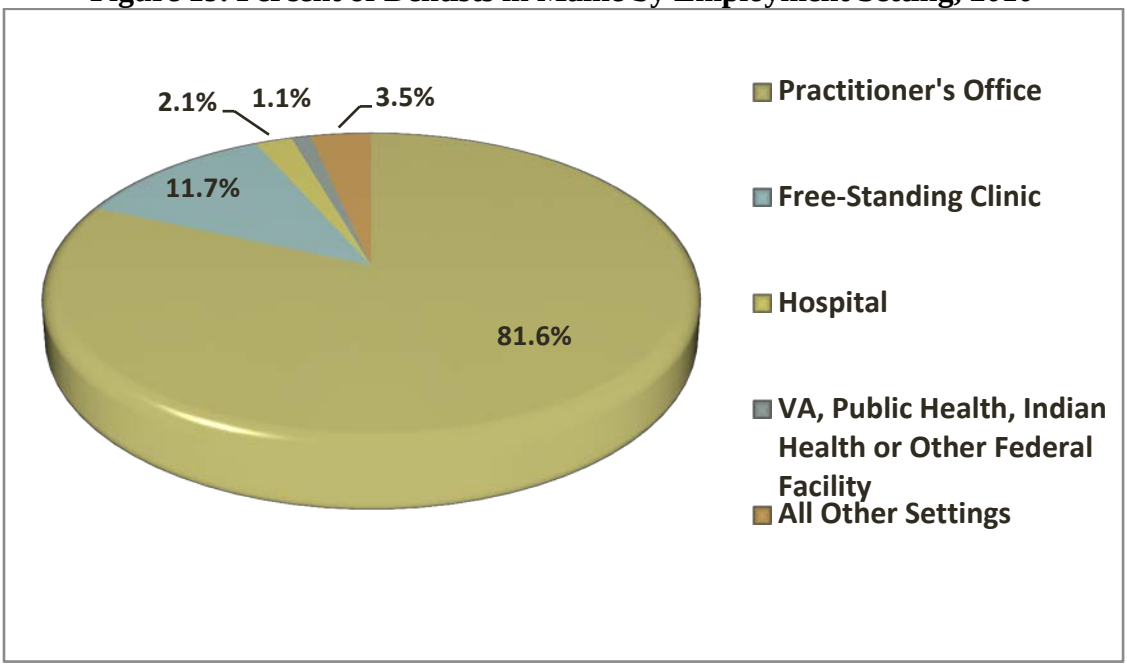
Table 21. Percent of Dentists in Maine by Form of Employment, 2010

Form of Employment	% of Dentists
Self Employed	**78.1%**
Solo Dental Practice	61.6%
Group Dental Practice	16.5%
Employed	**21.9%**
By A Dentist	6.4%
By A Partnership or Group	5.8%
By Federal Government	3.3%
By Non-Government Employer	2.7%
By Group Health Plan Facility	0.8%
By Local Government	0.8%
By Other Employer	2.1%
Total	**100.0%**

Source: Dentist reregistration survey, ME, 2010

Dentists in the state mainly practiced in private practices (81.6%) and free-standing clinics (11.7%)

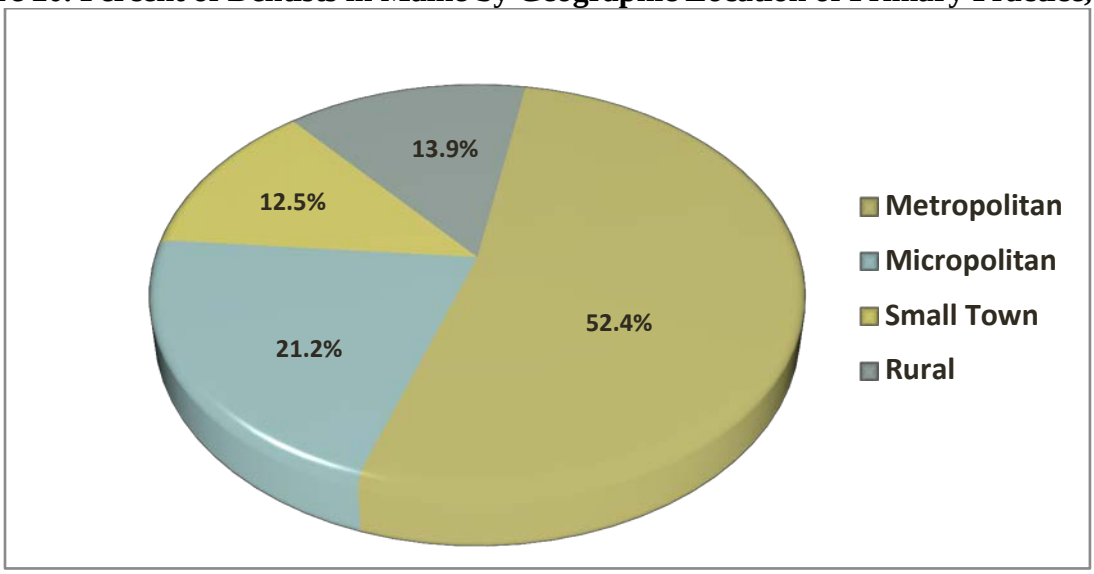
Figure 19. Percent of Dentists in Maine by Employment Setting, 2010



Source: Dental reregistration survey, 2010

Nearly three-quarters of dentists in Maine practiced in metropolitan (52.4%) and micropolitan areas (21.2%) of the state.[6]

Figure 20. Percent of Dentists in Maine by Geographic Location of Primary Practice, 2010



Source: Dentist reregistration survey, ME, 2010

Practice Activities of Dentists in Maine

Dentists in Maine were asked to indicate the number of hours they spent on average weekly in direct patient care activities, teaching, administrative functions, and research. General practice dentists spent the most time, on average weekly, providing general dental services to patients while specialists in each of the dental specialties spent most of their time on average providing dental services related to their expertise. Oral surgeons spent more time than other dentists performing administrative functions (mean of 15 hours per week).

[6] Rural Urban Commuting Areas (RUCAs) is a classification built by the U.S. Census Bureau and partner organizations. This taxonomy is a classification scheme that describes rural/urban status based on sub-county measures (i.e., census tracts and zip codes which are geographically specific and also consider functional relationships like population density, population work commuting areas, city size, etc. The continuum includes metropolitan areas, micropolitan areas, small towns, and rural areas (RHRC, 2011).

Table 22. Mean Weekly Hours of Actively Practicing Dentists in Maine by Clinical, Research, Teaching or Administrative Activities, 2010

	General Practice Dentists	Endodontists	Oral Surgeons	Orthodontists	Pedodontists	Periodontists	Prosthodontists
General Practice	27.5	0.5	*	*	*	*	13.4
Endodontics	3.5	31.7	*	*	*	*	1
Oral Pathology	1.5	0.5	*	2	*	*	*
Oral Surgery	3.7	0.5	36.1	*	2	*	7.5
Orthodontics	3	*	*	32.1	12.5	*	*
Pediatric Dentistry	5.4	0.5	*	*	31.5	*	2
Periodontics	2.4	*	*	*	*	29.8	5
Prosthodontics	7.5	*	*	*	*	*	31.3
Dental Public Health	12.3	*	*	*	1.5	*	*
Teaching	6.5	*	2.5	1.6	4	1	*
Research	2.3	*	*	*	2	*	*
Administration	6	6.3	15	9.7	6	4	12
Retail	1	*	*	*	*	*	*
Health Promotion	2.3	*	2	1.7	2	1	*
Other	2.8	*	*	6.5	*	*	*

Source: Dentist reregistration survey, ME, 2010

Longevity of Practice in Maine

Survey respondents were asked to indicate how many years they had practiced in Maine as well as how many years they had practiced in another location during their dental career. Half of respondents (49.9%) indicated they had only practiced in Maine during their dental careers suggesting that they located in Maine soon after graduation from dental school. Among those dentists who had only practiced in Maine, the average number of years practicing dentistry was 23.7 years (median = 26 years). The minimum number of years practiced was 0.5 and the maximum was 55 years.

At the same time, 50.1% of dentists had practiced in Maine and also in another state during their dental career suggesting that many of the state's dentists had professional experience before licensing in Maine. The mean number of years practicing in Maine for these dentists was 17 years (median =16 years). There was variation among these dentists in the number of years practiced out-of-state. The mean number of years practicing in another state was 10.1 years but the median was five years. The minimum number of years of out-of-state practice was one year and the maximum was 47 years. The mean current age of dentists who had only practiced in Maine was slightly older (54.5 years) than the mean age of dentists who had practiced in Maine and at least one other state (53.9 years on average).

Survey respondents were asked to describe the number of weeks they had worked as a dentist during the 12 months prior to the survey. Dentists who worked only in Maine during the

previous year worked on average 48.6 weeks, but the range of weeks worked was two weeks to 52 weeks. A small percentage of dentists had practiced both in-state and out-of-state in the prior year (2.1%). These dentists practiced on average 43.6 weeks in Maine and 25.9 weeks in another state. The range for both in-state and out-of-state practice was one week to 52 weeks.

Dentists with secondary employment in Maine indicated they worked, on average, 12 hours per week providing patient care at their secondary practice location.

Dental Caseloads in Maine

Most dentists in Maine were accepting new patients in their practices (94.8%). Dentists in dental specialties were the most likely to be accepting new patients (99.1%) and dentists in small towns or rural areas were the least likely to be accepting new patients (89.1%).

Table 23. Percent of Dentists in Maine Accepting New Patients in Dental Practice, 2010

Characteristics of Dentists	Accepting New Patients	Not Accepting New Patients
General Dentists	90.7%	9.3%
Specialty Dentists	99.1%	0.9%
Dentists in Metropolitan or Micropolitan Area	94.8%	5.2%
Dentists in Small Towns or Rural Areas	89.1%	10.9%

Source: Dentist reregistration survey, ME, 2010

Less than half of the actively practicing dentists in Maine who responded to the re-registration survey indicated they were currently treating patients insured by MaineCare. And while almost all dentists in the state were accepting new patients into their practices, very few dentists, particularly general dentists, were accepting new MaineCare patients. Dentists in small towns and rural areas were significantly more likely (p-value<0.0001) than dentists in metropolitan or micropolitan areas of Maine to be treating MaineCare patients. They were also more likely than their urban counterparts to be accepting new MaineCare patients. This may be due in part to the presence of more MaineCare eligible patients on a per population basis in small towns and rural areas of the state.

Table 24. Current Practice Behaviors, Dentists in Maine, 2010

Characteristics of All Dentists in Maine	Treat MaineCare Patients	Accepting Any New Patients	Accepting New MaineCare Patients
General Dentists	45.2%	90.1%	23.9%
Specialty Dentists	49.1%	99.1%	45.6%
Dentists in Metropolitan Areas	40.0%	94.8%	26.6%
Dentists in Micropolitan Areas	45.7%		28.3%
Dentists in Small Towns	62.9%	89.1%	35.0%
Dentists in Rural Areas	62.3%		43.5%

Source: Dentist reregistration survey, ME, 2010

There was also variation among dentists who treated MaineCare patients in their practices in 2010. Almost all general (97.3%) and specialty (98.2%) dentists in Maine who currently treated MaineCare patients indicated that they treated children covered by MaineCare. Only two-thirds of general dentists (65.7%) and 56.4% of specialty dentists who currently treated MaineCare patients treated adult MaineCare patients. Dentists in rural areas and micropolitan areas were more likely than dentists in other geographic areas to treat adults on MaineCare.

Sixty percent of all dentists treating MaineCare patients currently indicated that they limited the percent of MaineCare patients in their caseloads. On average, these dentists limited MaineCare patients to 12.5% of total caseload although the range was from 5% to 50%. (Note: Outlier cases <5% and >50% were excluded from the analysis.) General dentists and dentists in metropolitan areas were more likely than other dentists who also treated MaineCare patients to indicate that they limited the percent of MaineCare patients in their caseloads.

Table 25. Percent of Dentists in Maine Who Treat MaineCare Patients by Characteristics of Current MaineCare Caseload, 2010

Characteristics of Dentists in Maine Who Treat MaineCare Patients	Limit the Percent of MaineCare Patients in Caseload	Treat MaineCare Patients Younger Than 21	Treat MaineCare Patients Older Than 21
General Dentists	67.3%	97.3%	65.7%
Specialty Dentists	50.0%	98.2%	56.4%
Dentists in Metropolitan Areas	62.8%	97.3%	59.0%
Dentists in Micropolitan Areas	61.2%		66.7%
Dentists in Small Towns	58.8%	98.7%	65.8%
Dentists in Rural Areas	56.1%		69.8%

Source: Dentist reregistration survey, ME, 2010

Dentists who did not treat MaineCare patients were asked to indicate whether certain incentives would motivate them to treat MaineCare patients. Dentists who did not currently treat MaineCare patients indicated that they might consider seeing MaineCare patients if there were higher reimbursement for services (68.4%), if there were less administrative paperwork attached to MaineCare (67.9%), or if they were compensated for missed appointments (66.2%).

Table 26. Percent of Dentists Who Do Not Treat MaineCare Patients Currently by Type of Incentive That Could Motivate Participation in MaineCare, 2010

Dentists Who Do Not Currently Treat MaineCare Patients	Higher MaineCare Reimbursement Rates	Less Administrative Paperwork	Compensation for Missed Appointments by MaineCare Patients
Dentists in Maine	68.4%	67.9%	66.2%
Dentists in Metropolitan or Micropolitan Areas	69.1%	67.3%	68.6%
Dentists in Small Towns or Rural Areas	64.7%	65.4%	67.4%

Source: Dentist reregistration survey, ME, 2010

Dentists were also asked if they treated children with special health care needs in their practices. Dental specialists and dentists practicing in rural areas of Maine were more likely than others to treat children with special needs.

Table 32. Percent of Dentists in Maine That Treat Children with Special Needs by Practice Type and Geographic Location

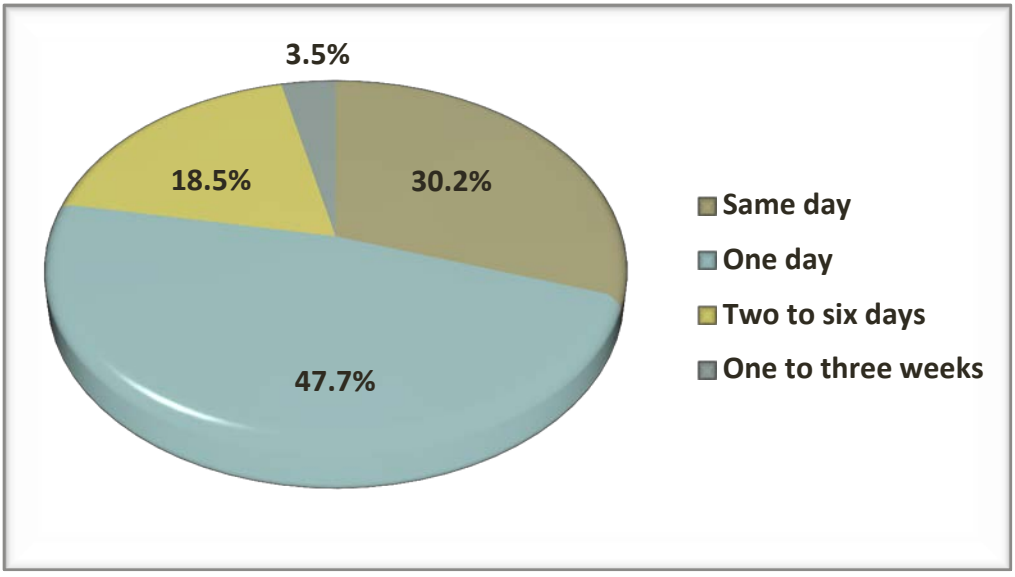
Characteristics of Dentists	Treat Children with Special Needs
General Dentists	53.9%
Specialty Dentists	74.6%
Dentists in Metropolitan Areas	54.2%
Dentists in Micropolitan Areas	63.6%
Dentists in Small Towns	66.7%
Dentists in Rural Areas	68.2%

Source: Dentist reregistration survey, ME, 2010

Waiting Times for Dental Appointments

Dentists were asked to describe wait times in their practices for emergency care. More than three-quarters of dentists (77.9%) indicated that they provided either same day or next day appointments in an emergency.

Figure 21. Percent of Dentists in Maine by Wait Times for Emergency Dental Appointments, 2010



Source: Dentist reregistration survey, ME, 2010

Wait times for emergency care were slightly longer for dentists in small towns or rural areas than for dentists in metropolitan or micropolitan areas. This is likely due in part to the smaller numbers of dentists in those areas.

Table 33. Wait Times for Emergency Care Visits with Dentists in Maine by Specialty and Geographic Location of Practice, 2010

Wait Time For Emergency Care Visit	General Dentists	Specialty Dentists	Metropolitan / Micropolitan Area	Small Town/ Rural Area
Same day	25.8%	31.4%	29.8%	31.5%
One day	51.1%	49.5%	50.3%	40.3%
Two to six days	19.6%	17.2%	17.2%	22.6%
One to three weeks	3.5%	1.9%	2.7%	5.6%

Source: Dentist reregistration survey, ME, 2010

Wait times for non-emergency and routine care were a bit longer according to dentist who responded to the reregistration survey. The median wait time for appointments for both non-emergency and routine care visits with dentists was two to four weeks. Wait times for non-emergency and routine care were slightly longer in small towns and rural areas than in metropolitan or micropolitan areas.

Table 27. Wait Times for Non-Emergency and Routine Dental Visits in Maine by Dental Specialty and Geographic Location of Practice, 2010

Wait Time For Non-Emergency Care Visit with Dentist (New Patient, Recall)	General Dentists	Specialty Dentists	Metropolitan/ Micropolitan Area	Small Town/ Rural Area
Same day to three days	14.5%	20.8%	14.4%	10.5%
Four days to one week	31.3%	24.5%	32.7%	29.0%
Two to four weeks	43.6%	47.2%	43.4%	47.6%
Five or more weeks	10.6%	7.5%	9.5%	12.9%
Wait Time For Routine Care Visit with Dentist	**General Dentists**	**Specialty Dentists**	**Metropolitan/ Micropolitan Area**	**Small Town/ Rural Area**
Same day to three days	13.3%	24.1%	14.5%	12.2%
Four days to one week	28.3%	21.9%	27.1%	27.8%
Two to four weeks	49.5%	47.1%	49.9%	45.2%
Five or more weeks	8.9%	6.9%	8.5%	14.8%

Source: Dentist reregistration survey, ME, 2010

Sliding Fee Payment Scale

Only a small proportion of dentists in Maine (11.8%) indicated that a sliding fee scale was available for patients in their dental practice. Among dentists with a sliding fee scale available, 26.3% reported a posted sliding fee scale in the dental office. There was not much variation in availability of a sliding fee scale by geographic location of the dental practice, although dentists in small towns and rural areas were somewhat more likely to have a sliding fee scale available and to also have it visibly posted than were dentists in metropolitan or micropolitan areas.

Table 28. Availability and Visibility of Sliding Fee Scales by Geographic Location of Dental Practice in Maine, 2010

Geographic Location of Dental Practice	Sliding Fee Scale Available		If Available, Sliding Fee Scale is Visibly Posted	
	Yes	No	Yes	No
Metropolitan/Micropolitan Area	10.8%	89.2%	25.0%	75.0%
Small Town/ Rural Area	14.0%	86.0%	31.6%	68.4%

Source: Dentist reregistration survey, ME, 2010

Future Plans of Dentists in Maine
More than three-quarters (77.3%) of dentists expected to be working in dentistry in Maine in five years, while 8.8% were unsure of their future plans. About 14% of responding dentists did not expect to be working in dentistry in Maine in five years.

Dental Hygienists
According to November 2011 licensure files, there were 1,009 actively practicing dental hygienists (DHs) licensed in the state of Maine in 2011. There were an additional 32 DHs licensed as independent practice dental hygienists (IPDHs) and eight DHs certified as extended function dental assistants. There were 11 actively practicing DHs who principally practiced in a state other than Maine (Maine Licensure Data, 2011). The mean age of DHs was 43 years.

Regulation of Dental Hygienists in Maine
DHs in Maine are governed by the Dental Practice Act in Maine Revised Statute, Title 32, Chapter 16 and are regulated by the rules of the ME BDE which describe the qualifications for licensure in the state, the tasks permitted, and the required levels of supervision for particular dental hygiene services. The qualifications for licensure in Maine and the scope of practice for DHs in the state are listed in Appendix A. of this report.

DHs in Maine generally provide preventive and prophylactic services to patients under varying levels of supervision defined in statute and regulation. DHs have several opportunities to practice in expanded capacities in Maine. They may work under public health supervision or as IPDHs. They are also able to qualify as extended function dental assistants.

DHs working under public health supervision work under the general supervision of a dentist in public health settings. The DH has a written agreement with the supervising dentist who provides standing orders for patient care (Beaulieu, 2000). However, the supervising dentist is not generally the dentist of record for the patients seen by the DH. While the supervising dentist must work with the DH to determine how patients are to obtain follow-up care, the dentist is not responsible for provision of that care.

DHs working under public health supervision can practice in medical facilities, public and private schools, residential facilities, nursing homes, and settings other than a traditional dental

practice. DHs under public health supervision must notify the ME BDE of their intent to work under public health supervision and must also submit a report to the ME BDE at conclusion of the work or annually. The DH working under public health supervision can perform reversible procedures without the presence of a dentist, including temporary filling procedures, placing and removing rubber dams, placing and contouring amalgam, placing composite and other restorative materials, applying sealants, and doing supra gingival polishing.

In 2008, the number of hygienists utilizing public health supervision status varied between 35 and 60 DHs at any point in time. Some DHs use the status regularly while others use it on a one time only basis to work at community health fairs and similar types of events (Initiatives, 2008). In 2007, 11 hygienists working under public health supervision served 7,000 children. In the 2010 DH reregistration survey, 109 survey respondents indicated they had used public health supervision status and 43 respondents were currently using that status. DHs in rural areas and small towns were significantly more likely to use public health supervision than were DHs in other areas of the state.

Independent Practice Dental Hygienists (IPDHs)
DHs in Maine were permitted by legislation passed in April 2008 to qualify for independent dental hygiene practice and to own a practice to provide dental hygiene services within the limits of the law. To qualify, DHs must have a bachelor's degree and have 2,000 hours of clinical practice experience or an associate degree and 6,000 of clinical experience.

Once an application to practice as an IPDH is approved by the ME BDE, the applicant's license to practice as a registered DH in the state expires. An IPDH can provide certain prophylactic and preventive services that are within the scope of dental hygiene practice without the supervision of a dentist (see Appendix A for a full list of qualifications and a description of scope of practice for IPDHs).

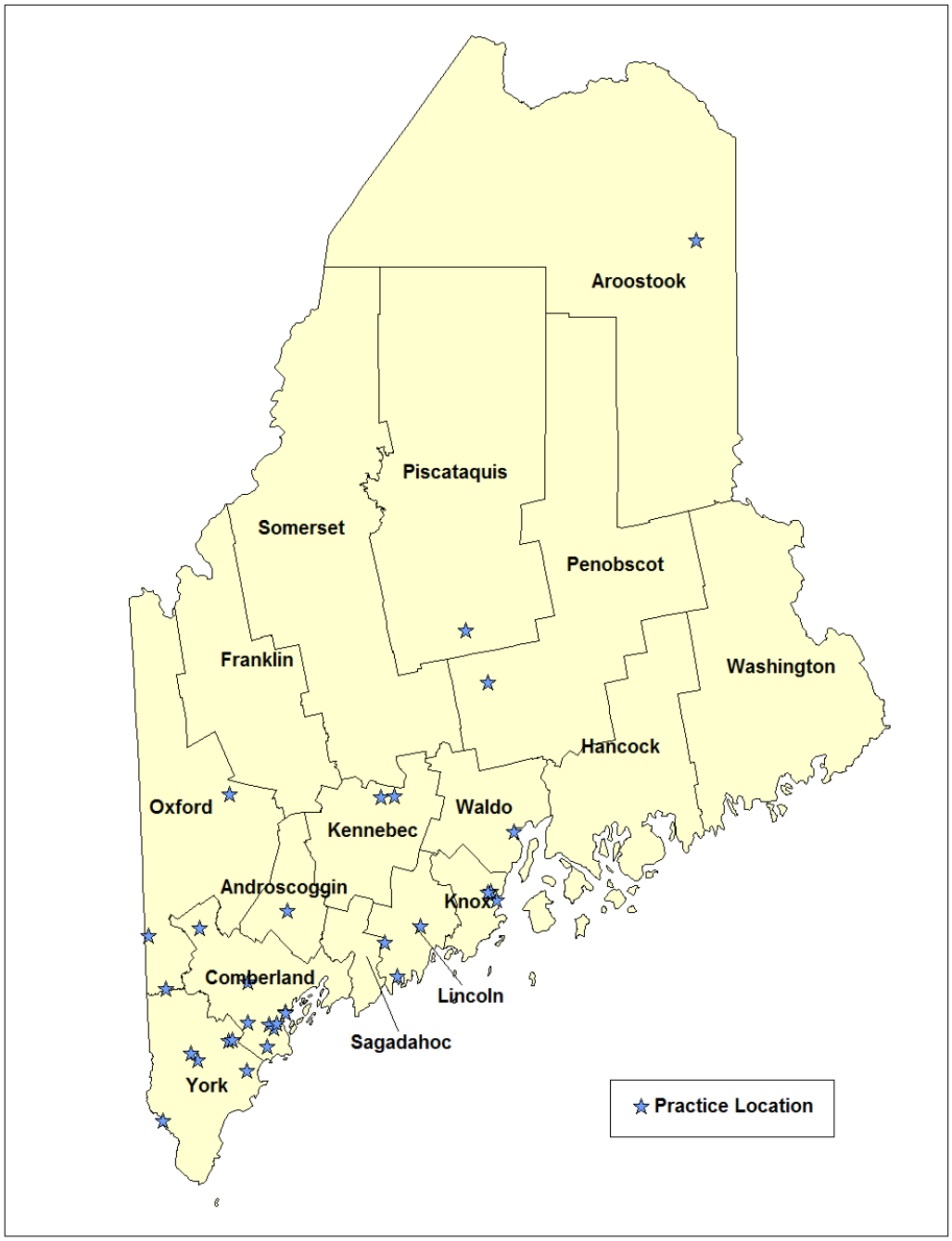
IPDHs establish a provider/patient relationship with the people they serve. An IPDH can be employed by a nonprofit organization to provide independent practice services. An IPDH may employ another IPDH, but may not employ a registered DH. If an IPDH is working under public health supervision status, the IPDH is still required to notify ME BDE of that status, obtain a supervising dentist, and file required reports with the ME BDE.

The ME BDE requires that an IPDH present a written plan for patient referral to a dentist in case dental care is needed. The plan must be comprehensive and include referral options for all conditions that would require dental services.

In practice, an IPDH must obtain written acknowledgement from each patient or patient representative stating that the patient understands that the care is being provided by someone who is not a dentist and that the care is neither a dental treatment nor a restoration.

In November 2011, the licensure lists in Maine included 32 DHs licensed as IPDHs. IPDHs mainly practiced in the southern counties of the state.

Figure 22. Practice Location of IPDHs in Maine, November, 2011



Source: CHWS, 2012, ME Licensure Data, 2011

Dental Hygiene Education Programs in Maine

The University of Maine at Augusta (UMA) offers both a bachelor's of science degree and associate degree in dental hygiene at its University College of Bangor. The programs are accredited by the ADA's CODA. The curriculum includes studies in dental health as well as general studies (UMA, 2011). Students are trained to provide patient assessments, clinical services, and oral health education. Students also work in a campus dental health clinic on the Bangor campus that is open to the public. The clinic serves community members seeking low

cost dental hygiene services. The clinic is used to train dental hygiene students who provide oral examinations, fluoride and sealant treatments, dental prophylaxis, x-rays, and athletic mouthguards (UMA, 2011). The program has the capacity to admit 20 dental hygiene students annually. In the 2009-2010 school year, there were 96 students enrolled in the dental hygiene program. In 2009, there were 24 dental hygiene graduates (ADA, 2011).

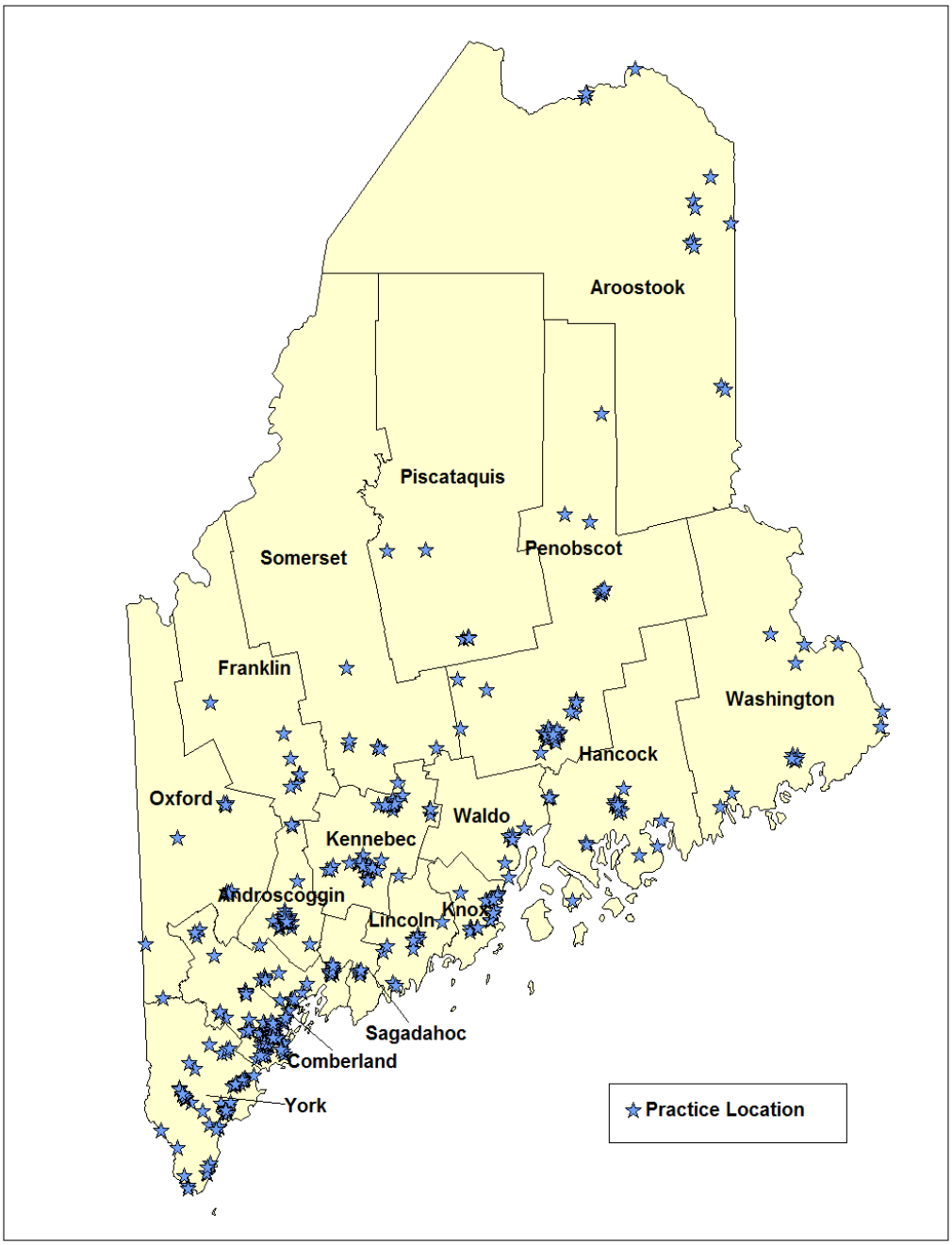
There are only two colleges offering dental hygiene education in the state and UMA is the only program in eastern Maine. The school also offers a bachelor's of science degree completion program. The school participates in the New England Board of Higher Education Regional Student Program, which enables students who are New England residents to enroll in out-of-home-state public colleges and universities at a discount (New England Board of Higher Education, 2012).

The University of New England (UNE) in Portland, Maine also hosts a CODA-accredited dental hygiene program and also offers both a bachelor's of science degree in dental hygiene and a bachelor's of science degree completion program. The first two years of the program are hosted at UNE's Biddeford campus and the last two years of the program are at the Portland Campus. UNE has an on-campus dental clinic in Portland, Maine with 30 dental chairs and five operatories that serve about 5,000 patients from the community each year. Students in the dental hygiene program spend a substantial amount of time in the clinic during their final two years of dental hygiene study (UNE, 2012). The program has the capacity to accept 50 new dental hygiene students annually. In 2009-2010 there were 138 dental hygiene students enrolled in the program. In 2009, 38 students graduated from the dental hygiene program (ADA, 2011).

Location of Dental Hygienists in Maine

Dental hygienists work closely with dentists so their practice locations generally mirrored those of dentists in the state in November 2011.

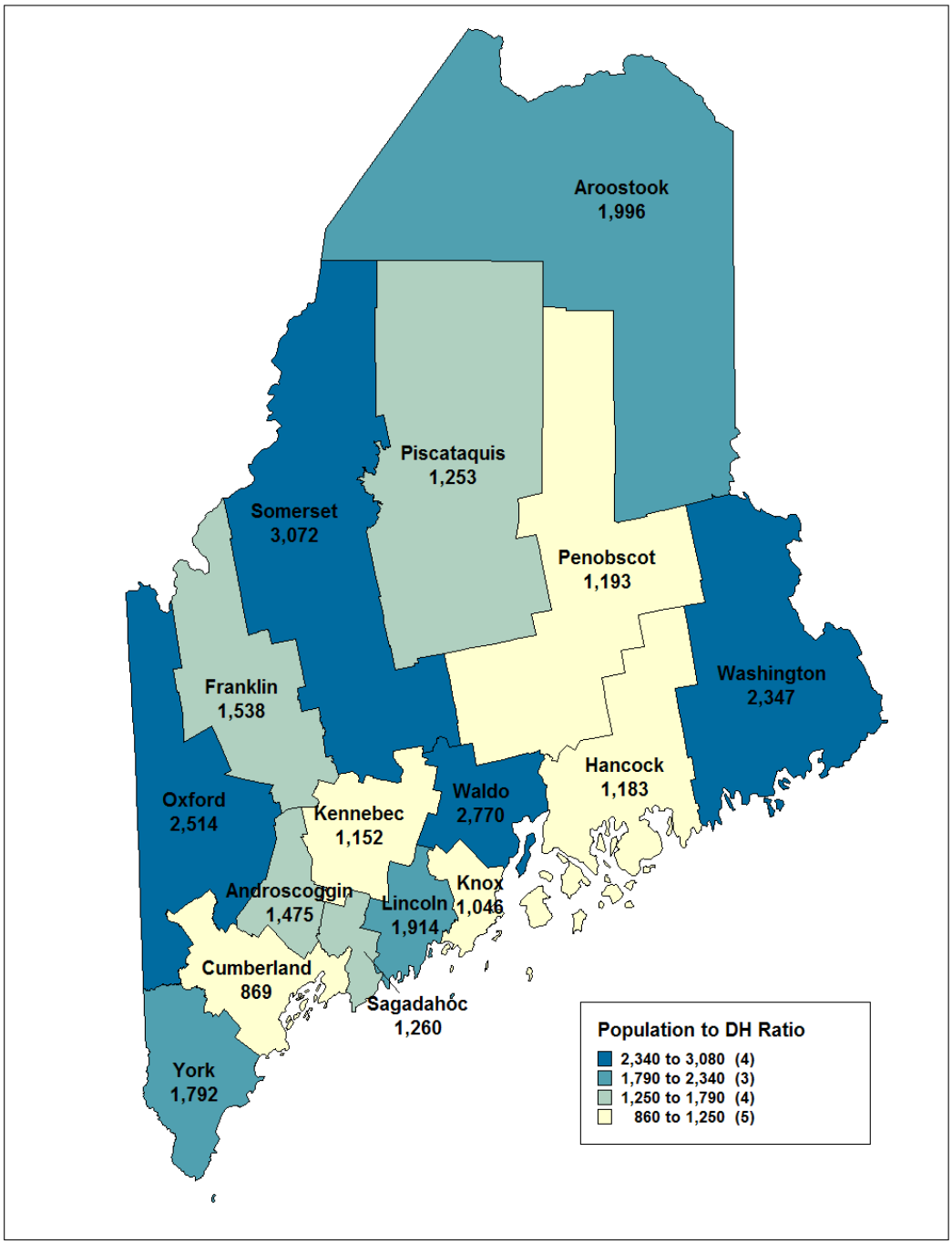
Figure 23. Practice Locations of DHs in Maine, November, 2011



Source: CHWS, 2012, ME Licensure Data 2012

There was variation across counties in Maine in the population to DH ratios based on the November 2011 Maine licensure database. In Cumberland County, there were 869 people per DH. In Somerset County, the ratio was 3,072 people per DH.

Figure 24. Population to DH Ratio by County of Practice in Maine, November, 2011



Source: CHWS, 2012, ME Licensure Data, 2011

DH Re-registration Survey

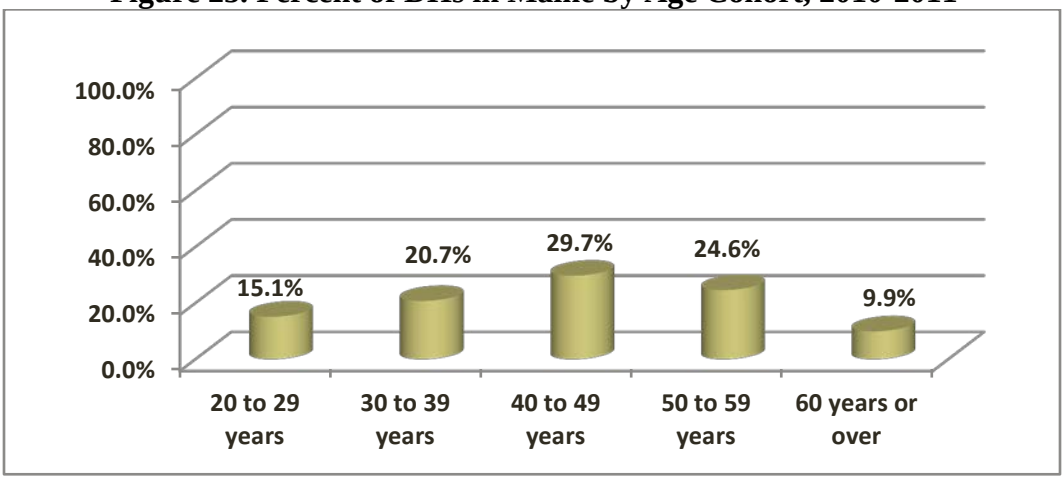
The Maine Office of Data, Research and Vital Statistics, in conjunction with the Maine Board of Dental Examiners, conducts a biennial re-registration survey of DHs. There were 629 responses to the 2010 re-registration survey. This is estimated to be a response rate of over 60%, based on the number of actively practicing licensed DHs in the licensure database in 2011 (1,009 DHs).

Nearly all dental hygiene survey respondents both lived and worked in Maine (99.2%). The remainder of active DHs (0.8%) lived in a neighboring state (either Massachusetts or Vermont) but worked in Maine. DHs were either licensed in Maine as DHs (96.7%) or as IPDHs (2.5%). Survey respondents were asked to describe any specialty certifications or advanced practice permits. Forty-one percent of respondents held a permit for an advanced practice function. More than half (51%) of those with extra certifications held a local anesthesia permit in Maine and about one-third (32%) held both a local anesthesia and a nitrous oxide certificate. Another 9% held only a local anesthesia permit. An additional 3% had other kinds of advanced training including laser therapy. A few respondents were also trained as another type of health or oral health professional including registered nurse, registered dietician, and dental assistant.

Demographic Characteristics of DHs in Maine

DHs in Maine were female (99%), White (98.9%), and non-Hispanic (99.5%). This reflects the overall composition of the Maine population (95% White). The mean age of DHs was 44 years. Respondents to the survey were, on average, a bit older than DHs in the licensure list (mean age of 43).

Figure 25. Percent of DHs in Maine by Age Cohort, 2010-2011



Source: DH Reregistration Survey, ME, 2010-2011

Educational Background of DHs in Maine

DHs were asked to describe their educational background including the year in which they graduated from an academic program, the state of attendance, and field of study.

One-quarter of DHs (25%) currently employed in Maine graduated from high school prior to 1977, 50% graduated from high school earlier than 1985 and the remainder in subsequent years. The earliest graduation date from high school was 1940 and the most recent was 2008.

DHs in Maine usually had an associate degree education (94%). The remainder of survey respondents either did not provide information about associate degree education (5.6%) or indicated they did not have one (0.5%). Most DHs obtained their associate degree from an educational institution in Maine (84.1%). A small percentage of DHs also held a second associate degree (3%) in a discipline other than dental hygiene. Most DHs (91%) indicated that dental hygiene was their field of study in their associate or bachelor's degree education program.

Almost one-quarter of survey respondents (22.7%) held a bachelor's degree and most received that degree from an educational program in Maine (75%). A small percentage of DHs (2.9%) reported a graduate or professional degree as their highest degree. Many with advanced degrees (61.1% of DHs with a master's degree) completed that degree in a college or university in Maine. A few DHs had a second bachelor's degree (0.5%) or multiple graduate degrees (0.3%).

Table 29. Educational Attainment of DH Survey Respondents and Location of Education Program, DHs Actively Practicing in Maine, 2010

State in Which Education Program was Located	High School Diploma or Equivalent	Associate Degree	Bachelor's Degree	Graduate or Professional Degree
Maine	71.5% (N=450)	78.2% (N=492)	16.7% (N=105)	1.8% (N=8)
Massachusetts	4.0% (N=25)	3.8% (N=24)	1.1% (N=7)	0.5% (N=3)
New Hampshire	2.4% (N=15)	1.6% (N=10)	0.5% (N=3)	0.3% (N=2)
Connecticut	1.8% (N=11)	1.6% (N=10)	0.5% (N=3)	0.2% (N=1)
Vermont	1.4% (N=9)	1.1% (N=7)	0.2% (N=1)	
New York	1.3% (N=8)	1.3% (N=8)	1.0% (N=6)	0.2% (N=1)
Other States	6.7% (N=42)	4.9% (N=31)	2.2% (N=14)	
Out of U.S.	0.6% (N=4)	0.5% (N=3)	0.2% (N=1)	
No diploma or degree at academic level or missing information	10.3% (N=65)	7.0% (N=44)	77.7% (N=489)	97.1% (N=611)

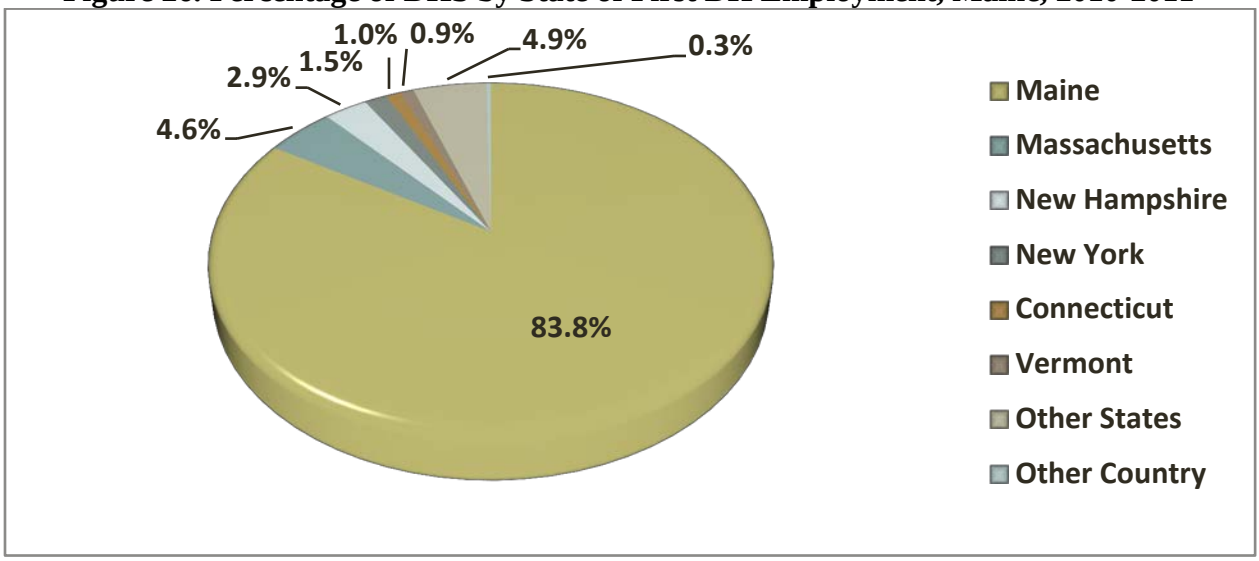
Source: DH Re-registration Survey 2010-2011
Note: Totals may not equal 100% due to rounding error

Entry to the DH Profession

DHs were asked to indicate the year in which they were first employed in the dental hygiene field. One-quarter (25%) of actively practicing DHs began dental hygiene employment in 1982 or before, another 25% started in the field between 1983 and 1992, 25% began working in dental hygiene between 1993 and 2001, and the remainder (25%) began working as a dental hygienist in 2002 or later.

The majority of DHs who were actively practicing in Maine were first employed as a dental hygienist in the state of Maine (83.8%). The remainder first held a dental hygiene job in another state or another country before beginning practice in Maine. Considering the high percentage of DHs who were educated in Maine, it is apparent that most dental hygiene professionals in Maine are native to the state.

Figure 26. Percentage of DHS by State of First DH Employment, Maine, 2010-2011

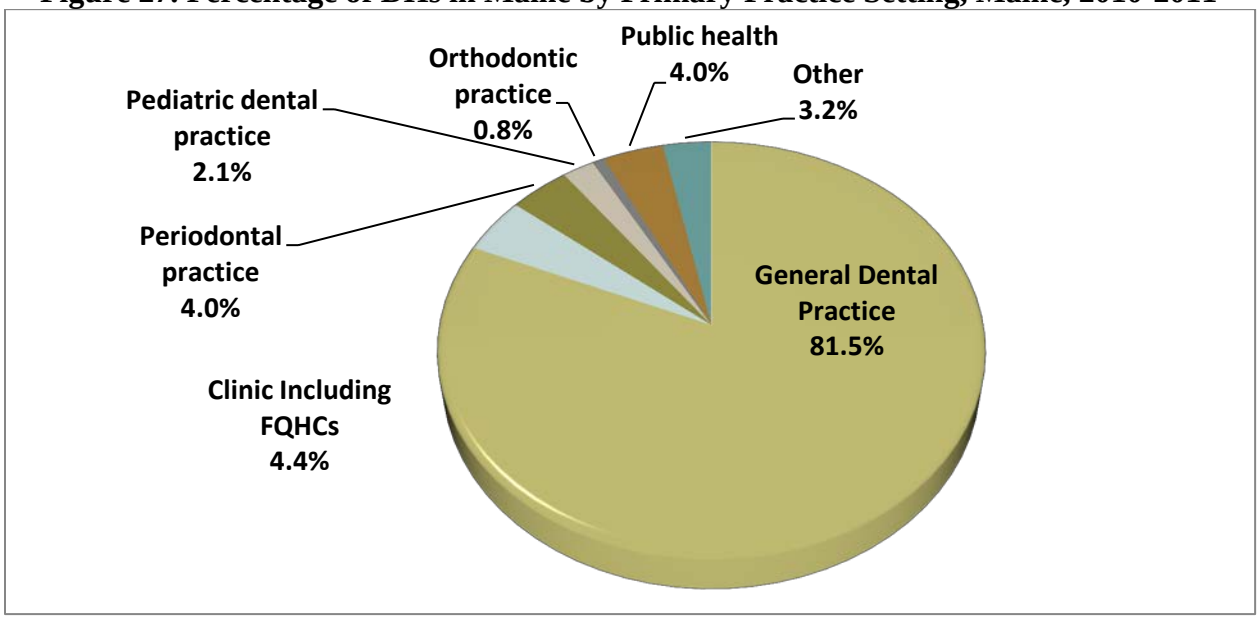


Source: DH Re-registration survey, 2010-2011
Note: Totals do not equal 100% due to rounding error

Current Employment Location of DHs in Maine

DHs were asked to describe the primary work setting in Maine. Most DHs worked in general dental practices (81.2%).

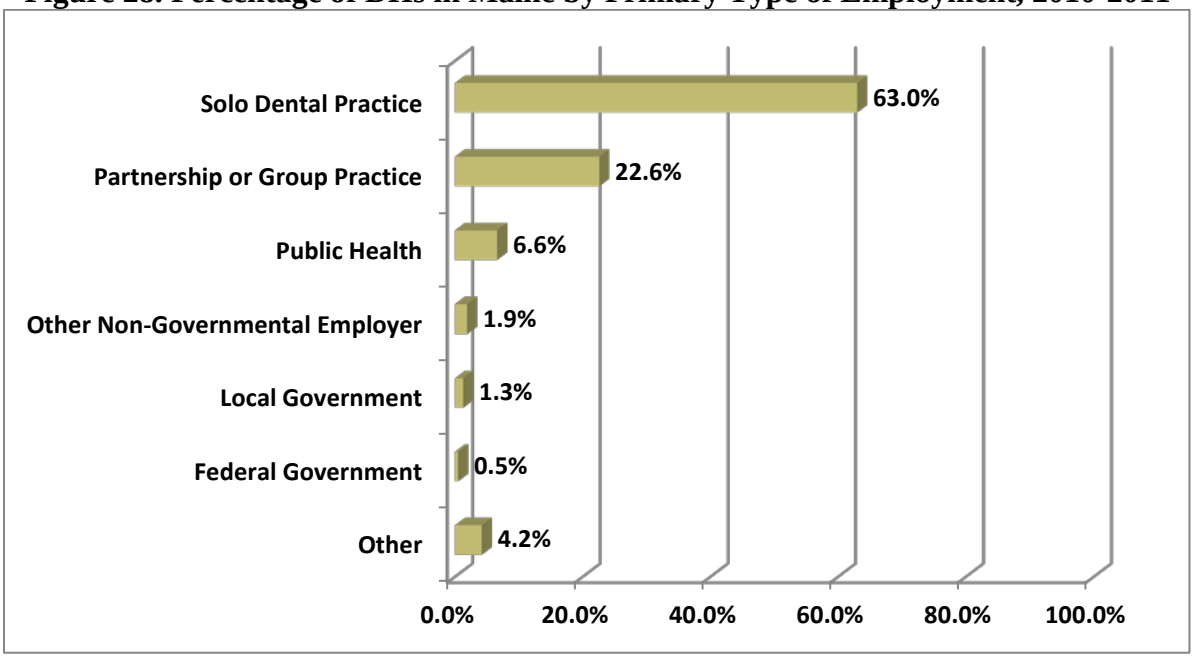
Figure 27. Percentage of DHs in Maine by Primary Practice Setting, Maine, 2010-2011



Source: DH Re-registration survey, 2010-2011

DHs in Maine primarily worked in solo (63.0%) and group (22.6%) dental practices. Some indicated that they worked for "other" types of employers (4.2%), which were not described in the survey response options, including corporate dental practices, academic institutions, or a self-employed independent dental hygiene practice.

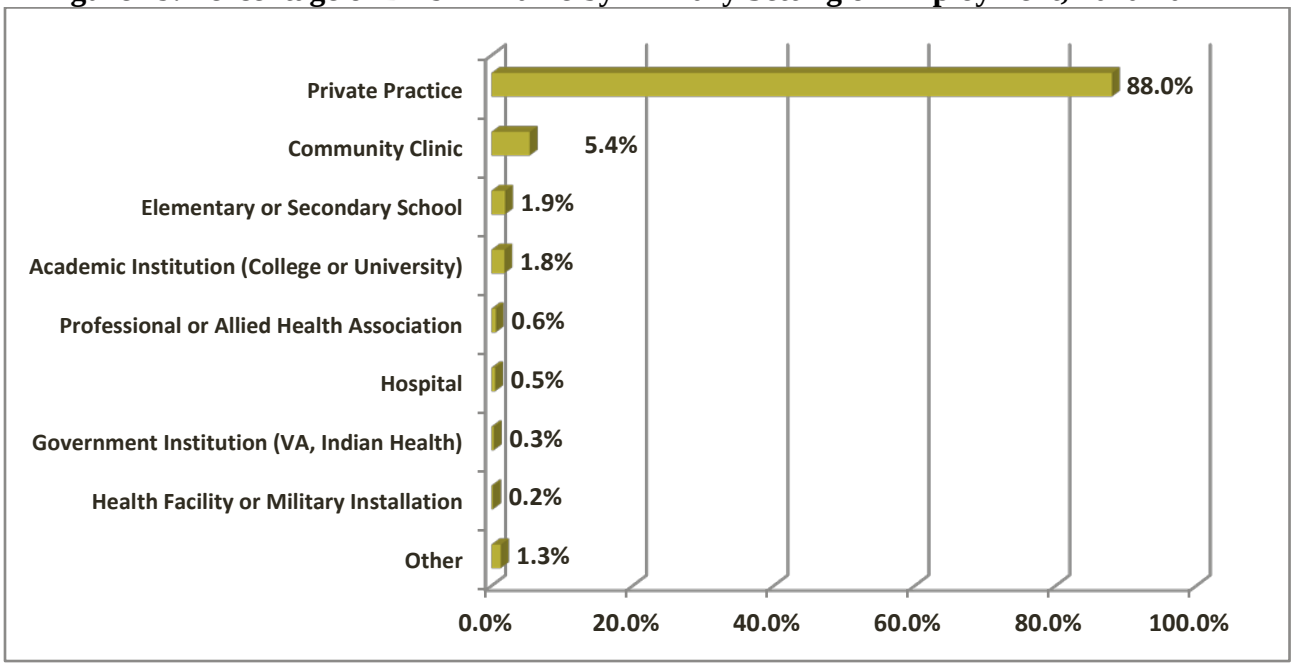
Figure 28. Percentage of DHs in Maine by Primary Type of Employment, 2010-2011



Source: DH Re-registration survey 2010-2011

DHs further described their primary employment settings. Most worked in private dental practice (88.0%) with some primarily working in community clinics (5.4%), elementary or secondary schools (1.9%), or academic institutions, such as colleges and universities (1.8%). Some DHs primarily worked in "other" settings (1.3%) including temporary help agencies, corporate dental practices, or in independent dental hygiene practices.

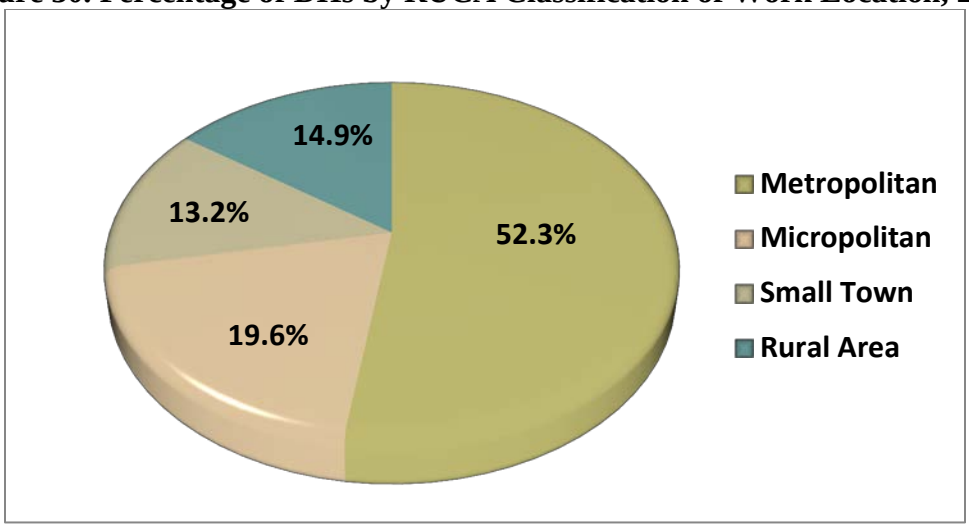
Figure 29. Percentage of DHs in Maine by Primary Setting of Employment, 2010-2011



Source: DH Re-registration survey 2010-2011
Note: Small differences in percent from previous tables and figures are due to differences in variable response rates used in cross tabulations.

Most DHs in Maine worked in urban areas of the state (71.9%) (either metropolitan (52.3%) or micropolitan areas (19.6%)). A relatively small percentage of DHs in Maine worked in rural areas (14.9%)

Figure 30. Percentage of DHs by RUCA Classification of Work Location, 2011



Sources: DH Reregistration Survey, 2010-2011, U.S. Census Bureau, 2011

DHs in Maine in general dental practice primarily worked in metropolitan areas (50.1% of DHs) or micropolitan areas (20.7%) of the state. DHs working in clinics mainly worked in metropolitan areas (42.9%) or rural areas (32.1%) of Maine. DHs working in specialty dental practices like periodontics (84.0%), pedodontists (84.6%), and orthodontics (60.0%) worked mostly in metropolitan areas of the state.

Table 37. Percent of DHs in Maine by Practice Type and RUCA, 2010-2011

Setting	Metropolitan Area	Micropolitan Area	Small Town	Rural Area	Total %	Total #
General Dental Practice	50.1%	20.7%	14.1%	15.1%	100.0%	511
Periodontal Practice	84.0%	16.0%	0.0%	0.0%	100.0%	25
Public Health	52.0%	24.0%	12.0%	12.0%	100.0%	25
Clinics (Including FQHCs)	42.9%	14.3%	10.7%	32.1%	100.0%	28
Pediatric Practice	84.6%	7.7%	7.7%	0.0%	100.0%	13
Orthodontic Practice	60.0%	0.0%	20.0%	20.0%	100.0%	5
Other	60.0%	5.0%	15.0%	20.0%	100.0%	20

Source: DH Reregistration Survey, ME, 2010-2011

Hours DHs Worked

The survey asked DHs to describe the total number of hours worked in a typical week in their primary job and the number of hours spent each week providing direct patient services. On average, DHs worked 28.9 hours per week for their primary employer and mainly provided direct patient care for, on average, 26.8 hours per week. DHs working for nongovernmental employers like nursing homes, schools, and community health clinics provided on average more direct patient services (mean 30.4 hours/week) than DHs working in solo dental practices (mean 26.7 hours/week) or DHs in group practices (mean 27.1 hours/week).

DHs were also asked how many hours they spent working for health care providers other than their primary employer. Just 13.7% of survey respondents indicated working for a secondary employer for an average of 14.6 hours per week in addition to primary employment.

Table 38. Mean and Median Weekly Work Hours, DHs in Maine, 2010-2011

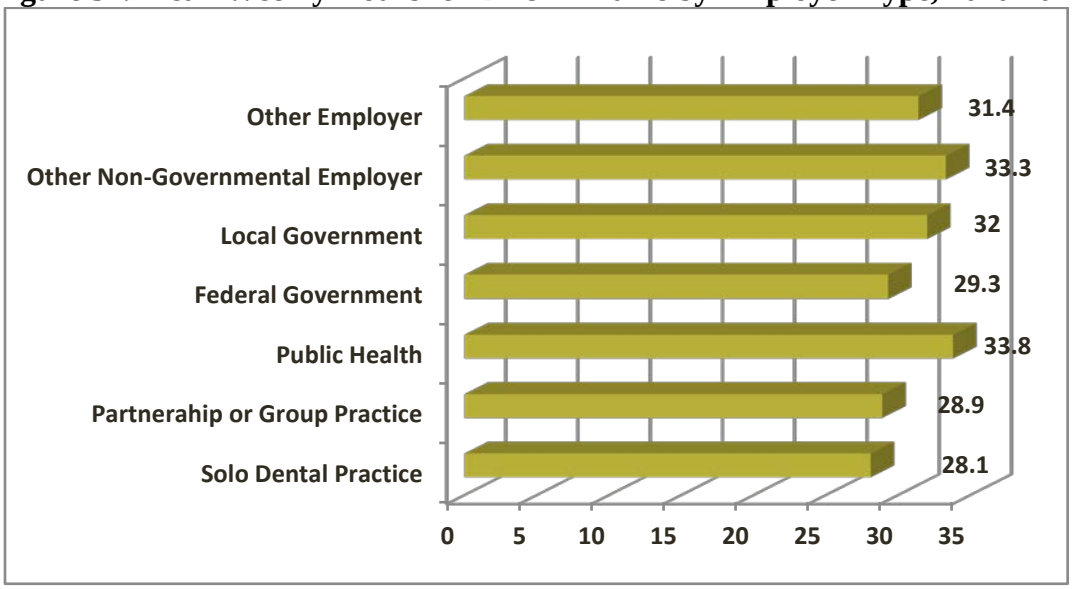
Hours Worked	Mean Hours	Median Hours	25% Quartile	75% Quartile	Total # of DHs
Total Hours - Primary Setting	28.9	32	24	35	602
Total Hours - Other Employer	14.6	10.9	8	20	86
Total Hours - Direct Patient Care	26.8	30	22	32	587

Source: DH Reregistration Survey, ME, 2010-2011
Note: Observations with <4 and > 60 hours per week were excluded

Work hours per week were similar for DHs regardless of whether they worked in a metropolitan, micropolitan, small town, or rural area of Maine. There were no significant differences in the mean hours worked by geographic area of practice. Median weekly hours worked by DHs (32 hours per week) were identical for DHs who worked in metropolitan, micropolitan, small town or rural areas in Maine.

DHs who worked for employers other than private dental practices worked on average more hours per week than DHs working for solo or group practices.

Figure 31. Mean Weekly Hours for DHs in Maine by Employer Type, 2010-2011



Source: DH Reregistration Survey, ME, 2010-2011
Note: Observations with <4 and > 60 hours per week were excluded

DHs who worked for a secondary employer were most likely working in solo dental practices or in a group/partnership practice. Among DHs who primarily worked for a solo dental practice, 12.5% worked for a secondary employer for, on average, 13.6 hours per week. Of those who primarily worked in a group practice, 15.2% indicated working for a secondary employer for, on average, 15.3 hours per week.

DHs were asked to indicate the average number of hours spent each week providing particular patient services. As expected, DHs spent much of their practice time providing oral prophylaxis services to patients (20.9 hours per week). There was some variation in the amount of time spent in particular clinical activities depending on the DH's employer. DHs working for nongovernmental employers like nursing homes, schools, and community health clinics spent more time, on average, providing oral prophylaxis services to patients (mean of 22.2 hours per week) and doing oral inspections (mean of 9.4 hours per week) than DHs working for other types of employers. DHs working for local governments spent more time, on average, providing oral health instruction (mean of 9.8 hours per week) and sealants (mean of 15.5 hours per week) than DHs working for other types of employers.

DHs also described other services they provided for patients including radiographs/x-rays, fluoride varnishes and treatments, periodontal scaling, root planing, and local anesthesia. DHs working for local governments spent more time providing these other services for patients than DHs in other settings. However, the number of DHs working for local governments was small so a comparison with DHs working in dental practices or for other employers was made with caution.

Table 30. Mean Weekly Hours of DHs Providing Particular Direct Care Services to Patients, Maine, 2010-2011

Type of Employer	Oral Prophylaxis	Oral Inspections	Oral Health Instruction	Sealants	Other Services
All DH Respondents in Maine	20.9	7.7	7.7	2.7	5.5
Solo Dental Practice	21	7.8	8	2.1	5.4
Group Dental Practice	21.2	6.4	6.5	2.2	4
Public Health	19.6	7.3	6.9	4.7	5.1
Other Non-Governmental	22.2	9.4	8.8	5.4	3.5
Federal Government	13	5	5	0	1
Local Government	12.8	8.8	9.8	15.5	40
Other	19.2	10.6	9.8	4.5	10

Source: DH reregistration survey, 2010

DHs were also asked to describe indirect work activity hours for an average week. The most common indirect activity was administration. Twenty-two percent of DHs indicated engaging in some administrative functions in an average week. DHs who engaged in administrative activity spent, on average, 5.3 hours weekly on those activities. DHs working for the federal government, including the military, the Veterans Administration, and public health services, and who had administrative tasks spent 15.3 hours weekly, on average, on those tasks.

Just 9.2% of DHs indicated any time spent teaching dental hygiene or dental assisting studies. On average, DHs in Maine who did teach spent 10.5 hours per week in teaching activities. DHs working for "other" nongovernmental employers spent more time, on average, teaching (mean of 28 hours per week) than DHs working for other categories of employers. However, the number of DHs in this category was small so comparisons should be made with caution.

Some DHs worked in office management for some part of their work week (11.9%) or did other indirect activities during an average week (9.9%), such as billing, accounting, charting, cleaning and sterilizing instruments, disinfecting operatories, ordering hygiene supplies, doing inventory, OSHA related tasks, etc.

Table 31. Mean Weekly Hours of Indirect DH Work Activities by Type of Employer, Maine, 2010-2011

Type of Employer	Teaching	Administration	Office Management	Other
All DH Respondents in Maine Who Did Indirect Work Activities	10.5	5.3	5.3	4.4
Solo Dental Practice	5	4.3	5.2	4
Group Dental Practice	15.7	5	2.5	1.7
Public Health	9.2	5.7	7	2
Other Non-Governmental	28	2.3	1.8	4
Federal Government	5	15.3	5	0
Local Government	24	12.9	3	0
Other	19.9	12.4	12	11.2

Source: DH Reregistration Survey, ME, 2010-2011

DHs Working under Public Health Supervision Status

DHs in Maine were asked about whether they had ever utilized public health supervision status to practice in a non-traditional dental setting. Among survey respondents, 17.6% of DHs had utilized public health supervision status at some point in their dental hygiene professional career. More than three-quarters (78.4%) of DHs had never utilized public health supervision status, and 4% were unsure if they had ever worked under public health supervision. There were 109 DHs in Maine who indicated ever using public health supervision status. Of those, 43 DHs are currently utilizing public health supervision status (39.4%).

More than half (56.9%) of DHs who had utilized public health supervision worked in a metropolitan or micropolitan area and 43.1% currently worked in a small town or rural area. However when DHs who had ever utilized public health supervision status were compared to other DHs across geographic areas who had never utilized public health supervision, interesting differences appeared.

While 39.2% of DHs working in a small town or a rural area in Maine had utilized public health supervision status at some time in their professional career, just 16.9% of DHs who worked in metropolitan or micropolitan areas of Maine had ever used public health supervision status. This variation was statistically significant. DHs in small towns or rural areas were more likely to use public health supervision than their more urban counterparts.

DHs were also asked if they would be interested in providing expanded functions if the scope of practice for dental hygiene were changed. More than half (57.7%) of DHs indicated they would be interested in expanded functions; 21.2% were not interested in expanded functions; and 4% were unsure of their interest in expanded functions.

DHs Future Plans

DHs were asked if they planned to be working in the dental hygiene field in Maine in five years. Most (83.7%) expected to be working as a DH in Maine at that time. Just 5.1% of DHs did not

expect to be working as a DH in Maine in five years. The remainder (11.2%) was unsure of their future plans.

The mean age of DHs who responded that they expected to be working as a DH in Maine in five years was 42.5 years. The mean age of those who responded that they did not expect to be working as a DH in Maine in five years was 49.2 years. DHs who were unsure if they would be practicing as a DH in Maine in five years had the oldest mean age at 51.3 years.

Dental Assistants

It is difficult to accurately describe dental assistants (DAs) in Maine. Since DAs are neither required to be licensed nor certified to work in the state, there is limited current, accurate, or available data about their supply or characteristics.

DAs work under the direction and supervision of dentists. DAs are usually dependent oral health auxiliaries since they generally work in the presence of a supervising dentist to perform authorized services for patients.

Some DAs are trained in formal, CODA-accredited academic programs lasting a year or more, while others may attend a shorter education program in a proprietary, trade, or vocational school. Still others are trained chairside by the employing dentist to act as a "second pair of hands" for the dentist during dental procedures. DAs may qualify by education or experience for national certification as a certified dental assistant (CDA) after passage of three examinations sponsored by the Dental Assisting National Board, Inc. (DANB). Those examinations cover the subject areas of radiation safety, infection control, and general chairside assisting. DAs may qualify by experience or by graduation from a CODA-accredited dental assisting program to sit for the certification examination.

There is one CODA-accredited dental assisting education program in Maine at the University of Maine, University College in Bangor. The program has capacity for 24 students (ADA, 2011). In 2009-2010, there were 24 students enrolled in the program with either full-time or part-time status (ADA, 2011). In 2009, the program graduated 13 students and granted them diplomas/certificates (ADA, 2011).

Supply and Characteristics of DAs in Maine

In May, 2010, the U.S. Bureau of Labor Statistics (BLS) estimated that there were 890 jobs for DAs in Maine, and most of those jobs were located in the Portland-South Portland-Biddeford, Maine area (340 jobs) and in the southwest Maine nonmetropolitan area (230 jobs).

The American Community Survey 2005-2009 of the U.S. Census Bureau describes DAs in Maine as non-Hispanic White females (96.3%) with an average age of 42 years. There was a higher percentage of DAs in Maine with American Indian/Alaska Native heritage (1.9% of DAs) than in the U.S. as a whole (0.8%). More than half of DAs in Maine indicated they have attended some college but have no degree (51.9%).

Table 32. Demographic Characteristics of DAs in Maine and in the U.S., 2005-2009

Dental Assistants	Maine	U.S.
Gender		
Female	100.0%	96.4%
Male	0.0%	3.6%
Age (Years)		
Mean	42	36
Median	40	35
Race (%)		
White	96.3%	70.0%
Black/African American	0.0%	6.1%
American Indian/ Alaska Native	1.9%	0.8%
Asian/Pacific Islander	0.0%	4.7%
Other/Two or more races	1.9%	1.2%
Hispanic/Latino	0.0%	17.2%
Level of Education (%)		
Not a high school graduate	0.0%	3.7%
High school graduate	33.3%	32.3%
Some college but no degree	51.9%	39.0%
Associate degree	11.1%	15.7%
Bachelor's degree	3.7%	6.5%
Graduate/professional degree		
Employment Status (%)		
Employee of a private for-profit company or business	96.3%	93.8%
Salary ($)		
Mean	$25,056	$24,587
Median	$25,500	$24,000

Source: U.S. Census, ACS, 2005-2009

All of a DA's services must be provided under the direct supervision of a dentist, which means that the dentist must be in the office, provide a diagnosis for the patient, authorize the work of the DA, remain in the office or treatment facility while the DA performs the authorized services, and review the completed work before the patient leaves the office or clinic (ME Statute and Regulation, 2011).

In Maine, DAs with special training, proven competency, and with permission of the ME BDE are permitted to qualify as an expanded function dental assistant (EFDA) to perform various expanded duties under the supervision of a dentist. This legislation was passed in 2005 and an education program to train EFDAs began at York County Community College in Wells in 2007.

The training program includes 50 hours of didactic instruction and 135 hours of laboratory/clinical experience.

To qualify as an EFDA in Maine, the candidate must be a certified DA or a licensed DH and must have completed the required training in expanded functions in a school or program acceptable to the ME BDE. The candidate may qualify by endorsement for authorization to be an EFDA if the applicant has qualified as an EFDA in another state or in Canada. An EFDA must renew the authorization every five years (ME BDE, 2011). The scope of practice permitted to EFDAs in Maine is described in Appendix A of this report.

In November 2011, there were 26 EFDAs in Maine authorized by the ME BDE to practice. Most indicate a practice address in southern or central Maine.

Figure 32. Practice Location of EFDAs in Maine, November, 2011

Source: CHWS, 2012, ME Licensure Data, 2011

Denturists

Denturists are formally trained professionals who work as part of the oral health care team. They specialize in fitting and constructing removable oral prosthetic devices and prosthodontics. They repair and reline dentures and provide sports mouthguards. Denturists may have backgrounds as dental laboratory technicians. Denturists in Maine typically receive their education in a three-year program at George Brown College in Toronto, Canada. While much of the program is available through distance learning methods, there are still 270 hours of clinical training required (Sunrise Review, 2005).

Denturists have been authorized to work in Maine since 1977 (Flanders, 1981). In that year, the Maine legislature established a registration program for denturists that required these professionals to practice under the direct supervision of a dentist (Sunrise Review, 2005). The law was amended in 1995 to permit more autonomy to denturists. The revision permitted denturists to treat patients who had obtained an oral health certificate from a dentist stating that the patient's oral cavity was mainly free from disease and capable of receiving a denture. In 2001, the state changed the registration process to a licensure program and permitted denturists to provide their services directly to the public without the supervision of a dentist (Sunrise Review, 2005).

Licensed denturists in the state are currently permitted to take denture impressions and bite registration to make, produce, reproduce, construct, finish, supply, alter, or repair a denture that is fitted to an edentulous or partially edentulous arch or arches without performing alteration to natural or reconstructed tooth structures (ME Statute and Regulation, 2011).

To be licensed as a denturist in the state the applicant must meet the following qualifications:

- be a high school graduate or have a high school equivalency diploma;
- have a diploma from a post-secondary denturist program (denturists licensed before September 2009 without a diploma from a program must do an update curriculum before relicensing is permitted); and
- pass a ME BDE-prepared exam that covers basic anatomy, basic physiology, dental materials, dental technology, and demonstrates understanding of the CDC guidelines (ME Statute and Regulation, 2011)

A candidate for licensure as a denturist may be licensed by endorsement if the professional has an active denturist license in another jurisdiction (U.S. state or Canada) and can demonstrate three years of experience working as a denturist. The applicant for licensure by endorsement must have a personal interview with the ME BDE, which may also require letters of reference (ME Statute and Regulation, 2011). Denturists are required to complete 20 hours of continuing education units every two years. Biennial re-registration is required in the odd numbered years.

In November 2011, there were 21 licensed denturists in Maine with a practice address in the state and another 10 licensed denturists with out-of-state practice addresses (three in Washington State and seven in Canada) (ME Licensure Data, 2011). Denturists were manly located in the southern part of Maine.

Figure 33. Practice Location of Denturists in Maine, November, 2011

Source: CHWS, 2012, ME Licensure Data, 2011

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Appendix A

Qualifications and Scope of Practice for Dental Hygienists in Maine

To be licensed in the state of Maine a dental hygienist (DH) must meet the following criteria:

1. Be 18 years of age or older
2. Be a graduate of a Commission on Dental Accreditation (CODA)-accredited associate or bachelor's degree program
3. Pass the National Board Dental Hygiene Exam
4. Pass the Northeast Regional Board Dental Hygiene Examination (if regional exam is completed more than one year prior to application, applicant must be personally interviewed by the Board)
5. Pass the jurisprudence exam given by the Maine Board of Dental Examiners (MRSA Chapter 16 Title 32 and ME BDE Regulations, 2011).

Licensure by endorsement is available in Maine if the DH applicant meets the following standards:

1. The applicant must provide proof of graduation from an accredited dental hygiene program.
2. The applicant must present proof of valid licensure in another jurisdiction (either a U.S. state or Canada)
3. If the applicant graduated after 1964, proof of passage of the National Board Dental Hygiene Exam is required.
4. If the applicant graduated after 1970, proof of passage of the Northeast Regional Board Dental Hygiene Examination is required. The Maine Board of Dental Examiners may waive the requirement for passage of this examination at its discretion.
5. The applicant must have been engaged in active clinical practice for a minimum of three years prior to application.
6. The applicant must pass a jurisprudence exam given by the Board.
7. The applicant must complete a personal interview with the Board (MRSA Chapter 16 Title 32 and ME BDE Regulations, 2011).

Licensed DHs in Maine are required to re-register biennially. The ME BDE requires that the DH obtain 30 hours of continuing education credits in the immediate two years preceding re-registration (MRSA Chapter 16 Title 32 and ME BDE Regulations, 2011). The board has the prerogative to issue a temporary license to practice dental hygiene in the state to DHs who present satisfactory credentials (MRSA Chapter 16 Title 32 and ME BDE Regulations, 2011). A full-time dental student who has completed half of the dental course of study in an accredited dental college but has not yet graduated can apply for examination in dental hygiene in Maine (MRSA Chapter 16 Title 32 and ME BDE Regulations, 2011).

DHs in Maine may perform the following services under general supervision (ME BDE Regulations, 2011):

1. Interview patients and record complete medical and dental histories
2. Take vital signs
3. Perform oral inspection recording conditions for the dentist to evaluate
4. Perform complete periodontal and dental restorative charting

5. Expose and process radiographs
6. Perform pulp testing
7. Provider complete prophylaxis, including root planning and curettage
8. Apply fluoride to control caries
9. Apply desensitizing agents
10. Apply liquids, pastes or gel topical anesthetics
11. Apply sealants provided that a licensed dentist makes the determination about which surfaces should be sealed (Note: there is an exception to this rule in public health or school settings where a dentist does not need to make the determination prior to a DH providing the service).
12. Smooth and polish amalgam restorations
13. Cement pontics and facings outside the mouth
14. Take impressions for study casts, athletic mouth guards, custom trays, bleaching trays, fluoride trays, opposing models, retainers, and stents
15. Re-cement temporary crowns with temporary cement
16. Place and remove rubber dams
17. Perform post-operative irrigation of surgical site
18. Place temporary restorations as an emergency measure provided patient is informed of the temporary nature of the restoration
19. Isolate operative fields
20. Place and remove gingival retraction cord without vasoconstrictor
21. Obtain bacterial sampling when treatment is planned
22. Place localized delivery of chemotherapeutics agent when treatment is planned by a dentist
23. Perform any other duties permitted to a dental assistant

Additionally, DHs may do the following under the direct supervision of a dentist:

1. Place periodontal dressings
2. Remove socket dressings
3. Take cytological smears as requested
4. If DH does not have a nitrous oxide permit, the DH may still monitor the nitrous gauges and advise the dentist of any changes in the indices or gauges but the DH may not under any circumstances adjust or monitor the apparatus
5. Take impressions for night guards and occlusal splints as long as the supervising dentist takes the measurements.
6. Other duties permitted to dental assistants

A DH may obtain a nitrous oxide (N2O) permit to administer N2O after completion of and examination in a course about nitrous oxide.

1. The course must be a minimum of eight hours in length and have a didactic and clinical component. The course must include an exit examination. DH must pass both the exam and the course to be certified in N2O.
2. The DH may be certified by endorsement if the DH is a graduate of a CODA-accredited education program that included nitrous course in the curriculum or if the DH is already certified to administer N2O in another state.
3. The dentist still must determine if a patient is to be sedated.

4. A DH with a permit may not administer N2O in concentrations greater than 50%.
5. The equipment used to administer N2O must be calibrated every three years.

DHs may also obtain a special endorsement to administer local anesthesia. The DH:

1. must complete a CODA- or ADA-approved course in local anesthesia of at least 40 hours in duration that includes both didactic and clinical instruction;
2. must have successfully completed at least 50 injections of local anesthesia;
3. must pass a ME BDE, state, regional or national exam in local anesthesia; and
4. must be certified in CPR.

The endorsement in local anesthesia is good for five years. Again, the DH can qualify to administer local anesthesia by endorsement by demonstrating two years of experience in the past five years in another state.

Qualifications and Scope of Practice for Independent Practice Dental Hygienists (IPDHs)

To qualify as an IPDH, a DH:

1. Must be 18 years old
2. Must be licensed as a DH in Maine or qualify for endorsement as an IPDH
3. Must have a bachelor's degree from a CODA-accredited program and document at least 2,000 hours of experience under direct or general supervision of a private practice dentist or in a dental clinic in the four years immediately preceding application. Alternatively, the DH may have an associate degree from a CODA-accredited program and document at least 6,000 hours of experience working under the direct or general supervision of a private practice dentist or in a dental clinic in the immediately preceding six years.
4. The professional's DH license automatically expires when an IPDH license is issued. An IPDH is required to re-register every two years and demonstrate completion of 30 hours of continuing education credits.
5. Biennial renewal required completion of 30 hours of continuing education units (odd years)
6. May also practice under the supervision of a dentist

Tasks permitted to IPDH:

1. Interview and record medical and dental histories
2. Take and record vital signs
3. Perform complete periodontal and dental restorative charting
4. Perform all procedures necessary for a complete prophylaxis, including root planning
5. Apply fluoride
6. Apply desensitizing agents to teeth
7. Apply topical anesthetics
8. Smooth and polish amalgam restorations, limited to slow speed application only
9. Cement pontics and facings outside the mouth
10. Take impressions for athletic mouthguards and custom fluoride trays
11. Place and remove rubber dams
12. Place temporary restorations

13. Apply topical antimicrobials excluding antibiotics, including fluoride for the purposes of bacterial reduction, caries control, and desensitization in the oral cavity (topical includes superficial and intraoral application)

Scope of Practice for Dental Assistants (DAs) in Maine

In Maine, DAs with special training, proven competency, and with permission of the ME BDE are permitted to provide various extended functions or expanded duties under the supervision of a dentist.

According to statute and regulation in Maine, DAs may work as extended function dental assistants (EFDAs) and provide the following services.

1. Place and remove rubber dams and matrices
2. Place and contour amalgam composite and other restorative materials
3. Apply sealants
4. Do supra gingival polishing
5. Other reversible procedures not designated as only to be performed by dentists, DHs, or IPDHs (ME Statute and Regulation, 2011).

An EFDA may not:

1. Examine, diagnose, or treatment plan
2. Perform surgical or cutting procedures
3. Prescribe drugs
4. Perform pulp capping
5. Place and adjust prosthetic appliances
6. Administer anesthesia or sedation (ME Statute and Regulation).