

**New Hampshire  
Oral Health Workforce  
Strategic Plan**

**September 2010**



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**MESSAGE FROM THE DIVISION DIRECTOR**

I am pleased to present the Division of Public Health Services' Oral Health Strategic Workforce Plan for New Hampshire. Since the 2002 publication of the New Hampshire Oral Health Plan: A Framework for Action, much has been accomplished across the state to improve access to oral healthcare for New Hampshire residents. However, oral health workforce issues, like the geographic distribution of providers, cultural sensitivity, and the skills needed to treat populations across the lifespan, continue to present barriers to oral health care for New Hampshire's most vulnerable residents. This report presents the first comprehensive strategic plan focused on the supply, diversity, cultural competency, composition and distribution of the oral health workforce to serve all New Hampshire residents.

To create this oral health strategic workforce plan the Division of Public Health Services (DPHS) contracted with the New Hampshire Recruitment Center at Bi-State Primary Care Association to conduct a statewide survey of dentists and dental hygienists and to facilitate focus groups, key informant interviews, and meetings of an oral health task force convened to elicit stakeholder input.

I would like to thank the DPHS Bureau of Population Health and Community Services, the Office of Medicaid Business and Policy, and all the oral health advocates that served as members of the project Task Force representing a broad array of organizations from New Hampshire and New England. Task Force members offered input that evolved into the recommendations that appear in this report. The project Advisory Committee provided oversight for the project's work and prioritized the final recommendations of the plan. Together, they contributed a significant amount of time and effort in the plan's development and deserve tremendous praise for their work.

Sincerely,

José T. Montero, MD  
Director

## **Acknowledgements**

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The State recognizes and acknowledges the contributions of organizations and individuals including but not limited to:

- Avis Goodwin Community Health Center
- Bi-State Primary Care Association
- Claremont Community Dental Center
- Community Action Program of Belknap and Merrimack Counties
- Endowment for Health
- Harvard Pilgrim Health Care
- New Hampshire Dental Society
- New Hampshire Dental Hygienists' Association
- Northeast Delta Dental
- New Hampshire Family Voices
- New Hampshire Oral Health Coalition
- Southern New Hampshire Area Health Education Center
- University of New England, College of Dental Medicine

## **Reflections on the Workforce Plan in the Context of the NH Medicaid Program**

The State of NH has agreed to provide certain services under the terms of Title XIX including comprehensive dental services to children, and emergency dental services to adults. The scope and scale of the duties incumbent upon NH Medicaid in complying with the requirements and regulations of Title XIX in providing services for a large population of clients demand cost efficiency, well-reasoned and well-informed decision making, and constant vigilance in order to ensure sustainability, and accountability for the performance of the programs.

The care delivery systems upon which NH Medicaid relies are large and complex, and are more vulnerable to disruption than responsive to attempts at improvement for a variety of reasons, regardless of how well intended those attempts may be.

Programmatic change in Medicaid is often effected first by use of a pilot program designed to replicate a “best practice” demonstrated elsewhere; the results of the pilot are then evaluated in terms of efficacy, cost efficiency and probability of achieving desirable goals statewide. The pilot also permits discovery of unintended consequences on a small scale, so that those, too can be evaluated and avoided before going global.

It is within this context that readers of this report will want to consider recommendations that require a change in the NH Medicaid program, as it cannot be guaranteed that the program will be able to be responsive in a timely or nimble fashion to the expectations outlined in the recommended state workforce development plan.

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## **I. Executive Summary**

In 2009 the New Hampshire Division of Public Health Services (DPHS), through its Rural Health and Primary Care Section, was awarded a grant from the Health Resources and Services Administration (HRSA) to develop a Strategic Oral Health Workforce Plan. The intent was to develop strategies to improve the supply, diversity, cultural competence, composition and distribution of the oral health workforce to serve all New Hampshire residents with an emphasis on those in rural and underserved areas and very young children.

This process was not intended to provide a comprehensive review of the oral health status of New Hampshire's residents or to restate the scope of the problem. It was designed to obtain input from stakeholders on issues associated with access to oral health care and to share perspectives on providing access to care for special populations. Participants described barriers to oral health access and discussed opportunities for implementing strategies to assure that a qualified and geographically dispersed oral health workforce is available to serve all individuals living in New Hampshire.

A Task Force and Advisory Committee were formed as part of a workforce planning process.<sup>1</sup> The Advisory Committee was composed of a small group of organizations each having a statewide role in access to oral health care and oral health workforce. The Advisory Committee provided structure to the process, reviewed survey results and input from the stakeholder groups, and now report the workforce recommendations of the Task Force.

Representatives from a diverse group of stakeholders participated in the Task Force, including the New Hampshire Dental Hygienists' Association, New Hampshire Dental Society, New Hampshire Board of Dental Examiners, University of New Hampshire Health Professions Program (UNH), New Hampshire Technical Institute (NHTI), University of New England (UNE), New Hampshire Area Health Education Center (AHEC), New Hampshire hospitals, long term care providers, health insurance providers, dental benefits administrators, Community Health Centers, community-based dental clinics, and advocates for high risk populations. The Task Force was charged with identifying the qualifications and types of providers needed to enhance access to oral health care for high-risk populations. The Task Force held six two-hour meetings over a period of four months to consider issues that may affect access to oral health care and develop recommendations.

The Task Force developed a series of recommendations, including objectives, tactics and strategies that may increase the oral health workforce and strengthen its ability to address the oral health needs of the population. Task Force recommendations included strategies to both reduce the need for oral health services and increase or augment the oral health workforce.

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<sup>1</sup> Lists of the Task Force participants and Advisory Committee members are provided in Appendix A and Appendix B

While all of the Task Force's recommendations were considered for inclusion, final recommendations in the Plan specifically focus on maintaining the workforce needed to enhance access to oral health care services for New Hampshire residents, especially high-risk populations.

Additional input was obtained through focus groups, interviews, a consumer survey and oral health workforce surveys. Focus groups were conducted with NH licensed dental hygienists and dentists. Input from consumers in high-risk populations was gathered through a brief online survey that was distributed through advocacy organizations and the NH Department of Health and Human Services' website. The purpose of the consumer survey was to gain insight regarding barriers to care through the feedback from this small convenience sample.<sup>2</sup> Surveys of New Hampshire licensed dentists and hygienists were conducted to capture demographic and practice information for New Hampshire's existing workforce. Results from the workforce surveys were used to characterize the existing workforce and to inform strategies to improve the supply, diversity, cultural competence, composition and distribution of the oral health workforce in New Hampshire.<sup>3</sup> This input yielded opinions regarding oral health access, solutions to access challenges, and opportunities for implementing oral health workforce solutions.

The Advisory Committee considered the information gathered by the Task Force in the development of the Strategic Plan. Potential recommendations were assessed using the Priority Rating System for Public Health Programs (PEARL) Framework.<sup>4</sup> PEARL is a tool for assessing the socioeconomic, legal, and political viability of various interventions. While the Plan principally focuses on issues related to the oral health workforce, several other factors affect the ability of the workforce to provide services. For example, availability of adequate facilities and technology influences the provision of care, and an individual's ability to prioritize oral health will determine if, when, and how that person responds to preventive messages or seeks care. Understanding current and predicting future disease burden and distribution underpins strategic planning for workforce development.

Each activity in the Plan includes potential partner organizations that may want to be involved in or take responsibility for the implementation of a particular strategy. Placeholders are included for implementation timelines and the evaluation plan, which will be determined in developing an action plan. Further, recognition of an activity as a best practice or evidence-based strategy has been noted. The recommendations included in the Plan are intended to be part of an overall strategy to improve the oral health of New Hampshire residents across the life course and to reduce oral health disparities among vulnerable populations. Recommendations fall into four major categories:

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<sup>2</sup> See Appendix E for the Consumer Survey

<sup>3</sup> See Appendix F for the Executive Summary of the 2010 Surveys of Actively Licensed Dentists and Hygienists in NH

<sup>4</sup> Vilnius D, Dandoy S. 1990

1. Regularly analyze and document the need for oral health services across New Hampshire's population;
2. Integrate oral health and general medical care;
3. Develop an oral health workforce that addresses the needs of high risk populations such as young children, older adults, and individuals with special needs, as well as those residing in rural areas of the state through programs and services;
4. Evaluate the implementation and success of the Oral Health Workforce Strategic Plan.

**List of Recommendations:**

- Regularly analyze and document the needs for oral health services across New Hampshire's population
- Implement prevention strategies that will enable the workforce to manage the state's oral health
- Integrate oral health and general medical care
- Address the needs of high risk populations such as young children, older adults, and individuals with special needs, as well as those residing in rural areas of the state, and cultural minorities
- Improve the ability of the oral health workforce to address the needs of New Hampshire residents, particularly high risk populations
- Evaluate the implementation and success of the oral health workforce strategic plan

## II. Background

Since the publication of the *New Hampshire Oral Health Plan: A Framework for Action*<sup>5</sup> in 2002, much has been accomplished across the state to improve access to oral health care for New Hampshire residents. Many of New Hampshire's Community Health Centers (CHC) have established dental programs and offer a range of services in local school systems, in community settings, and in fixed and mobile dental operatories. The CHCs have made strides in integrating oral health into overall health services. In addition to creating capacity within the CHC network, a number of dental programs have been launched in communities across the state where access to oral health care has historically been a challenge. State-funded and community sponsored school-based programs have expanded to assure that children in New Hampshire's Title 1 schools have access to sealants and other preventive health services. The North Country region has launched a collaborative initiative to address the unique needs of its geographically dispersed population through a mobile clinic that is able to provide services in schools, nursing homes and other community locations. New Hampshire dentists and dental hygienists continue to provide professional services on a volunteer basis.

### Division of Public Health Activities

Since 2002 the Department of Health and Human Services' Division of Public Health Services (DPHS) has increased public health efforts to improve the oral health of New Hampshire citizens. For example, DPHS has maintained its oral health surveillance system to monitor the oral health status of the state's population and produced five New Hampshire Oral Health Data reports. The 2009 *Healthy Smiles-Healthy Growth* Survey indicated that the oral health of New Hampshire's children has improved since 2004, with statistically significant decreases in caries experience and untreated decay and a statistically significant increase in protective dental sealants among third grade students. The 2007 survey of Head Start children indicated that 31% of enrolled children age 3-5 years had untreated dental disease. Several oral health initiatives are currently underway to improve the oral health of Head Start children.

The number of DPHS oral health contracts that link underserved residents to oral health care has increased from 13 to 18 since 2002. From July 1, 2008 to June 30, 2009, 17,104 people received dental services at 16 dental centers across New Hampshire, compared to 8,335 people served in eight centers in 2002. Since 2002, the number of school-based preventive dental programs has also increased. Currently, 21 programs work in 187 (59%) schools providing screening, preventive services and care coordination to 20,262 students from pre-kindergarten to fifth grade. These students were screened for oral health treatment needs and referred for treatment when needed. In addition, the success of the New Hampshire Statewide Sealant Project that increased dental sealant application in school-based and school-linked programs was instrumental in the adoption of an administrative rule change allowing hygienists to apply sealants in schools without a prior diagnosis by a dentist.

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<sup>5</sup> [www.endowmentforhealth.org/uploads/documents/resource-center/EFHOralHealthReport](http://www.endowmentforhealth.org/uploads/documents/resource-center/EFHOralHealthReport)

## Medicaid Oral Health Activities

The NH Medicaid Program is by any measure the most robust system providing access to oral health care for children in the state. Its growth in terms of service capacity and services delivered has been brisk and continuous since 2003, the year of implementation of a conscientiously applied strategic initiative to increase access to care for Medicaid-eligible children.

The objective of the Medicaid oral health initiative is to provide dental services to all Medicaid eligible children as required by Title XIX's Early, Periodic, Screening, Diagnosis and Treatment (EPSDT) provisions and Title V provisions for education and outreach to underserved populations. The strategic intent of the oral health initiative is threefold:

- Increase provider capacity for access to dental care for children enrolled in NH Medicaid
- Drive demand for dental services that are available
- Reduce need for restorative and specialty treatment

Tactical measures that have been implemented to achieve the strategic intent include the following:

- Increase capacity
  - o Raise dental rates for not just a few but for 48 codes needed to provide comprehensive care, as required by EPSDT
  - o Reduce administrative burden for enrollment and claims processing
  - o Improve provider support by Medicaid
  - o Recruit providers directly and through partnerships with Bi-State Primary Care Association, NH Dental Society, etc.
  - o Outreach to recruit large capacity providers, existing and new
- II. Grants to community dental programs such as Molar Express, White Mountain Health Center, Avis Goodwin Health Center, and Greater Nashua Dental Connection
  - o Educate Medicaid families about etiquette that is most likely to maintain dental access, such as appointment keeping, compliance with dentists' instructions, seeking regular routine screenings, etc.
- Drive demand
  - o Inform parents of newly eligible children and send 6-month reminders of need for routine oral health care starting before first birthday, ways to reduce risk of oral disease, etc.
  - o Outreach to parents of children without a Medicaid-paid dental visit including a list of local dentists accepting new Medicaid patients
  - o Social marketing campaign to promote oral health and inform parents of ways to use Medicaid Client Services to arrange dental appointments, transportation and language services, etc.
  - o Educate PCPs with posters and brochures to promote establishment of dental home before first birthday, guide oral screenings, provide anticipatory guidance, and advise parents about how to contact Medicaid Client Services

- Reduce need for restorative and specialty services
  - Promote establishment of dental home before age one
  - Medicaid payment for preventive programs in school based and school linked sealant and hygiene programs
  - Educate PCPs and parents to promote behaviors that prevent oral disease and promote oral health through healthy personal choices
  - Educate parents about value of practicing dental etiquette to sustain relationships with dentists so that their children can access routine and preventive care in a dental home
  - Promote performance of preventive treatment through Medicaid rate structure and payment policies for before-age-one periodicity schedule, sealants for primary and permanent molars, semi-annual fluoride application, duplicate payment for sealants in dental home and in school based programs, etc
  - Educate about public policies to reduce risk of oral disease

The Medicaid oral health initiative can demonstrate great success in increasing access to oral health care by several measures:

- By CMS 416 Report, for FFY2009 compared with FFY2003: Increase of 132% in number of children with any dental service, and 156% increase in number of Medicaid eligible children with a preventive dental service, in a period with 19% increase in number of eligible children
- In SFY 2003, between 66% and 82% of Medicaid eligible children in NH counties had no paid dental claims, with the statewide average of Medicaid-eligible children with dental access being only 26%. By SFY 2010, between 46% and 60% of Medicaid-eligible children in NH counties had no paid dental claims, while the statewide average of Medicaid-eligible children with dental access had improved from 26% in SFY2003 to 54% in SFY2010
- By HEDIS measures 68% of children with continuous Medicaid eligibility for 12 months had access to dental care
- The number of enrolled providers increased 28% in the period from SFY 2002 through SFY2010, while the average number of children treated by Medicaid's top performing 10 percent of providers increased by 164%
- Between SFY 2002 and SFY 2010 the number of Medicaid-enrolled dentists treating more than 100 patients increased 111%
- The total number of unduplicated Medicaid-eligible children with paid dental claims increased from 18,457 in SFY2002 to 52,104 in SFY2010, or 154%
- Many programs such as community health centers and FQHCs report having been able to expand dental care access to adults because their operations are financially supported by the EPSDT dental program of NH Medicaid

The interventions that have been successful as well as those that have been less so may help inform efforts to increase access to oral health service delivery and improve the State's oral health. The following observations from the NH Medicaid experience may

provide insight or guidance to those seeking to improve access through workforce initiatives:

- The nature of impediments to access are often specific to a locale; statewide initiatives may not be efficient if they fail to respond to local variation
- Almost all private, corporate, and public providers of Medicaid dental services report disproportionately high rates of broken appointments among Medicaid patients
- Many dental providers with a large proportion of their capacity dedicated to Medicaid patients indicate that they have excess capacity for Medicaid patients despite being located in areas that are underserved and that demonstrate low access and high need; therefore, it is important to assess whether lack of oral health care is due to lack of supply of specific workforce, lack of demand for preventive or routine dental care in a specific location, transportation problems, care management, language services, etc., and address the specific problem locally
- Large increases in access to care have been achieved by capturing capacity from relatively few providers
- Despite rising percentage rates and number of NH Medicaid-eligible children with access to dental care, the ratio of expenditures for preventive services to restorative treatment remains nearly constant; over the past decade, reduction in need for restorative services has not been observed, despite increased utilization of preventive services (including sealants, prophylaxis, topical fluoride)
- There is an upward trend in rates of cases requiring hospitalization and general anesthesia for pediatric dental care by extensive restorative treatment
- Many children who require repeated, extensive dental rehabilitation under general anesthesia have established dental homes, but they do not attend routine examinations, preventive visits, or appointments for restorative care;
- The most cost efficient method to increase access may be to drive demand for existing services and to reduce need through public health interventions about personal behavior and choices that promote oral health

### **Need for Oral Health Workforce Planning**

In addition to these service enhancements, New Hampshire has seen improved collaboration between dental and medical professionals; primary care medical practitioners increasingly addressing the oral health needs of young children; willingness to explore new ways to deliver oral health services; the development of collaborative agreements between dentists and dental hygienists; changes to the dental hygiene practice act that improve access to preventive services in schools; and the development of pipeline and recruitment strategies. While progress to date has been positive, there has not been a comprehensive strategic plan focused on the supply, diversity, cultural competence, composition and distribution of the oral health workforce to serve all New Hampshire residents. As such, a strategic planning process is needed to provide direction to oral health workforce activities.

Evidence shows that over 90% of oral disease can be prevented, yet dental caries is still the most common, chronic childhood disease.<sup>6</sup> Improving access to services known to prevent oral disease, such as dental sealants and fluoridation, may over time, reduce the need for restorative services and maximize the potential of the available and trained workforce to address the needs of the population.

Access to care is associated with socioeconomic factors such as recent immigration and ethnicity, educational level and income.<sup>7</sup> For example, those with greater socioeconomic status are more likely to have access to oral health care, although individuals in specific geographic regions or with special needs may experience barriers to care irrespective of socioeconomic status. As with other health care services, the uninsured and underinsured populations can experience barriers to accessing oral health care; the burden of oral disease falls disproportionately on those who have the least access to education, prevention and treatment. In an ideal system, effective oral health promotion and a basic set of oral health benefits would be available to all individuals, and reimbursement for care would be adequate to ensure the financial viability of those providing it, whether in private practice or public health settings.

The Affordable Care Act (ACA) legislation includes a number of provisions designed to improve the oral health of the population. Initiatives targeted to prevention will include a five-year national public education campaign focused on prevention and targeted oral health improvements for specific populations including young children, pregnant women, and individuals with disabilities. Grants will be awarded to demonstrate the effectiveness of research-based dental caries management, specifically to develop and promote strategies that address suppression of early childhood tooth decay. The ACA requires that all states receive grants for school-based sealant programs.

Under ACA provisions, oral health workforce improvements include funding to assure training of primary care dentists and hygienists needed to provide additional services required under expanded Medicaid pediatric dental benefits. In states that explicitly allow experimentation in their dental workforce or sanction a new provider, new programs will train or employ alternative dental health care providers to increase access to dental health care services specifically targeted at underserved communities. ACA funding will allow the Centers for Disease Control and Prevention to expand support of a state-based oral health infrastructure program that promotes leadership, program guidance, oral health data collection and interpretation, and a multi-dimensional oral health delivery system. To improve oral health reporting, additional ACA funds will assure that federal survey tools include appropriate oral health questions.

Facilities where oral health services are delivered can take many forms. Fixed dental offices and clinics located in communities across the state represent one service model. In regions where population density is not sufficient to support a fixed site, mobile clinics

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<sup>6</sup> [www.cdc.gov/OralHealth/topics/child.htm](http://www.cdc.gov/OralHealth/topics/child.htm)

<sup>7</sup> US Department of Health and Human Services, Oral Health in America: A Report of the Surgeon General, Rockville, MD

that provide services across a wider geography may be a more effective approach. The integration of oral health care through service delivery in venues such as physicians' offices, schools, nursing homes, hospitals and other locations frequented by at-risk populations can also augment access. Integration of oral health services into the health home concept and providing comprehensive (preventive, restorative and emergency) care remains a challenge for mobile delivery systems and for preventive-services only delivery systems. Improved access may also be accomplished via a variety of technologies to extend the reach of traditional professional care. While there are no models that rely directly on technology to deliver care in New Hampshire at the present time, other states are exploring these options and may provide models that can be used here in the future.

Understanding that oral health is an essential component of overall health, interventions designed to improve access should include opportunities to integrate oral health with overall health both physically and conceptually. Providing a full range of oral health services, including education as well as prevention and treatment may improve the oral health of New Hampshire residents. Building both skills and awareness across health provider groups may reinforce the understanding of the link between oral health and overall health, as well as capture opportunities to address oral health issues within the dental office and primary care medical practice setting.

This process was not intended to provide a comprehensive review of the oral health status of New Hampshire's residents or to restate the scope of the problem. For this process it was deemed important to gather input from a variety of stakeholder groups to assess current perceptions regarding access to care and the availability and distribution of the oral health workforce, as well as to identify possible causes of access problems and possible solutions for providing access to care for special populations. To achieve this end, representatives from a variety of stakeholder groups were invited to participate.

### **III. Planning Process**

A Task Force and Advisory Committee were formed as part of the workforce planning process.<sup>8</sup> The Advisory Committee comprised a small group of organizations each having a statewide role in addressing access to oral health care and oral health workforce. The Advisory Committee provided structure to the process and reviewed input from the stakeholder groups.

In January 2010, a Task Force was convened as part of a strategic planning process. The Task Force was designed to represent diverse perspectives and opinion from oral health professionals, medical professionals, consumer advocates, and other groups concerned with access to oral health care. The charge to the Task Force was to focus on the workforce needed to enhance and create access to oral health for high-risk populations, including young children, older adults, individuals with special needs and those residing

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<sup>8</sup> Lists of the Task Force participants and Advisory Committee members are provided in Appendix A and Appendix B

in rural areas. The Task Force met six times over a period of four months to consider the issues that affect access to oral health and to contribute to the development of a strategic plan to address the oral health care needs of New Hampshire's high-risk populations.

Task Force participants described barriers to oral health access and discussed opportunities for implementing strategies to assure that a qualified and geographically distributed oral health workforce is available to serve all individuals living in New Hampshire. Each member of the Task Force was also interviewed individually to elicit further input. Additional interviews were conducted with individuals who were unable to join the planning process. Focus groups were conducted with dental hygienists and dentists to gather opinions regarding access, solutions and barriers. In an effort to gain input from consumers in high-risk populations, a brief convenience survey was distributed through several advocacy organizations and posted on the NH DHHS website. The purpose of this survey was to gain insight regarding the perceptions of consumers about barriers to care through the feedback from this small sample.<sup>9</sup>

In addition to these activities, surveys of New Hampshire licensed dentists and dental hygienists were conducted. These workforce surveys were intended to capture demographic information about the two professional groups and to update baseline data collected in 2004.<sup>10</sup> To provide information on existing oral health workforce activities, an assessment of New Hampshire's existing loan repayment, educational pipeline and recruitment programs was conducted. The loan repayment program is designed to encourage graduating dentists to practice in underserved areas of New Hampshire, while the other two programs were established to encourage both newly graduated and experienced dentists to practice in New Hampshire in underserved areas, public health clinics and private practice settings.

As interviews, focus groups and surveys were conducted, it became apparent that there are many opportunities to improve the oral health workforce across the state to increase access to oral health. Some of these opportunities specifically relate to the workforce itself; others are broader, addressing an increased use of preventive services and public health measures, such as fluoridation of public water supplies and application of dental sealants. It also became clear that there is a need for greater awareness of the link between oral health and overall health among the general public, providers and policy makers. A lack of robust demographic data on the existing workforce of dentists and hygienists creates an impediment to planning for future needs. There is also an apparent need to address the distribution of those providers throughout the state to meet the needs of the population. Oral health is not yet fully integrated with overall health, and prevention of oral disease may help maximize many resources, including the reach of the workforce itself. These factors represent opportunities to continue building a system for eliminating barriers and improving the oral health of New Hampshire residents.

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<sup>9</sup> See Appendix E - Consumer Survey Tool

<sup>10</sup> A complete report on the results of the workforce survey may be found in Appendix F of this document[0].

## **IV. Environmental Scan**

Since the development of the *New Hampshire Oral Health Plan: A Framework for Action*, New Hampshire has pursued several promising strategies designed to build and sustain the oral health workforce. These include expansion of the State Loan Repayment Program to make loan repayment available to dentists and hygienists who agree to work in underserved areas serving high-risk populations; developing a workforce pipeline initiative focused on recruiting dental students to New Hampshire; and establishing a recruitment program through the NH Recruitment Center to attract and recruit dental school and residency program graduates and experienced dentists to areas of the state where their services are most needed.

These strategies are especially important because New Hampshire is one of 15 states that do not have a dental school or dental residency program from which to recruit. As a result, students must leave the state to attend dental school or advanced education through a dental residency. There is a risk that students who leave the state for training will not return to practice.

New Hampshire is fortunate to have a steady stream of dental hygienists graduating each year from the NH Technical Institute located in Concord. Many of the hygienist graduates who remain in the state choose to work in private practice. Opportunities exist to increase the availability of preventive strategies by dental hygiene graduates to treat high-risk patients in non-traditional settings, increasing the availability of oral health services in schools, nursing homes and primary care health homes.

### **State Loan Repayment Program**

The State Loan Repayment Program (SLRP) was established by the Department of Health and Human Services (DHHS), Division of Public Health Services under the provision of Chapter 410, Laws of NH 1994. The Rural Health & Primary Care Section (RHPC) administers the loan repayment program for New Hampshire. The SLRP helps to address health professional workforce shortages that may cause disparities in access to health care. The goal is to increase the number of primary health care providers serving in the state's Health Professional Shortages Areas (HPSAs), Mental Health Professional Shortage Areas (MHPSAs), Dental Health Professional Shortage Area (DHPSAs), Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs).

The State Loan Repayment Program offers licensed health professionals an opportunity to work in designated shortage areas and to receive partial payment toward their educational loans in exchange for their commitment to serving the uninsured, underinsured, Medicaid, and Medicare populations in New Hampshire. SLRP is funded jointly by State funds and a federal grant. Federal and State funds can be used by licensed dental providers working full time or in dental health provider shortage areas (DHPSAs), while only State funds can be used for providers working part-time or in designated Medically Underserved Areas/Populations.

The success of SLRP for oral health providers has been limited to date. Of the 46 SLRP participants in the past five years, six dentists and one part-time hygienist have taken advantage of the program. SLRP has yielded a retention rate of approximately 65% across all eligible disciplines, however dentists do not view it as a strong recruitment tool. Experience indicates that dental providers have often been unwilling to commit to the required three-year engagement. Additionally, many programs in New Hampshire's designated shortage areas attract more experienced dentists who no longer have educational loans. The program appears to be more attractive to dental hygienists, but demand for hygienists in designated shortage area is not as great.

In 2006, two stakeholder workshops were conducted by the RHPC to explore how the SLRP might be more effectively designed. Several of those recommendations have been implemented including increasing the total contract amount available to full-time clinicians; establishing a graduated yearly amount that is largest in the first year of service; and creating a part-time option. There were three recommendations that, while worthy of consideration, were considered out of the scope of the RHPC. These included establishing a loan forgiveness program; providing tax rebates; and loan repayment for private dental offices.

Loan forgiveness is an up-front loan provided to a student while in training in exchange for a required number of years of service in an underserved area after graduation. Although not currently available in New Hampshire, this type of program has strong appeal for clinicians and employers. It has the benefit of securing a commitment from an individual at the beginning of the pipeline, rather than forcing public health-oriented students to compete for scholarship dollars with those not interested in a public health career. Providing tax rebates rather than loan repayment was suggested as an incentive that might appeal to the more seasoned dentist. For private dentists who agree to treat target populations, a loan repayment fund supported by the private business community was recommended and is currently being explored.

### **NH Dentist Pipeline Program**

The New Hampshire Pipeline Program and Recruitment Center, administered by Bi-State Primary Care Association and supported in part by DHHS, are designed to function in a complementary fashion. The Pipeline Program, through its staff and Dentist Ambassadors, has successfully established relationships with New Hampshire dentists as well as with faculty, administrators and students at dental schools and dental residencies in the region.

The Pipeline Program focuses on cultivating the next generation of dentists for New Hampshire. The Pipeline Program introduces dental students and residents to practice opportunities in the state by conducting outreach and making annual presentations to students and residents in training. To date these sessions have been held at Tufts School of Dental Medicine, Boston University Goldman School of Dental Medicine and the University of Connecticut School of Dental Medicine. The presentations are made on campus, by a team of Dentist Ambassadors who practice in New Hampshire. The Dentist Ambassadors share their experiences working in both public and private sector practices with the students.

These presentations and the follow-up after the presentations foster connections between practicing dentists and students, offering mentoring opportunities to those who wish to explore practice in New Hampshire. The Pipeline Program has tracked 135 dentists from the region who considered opportunities in New Hampshire.

### **The NH Recruitment Center**

After a ten-year history of recruiting primary care clinicians to serve rural and underserved populations in New Hampshire, the NH Recruitment Center (NHRC) expanded its scope in 2004 to include the recruitment of dentists. The Recruitment Center's expansion originally focused on fulfilling a contract for the New Hampshire Department of Health and Human Services Office of Medicaid Business and Policy to recruit a pediatric dentist to the North Country. Over the years this has developed into a relationship with Medicaid to recruit dentists to practice in New Hampshire.

The Recruitment Center currently assists community dental programs and private practices in filling dentist vacancies. Over the last six years several public sector dental programs have consistently and successfully used the Recruitment Center to recruit dentists, while fewer private practices have used the Recruitment Center. Over the last year there has been an increase in vacancies in private practices. Since 2004 the Recruitment Center has conducted outreach that has identified 528 dentists who may be interested in practicing in New Hampshire. The Recruitment Center has also been involved with the recruitment of 22 new dentists to the state; 11 of these dentists were recruited to practice in a rural or underserved area.

Each of these three programs shows promise and may continue to play an important role in building the oral health workforce in the state as part of a broader oral health workforce strategy. To date, their efforts have identified some interesting and unforeseen factors that will have an impact on how future strategies are pursued:

1. New graduates are not always prepared to meet the clinical and management demands of public health settings. This may be the result of a lack of training in public health dentistry or the result of a new graduate's limited experience in treating patients with complex clinical and medical conditions.
2. Recruitment to the private sector has been affected by the disparate expectations of different generations of dentists. Those just coming into practice are often hoping to become employees, while those who are retiring are seeking purchasers of their practices.

3. Loan repayment has demonstrated limited efficacy in attracting dentists to rural and underserved areas. Many new dental graduates have greater debt than can be offset by current loan repayment amounts.
4. A loan forgiveness program for New Hampshire students who are interested in attending dental school may attract young students into the profession and broaden the recruitment pipeline while assuring that students return to New Hampshire to practice.

### **The Current Workforce: Findings from the 2010 Dentist and Hygienist Surveys<sup>11</sup>**

In February of 2010, workforce surveys of dentists and dental hygienists licensed in New Hampshire were conducted. The goal was to explore issues related to the current and future dental workforce in the state, including issues of provider demographics, practice patterns, practice structure, compensation, reimbursement, motivation and accessibility. The surveys were patterned on a similar pair of surveys conducted in 2004, to allow comparison of results. The 2010 surveys were implemented and analyzed by the Community Health Institute/JSI.

Based on lists obtained from the New Hampshire Board of Dental Examiners, surveys were sent to all actively licensed dentists with a valid mailing address (996 total), and a random sample of 600 of the 1,269 actively licensed hygienists with a valid mailing address. The response to the dentist and dental hygienist surveys was 51% (495 responses) and 59% (347 responses) respectively, correcting the sample for a small number of undeliverable surveys in both mailings. In addition to the survey results, a crosswalk of the entire licensing list from 2004 and 2009 was also conducted to examine trends in the underlying pool of licensed providers that form the survey universe. While the dentist crosswalk provided useful insights, the hygienist crosswalk identified gaps in the 2004 license list that did not allow for a similar comparison. Results from both surveys show that there is need for planning in order to maintain a workforce to meet the needs of NH's changing population the pipeline and recruitment efforts.

The findings of the two surveys suggest a dental workforce that is likely to experience significant changes in the coming years. The most notable issue is the aging of the dentist workforce, as nearly half of the respondents were over age 55 and nearly 40% reported the intent to leave practice within the coming 10 years. Since the 2004 survey, the number of dentists holding active licenses has fallen by 15%. There is currently no mechanism to determine how many dentists holding active licenses actually practice,

The percentage of dentists reporting that they work part-time increased from 2004 to the most recent survey (27%). The likelihood of retirement within 10 years is similar across

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<sup>11</sup> An Executive Summary for the 2010 Surveys of Actively Licensed Dentists and Hygienists in NH is provided in Appendix F; A Chart Book of the Dentist Survey Results is provided in Appendix G; A Chart Book of the Hygienist Survey Results is provided as Appendix H

general and pediatric dentists and specialists. Dentist shortage is likely to impact rural areas of the state first, as these areas already have proportionally fewer dentists compared to the population, and individuals located in rural areas are older than those living in non-rural areas. While fewer than 10% of dentists overall reported that they felt there is a shortage of dentists in their community, rural dentists were four to five times as likely to feel there was a shortage (15-20% compared to 4% in non-rural areas). Over 96% of dentists statewide still report that their practice is accepting new patients.

By contrast, the state's hygienist workforce is considerably younger than that of the dentists, and has been in practice for fewer years. One quarter of hygienists are over age 55 – half the proportion of dentists - and 36% report the intent to leave practice in the next 10 years. There appears to have been an increase in hygienists licensed in New Hampshire within the past 10 years, representing nearly 27% of the workforce; however the actual change in total licensed hygienists cannot be calculated due to limitations of the 2004 list, as noted above.

Comments from hygienists in the open-ended section of the survey included the desire to practice independently from dentists and to have a separate licensing board. At present, very few hygienists (less than 4%) feel there is a shortage in their own profession. Many of the open-ended comments suggested hygienists perceive that market saturation is an issue in terms of limited employment options, lack of benefits, and declining pay. Fifteen percent (15%) of hygienists reported working fewer hours than they would like to, and 21% of hygienists working part-time would like to work more hours. Over 90% of general and pediatric dentists and nearly 30% of dental specialists currently report employing hygienists.

Female providers represent an increasing proportion of the dentist workforce; this is likely to accelerate in the coming years, as dental schools' female admissions are 50% and rising. Over 20% of current dentists are female, an increase from 16% in 2004, and the female proportion of dentists is younger than the male. Nearly 55% of male dentists are over the age of 55, compared to just 22% of female dentists. This will shift the gender distribution of dentists sharply in the next decade as dentist retirement accelerates. Nearly 100% of current hygienists are female.

Most of the state's dental workforce is in private practice, the primary practice setting for approximately 92% of both dentists and dental hygienists. Also, most dental workforce capacity is dedicated to direct patient care, representing 91% of total dentist hours and 93% of hygienist hours. Many providers engage in other professional activities, but they represent a small amount of total professional time. For example, although nearly 40% of dentists and 27% of hygienists spend some of their time on community education and outreach, this represents less than 2% of reported time worked for both groups. Many also reported providing education and outreach on a volunteer basis.

Survey results indicate the dental workforce will face challenges and opportunities while addressing dental access issues. As dentists age and retire from the workforce greater

efforts must be directed toward developing a pipeline of young people interested in practicing dentistry in New Hampshire. Dental hygienists and other non-dentists such as nurses and health educators may be utilized to make oral health education and promotion activities more available to people less able to access services. Attracting dentists and hygienists to practice in underserved rural areas of the state will be challenging but can present opportunities to create new models of oral health service delivery.

## **V. Public Input**

As previously mentioned, it was deemed important in this process to gather input from a variety of stakeholder groups. Stakeholders' perceptions regarding access to care, impediments to access, solutions for providing access for special populations, and barriers to implementing those solutions provide important context and help assure that strategies are responsive to local needs. The different mechanisms that were employed to elicit public input are described below.

### **Consumer Survey**

In an effort to gain input from high risk and special needs populations, a brief convenience survey was distributed through a number of advocacy organizations. As a convenience survey, results provide only the perspectives of the respondents and cannot be generalized to the overall population. This survey was distributed through: New Hampshire Family Voices, New Hampshire Minority Health Coalition, Granite State Organizing Project, North Country Health Consortium, and Belknap/Merrimack Community Action Program. The survey was also posted online on the New Hampshire DHHS website.

A total of 134 individuals responded to the survey.<sup>12</sup> Almost 65% of consumer respondents indicated they currently have access to dental care, while 35% of respondents indicated they did not currently have access. Of those who reported accessing care, 101 reported access through private dentist's offices; 5 through Community Health Centers; 6 through community or hospital dental clinics; and 2 through school-based clinics/programs. Fourteen (13.1%) indicated accessing oral health care through other sources.

Those who were unable to access care were asked to indicate as many reasons as applied as to why this was the case. There were sixty responses to the question that indicated the following: 46- unable to pay for care; 13- unable to find a dentist who offers a payment plan; 19- unable to find a dentist who takes Medicaid; 3- no dentist nearby; 1-inconvenient office hours; 6- unable to find a dentist who will treat a patient with disabilities. Seventeen (28%) of those without current access to dental care indicated other reasons such as medical and behavioral problems that require total anesthesia or

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<sup>12</sup> For the complete survey tool, see Appendix E

limited dental benefits. Twenty -one (15.7%) of the 134 respondents reported having gone to an emergency room for a dental problem in the past twelve months.

Consumers were also asked where they receive routine health care. Of the 134 respondents, 129 reported receiving care in a primary care physician's office; 11 accessed care in a Community Health Center; 16 in an emergency room; 13 in a walk-in clinic; 3 in a school-based clinic; and 8 in "other" locations. While the survey responses represent experiences from a small group of consumers they suggest a variety of strategies to address access to oral health care services for these populations.

### **Clinician Focus Groups**

Two focus groups were conducted to gather opinions regarding access, challenges, and solutions perceived by the professionals who most commonly provide oral health services. One was conducted with dental hygienists and another with dentists. To ensure a broad perspective, focus group participants were selected to represent private practice, community-based/public health practice, and school-based programs.<sup>13</sup>

Both focus groups responded to the same questions:

1. In your opinion, do NH residents have appropriate access to oral health care?
2. How do you define appropriate access?
3. If appropriate access is not available for NH residents, what are the causes?
4. What are the solutions you would envision to address these issues?
5. What are the barriers to implementing these solutions?
6. What are the biggest obstacles to creating a workable plan for NH's oral health workforce?

### **Dental Hygienist Focus Group**

For the purposes of the focus group, hygienist participants agreed to a definition of "appropriate access" as the ability to schedule an appointment for an emergency in less than 24 hours; for urgent care, within two weeks, and for routine care within one month. Focus group participants reported feeling that access to care for children has generally improved over the past several years. They also perceived an increase in the number of Medicaid providers, which they felt has alleviated a considerable amount of the problem. The focus group participants reported that they still see challenges in accessing care for several groups including very young children (between the ages of one and three); adults without insurance, and for residents in specific geographic areas of the state.

One or more hygienist focus group participants noted the following causes of the access problems including: problems with parental compliance, lack of transportation, lack of financial resources, lack of access to accurate information regarding participating dentists and a lack of awareness of the importance of oral health.

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<sup>13</sup> A complete list of focus group participants is included in Appendix D

Hygienists suggested that engaging primary care physicians (pediatricians and family practitioners) in providing assessment, oral health education, fluoride varnish and referral for additional oral health services could significantly increase access to care for very young children. The hygienists also identified several venues through which access could be improved such as bringing more services into the school setting, establishing urgent care clinics in retail locations, increasing the number and reach of mobile programs, and creating “preventive care practices.”

Prevention strategies such as oral health education, improved eating habits, access to fluoride and sealants were cited as important to improving oral health and eliminating barriers to access. Reimbursement strategies that encourage preventive care were also discussed. Emerging practices such as “atraumatic” restorative services, in which filling material is placed without removing decay, including temporary restorations and glass ionomers, were suggested as well.

The hygienists in the focus group felt that there was a need to collect evidence on the efficacy of new practices in order to build the case for pursuing specific preventive interventions. The group also suggested that continuing education in recognized evidence-based best practices be made available and encouraged for all oral health professionals.

There was also discussion of the merits of independent practice for hygienists, as well as the deployment of hygienists to work within medical practices as avenues to increase access to preventive services. The group noted that there are many barriers to overcome in creating solutions to the problem of access to care. Beyond the issue of scope of practice, focus group participants expressed concern that oral health might well be “overtaken” by the medical profession if dentists and hygienists do not work collaboratively to solve the problem.

### **Dentist Focus Group**

The dentists who participated in the focus group felt that access to care was principally an issue in certain geographies and among special populations, including the elderly. They acknowledged that there remain areas of the state where access is limited, but overall, they report seeing significant improvements in the last several years. One participant sought to summarize the group’s sentiments, referencing the availability of financial resources as the principal factor determining adequate access.

The group expressed concerns about the importance of understanding the issue of “need” versus “demand.” They felt that over the last several years there has been an expansion of access points to address specific populations, but that many of these programs were not utilized well by consumers. The dentists felt that until the general public understands the importance of oral health and prioritizes it as a health concern, the need for care may exist, but the lack of demand will not sustain many of the established programs. Oral health education and individual responsibility for oral health were discussed as key factors to managing the issue of need. Building partnerships between oral health

professionals and patients to address the need for care from a holistic perspective was cited as an opportunity for improving oral health.

Financial resources were also cited as critical to addressing the problem of need. The group expressed a sense that those with financial resources generally do not have problems with access, but those who have limited or no dental insurance benefits, and who are dependent on publicly funded benefits do have problems accessing care. Prevention was cited as a critical component of solving the access problem, but reimbursement strategies used by benefits administrators in both the commercial and Medicaid markets are not structured to invest in prevention. One suggestion to address this was to offer benefits or “credits” which individuals (patients) who engage in prevention and routine care could earn.

The group suggested that the issue of access is also confounded by the question of where access should occur – in private practices or in the safety net. While the group felt that there are opportunities to integrate oral health with general medical care, if access to care is to be created through private practices, some focus group participants stated that there might be a need to expand the dental team. If access is to be handled by the safety net, the dentists concurred that there should be a better definition of its composition, and what services are to be accessed therein.

Focus group participants noted that school-based programs across the state have had good results in providing preventive services to some of New Hampshire’s higher-risk children. They also shared that the NH Dental Society has worked collaboratively with the school-based hygienists to build capacity to accept referrals for necessary care. Concerns were raised about access to care at the other end of the lifecycle as the group felt that services for the institutionalized geriatric population lag. It was suggested that the NH Dental Society could build relationships between nursing homes and dentists, similar to that which has been developed for the school-based programs as a way to improve access for this population.

Noting the importance of the integration of oral health with overall health, the dentists discussed the value of having primary care medical practitioners address basic oral health issues such as education, screening, fluoride varnish and referral. Given how healthcare benefits are structured, the group felt there might be enhanced access to services if they were provided in a primary care office. The group felt that the limited availability of financial resources to support care for high-risk populations was the most significant barrier to solving both access and workforce problems. They noted that if alternative models of care provision are to be developed and utilized, they must be economically feasible. With current limitations on benefits – both through private and publicly funded sources – neither patients nor providers have strong incentives to improve oral health.

## **Task Force**

Representatives from a variety of stakeholder groups were invited to participate in the planning process through the Task Force. Groups invited to participate included: the

New Hampshire Dental Hygienists' Association, New Hampshire Dental Society, New Hampshire Board of Dental Examiners, University of New Hampshire Health Professions Program (UNH), New Hampshire Technical Institute (NHTI), University of New England (UNE), New Hampshire Area Health Education Center (AHEC), New Hampshire hospitals, long term care providers, health insurance providers, dental benefits administrators, Community Health Centers, community-based dental clinics, and advocates for high risk populations. In addition to participation in the planning sessions, each member of the Task Force was interviewed individually. As several stakeholder groups were unable to participate in Task Force meetings, individual interviews were conducted with them to capture their perspectives.

The Task Force met six times over four months. Task Force discussions focused on the landscape of oral health in New Hampshire, the design and parameters of an “ideal system”, gaps between the current system and the ideal, and finally on the development of recommendations for action. Because of the diversity of stakeholders, Task Force meetings included lively discussion regarding the existence of a problem with access to care, barriers to access, and solutions. Unfortunately, due to the time constraints of this project, the Task Force did not have access to the final results of the workforce surveys, or a catalogue of evidence-based practices in oral health workforce recruitment and retention. The Task Force reached general consensus on their recommendations.

As the Task Force assumed its challenge, its members worked together to create a common working definition of access. The definition that was developed ultimately expressed the group's concern with access to *oral health* rather than access solely to *oral health care*, but is not based on any national standard or consensus, as none is available. Incorporating an empiric policy provided by one Task Force member that had been used for prioritization of care at the University of Nevada School of Medicine, Dental General Practice Residency, the Task Force defined access to oral health as follows:

*Access to oral health is the ability of an individual to maintain a state of oral health through education, prevention and treatment. Access is further defined as the ability of an individual to make an appointment for routine dental services (including preventive, restorative and surgical services) within one month; for urgent care within one week; and for emergency services within 24 hours.<sup>14</sup> Such care will be available within 30 minutes or 30 miles of the individual's place of residence.*

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<sup>14</sup> **Routine Dental Care:** Dental conditions with minimal to moderate pain or discomfort (0 to 4 on the analog pain scale) or loss of function including but not limited to defective restorations and prostheses, hypersensitivity, myofascial pain, soft tissue ulcers or minor intraoral injuries as well as asymptomatic dental conditions.

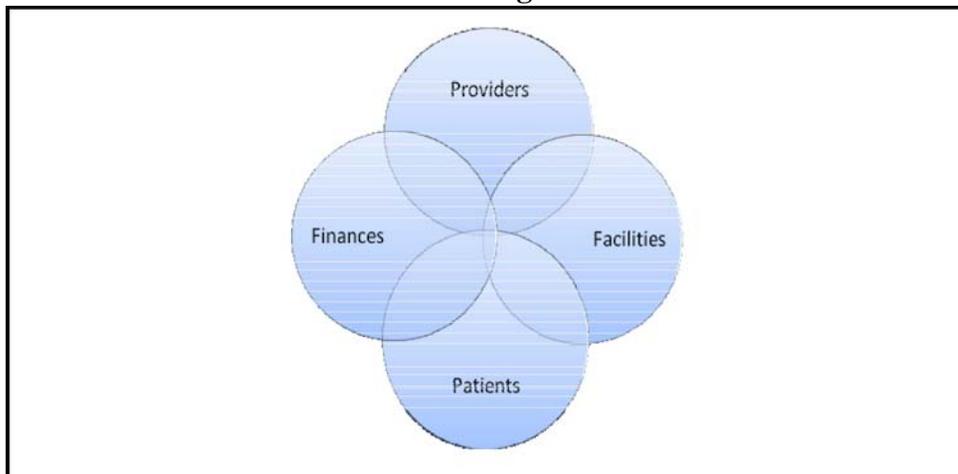
**Urgent Dental Care :** Dental conditions that require prompt attention to alleviate moderate pain (5 to 7 on the analog pain scale) or loss of function but do not pose a risk of for significant morbidity or mortality. Urgent dental care may include conditions such as reversible pulpitis, symptomatic defective restorations and localized periapical, pericoronal or periodontal lesions without evidence of systemic involvement.

**Dental Emergency:** Dental conditions that a pose a significant risk for morbidity, mortality or undue suffering to the patient including space infections, jaw fractures, facial lacerations, avulsion or severe subluxation of teeth, severe acute pain (greater than or equal to 8 to 10 on the analog pain scale) and/or significant abnormal systemic findings (fever, tachycardia, respiratory difficulty, etc.) of possible odontogenic origin.

*Ideally, oral health care shall be provided through a financially accessible, integrated health delivery system (a health home) and shall utilize appropriately educated and regulated health care professionals, trained in patient-centered care and cultural diversity, to provide appropriate assessment, diagnosis, triage, care and referral.*

The Task Force viewed access to oral health as being driven by four interrelated system components: providers, patients, finances and facilities. In terms of providers, the number, type and distribution can affect access to care. As for patients, culture, economic strata, disease burden and “oral health IQ” are influencing factors. A discussion of finances must include the scope of benefits and coverage as well as reimbursement levels and payment models. Any reference to facilities must consider the type, location, distribution and the technology used to support the delivery of care. Where those four components intersect, as illustrated below in Figure 1, access to oral health care occurs.<sup>15</sup>

**Figure 1**



Other factors that the Task Force felt inhibit achieving the goal of providing access include: 1) workforce distribution is not optimal to meet the need and/or demand for services across the state; 2) much of the existing workforce does not have the training to address the needs of certain high risk populations; and 3) funding is insufficient to sustain the delivery of oral health services to segments of the high-risk population who are not covered by public or private dental benefit plans.

It is important to distinguish between need for care and demand for care. While a health professional might identify a clinical need for oral health care, an individual who does not prioritize oral health may not seek that care. Thus, patient demand, or lack thereof, is

<sup>15</sup> Design courtesy of Kneka Smith, MPH, University of New England, College of Dental Medicine

not necessarily an indication of need. If the population does not understand why oral health is important, simply building a system that creates access will not accomplish the goal of improving the oral health of New Hampshire's residents. In the opinion of the Task Force it is clear that improving oral health and access to care is linked to building awareness of the relationship between oral health and overall health among diverse groups including consumers, providers and policymakers.

In considering existing workforce challenges and future workforce needs, workforce adequacy is a major issue in the discussion. While adequacy is often considered solely in terms of number of personnel, New Hampshire's ratio of dentists and hygienists to population have been compared to, and are higher than, national and regional ratios. While there is a standard for the minimum number of dentists needed per population that has been established by the Shortage Designation Branch of the Health Resources and Services Administration of the US Department of Health and Human Services (HRSA), in the opinion of the Task Force, there is no generally accepted standard at the state or federal level that specifically defines workforce adequacy. While the minimum number of providers has been established, the formula does not include a benchmark for the optimum number of dentists per population. For this reason, the Task Force felt the need to create several algorithms to look at possible benchmarks for projecting workforce needs in New Hampshire.

Using the current Health Resources and Services Administration standard that defines a dental health provider shortage area (DHPSA), the Task Force facilitator developed a formula, adopted by the Task Force that estimated the number of visits or number of patients in an average dental practice. Based on these informal calculations, the Task Force decided that a target ratio for New Hampshire should be a minimum of five general/pediatric dentists per 10,000 population and eight hygienists per 10,000 population.<sup>16</sup>

According to the New Hampshire Board of Dental Examiners there are currently 757 general and pediatric dentists and 1,381 hygienists with active licenses in the state. This translates to approximately six general/pediatric dentists per 10,000 population<sup>17</sup> and nine hygienists per 10,000 population.<sup>18</sup> In comparing these data with the Task Force's proposed benchmark, it seems that New Hampshire currently has a workforce of general/pediatric dentists and dental hygienists that ought to be sufficient to provide access to oral health care. In fact, the numbers indicate a slight surplus of oral health

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<sup>16</sup>Estimates for dentist and hygienist to population ratios were based on the following formulas, which consider average practice statistics per Task Force input.

*Formula #1:* Dental Visits calculated at 10 visits/day, 4 days/week, 48 weeks/year = 1920 visits/year per dentist.

Hygiene Visits calculated at 12 visits/day, 4 days/week, 50 weeks/year = 2200 visits/year per hygienist;

NH population = 1,300,000; estimate 1 dental visit/yr per resident = 1,300,000 visits/yr; 677 dentists needed or 5.2 per 10,000; 2 hygiene visits/yr = 2,600,000 visits/yr; 1181 hygienists needed or 9.1 per 10,000

*Formula # 2:* Average full dental practice (including hygiene services) encompasses 2,500 patients; 1,300,000 population/2,500 patients = 520 dentists or 4.0 per 10,000 population

<sup>17</sup> Source: NH Center for Public Policy Studies, Dental Services and Workforce in New Hampshire, January, 2010

<sup>18</sup> Source: NH Board of Dental Examiners, March, 2010.

professionals in the state. However, the licensing data do not address provider demographics or the time that an individual dentist or hygienist actively practices (if at all), nor do they offer any indication of provider practice lifespan/retirement goals; thus, they may provide an overestimate of the State's dental workforce capacity. Provider-to-population ratio is an important factor to consider when looking at the adequacy of the workforce, but is only one piece of the puzzle.

To build a workforce better able to address the oral health needs of New Hampshire's population today and into the future, the Task Force described five principal over-arching goals:

1. Regularly analyze and document the need for oral health services across New Hampshire's population;
2. Implement evidence-based prevention strategies that will reduce the need for treatment, thus decreasing the need for workforce;
3. Integrate oral health and general medical care;
4. Address the needs of high risk populations such as young children, older adults, and individuals with special needs, as well as those residing in rural areas of the state; and
5. Improve the skills and training of the oral health workforce to address the needs of New Hampshire's residents, particularly the high-risk populations.

To address each of these goals, the Task Force developed recommendations including objectives, tactics and strategies to improve the oral health workforce and strengthen its ability to address the oral health needs of the population. Approaching these issues from a systems perspective, Task Force recommendations included strategies to both impact the need for oral health services and increase or augment the oral health workforce. While all of the Task Force's recommendations were considered for inclusion, final recommendations in the Plan focus more directly on strategies to maintain the workforce needed to enhance access to oral health for New Hampshire residents, especially the identified high-risk populations. The broader recommendations from the Task Force may be useful to stakeholders looking to impact oral health from a more comprehensive perspective. The full list of Task Force recommendations is included in Appendix G.

## **VI. Selecting Final Recommendations**

The Advisory Committee considered the information gathered through this multi-layered process to develop a list of final strategic plan recommendations. Potential recommendations were assessed using the Priority Rating System for Public Health Programs (PEARL) Framework.<sup>19</sup> PEARL is a tool for assessing the socioeconomic, legal, and political viability of various interventions. The framework looks at the following:

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<sup>19</sup> Vilnius D, Dandoy S. 1990

P = Propriety; is an intervention suitable?

E = Economics; does it make economic sense to address this problem?

A= Acceptability; will the community agency accept an emphasis on this problem, and will they accept the proposed intervention?

R= Resources; are funding and other resources available or potentially available?

L = Legality; do the current laws allow the intervention to be implemented, and if not, is it worthwhile to expend time, energy, and resources working for legislative and regulatory change?

While the Plan principally focuses on issues related to the oral health workforce, several other factors affect the ability of the workforce to provide services. For example, availability of adequate facilities and technology influences the provision of care, and an individual's ability to prioritize oral health will determine if, when, and how that person responds to preventive messages or seeks care. However, most recommendations are directly related to the supply, diversity, competence, composition and distribution of the workforce. This focused approach helps assure that implementation is feasible.

Each activity in the Plan includes potential partner organizations that may want to take responsibility for or be involved in the implementation of a particular strategy. Placeholders are included for implementation timelines and the evaluation plan, which will be determined in the action planning phase. Further, if an activity is recognized as a best practice or evidence based strategy this has been noted.

The Oral Health Workforce Strategic Plan is part of a broader public health strategy to improve the oral health of New Hampshire residents across the lifespan and to reduce oral health disparities among populations. For example, the Oral Health Program within the Division of Public Health Services has accomplished a great deal in the areas of data collection, analysis and dissemination; partnership development; maintenance of a cadre of school- and community- based sealant programs; and collaborative projects with other public health programs and external partners.

## **VII. Next Steps: Action Planning**

In creating the Oral Health Workforce Strategic Plan, the Advisory Committee recommended that the implementation of the plan be monitored and coordinated through the NH DPHS Rural Health and Primary Care Section. This is the office within DHHS that deals with all primary care clinician workforce programs, including the maintenance of the Health Professional Shortage Area Designations, State Loan Repayment and the Recruitment Center contract. A representative from this office will participate in a statewide commission that will address all workforce planning and evaluation efforts.

### VIII. Oral Health Workforce Recommendations

<b>I. Regularly analyze and document the needs for oral health services across New Hampshire’s population</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Evidence Base Identified</b>
A. Identify and routinely convene a Statewide Healthcare Work Group of key leaders and policy makers to monitor the changing needs of the population and the healthcare workforce	NH Department of Health and Human Services (NH DHHS)		
B. Review practice acts, licensure and professional requirements and revise as necessary to enable providers to deliver oral health services to high risk populations	Commission on Primary Care Workforce Issues		
C. Work with Board of Dental Examiners to collect key demographic data from dentists and hygienists through the licensure process and to establish and maintain a database of provider demographics, and periodically distribute in an accessible format	NH DHHS, NH Board of Dental Examiners, Commission on Primary Care Workforce Issues		
D. Conduct periodic evaluations of the current workforce model, and refine as necessary to address the evolving needs and demands of the population	Commission on Primary Care Workforce Issues		
E. Evaluate and refine the proposed standard for workforce adequacy	Commission on Primary Care Workforce Issues		

<b>II. Integrate oral health and general medical care</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Evidence Base Identified</b>
A. Build and expand awareness among all health professionals of the importance of oral health to overall health	NH Medical Society, NH Dental Society, Bi-State Primary Care Assoc., NH DHHS, NH Area Health Education Centers (NH AHEC)		Children’s Dental Health Project (CDHP)
B. Disseminate model protocols for basic oral screening for primary care and prenatal medical providers	NH Dental Society, NH Dental Hygienists’ Assoc., NH Medical Society, NH AHEC		California Dental Association Foundation (CDA)
C. Provide training for primary care and prenatal medical practitioners who provide oral assessment, preventive and referral services	NH DHHS, NH AHEC		CDA
D. Explore reimbursement models for primary care and prenatal medical practitioners who provide oral assessment, preventive and referral services	NH DHHS/Medicaid, Commercial Medical & Dental Insurers		CDHP
E. Disseminate model protocols for basic medical screenings for oral health professionals	NH Medical Society, NH Dental Society, NH Dental Hygienists’ Assoc., NH AHEC		CDHP
F. Provide training for oral health professionals who provide basic medical screenings	NH DHHS, NH AHEC		

Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
G. Explore reimbursement models for oral health providers who provide oral assessment, preventive and referral services	NH DHHS/Medicaid, Commercial Medical & Dental Insurers		CDHP
H. Develop general practice (GPR) and pediatric dental residency programs in New Hampshire hospitals to increase exposure and provide opportunity for better integration of oral health with overall health	NH Dental Society, NH Hospital Assoc.		
<b>III. Develop an oral health workforce that addresses the needs of high risk populations such as young children, older adults, and individuals with special needs, as well as those residing in rural areas of the state.</b>			
Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
A. Expand the capacity of the safety net	Bi-State Primary Care Association		
B. Establish a network of regional public health dental supervisors to expand the practice of dental hygiene in public health settings	NH DHHS – Oral Health Program		
C. Explore models for direct reimbursement for services delivered by dental hygienists working in public health	NH DHHS, Commercial Medical & Dental Insurers		
D. Elevate the knowledge, skills and ability of the New Hampshire workforce to address the oral health needs of high risk populations	NH Dental Society, NH Dental Hygienists' Association, NH Technical Institute (NHTI), NH AHEC		

Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
E. Expand educational opportunities to encourage faculty development for oral health training and education	NHTI, University System of NH, NH Dental Society, NH Dental Hygienists' Association		
F. Provide loan repayment to oral health professionals willing to serve New Hampshire's underserved areas, indigent and high- risk populations	NH DHHS		
G. Explore the potential to develop a loan forgiveness program for oral health professionals willing to serve New Hampshire's underserved areas, indigent and high-risk populations	Bi-State Primary Care Association, University of New England (UNE)		
H. Work with partners to create a system to support recruitment and training of oral health providers who see high-risk populations	Bi-State Primary Care Association's NH Recruitment Center		
I. Establish scholarship programs to encourage New Hampshire residents to pursue careers in public health oral health	NH DHHS, Bi-State Primary Care Association's NH Recruitment Center		
J. Increase the number of, and encourage oral health professionals' attendance at, continuing education programs that focus on the needs of special populations	UNE, NHTI, University of NH System, NH Dental Society, NH Dental Hygienists' Association, NH Dental Society		

Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
K. Explore the need to train members of the workforce in cultural competence	NH AHEC, Bi-State Primary Care Association		
L. Recruit a culturally diverse population into pipeline	Bi-State Primary Care Association/ Recruitment Center		
M. Support the development of a dental school at the University of New England (UNE)	NH DHHS, Bi-State Primary Care Association, Endowment for Health, NE Delta Dental, NH Dental Society		
N. Increase the proportion of New Hampshire dentists who have residency training and/or hospital privileges	UNE, NH Dental Society, NH Hospital Association		
O. Explore the establishment of dental residency programs within New Hampshire with the NH Hospital Association	UNE, Bi-State Primary Care Association		
P. Explore creation of advanced education in general dentistry residencies (AEGD) within public health practices	UNE, Bi-State Primary Care Association		
Q. Establish dental training opportunities within public health practices	UNE, Bi-State Primary Care Association, NH Dental Society		
R. Review the evidence base for and feasibility of training community oral health workers	NH AHEC		

Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
S. Monitor the development and implementation of alternative workforce models and implement those models in New Hampshire as appropriate	NH Dental Society, NH Dental Hygienists' Association, NH Board of Dental Examiners		
T. Provide information to promote career counseling at all New Hampshire high schools to encourage students to pursue careers in oral health	NH Department of Education (NH DOE)		
U. Require integration of oral health information in all workforce development and pipeline activities that receive DPHS funding	NH DHHS		
V. Establish educational pathways to encourage those who pursue careers in oral health professions to commit to practicing within the state	NH DOE, NH DHHS, UNE, NH AHEC		
W. Establish mentoring programs for students interested in the oral health professions	NH Dental Society, NH Dental Hygienists' Association		
X. Provide information to oral health professionals about pursuing roles in both professional and community education and training.	UNE, NHTI, NH Dental Society, NH Dental Hygienists' Association		
Y. Establish a website listing volunteer opportunities in public health settings	NH AHEC, NH OH Coalition, NH Dental Society, NH Dental Hygienists' Association, Bi-State Primary Care Association		

Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
Z. Provide training for oral health professionals who volunteer in public health settings	NH AHEC		
AA. Explore options for professional liability insurance for retired oral health professionals who volunteer in public health settings	NH Dental Society, NH Dental Hygienists' Association, Bi-State Primary Care Association, NHDOI		
BB. Facilitate licensure pathways for retired oral health professionals who volunteer in public health settings	New Hampshire Primary Care Workforce Committee		
CC. Develop and disseminate assessment and treatment protocols for individuals with special health care needs	NH AHEC, NH Medical Society, NH Dental Society, NH Dental Hygienists' Association		
DD. Investigate opportunities for, and use as appropriate, tele-dentistry and tele-medicine to access specialty input for treatment of high risk populations	UNE, NH Dental Society, NH DHHS		
<b>IV. Evaluate the implementation and success of the oral health workforce strategic plan</b>			
Activity	Potential Partners	Timeline (TBD)	Evidence Base Identified
A. Develop evaluation plans to correspond with identified activities.	NH DHHS		

## Appendix A

### Task Force Participants

- BJ Brown, RDH NH Technical Institute/Nursing Homes
- Malone Cloitre Southern NH Area Health Education Center
- Joan Fitzgerald, RDH NH Dental Hygienists' Association
- Alan Freeman, MD Harvard Pilgrim Health Care
- Carolyn Girard Claremont Community Dental Center
- Whitney Goode, DMD Avis Goodwin Community Health Center
- Martha Jean Madison NH Family Voices
- Nancy Martin, RDH NH Department of Health & Human Services/Oral Health Program
- Shannon Mills, DDS Northeast Dental Delta
- Julie Sackett Belknap-Merrimack Community Action Program
- Kneka Smith, MPH University of New England, College of Dental Medicine
- Richard Vachon, DDS NH Dental Society

## **Appendix B**

### **Advisory Committee**

- Lisa Bujno, NH Department of Health & Human Services, Division of Public Health
- Alisa Druzba, NH Department of Health & Human Services, Division of Public Health - Rural Health and Primary Care Section
- Mary Kaplan, Endowment for Health, NH Oral Health Coalition
- Nancy Martin, RDH, NH Department of Health & Human Services/Oral Health
- Stephanie Pagliuca, Bi-State Primary Care Association
- Margaret Snow, DMD, MPH, MBA, Division of Public Health Services, Office of Medicaid Business and Policy

## Appendix C

### Informant Interviewees

- Alisa Druzba NH Department of Health & Human Services, Division of Public Health/Rural Health and Primary Care Section
- A.J. (Skip) Homicz, DDS NH Dental Society Committee on Access
- Raymond Jarvis, DMD NH Board of Dental Examiners
- Susanne Kuehl, RDH NH Dental Hygienists' Association
- Ellen Legg, RDH NH Technical Institute
- Stephanie Pagliuca Bi-State Primary Care Association, NH Recruitment Center

## Appendix D

### **Focus Group Participants:**

- Sally Adams, RDH
- Virginia Barunas, RDH
- Mary Davis, RDH
- Rachel Giguere, RDH
- Kristine Hodsdon, RDH
- Cindy Northrup, RDH
- Helena Titilah, RDH
- Nancy Young, RDH
  
- Pamela Baldassarre, DMD
- Glenda Reynolds, DDS
- Richard Rosato, DMD
- Earle Simpson, DMD
- Richard Vachon, DDS
- James Williamson
- Drew Wilson, DMD

*To ensure a broad perspective of the issues clinicians representing private practice, community-based/public health practice, and school-based programs were invited to participate.*



## **Appendix F**

### **2010 SURVEYS OF ACTIVELY LICENSED**

### **DENTISTS AND DENTAL HYGIENISTS IN NEW HAMPSHIRE**

#### **Executive Summary of Findings**

In February of 2010, Bi-State Primary Care Association (BSPCA), in partnership with the State of New Hampshire's Department of Health and Human Services, undertook a project to survey Dentists and Dental Hygienists in the state of New Hampshire. The goal of the surveys was to explore issues related to the current and future dental workforce in the state, including issues of provider demographics, practice patterns, practice structure, compensation, reimbursement, motivations, and accessibility.

The surveys followed on a similar pair of surveys conducted in 2004, with comparisons between results being a goal where the surveys overlapped. The two current surveys were implemented and analyzed by the Community Health Institute / JSI under contract to BSPCA. Based on lists obtained from the New Hampshire Board of Dental Examiners, surveys were sent to all actively licensed dentists with a valid mailing address (996 total), and a random sample of 600 of the 1,269 actively licensed hygienists with valid mailing address. The response to the dentist and dental hygienist surveys were 51% (495 responses) and 59% (347 responses) respectively, correcting the sample for a small number of undeliverable surveys in both mailings. In addition to the survey results, a crosswalk of the entire licensing list in 2004 and 2009 was also conducted to examine trends in the underlying pool of licensed providers that form the survey universe. While the dentist crosswalk provided useful insights, the hygienist crosswalk identified gaps in the 2004 license list that did not allow for a similar analysis.

Examining the results of the two surveys collectively, the findings point to a dental workforce that is likely to experience significant changes in the coming years. The most notable issue was the aging of the dentist workforce, where nearly half of the respondents were over age 55, and nearly 40% reported and intent to leave practice within the coming 10 years. Both of these findings represent notable increases in the proportion of dentists in these categories compared to 2004, since which time the total pool of actively licensed dentists has already fallen by 15% as the number of newly licensed dentists in the state lagged behind the number that had dropped off the licensure list.

Further limiting workforce, an increased portion of dentists now work part time (27%) compared to 2004; an effect seen primarily in dentists nearing the end of their practice years. The likelihood of retirement within 10 years seems relatively similar for general/pediatric dentists and for specialists. The issue of dentist shortage is likely to impact the rural areas of the state first, however, as these areas already have proportionally fewer dentists compared to the population and those located in rural areas are considerably older than those in non-rural areas. Still less than 10% of dentists overall reported that they felt there is a shortage of dentists in their community. Here too, rural dentists were four to five times as likely to feel there was a shortage (15-20% compare

to 4% in non-rural areas). Over 96% of dentists statewide still report that their practice is accepting new patients each month.

By contrast, the state's hygienist workforce is considerably younger than that of the dentists, and has been in practice for fewer years. Only one quarter of hygienists are over age 55 – half the proportion amongst dentists, and they are less likely to report a plan to leave practice in the next 10 years. There appears to have been an influx of hygienists licensed in NH within the past 10 years, representing nearly 27% of the workforce; however, the actual change in total licensed hygienists cannot be calculated due to issues with the 2004 list as noted above.

Amongst hygienists, the desire to practice independently from dentists and to have a separate licensing board was expressed in a number of open ended comments. This may also be reflected, to some degree, in the greater proportion of hygienists than dentists that perceive a shortage of dentists in their community. At present, very few hygienists (less than 4%) feel there is a shortage in their own profession. Many of the hygienists' open-ended comments suggested that market saturation was more of an issue in terms of limited employment options, lack of benefits, and falling pay. Fifteen percent (15%) of hygienists reported working less hours than they would like to, jumping to 21% for the nearly half of hygienists that work a part time schedule. Over 90% of General/Pediatric dentist's practices, and nearly 30% of specialty practices, currently employ hygienists to some degree.

It is also notable that female providers represent an increasing portion of the dental workforce and this is likely to accelerate in the coming years. Over 20% of current dentists are female, up from 16% in 2004, and the female portion of the workforce is much younger. Nearly 55% of male dentists are over the age of 55, compared to just 22% of female dentists. This will shift the gender distribution of dentists sharply as dentist retirement accelerates in the next decade. Nearly 100% of current hygienists are female.

Most of the state's dental workforce is based around the private practice model, representing the primary practice setting for approximately 92% of both dentists and dental hygienists. Also, most of the capacity of the dental workforce is dedicated to direct patient care, representing 91% of total dentist hours and 93% of hygienist hours. Many providers engage in other professional activities but they represent a small amount of total professional time. For example, although nearly 40% of dentists and 27% of hygienists spend some of their time on community education and outreach, this represents less than 2% of reported time worked for both groups. Many also reported providing education and outreach on a volunteer basis.

Understanding the factors that influence the initial and long-term attractiveness of the dental profession is a key factor in shaping the workforce available. Hygienists were asked about their motivations for entering the field of dental hygiene, and the largest proportion (42%) selected the sense of service and helping people as the primary factor in their decision. Similarly, working with patients and their families was the most positive motivation for staying in the field of hygiene. Job flexibility was the next most commonly cited reason for entering dental hygiene, but earnings potential was the second most positive factor for staying in the field. Just over half of full-time hygienists (53%) earn between \$40,000 and \$60,000, with most of the remaining group (43%) earning over \$60,000. Availability of various types of benefits were also examined.

Almost no hygienists cited good benefits as a reason for entering the field and it had a net neutral effect on their desire to remain in the profession. Looking at the specific benefits offered, a question asked of both dentists and hygienists, the two groups ranked benefits available in a similar order, though hygienists perceived a lower rate of availability in most comparable benefit categories within their practice compared to dentists. This is likely the result of many hygienists being employed on a part time basis for which benefits may not be offered even if that benefit is offered within the practice overall. Paid holidays and paid vacation were the two most common benefits offered. Retirement contributions were offered to just over 60% of hygienists – the second most common benefit (the category was not asked specifically of dentists). Health and dental insurance and paid sick time showed the greatest differences in availability between dentists and hygienists. It is also notable that disability insurance was available to only 16% of both dentists and hygienists through their practice, in spite of issues related to the physical demands of the job and concerns over injury and disability being frequently cited, particularly amongst hygienists. The physical demands of the profession was one of two factors that had a net negative impact on hygienists' overall desire to stay in the profession, along with the perceived opportunity for promotion and advancement.

Another set of key factors related to understanding and shaping the dental workforce are issues related to the pipeline of providers. This can be examined in terms of geographic origin, training, and ultimately the decision to practice in New Hampshire. Both dentists and hygienists were asked about these factors, with notably different results between the professions. Dental Hygienists are far more likely to be born in the state compared to dentists, with New Hampshire natives accounting for 41% of hygienists (the largest portion) compared to just 15% of dentists, amongst whom the state ranked third behind those born in Massachusetts and New York. Similarly, only 14% of dentists completed their undergraduate degree in New Hampshire.

This can best be compared to the proportion of hygienists that completed their dental hygiene degree in the New Hampshire, in that most hygienists have an Associate's (76%) or Bachelor's (20%) level education and there is no clinical training venue for dentists in the state. Again one sees a much greater proportion of hygienists, 45%, earning their degree in New Hampshire. New Hampshire relies most heavily on Massachusetts in terms of the clinical training of its dentists, with nearly 40% of the state's dentists completing their dental degree there. Of those that completed a dental residency program, again the largest group, over one quarter, did so in Massachusetts. A significant proportion of both dentists and dental hygienists with active New Hampshire licenses also maintain active license status in Massachusetts, representing 26% and 21% of the provider groups respectively.

When asked what was the initial reason for coming to New Hampshire to practice, personal connections to the state/region was the dominant factor for both dentists (48%) and hygienists (66%). Dentists were far more likely to cite professional reasons for coming to the state, with practice environment and professional opportunities accounting for nearly 40% of dentists, compared to less than half that proportion (19%) of hygienists.

Beyond the size and nature of the workforce, financial access is an important factor in determining the availability of dentists. Dentists were asked about the proportional payor mix of their practice within several distinct payor categories based on the percent of patients seen. Nearly 90% of dentists reported accepting both private insurance and self-pay patients paying full charges, with these two payor classes accounting for 80% of all patients seen (54% and 26% respectively). For those without insurance and unable to pay, financial access is typically obtained either through Medicaid, for those that qualify, or dentists accepting discounted payment, asked in terms of a formal sliding fee arrangement. While 48% of dentists reported accepting Medicaid to some degree, this accounted for only 8.4% of patients seen. Similarly, 17% of dentists reported that a portion of their patients were seen under a sliding fee discount arrangement, but this represented just 2.5% of patients seen.

The rates of insurance acceptance and the overall payor mix was relatively similar between General/Pediatric dentists and dental specialists. Looking just at general dentists that also report seeing children under 1 for their first dental exam, it is encouraging that a much greater proportion (78%) report accepting Medicaid. It is also notable that rural parts of the state have different financial access issues than the non-rural areas. Rural dentists accept private insurance at similar rates to non-rural dentists, but this represents a much smaller portion of total patients in rural areas. Conversely, self pay patients represent a greater portion of total patients in rural areas despite similar or lower rates of acceptance of full self pay in rural areas. Dentists in the more rural parts of the state are far more likely to accept Medicaid and sliding fee compared with those in non-rural areas and see somewhat more Medicaid patients as a proportion of the total.

The results of the survey highlight both the challenges and potential opportunities and solutions that lie ahead in terms of New Hampshire's dental workforce and access to dental services. While it appears that the state faces a coming wave of retirement amongst the aging pool of dentists currently practicing in the state, the results also point to opportunities in terms of increasing the proportion of dentists cultivated within the state's population and pool of undergraduates, and highlighting factors that ultimately influence dentists to practice here in the future. Also, the dentist workforce can be supplemented by the pool of dental hygienists, many locally born and trained that appear eager to expand their practice opportunities and role in the dental care available. Cultivating this opportunity, however, may require rethinking the relationship between dentists and hygienists, and the employment arrangements, benefit structure, and physical environment under which they work. Also, considering factors that improve the geographic distribution of dental workforce within the state and increase the diversity of practice settings and payment options may help to alleviate issues in the rural areas likely to feel the greatest short-term impact regarding the dental workforce.

## **Appendix G**

### **2010 SURVEY OF ACTIVE LICENSED DENTISTS IN NEW HAMPSHIRE**

#### ***CHARTBOOK OF RESULTS***

This chartbook presents the findings of a survey of dentists, fielded in February 2010. The survey was conducted as a project of Bi-State Primary Care Association in partnership with the State of New Hampshire's Department of Health and Human Services. The survey was implemented and analyzed by the Community Health Institute / JSI under contract with Bi-State. The survey was mailed in February to all actively licensed dentists in NH with a valid mailing address, based on a list obtained from the New Hampshire Board of Dental Examiners as of December 15<sup>th</sup>, 2009. A total of 996 surveys were mailed, of which 25 were returned as undeliverable and dropped from the universe as corrected addresses could not be obtained. This resulted in a revised total universe of 971 surveys. A reminder postcard was sent to all non-responsive dentists approximately 3 weeks after the original surveys were sent and responses were received through the end of March 2010.

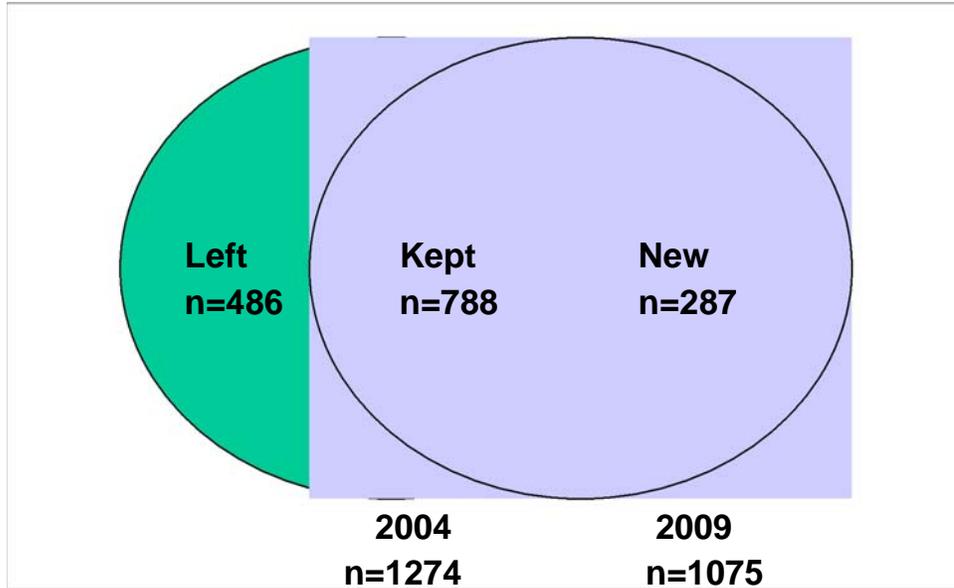
The survey resulted in 495 responses, or an overall response rate of 51%. The responding dentists were compared to the non-responding group based on parameters in the licensing list. Overall the response appears highly representative by specialty, with slightly more general dentists responding (75% vs. 73% amongst non respondents). Examining the license issue dates, it was noted that the average years licensed was somewhat higher for respondents at 21 years compared to 16 years for non-respondents.

The responses were scanned in electronically and incorporated into a statistical database for analysis using SPSS. Data were cleaned to assure skip patterns and survey logic was followed, and key variables were recoded as needed for analytic groupings.

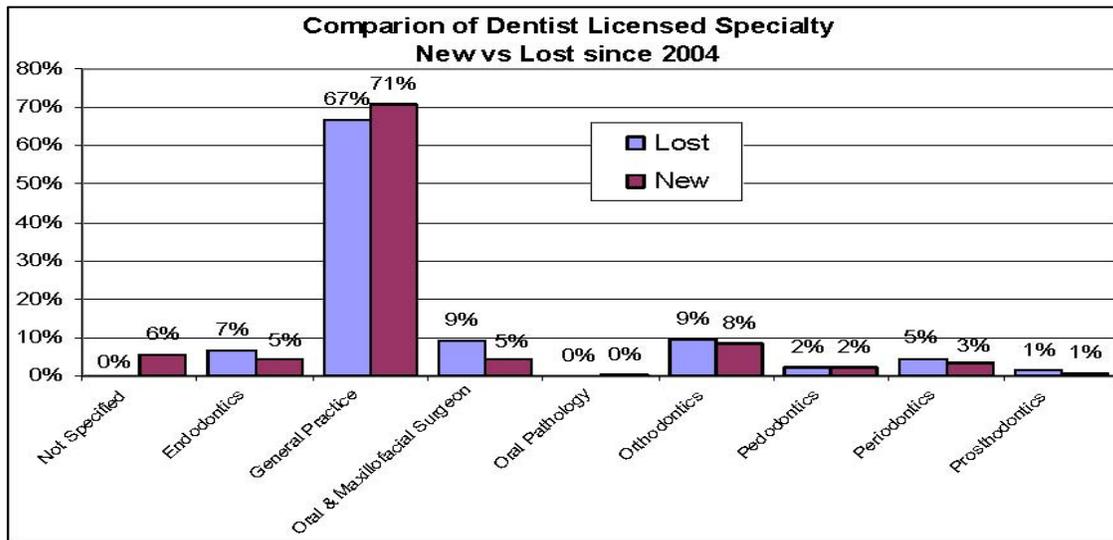
Where possible and valid, results were compared to the results obtained from a similar survey conducted in 2004. Because many of the questions in the current survey were new or modified from the 2004 survey, comparisons were not always possible.

In addition to statistical analyses of the survey results, a 'crosswalk' analysis of the entire dentist licensing list was conducted between the list obtained for this survey and the list used in 2004. By linking dentists based on their license number, it was possible to analyze the nature of dentists that had left practice in the state as compared to those that were newly licensed in the state.

## Crosswalk of 2004 to 2009 Dentist Licensure List



- In the roughly five and a half years between the dates the two lists were produced (May 19, 2004 to December 15, 2009) the pool of actively licensed dentists in NH decreased by 199 providers or -15.6% of those on the list in 2004.
- The change was the net result of 486 providers dropping off the 2004 licensure list and 287 new providers being added since the 2004 list was produced.
- Approximately 62% of the providers licensed in 2004 remained on the 2009 list.

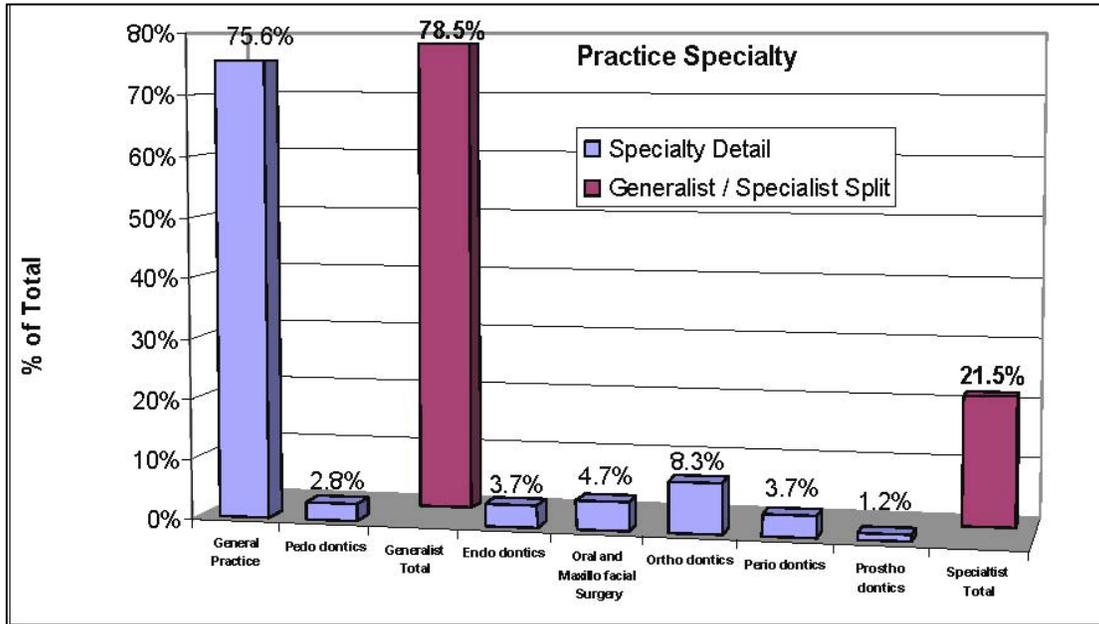


- Slightly more of the dentists new to the state since 2004 are General Dentists compared to those that were lost (however note that 6% of new dentists had no specialty listed, which was not an issue in 2004).

## 2010 New Hampshire Dentist Survey Results

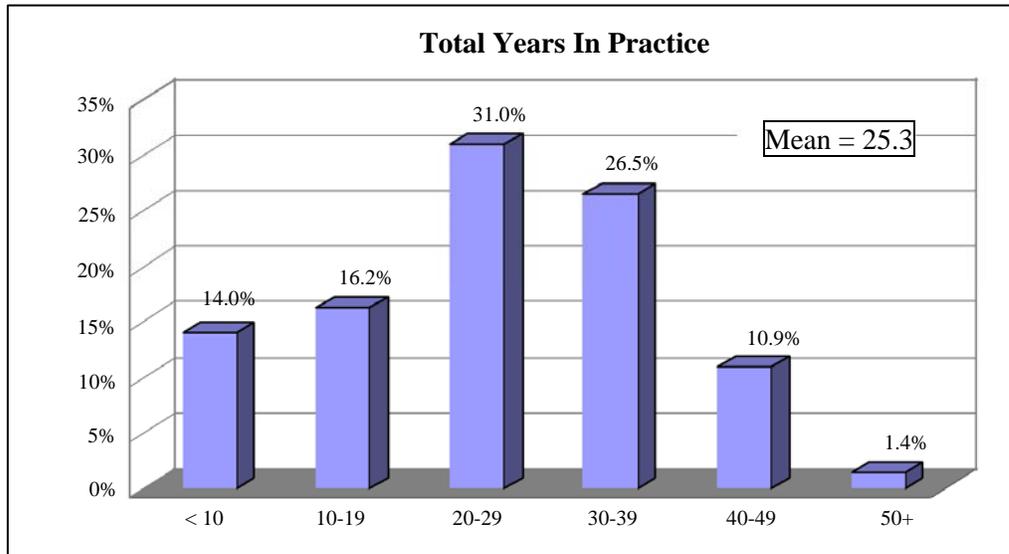
*(based on December 2009 Licensure List)*

### Dental Specialty:

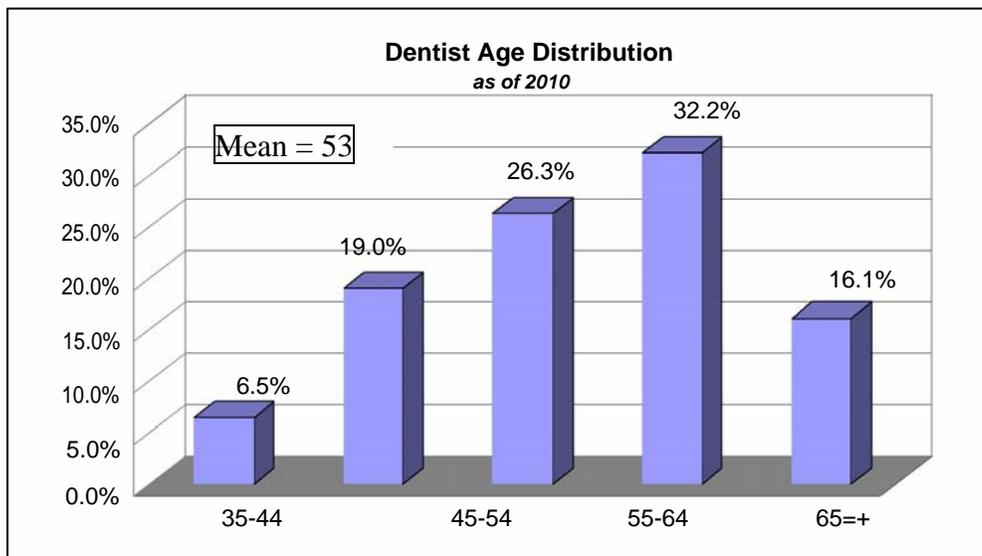


- General Practice and Pediatric dentists represented 78.5% of the survey respondents. These two specialties are grouped as they are considered the primary point of dental contact and routine care for the adult and juvenile population.
- The proportion of General Practice dentists remained largely unchanged since 2004 when they represented 76% of the total. Pediatric dentists were slightly lower than 2004 when they represented 4% of the total. Specialists were slightly higher (20% in 2004).
- Note: Although the survey permitted respondents to allocate their time across multiple specialties, the omission of a general dentistry response category prevented this data from being used in the analysis. As such, specialty data for this report is based on the specialty under which the provider was listed in the licensure list.

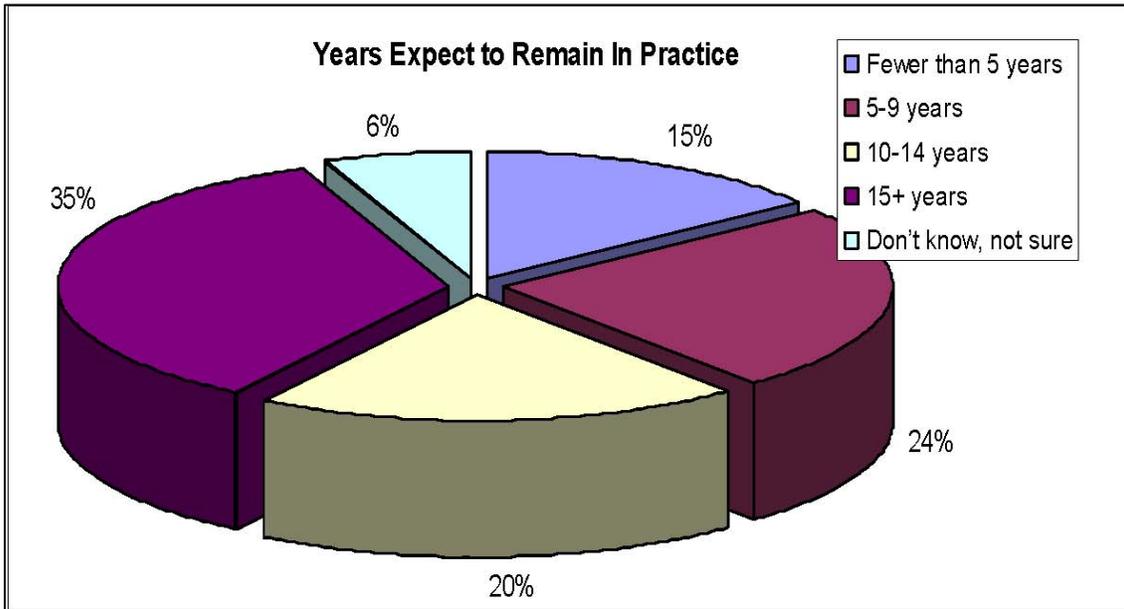
## Dentist Tenure, Age, and Years to Remain in Practice:



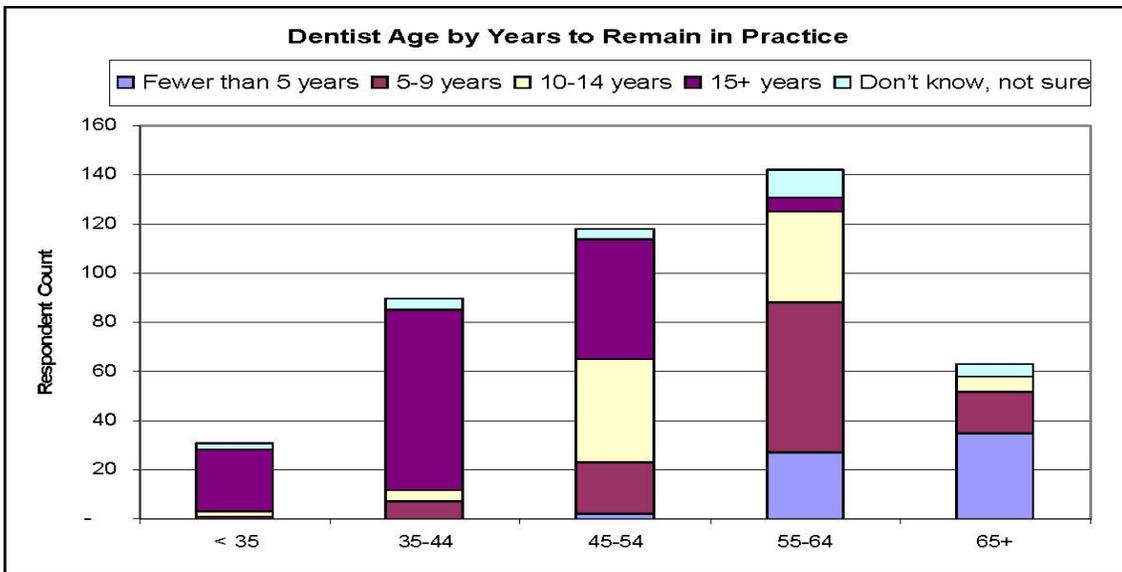
- Nearly 40% of NH dentists have been in practice for more than 30 years, with a mean practice tenure of just over 25 years overall.
- 4.6% of dentists with an active NH dental license reported that they are not currently practicing. Of these, just over half stated that they were retired, with those having left the state but still maintaining active license status being the next most cited reason.



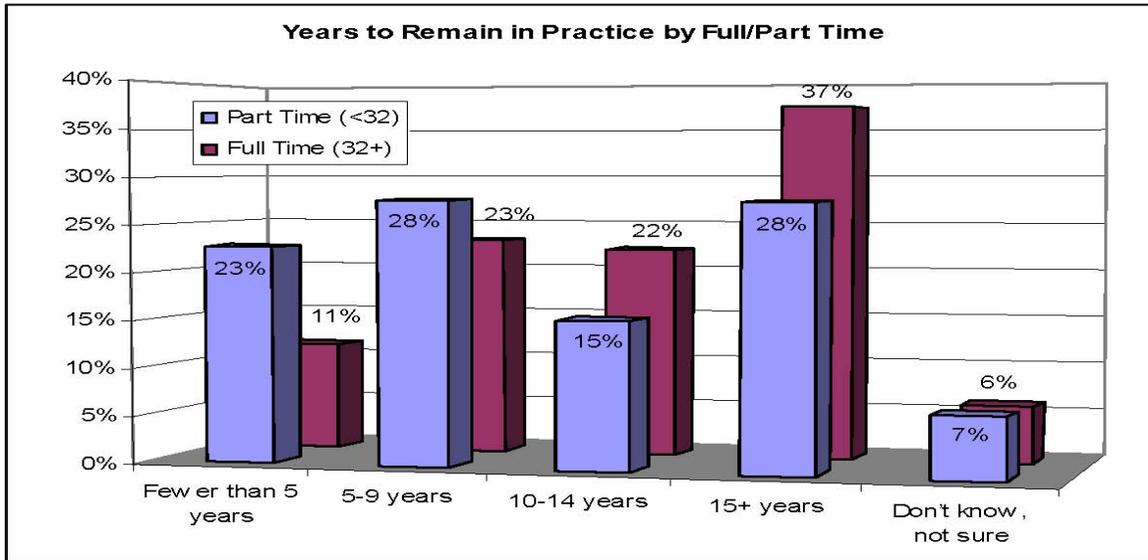
- Nearly half of NH dentists are over age 55, with steep drop in the age curve for those in the younger age categories. The mean age for dentists in the state is 53 years. Note that the average license date for respondents suggests that they may be somewhat older than non-respondents.
- The age curve has shifted towards the older age groups since the 2004 survey, when the largest category was those 45-54 years old (37%), while the largest group is now 55-64 years old (32%). Only 35% of dentists were over age 55 in 2004. The proportion over age 65 has more than doubled from 7% in 2004 to over 16% now.



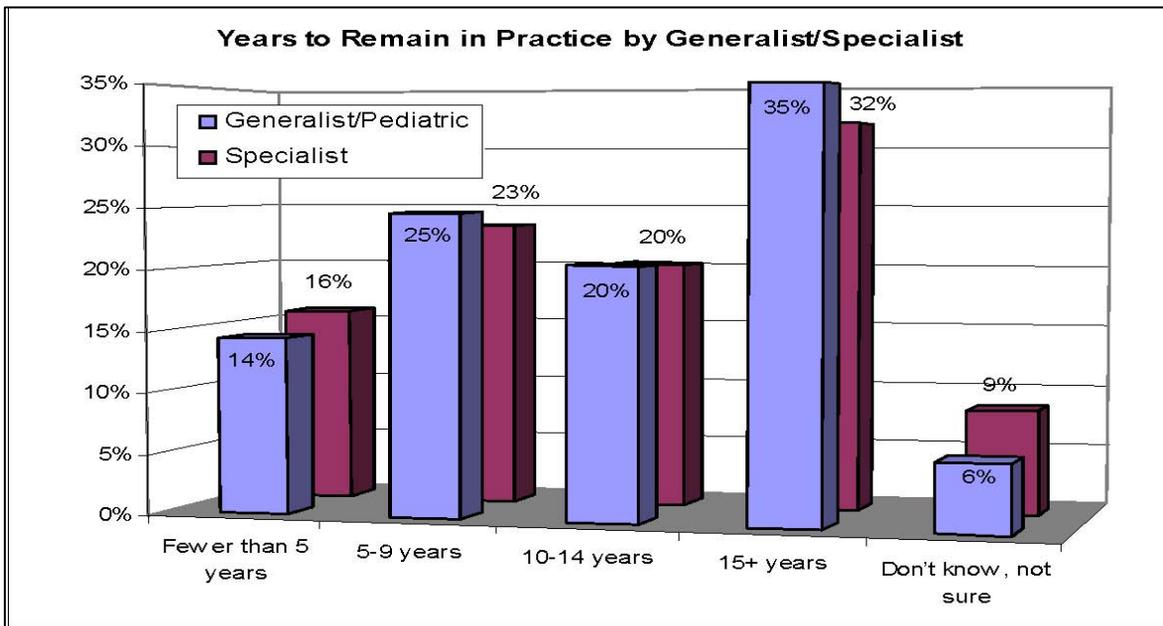
- Nearly 40% of current dentists expect to leave practice within the next 10 years, compared to 30% in the 2004 survey. Just under 60% of current dentists expect to leave practice within 15 years.



- Not surprisingly, the length of remaining practice is strongly tied to age. The great majority of those ages 55+ intend to leave practice within 10 years. This pattern, combined with the fact that replacement is not keeping pace with loss as noted in the crosswalk analysis, predicts steep declines in dentists over next 10-20 years unless efforts are made to recruit new providers to NH.
- The greatest level of uncertainty regarding years to remain practicing is seen in those 55-64 years old.

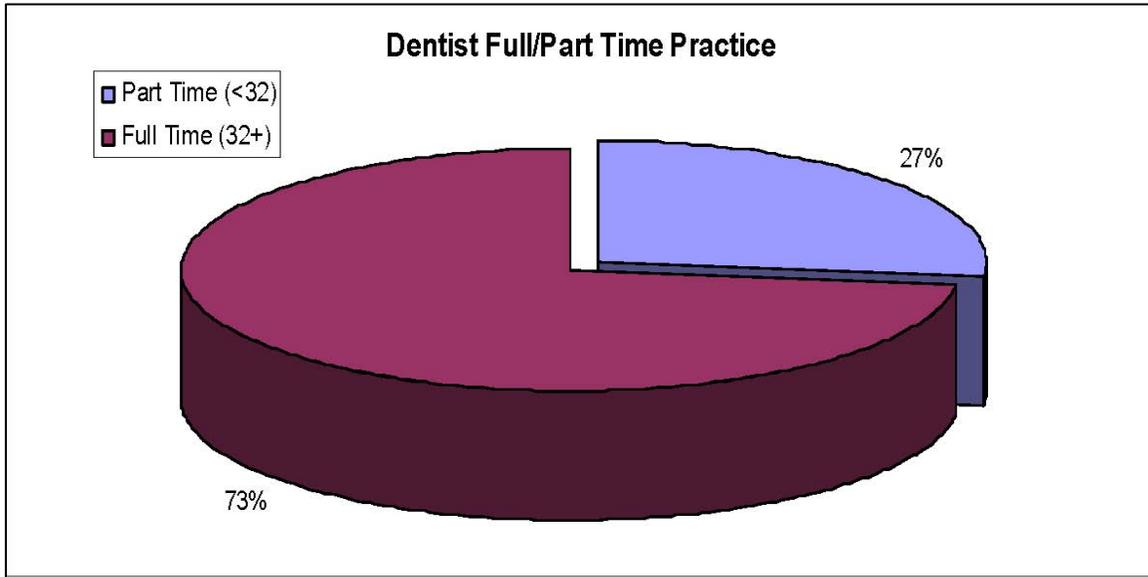


- Further exacerbating the potential workforce issues going forward, the results show that dentists appear to reduce practice hours in the final 10 years prior to retirement. This effectively reduces the workforce capacity beyond what is indicated by the count of dentists.

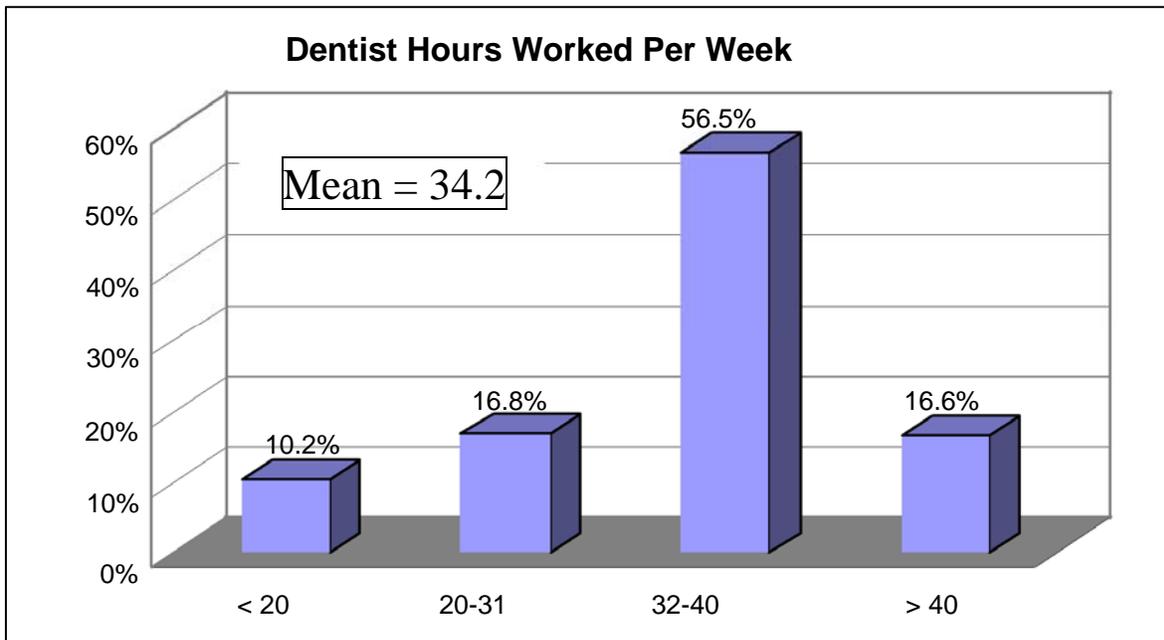


- 39% of both General/Pediatric Dentists and Specialists expect to leave practice within 10 years.
- General/Pediatric dentists show a slightly higher overall profile of years to remain in practice, and are slightly more certain of the number of years they plan to remain in practice.

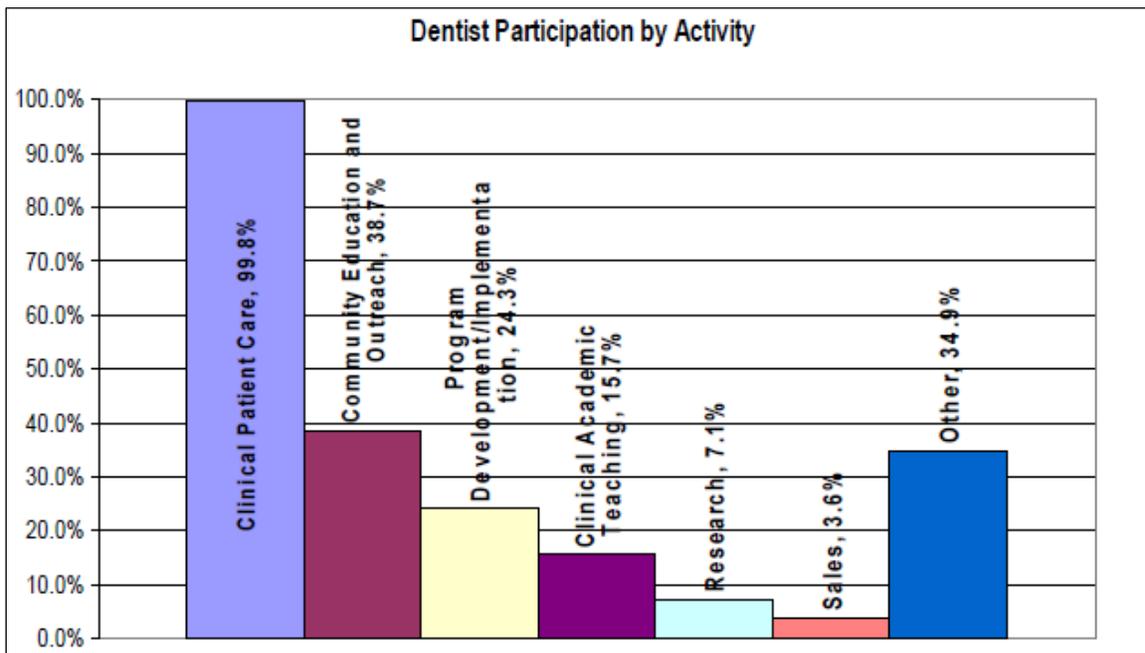
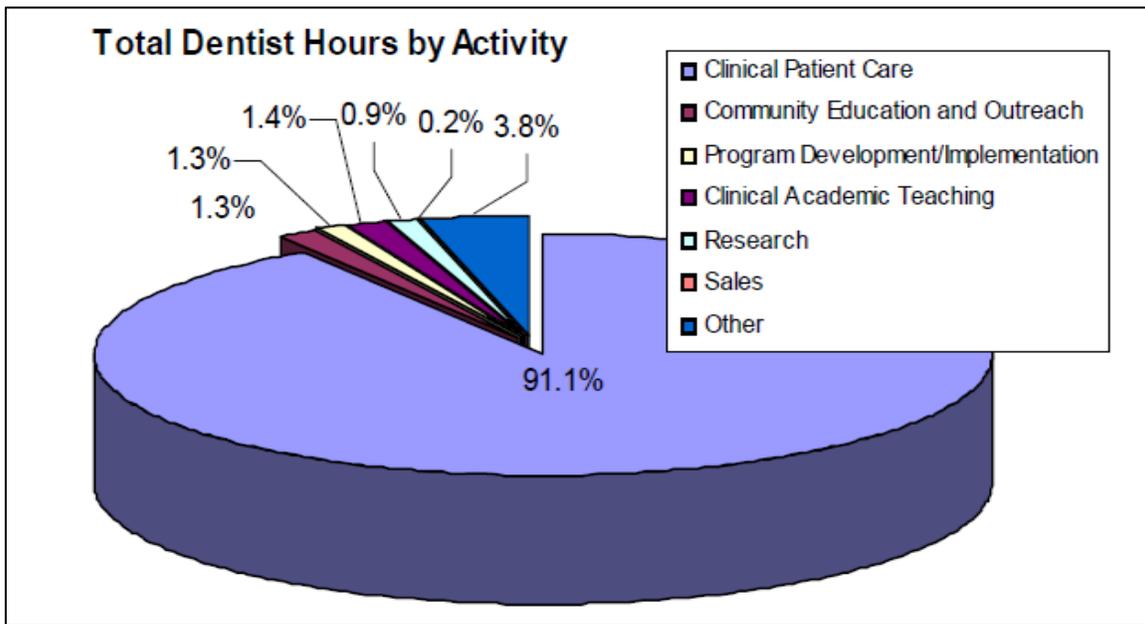
**Dentist Practice Patterns, Activities, and Setting:**



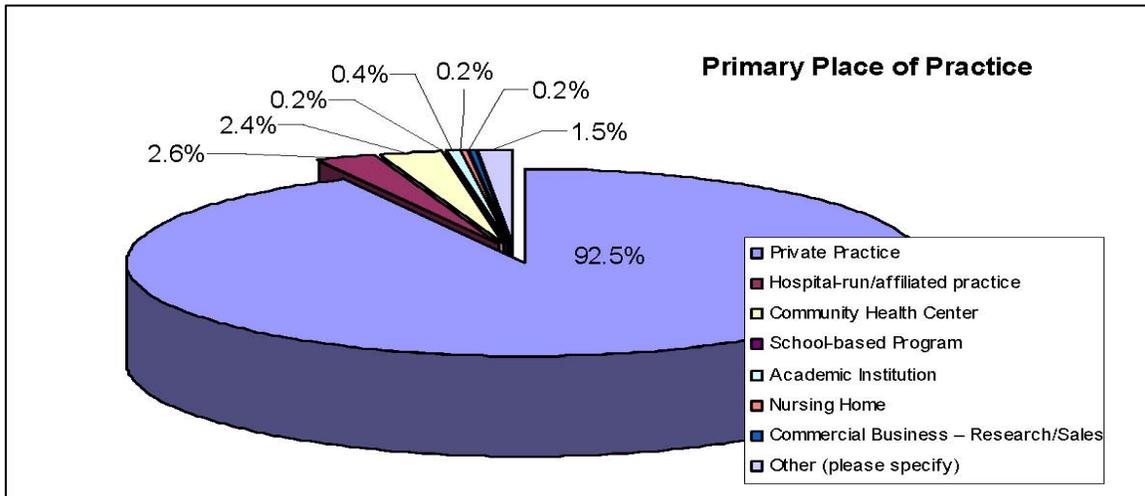
- Nearly three-quarters of dentists work ‘full time’ defined as 32+ hours per week.
- The proportion of full time dentists is down from 84% in the 2004 survey.



- More than 16% of dentists report working more than 40 hours per week. Approximately 10% of dentists work < 20 hours per week.
- Looking at detailed responses (not pictured), the most common work schedule is a 4-day week (32 hours), with a 40 hour week being next most common. The mean for dentists is just over 34 hours per week.

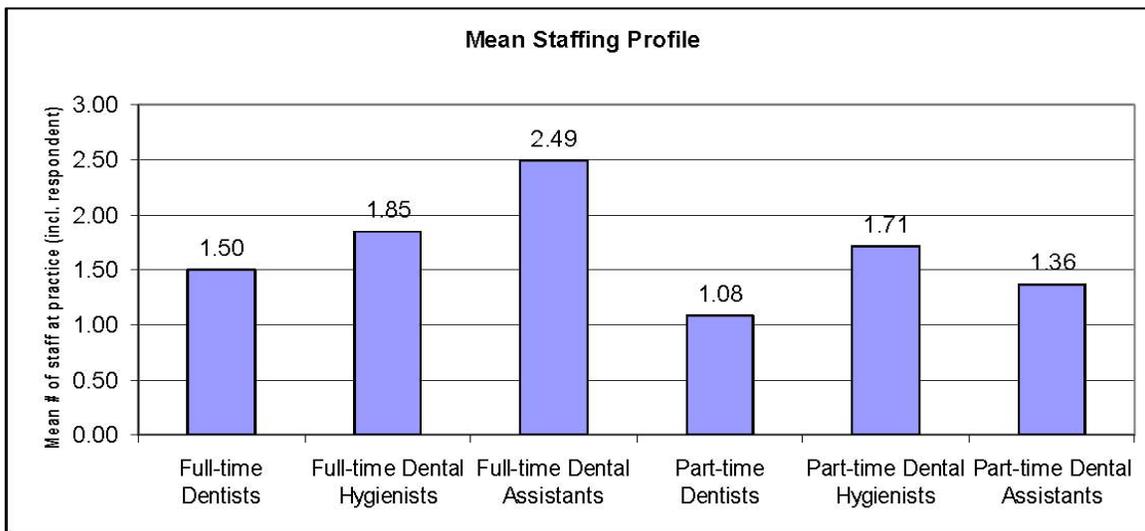


- Nearly all dentists (99.8%) provide some degree of clinical care.
- While nearly 40% of dentists provide education/ outreach and 24% engage in program development, each of these activities account for only about 1% of total practice hours overall. All non-clinical activities account for less than 10% of dentist time combined.
- The ‘Other’ category largely consists of providers specifying hours spent on office management and business operations.

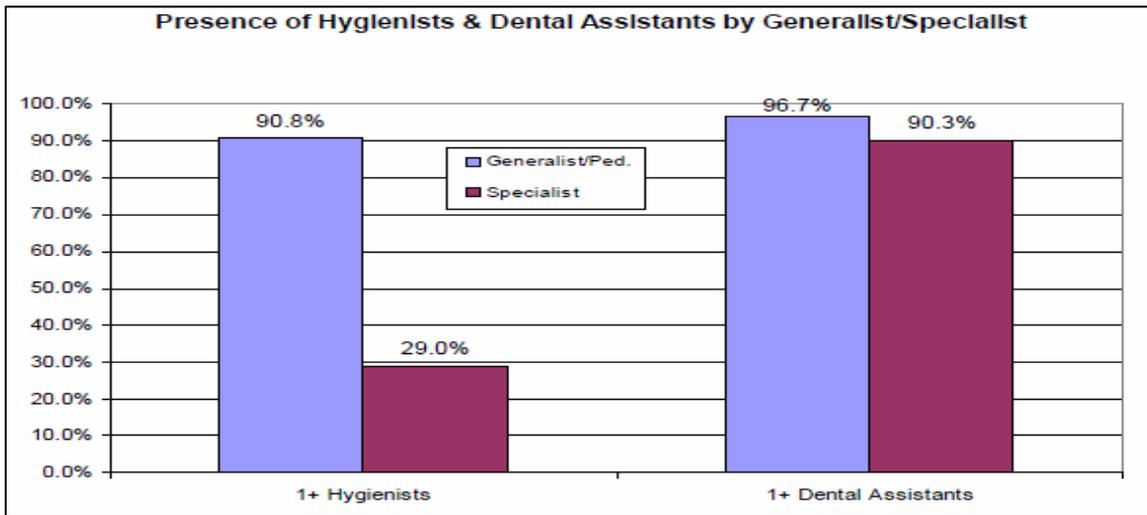


- 92.5% of dentists work in the Private Practice setting.
- About one-third of the remaining 7.5% of dentists work in a hospital affiliated practice and one-third work at a Community Health Center.
- The ‘Other’ category consists primarily of settings like correctional facilities and military/Veteran’s Administration settings.

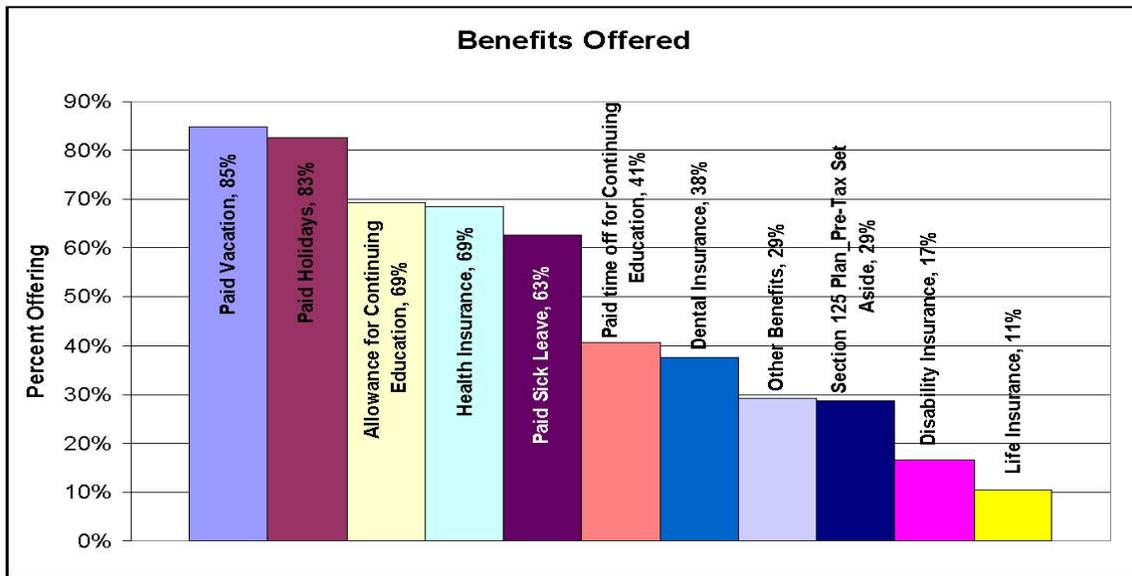
**Practice Structure and Benefits:**



- NH practices averaged 1.5 full time dentists and just over 1 part time dentist, with higher levels of Hygienists and Dental Assistants. Part time information cannot be translated to FTE as respondents were not asked to quantify part time hours.



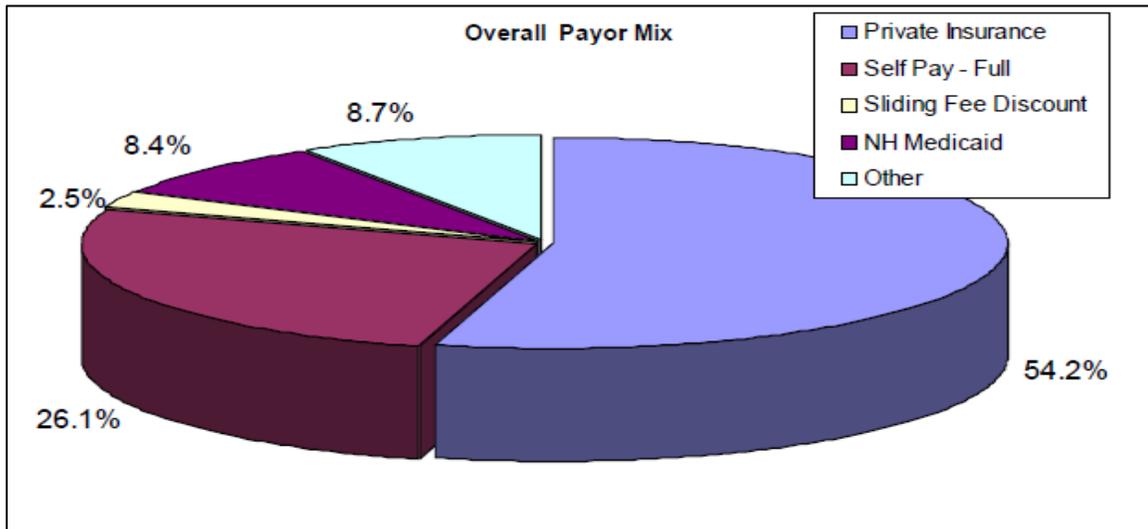
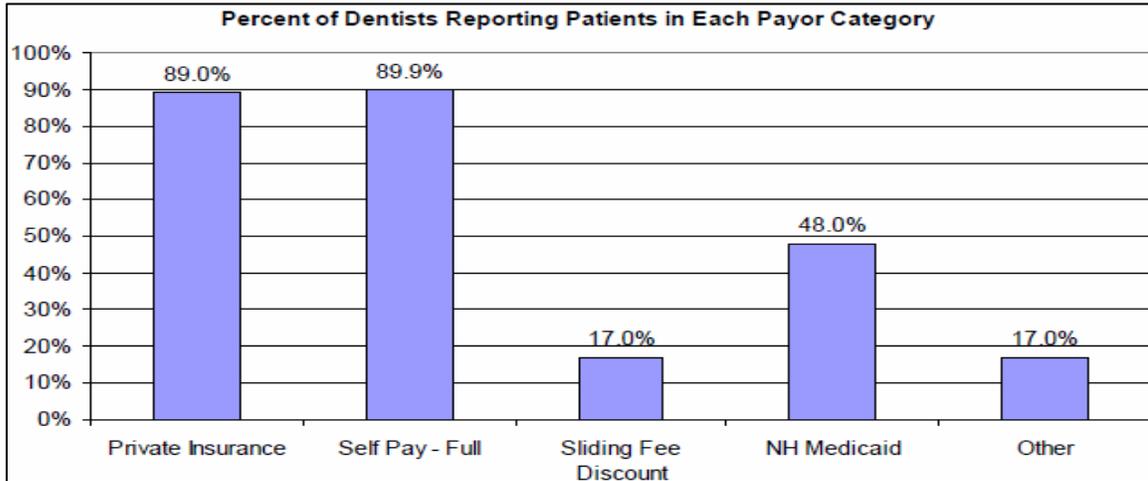
- Just under 10% of General/Pediatric dental practices employ no Hygienists.
- Less than one third of Specialist practices employ hygienists. Examining this by specialty (not shown), about half of these specialists are Periodontists, but hygienists were also reported by some Orthodontists, Prosthodontists, and Oral/Maxillofacial surgeons (in their practice overall).
- Dental Assistants are present in most General Dental practices and all but 10% of Specialist practices.



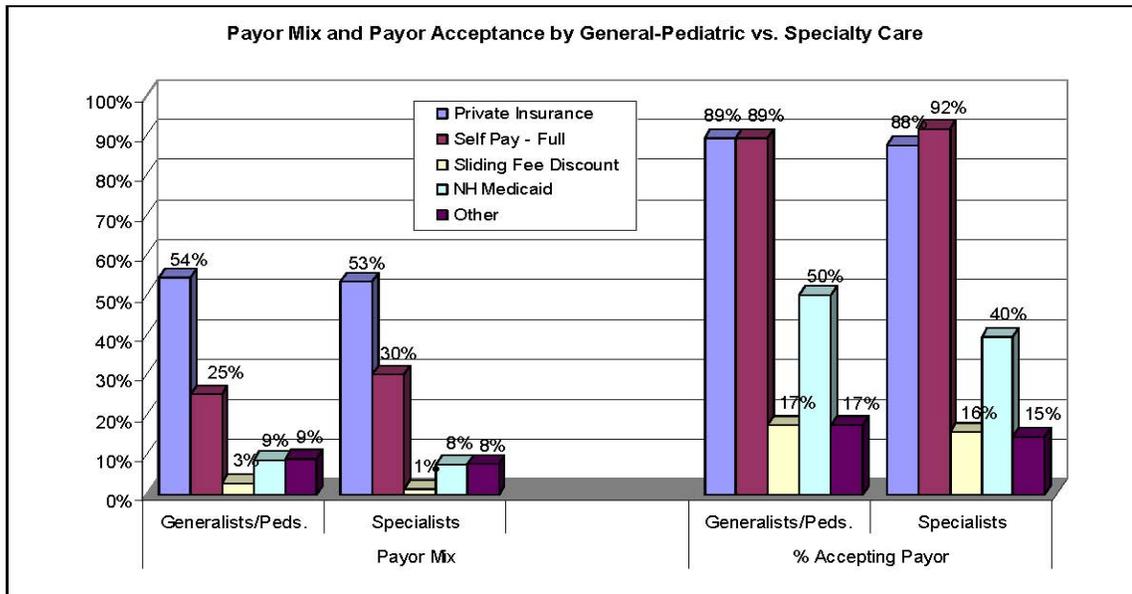
- The most frequently offered benefits were related to paid time off, including Paid Vacation and Paid Holidays, which were offered by 85% and 83% of practices respectively. Paid sick leave was offered by 63% of practices.
- Disability Insurance is the second lowest benefit category offered despite physical demands of dental practice.
- Just under 70% of practices offer an allowance for continuing education, but only 41% offered paid time for pursuing continuing education

- 69% of practices offer health insurance. 38% report offering dental insurance, however many respondents cited offering free or discounted dental care to staff and their families under “Other Benefits.”
- Other benefit categories included retirement/pension/401k/SEP/IRA contributions, profit sharing, uniform cleaning service, and free/discounted dental services.

**Payor / Insurance Acceptance and Patient Payor Mix:**

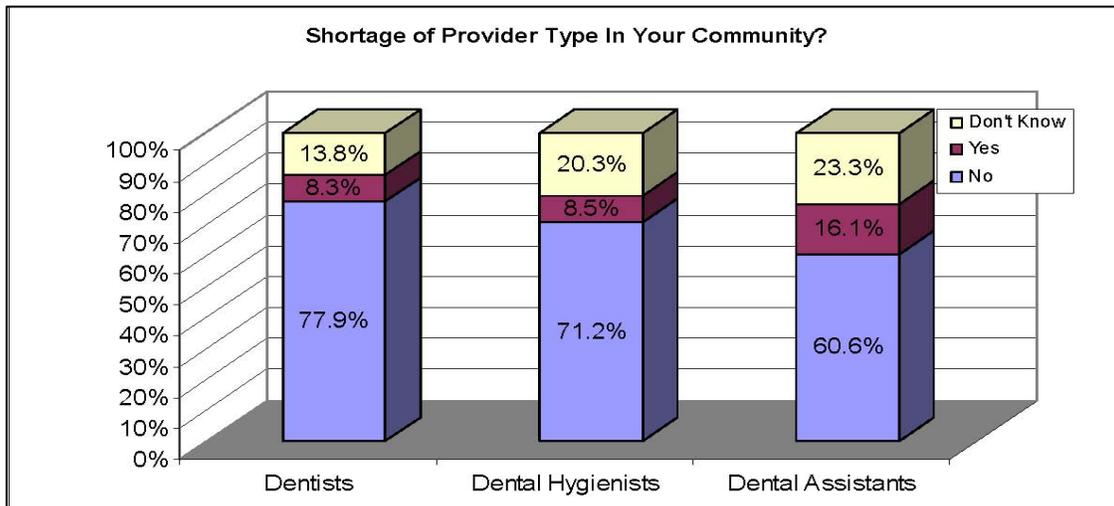


- Approximately 90% of dentists report accepting private dental insurance and full self pay (undiscounted) patients. Combined, these two payor categories account for 80% of total patients seen, though private insurance accounts for more than twice the proportion of patients seen compared to self pay (54% vs. 26% respectively).
- Nearly 50% of dentists report New Hampshire Medicaid in their payor mix, but this represents only 8.4% of total patients seen.
- 17% of dentists report offering a Sliding Fee discount (a formal up-front discount based on the patient’s income and ability to pay); however this covered only 2.5% of patients seen.

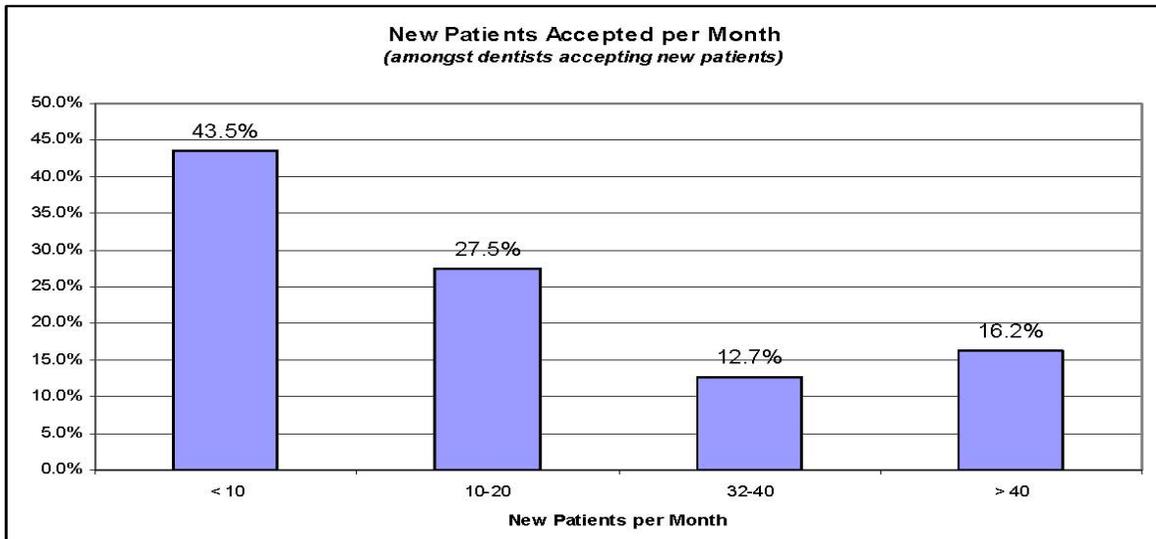


- Payor acceptance of insurance types is similar between General and Specialist dentists.
- General Dentists are 10% more likely to accept Medicaid, but the Medicaid percent of patients seen is approximately the same between the two groups (8-9%).
- Looking at General/Pediatric dentists only, 77.6% of those that see children under age 1 for their first dental exam accept Medicaid, compared to only 44.7% of those that do not see children under 1 for their first exam (not shown)

**Factors Related to Dental Access:**



- Amongst those dentists that felt they knew about the workforce in their community, approximately 10% felt that there were shortages of Dentists and of Dental Hygienists.
- Approximately one in five dentists stated that they did not know if there was a shortage of Hygienists and almost one quarter did not know if there was a shortage of Dental Assistants.

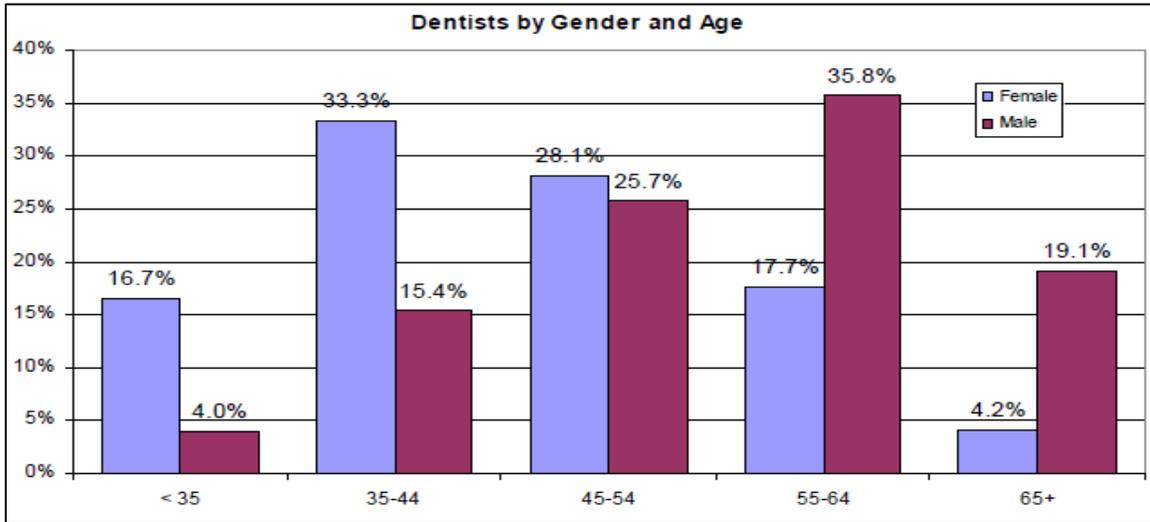


- 96.2% of dentists reported accepting some level of new patients each month. General and specialist dentist reported approximately equal rates of accepting new patients. Amongst those that accept new patients, 43.5% accept less than 10 new patients per month, and 71% reported seeing less than 20 new patients per month (or approximately one per weekday).

Other Responses Related to Dental Access:

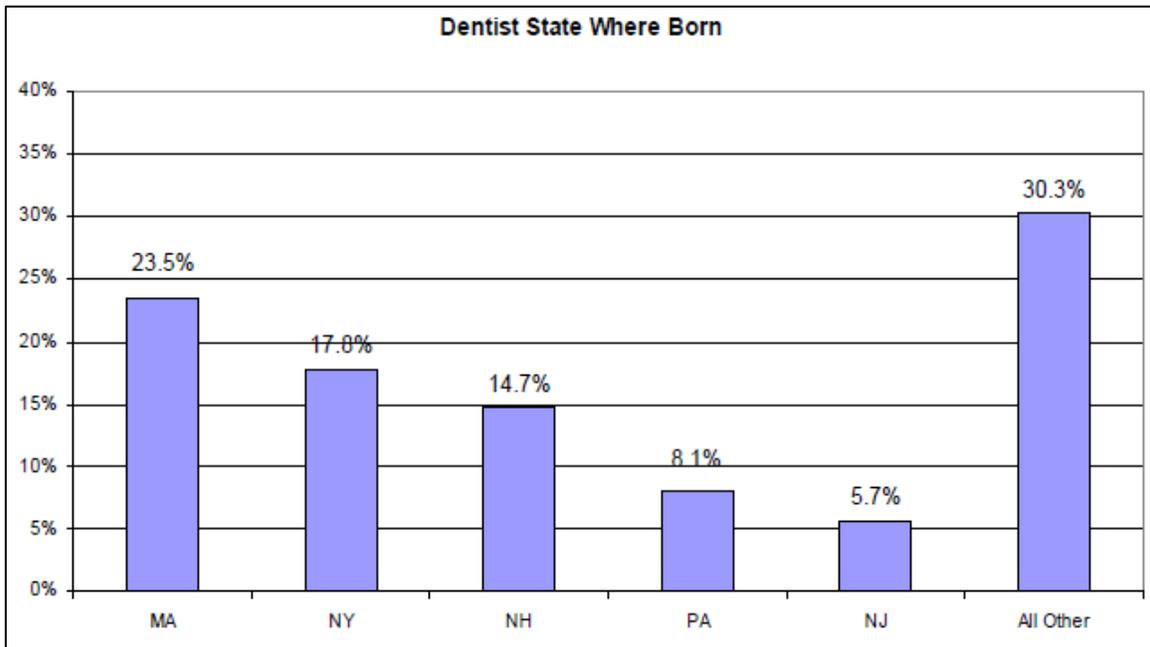
- 28.5% reported that their practice offers evening or weekend hours. As the question asked about the practice overall, it is unclear what proportion of dentists work these hours, or how many hours are available.
- 19% of General/Pediatric dentists see children under the age of 1 year for their first dental exam. Of those that do not currently see this population for their first dental exam, 21.8% stated that the ADA/AAPD guideline regarding children being seen by age 1 has influenced the likelihood that they will see this population for initial exams in the future.
- 45.6% of dentists report that they provide community outreach or clinical care on volunteer basis. This includes a wide variety of programs such as Dentists with a Heart, Cheshire Smiles, Give Kids a Smile, Traveling Adult Dental Services, etc., and providing care in community settings including schools, shelters, refugee programs, senior centers, and Community Health Centers.
- 26.9% of dentists speak a language other than English – approximately the same as in the 2004 survey. This represents a wide range of languages, with French being the most commonly cited, followed by Spanish.

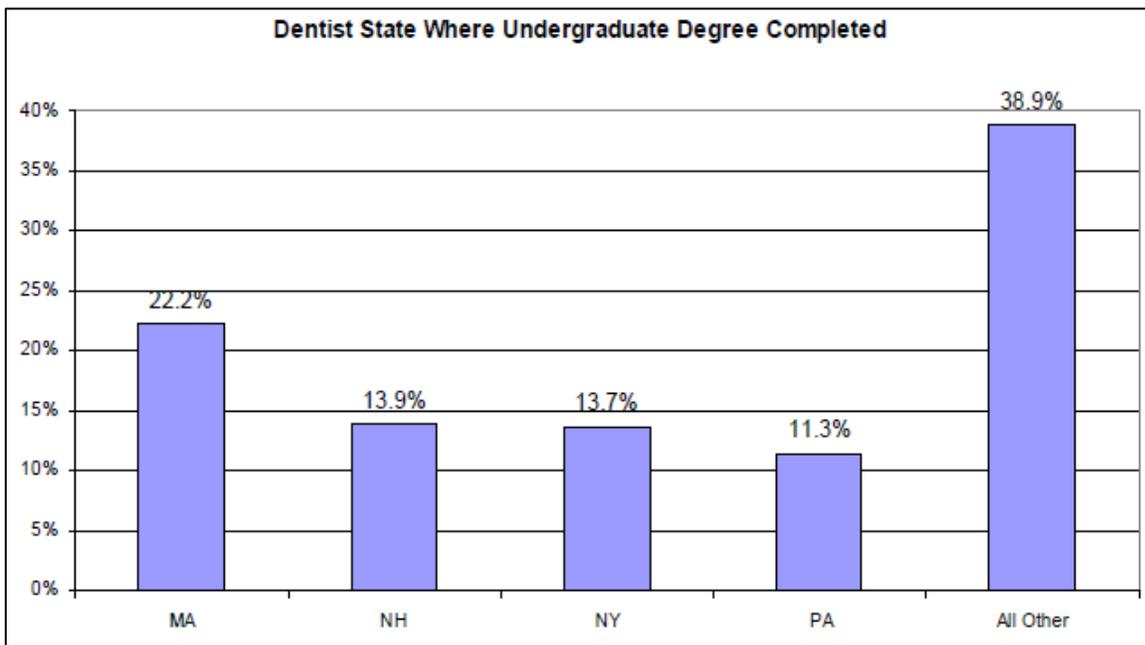
**Dentist Gender:**



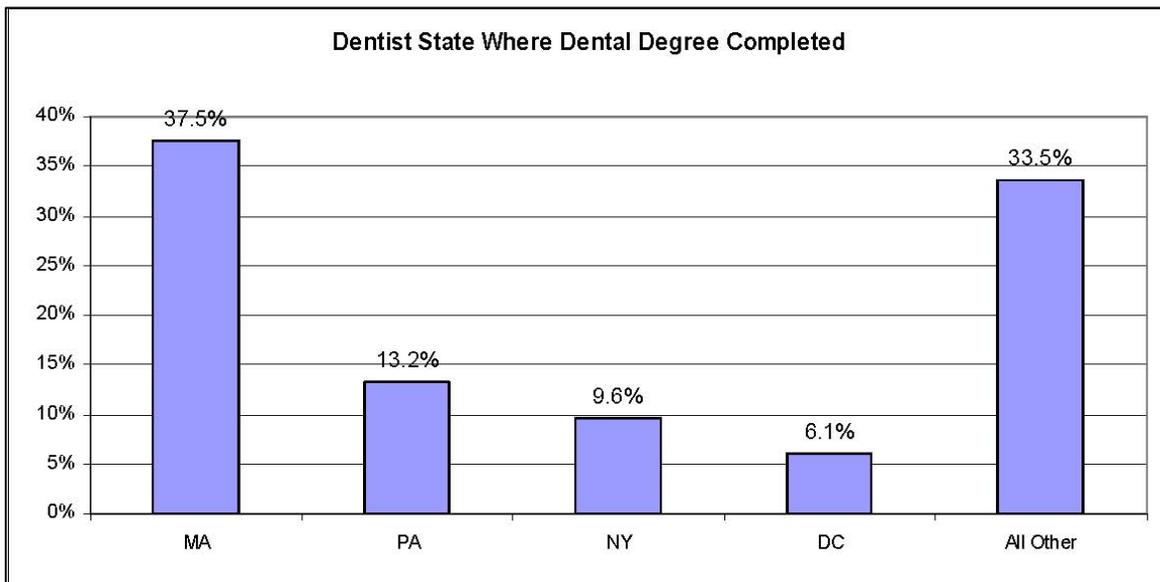
- 20.4% of dentists in the state are female, compared to 16% in the 2004 survey.
- Female dentists are considerably younger than male dentists in the state, with a mean age of 45 years compared to 55 years for male dentists. The distribution by age is even more pronounced, with the greatest proportion of female dentists (33%) in the 35-44 year age range while the greatest proportion of male dentists (36%) is in the 55-64 year range.
- Female dentists are somewhat more likely to work part time (33.0%) compared to males (25.6%). Female dentists are disproportionately likely to work part time at ages 35-44, while males are more likely to work part time when they are 65+.

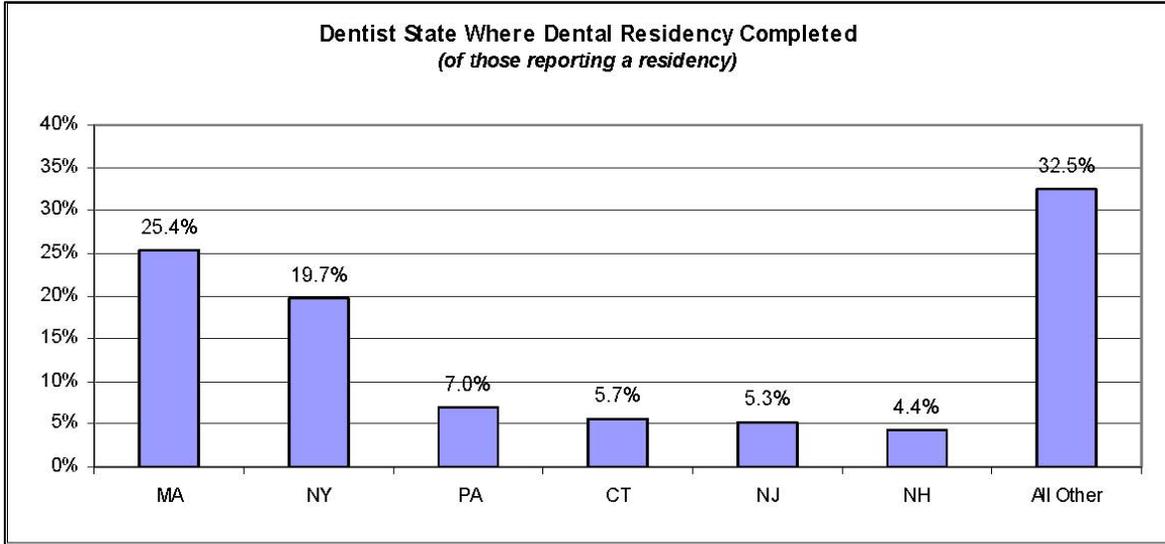
**Dentist Geographic Origin, Education, and Licensure:**



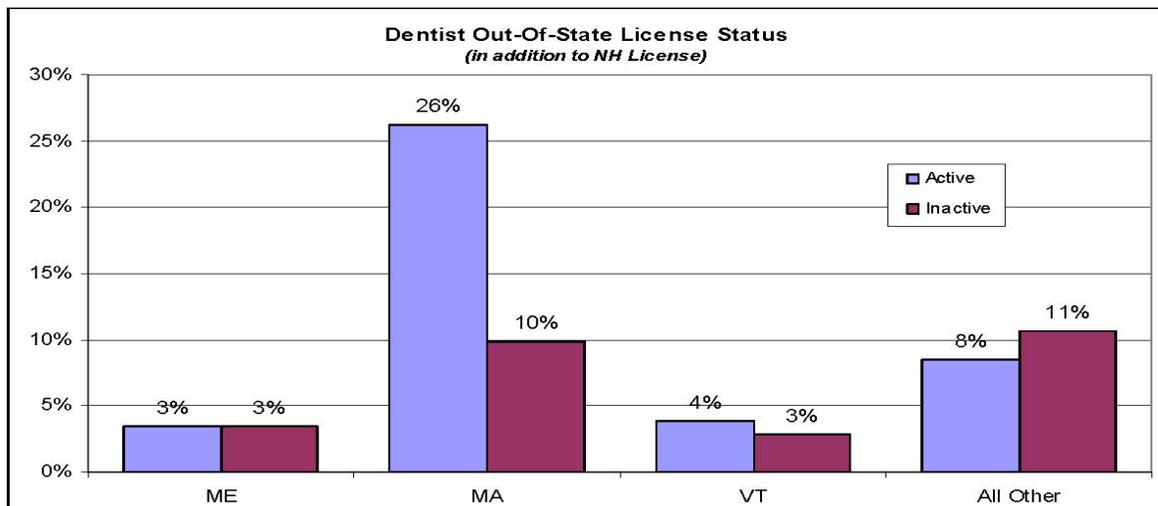


- The greatest portion of New Hampshire dentists, nearly one quarter, were born in Massachusetts, followed by New York at just under 18% of dentists. Just under 15% of the state’s dentists were natives of New Hampshire.
- Massachusetts was also the state where the greatest proportion of the state’s dentists completed their undergraduate degree. Though slightly smaller than the proportion born in the state, New Hampshire was second for undergraduate education at 13.9%, followed closely by New York

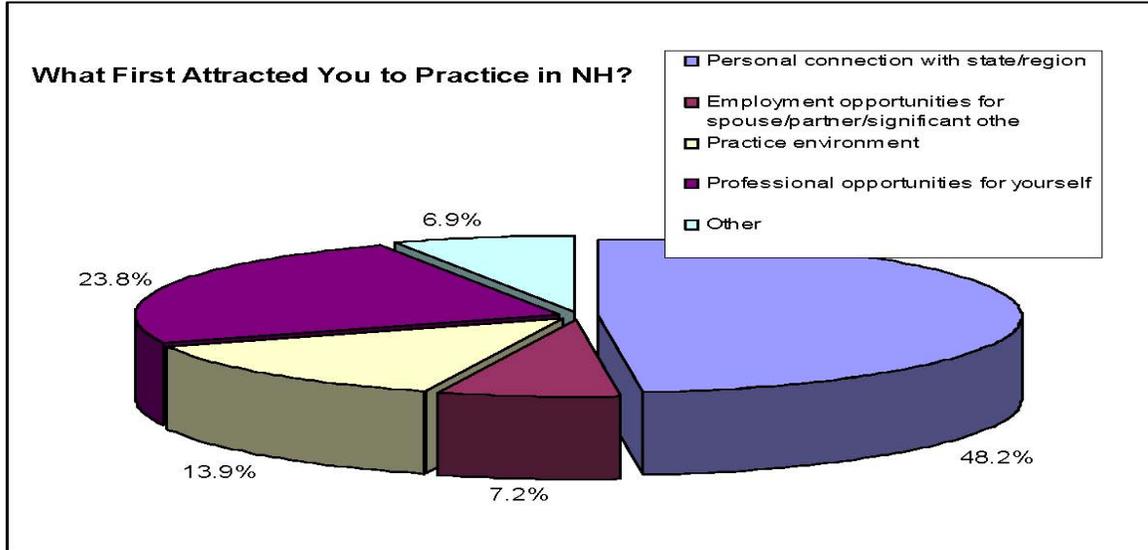




- Massachusetts is, by far, the dominant state where NH dentists complete their dental degree, accounting for nearly 40% of the state’s dentists. This is more than double the proportion from the next most common state, Pennsylvania at just over 13%. There are no dental schools in NH.
- 46% of dentists reported completing a residency program, up from 31% in the 2004 survey. Of those completing a residency, again Massachusetts was the most common state for the program, accounting for just over one quarter, followed by New York at just under 20%. New Hampshire was the 6<sup>th</sup> most common state for completing a residency, accounting for 4.4% of dentists completing a residency program. NH has not had a residency program in the state since the General Practice residency program at the Veteran’s Association closed in 2007.
- 11.9% of dentists reported completing a Masters’ Degree and 24.4% had a Specialty Certification.

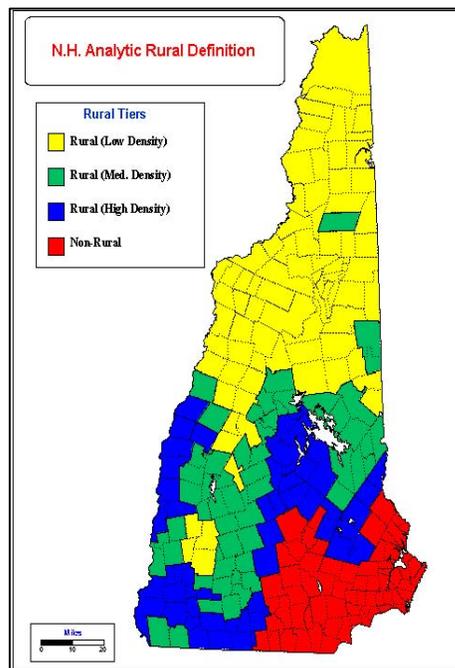


- More than one in four New Hampshire dentists maintains an active license in Massachusetts. This rate is approximately the same as in the 2004 survey. An additional 10% of NH dentists hold an inactive MA license.
- 8% of NH dentists hold an active out-of-state license in a state other than ME, MA, or VT. This is down slightly from 13% in the 2004 survey.



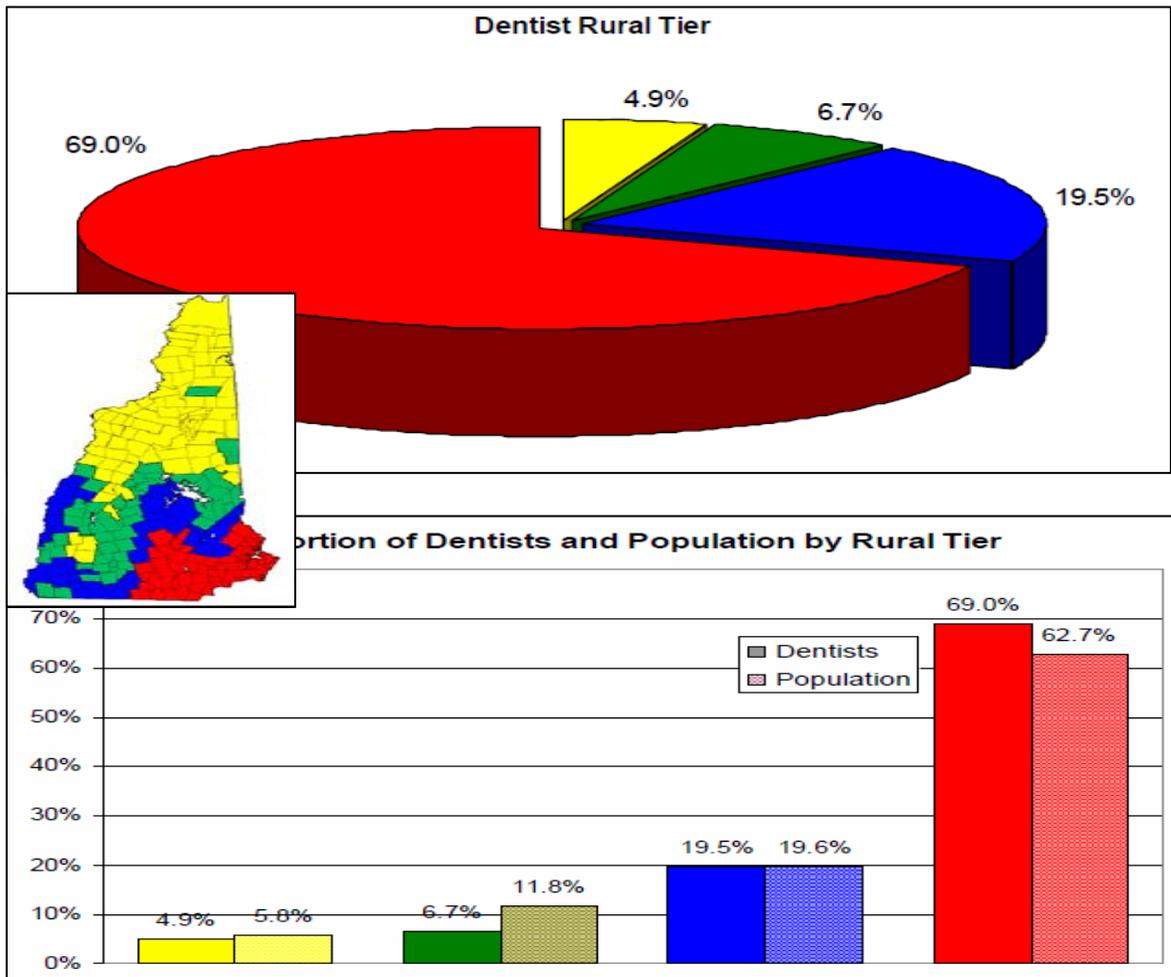
- Nearly half of all dentists in NH had a personal connection with the state/region that led to their practicing here.
- Nearly 40% were attracted to NH for professional reasons including the practice environment and professional opportunities available.

**Dentist Geographic Distribution and Rural Analysis:**

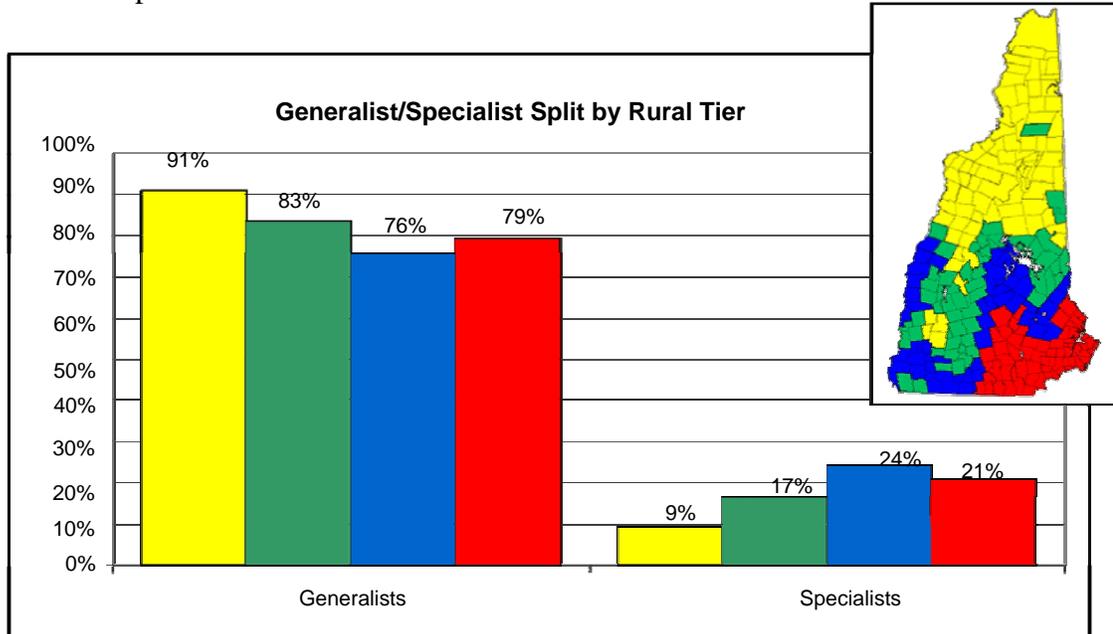


	Population	% Pop.	Cumulative Population	Cumul. % Pop.	Area (Sq. Miles)	% Area	Cumul. Area	Cumul. % Area
Rural Low Density	71,881	6%	71,881	6%	3,860	42%	3,860	42%
Rural Med. Density	146,160	12%	218,041	18%	2,034	22%	5,894	64%
Rural High Density	242,204	20%	460,245	37%	1,822	20%	7,716	84%
Non-Rural	775,305	63%	1,235,550	100%	1,437	16%	9,153	100%

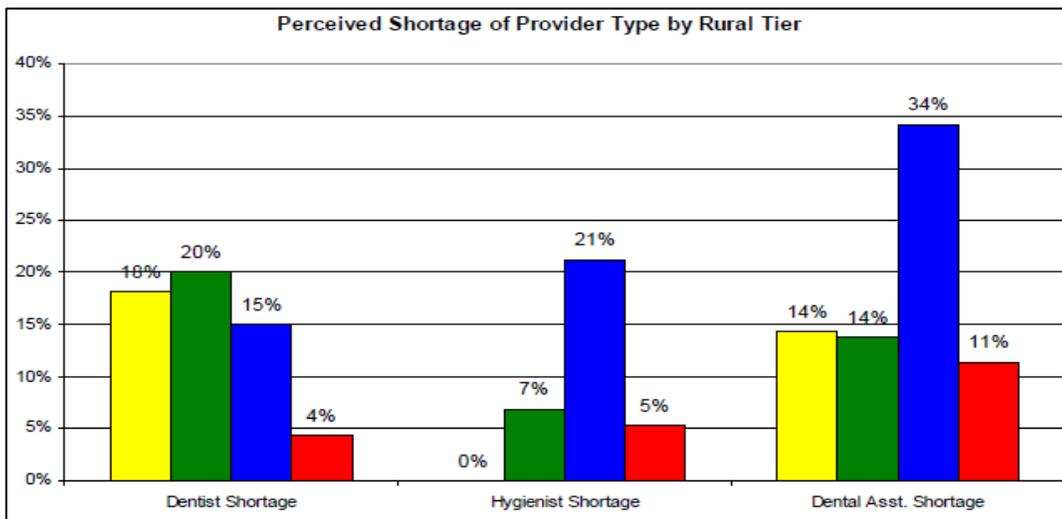
- To examine geographic distribution, the analysis broke responses down by a tiered rural definition developed for NH Department of Health and Human Services' State of Health in Rural New Hampshire report, released in 2004.
- The definition is based on a calculated population density within a 10-mile radius of the center of each city/town in the state, including areas and populations outside the state for municipalities on the border. The definition relies on 2000 census data for population and was crosswalked to match zip codes in the state.
- Dentists were assigned to a rural tier based on the zip code where they reported practice the greatest number of hours per the survey.



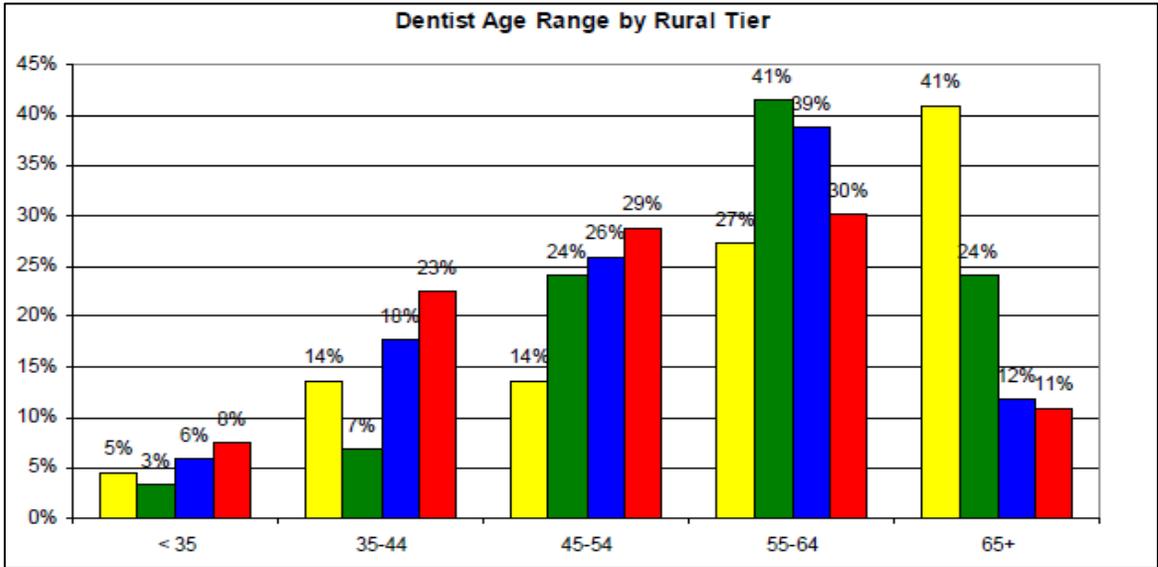
- Non-Rural areas of the state have 69% of the dentists, but just under 63% of the population, indicating that dentists have a proportionally higher density in the non-rural areas.
- The greatest difference between the proportion of dentists and population is in the Medium Density rural areas (green) which have 11.8% of the population but only 6.7% of the dentists.
- The three rural tiers account for 84% of the land area in the state, but just 31% of the dentists. Much greater area and fewer dentists in rural communities indicate a more sparse distribution of services and likely longer travel times to reach a provider.



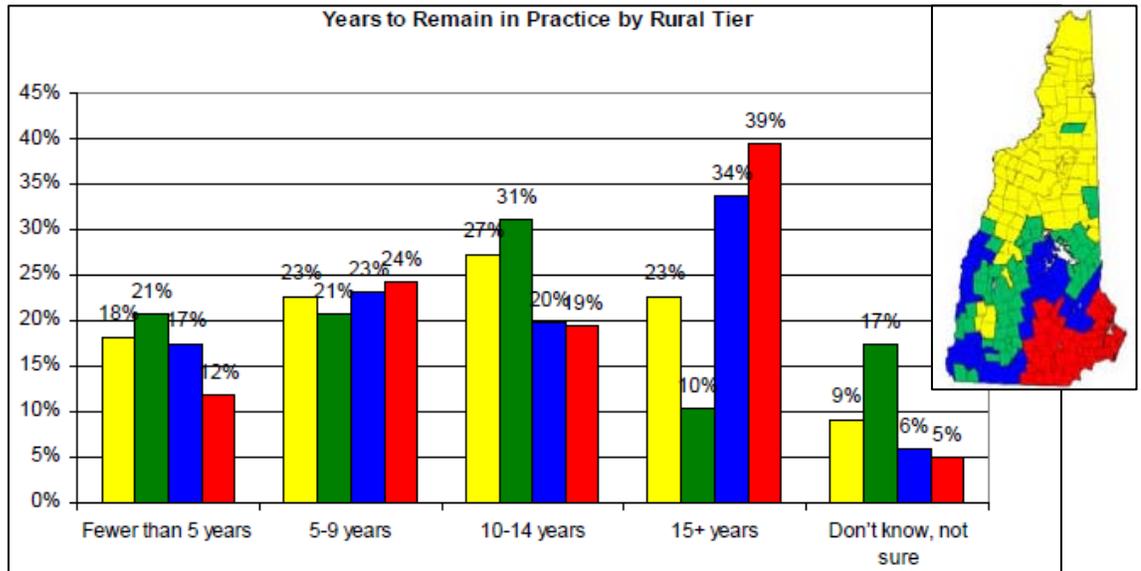
- The most rural parts of the state have the lowest proportion of specialists.
- The high density rural areas have slightly higher proportion of specialists than the non-rural areas.



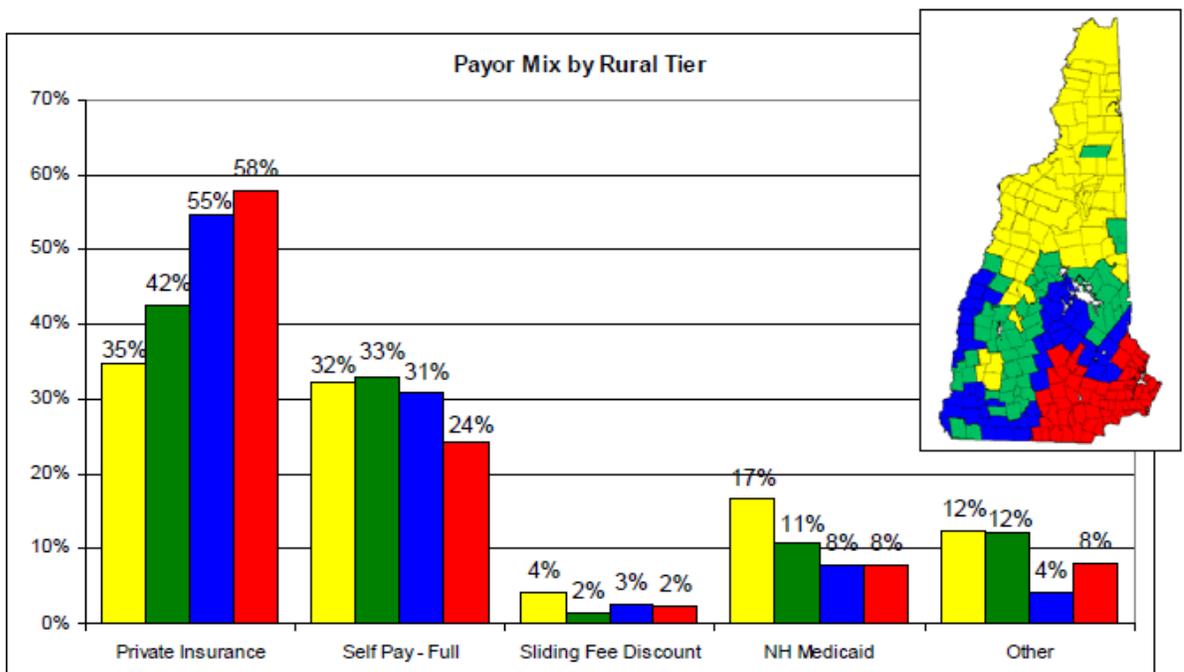
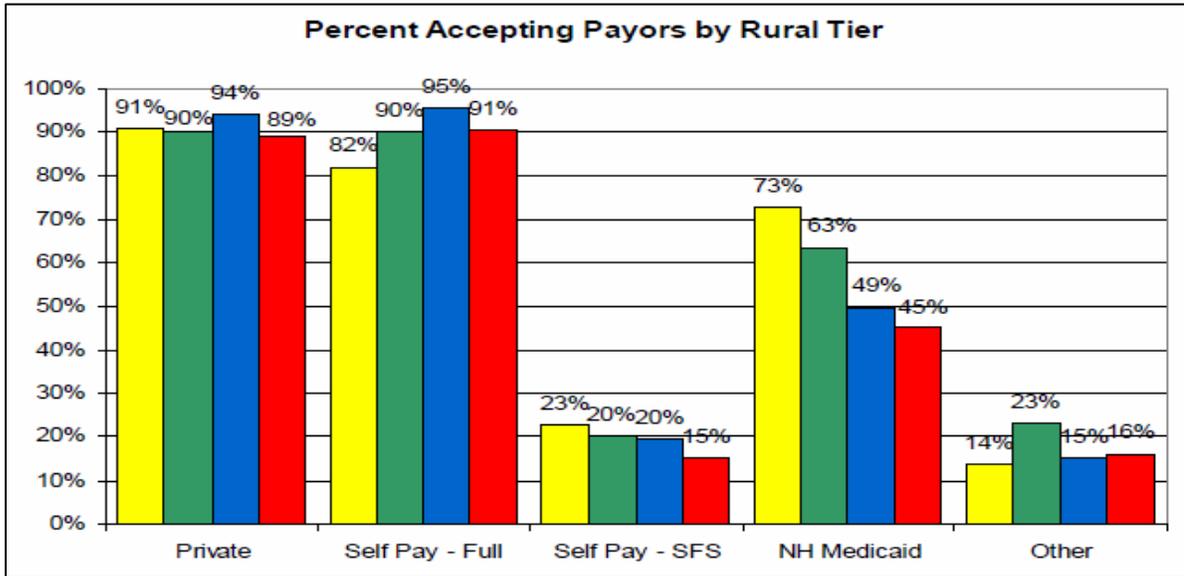
- Rural dentists perceived shortages of all provider categories (dentists, hygienists, and dental assistants) compared with non-rural dentists. This was most pronounced for the perceived shortage of dentists, where rural dentists were approximately four to five times as likely to perceive a shortage amongst their ranks compared to non-rural dentists (15-20% of rural dentists perceived a shortage, compared with 5% of non-rural dentists). Dentists in the two most rural tiers perceived the greatest shortage for dentists, while those in the high density rural areas felt shortages of hygienists and dental assistants were more of an issue.



- The age profile for dentists in the rural parts of the state shows a workforce that is significantly older than dentists in the non-rural areas, and there is a strong pattern of increasing age as rurality increases. Over 60% of dentists in each of the rural tiers are over age 55, compared to just over 40% in the non-rural tier. In the most rural tier, 41% of respondents were over age 65.



- The pattern regarding intent to leave practice is less notable than the patterns regarding age, though a notably greater portion in all of the rural tiers intend to leave practice within 5 years compared to those in the non-rural tier. This may suggest that rural dentists may plan to retire later in life to some degree.
- The greatest portion of dentists in the two most rural tiers plan to work 10-14 years, while the greatest portion in the high density rural and non-rural tiers plan to work 15+ years.
- The prevalence of part time practice (not shown) was roughly equivalent across the tiers.



- Rural dentists accept private insurance at similar rates to non-rural dentists, but this represents a much smaller portion of total patients in rural areas.
- Full self pay patients represent a greater portion of total patients in rural areas despite similar or lower rates of acceptance of self pay in rural areas.
- Dentists in the more rural parts of the state are far more likely to accept Medicaid compared with those in non-rural areas and see somewhat more Medicaid patients as a proportion of the total.

## **Appendix H**

### **2010 SURVEY OF ACTIVE LICENSED DENTAL HYGIENISTS IN NEW HAMPSHIRE**

#### ***CHARTBOOK OF RESULTS***

This chartbook presents the findings of a survey of dental hygienists, fielded in February 2010. The survey was conducted as a project of Bi-State Primary Care Association in partnership with the State of New Hampshire's Department of Health and Human Services. The survey was implemented and analyzed by the Community Health Institute / JSI under contract to Bi-State.

The survey was mailed to a random sample of 600 out of 1,269 actively licensed dental hygienists in NH with a valid mailing address, based on a list obtained from the New Hampshire Board of Dental Examiners as of December 15<sup>th</sup>, 2009. The sample was drawn using a pure random selection process based on a list generated by a commonly used research randomizer tool available at [www.randomizer.org](http://www.randomizer.org). Of the 600 surveys mailed, 14 were returned as undeliverable and dropped from the universe as corrected addresses could not be obtained. This resulted in a revised total universe of 586 surveys. A reminder postcard was sent to all non-responsive hygienists approximately 3 weeks after the original surveys were sent and responses were received through the end of March 2010.

The survey resulted in 347 responses, or an overall response rate of 59.2%. There were no categorical distinguishing parameters between hygienists on the licensing list, such as degree or specialty, upon which to examine the response compared to those that did not respond. By examining the license issue dates, it was noted that the average years licensed was somewhat higher for respondents, at 17.6 years, compared to 14.2 years for non-respondents. A similar pattern was noted in the Dentist survey.

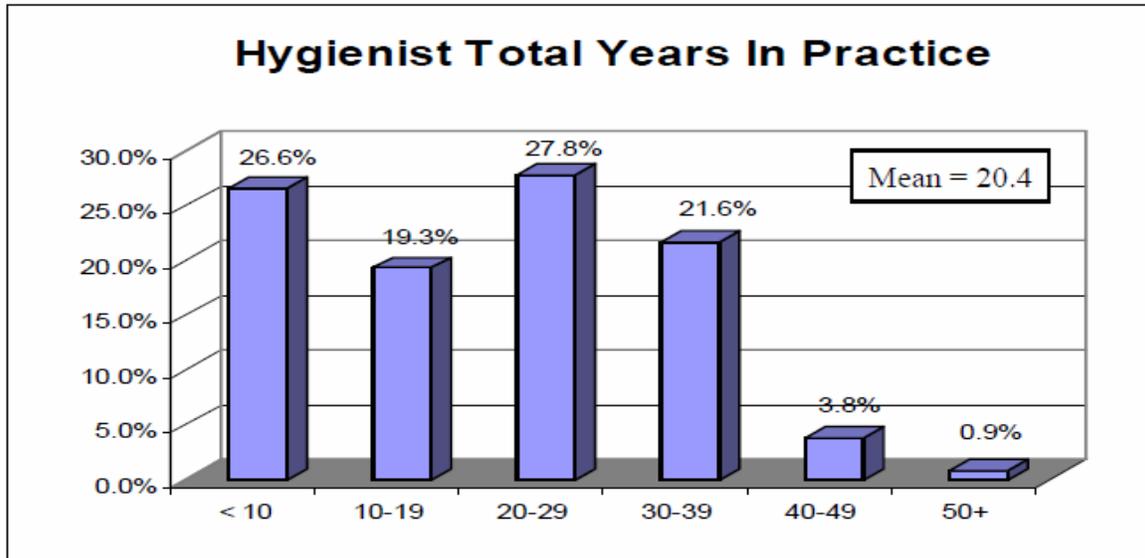
The responses were scanned in electronically and incorporated into a statistical database for analysis using SPSS. Data were cleaned to assure skip patterns and survey logic was followed, and key variables were recoded as needed for analytic groupings.

Where possible and valid, results from this survey are compared to the results obtained from a similar survey conducted in 2004. Because many of the questions in the current survey were new or modified from the 2004 survey, comparisons were not always possible. Where comparisons are made, there is one significant issue that must be kept in mind. As a result of a planned Crosswalk' analysis of the entire hygienist licensing list obtained for this survey compared to the list used in 2004, a significant issue with the list used in the earlier survey was noted. By linking hygienists based on their license number, it was determined that the earlier list, which had only 807 records, was missing a significant number of hygienists that were likely practicing in the state in 2004. This was confirmed based on licensing dates of hygienists on the 2009 list, but not on the 2004 list, many of whom had been licensed prior to the earlier survey. It was not possible to determine the nature of the missing group, which could impact 2004 results if the exclusion was not random in nature. Also, the gap in the 2004 list eliminated the ability to conduct the planned crosswalk analysis of the two lists. Obtaining accurate lists from the NH Board of Dental Examiners is essential in the future in order to rely on survey data for workforce analysis and projections.

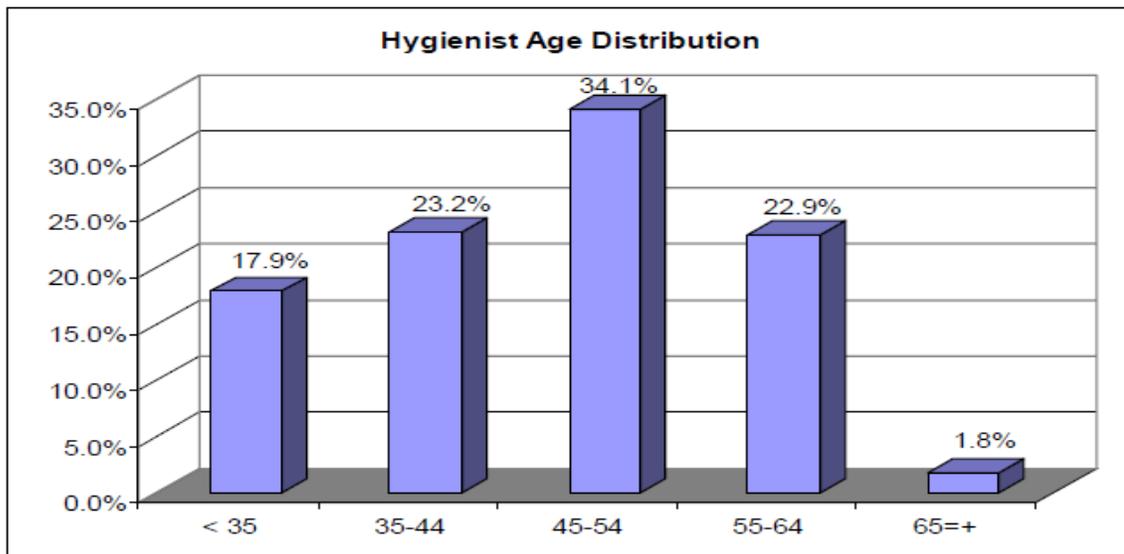
## 2010 New Hampshire Dental Hygienist Survey Results

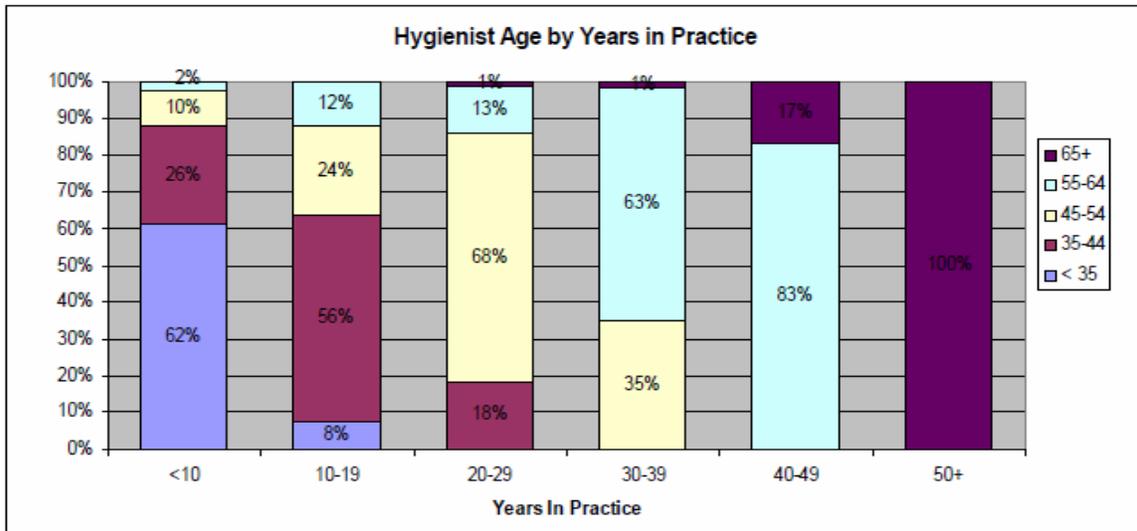
*(based on December 2009 Licensure List)*

### Hygienist Tenure, Age, and Years to Remain in Practice:

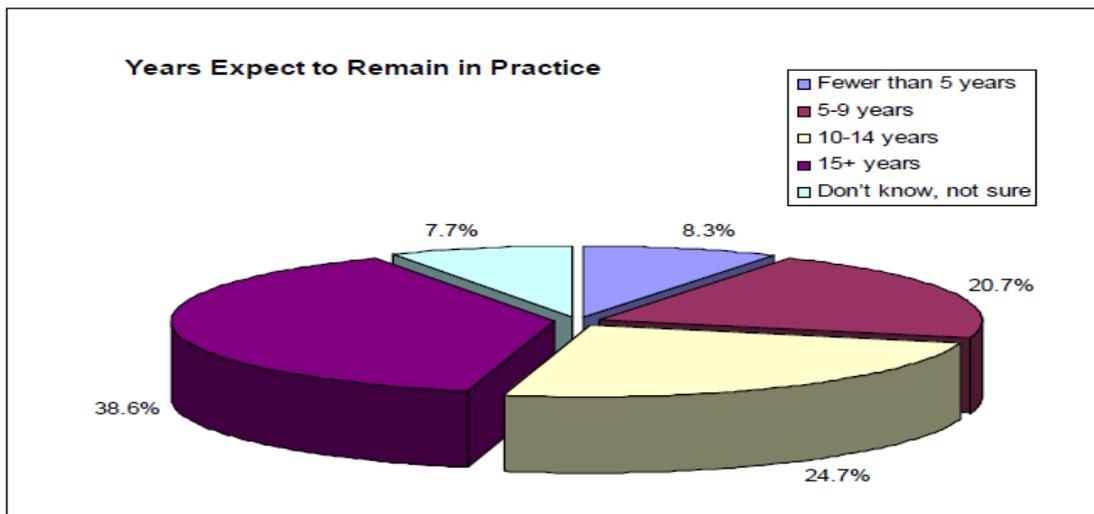


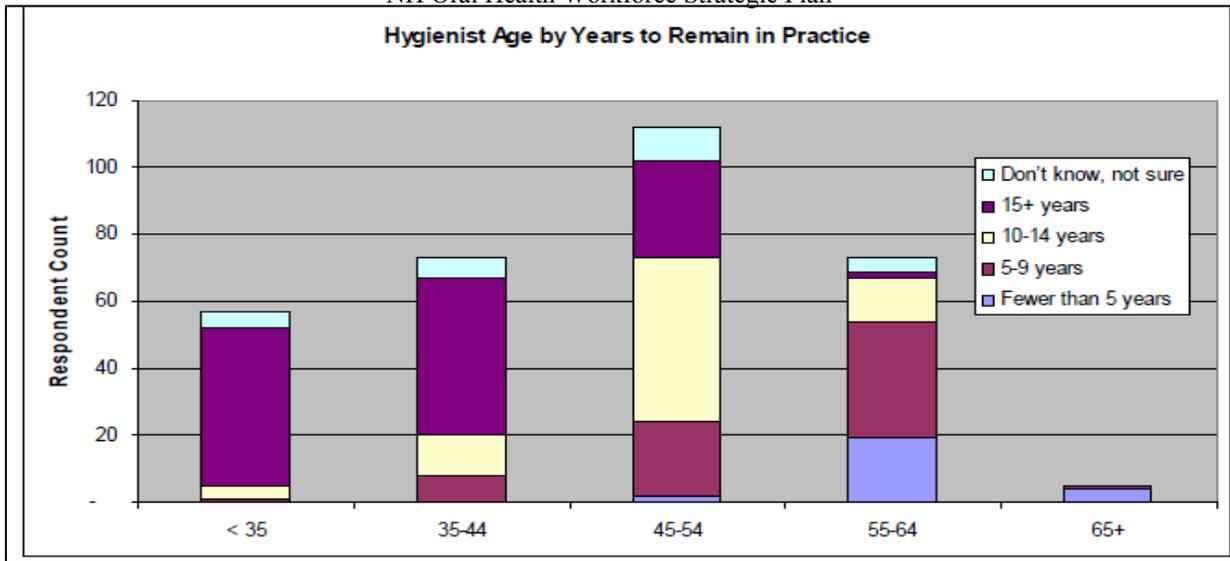
- Approximately one quarter (26%) of Hygienists have been in practice more than 30 years. This compares to nearly 40% for dentists.
- A second peak in the tenure curve for those practicing <10 years reflects a recent influx of hygienists (see comparison to age in next section).
- 4.3% of hygienists with an active NH license reported that they are not practicing in NH currently. There were a variety of reasons noted, but working out-of-state was cited most.



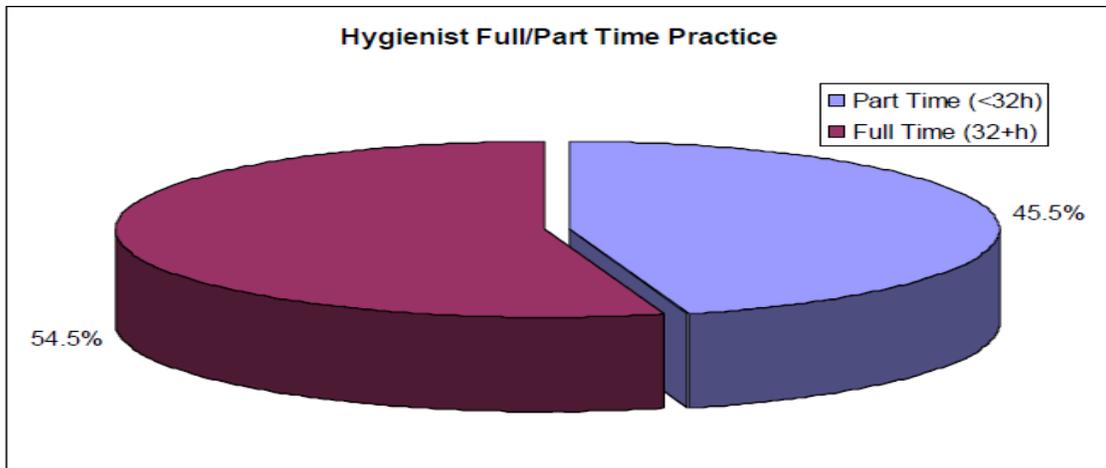


- Less than 25% of Hygienists are over age 55, compared to 48% for dentists. The 2004 survey showed only 13% of hygienists over age 55.
- It should be noted that 99.7% of hygienists are female, which some speculated may influence a portion of the workforce to change to inactive license status during childbearing years.
- Results show some evidence that Hygienists starting practice more recently may have entered the field later in life, referred to as ‘non-traditional’ enrollees in clinical education. This is evidenced by the comparison of the age curve above to the curve showing years in practice on the previous page. While complicated by issues of ‘aging out’, looking at these two factors together, one sees that:
  - 38% of Hygienists in practice < 10 years are 35+ years old
  - 36% of Hygienists in practice 10-19 years are 45+ years old
  - Only 14% of Hygienists in practice 20-29 years are 55+ years old

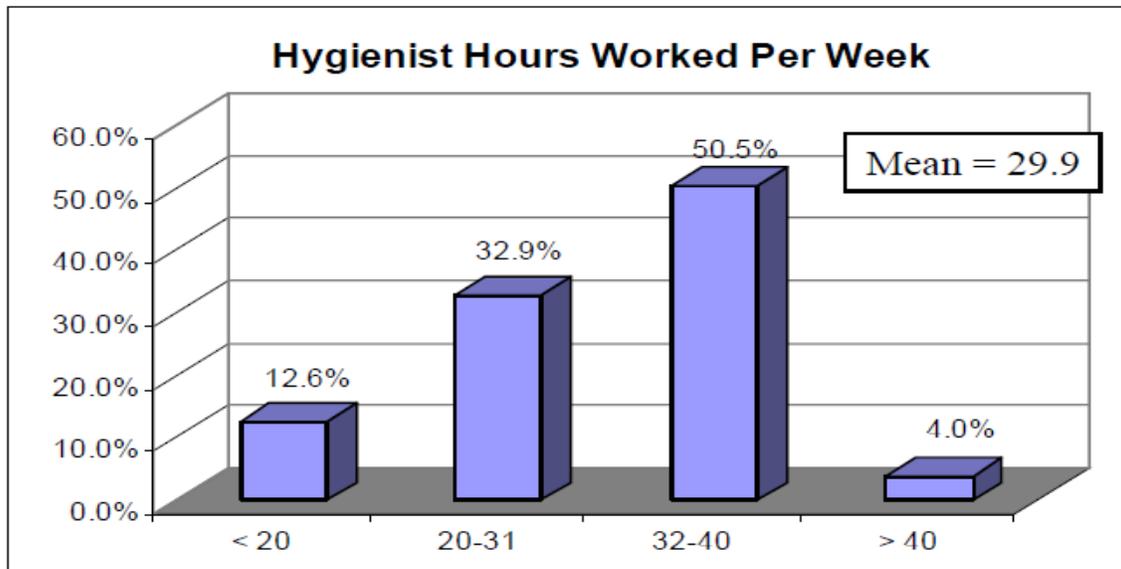




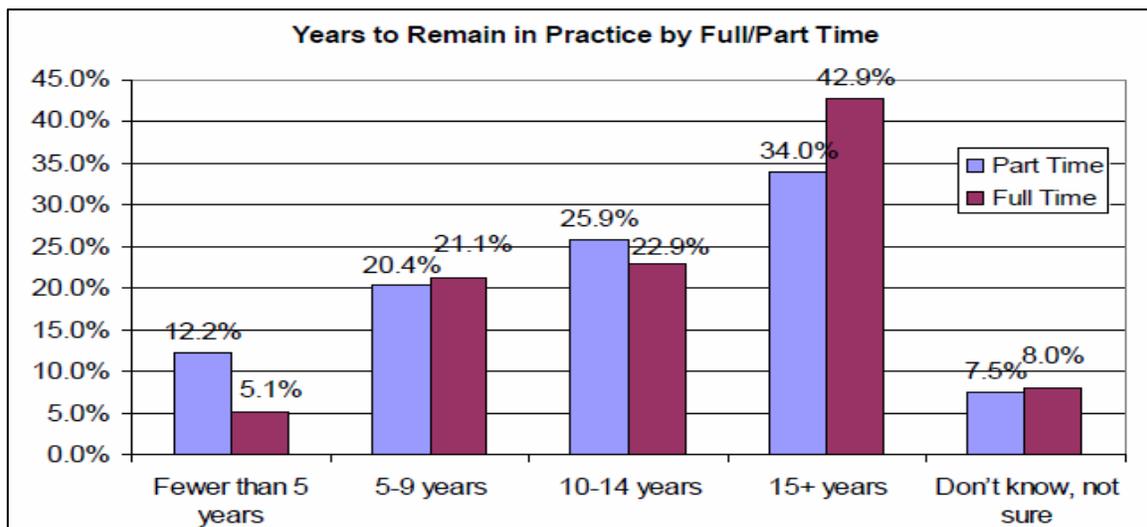
- Just under 30% of Hygienists expect to leave practice within 10 years. This compares to nearly 40% for dentists.
- Nearly 40% expect to practice for 15+ years, compared to 35% for dentists.
- The proportions are similar to those in the 2004 survey, with those expecting to practice 15+ years increasing from 35% to nearly 39%.
- Amongst those hygienists that expect to leave practice within 5 years, about half cited retirement as the reason (47%), with 22% citing burnout/stress, and with the remainder comprising a mix of health issues and issues of pay/benefits/opportunity.
- Age/Retirement curve suggests potential decline in Hygienist workforce after 15-20 years, potentially related to the issue of more hygienists entering practice later in life.

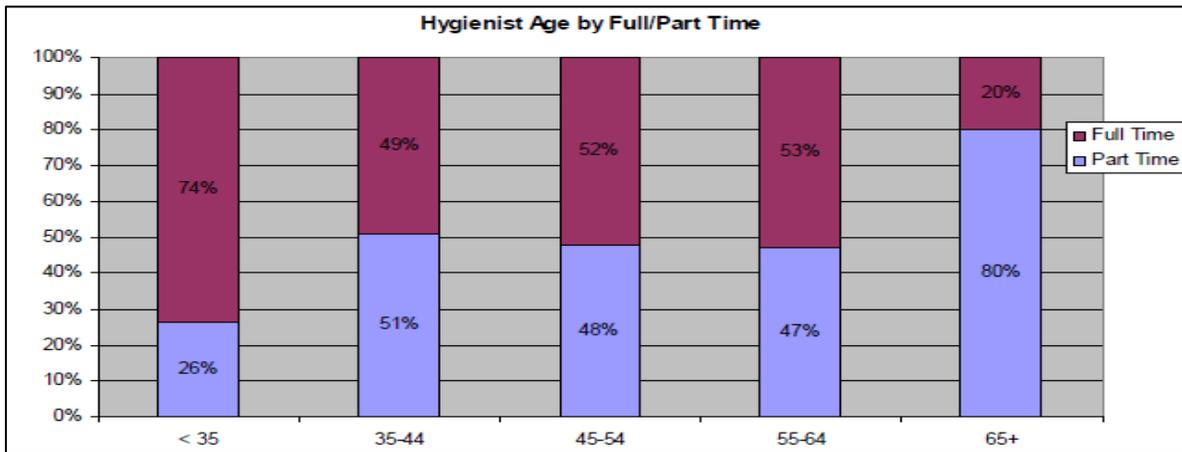


- Nearly half of all hygienists (45.5%) work less than full time. This proportion is essentially unchanged compared to the 2004 survey.

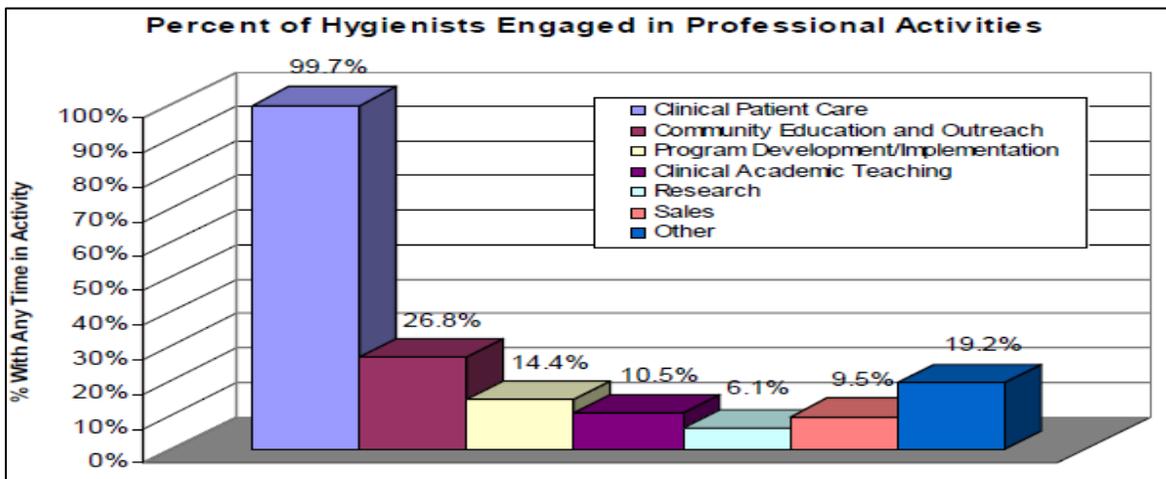
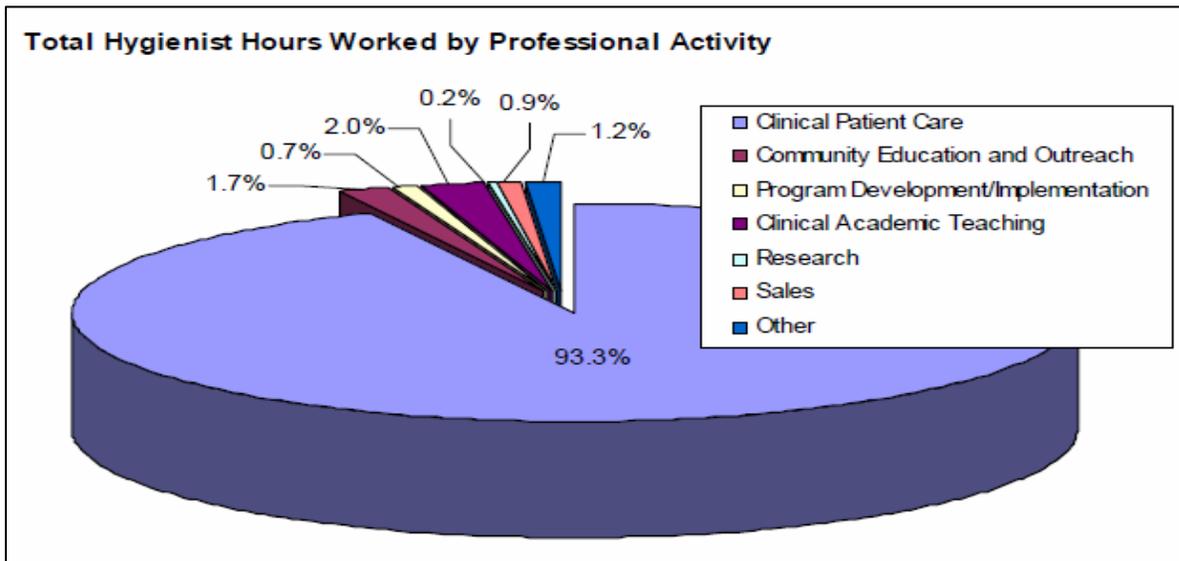


- Hygienists average approximately 30 hours per week. Approximately half work from 32 to 40 hours per week.
- Only 4% spend more than 40 hours per week practicing.
- The survey did not ask how many separate jobs each hygienist works, but 13% of hygienists that responded reported working in more than one zip code. Hygienists working at more than one location within the same zip code would not be reflected in this number.

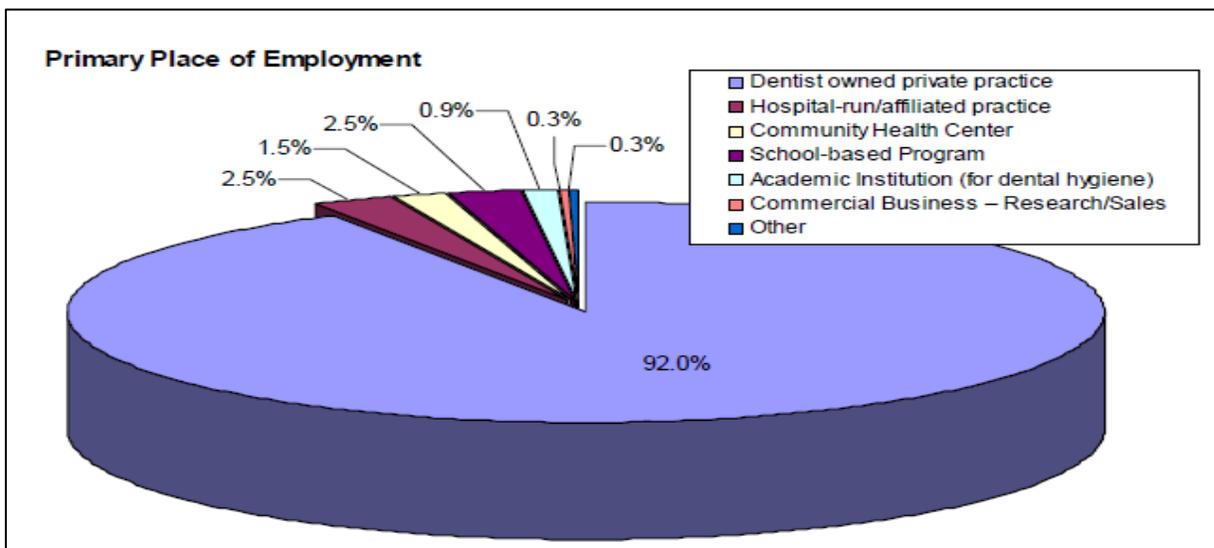




- Hygienists nearing retirement (leaving practice within 5 years or over age 65) are much more likely to work a part time schedule.
- Conversely, those expecting to work 15+ years or under age 35 are most likely to work a full time schedule.

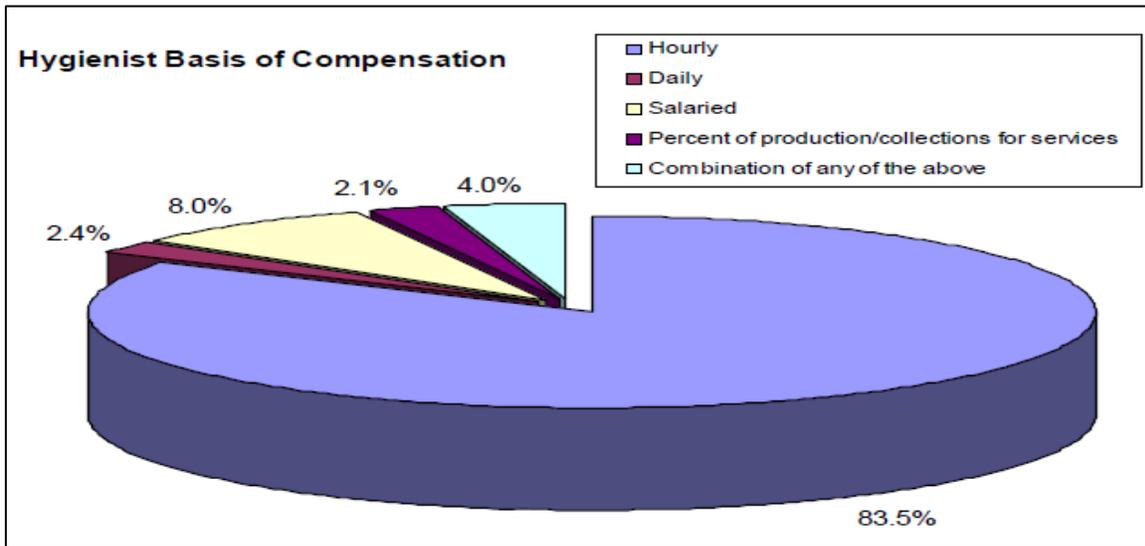


- Nearly all Hygienists (99.7%) provide clinical patient care, accounting for 93% of total hygienist hours worked.
- Almost 27% of Hygienists spend some time on community education and outreach, but this accounts for less than 2% of total hours worked. Similarly, over 14% report being involved in program development and implementation, however this accounted for less than 1% of total hours worked.
- Other” hours was comprised largely of hygienists that carved out time for administrative and management activities.
- In response to a separate question, 34% of hygienists stated that they volunteer to provide community outreach/education, citing a wide variety of programs, such as Dentists with a Heart, Cheshire Smiles, Give Kids a Smile, Tooth Tutors, and settings such as health fairs, schools, scouts/clubs, smoking cessation classes, etc.

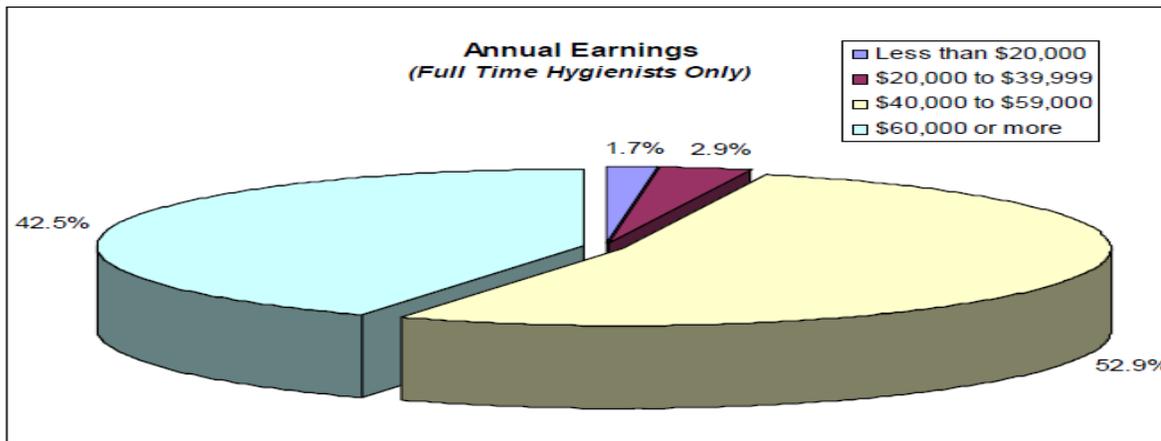


- Dentist owned private practices account for 92% of Hygienist employment.
- Hospital run practices, community health centers, and school based programs employ most of the rest.
- 60.6% of hygienists reported that they were aware of employment opportunities outside of private practice (not pictured).

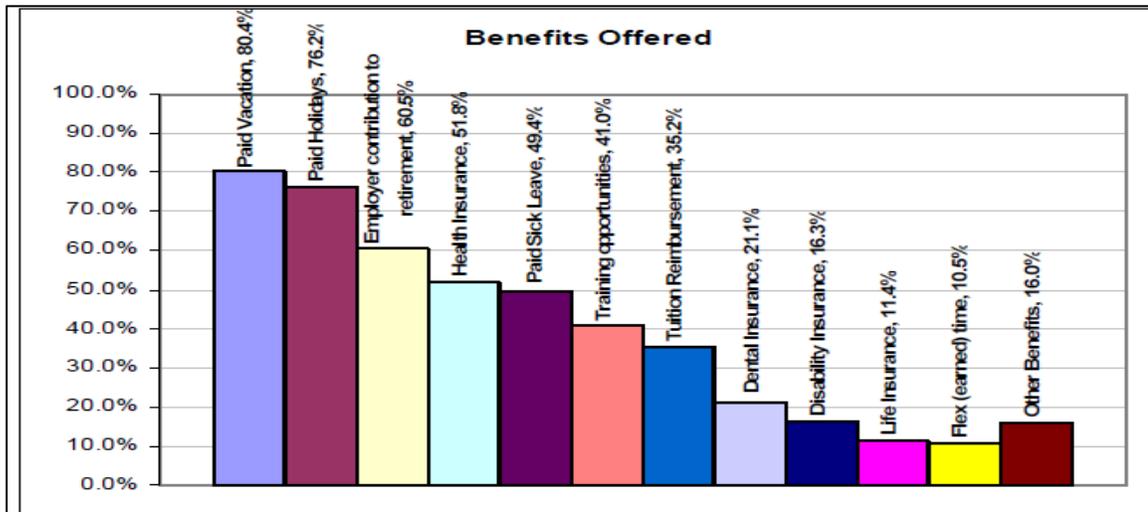
**Hygienist Compensation and Benefits:**



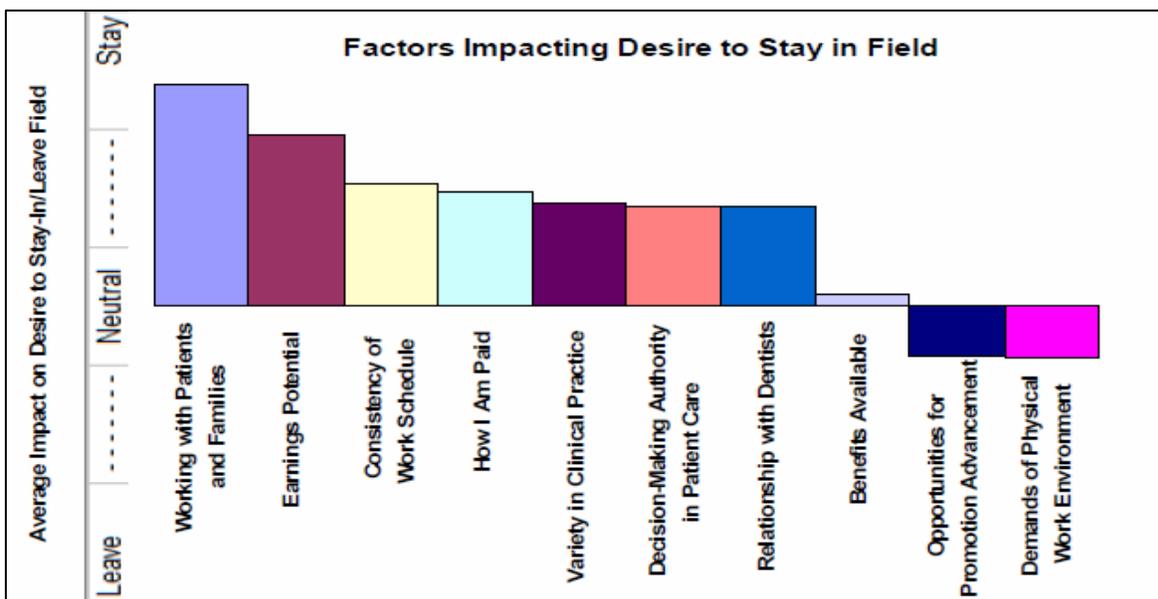
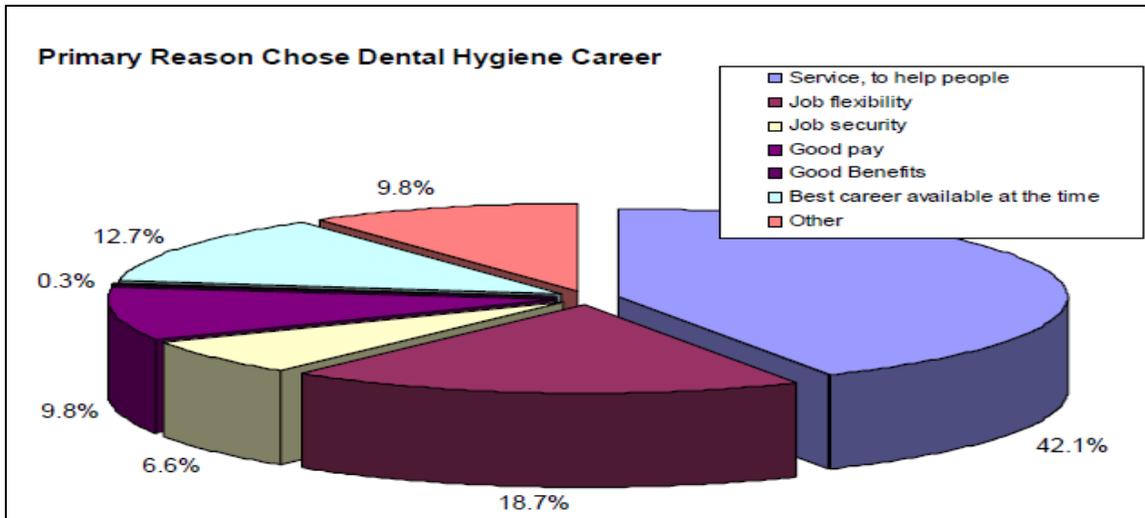
- Most hygienists are paid on a unit-time basis. Over 83% of Hygienists are employed on an hourly basis, up slightly from 80% in 2004. Another 2.4% paid on a daily basis, which is approximately the same as 2004.
- Salaried employment is the next most common compensation arrangement, accounting for 8% of hygienist employment. This is down from 11% in 2004.



- Looking at those that work full-time (32+ hours per week), just over half of full time hygienists earn between \$40,000 - \$59,000 per year. Most of the remaining group (42.5%) earns over \$60,000.
- Under 5% of full time hygienists earn below \$40,000.

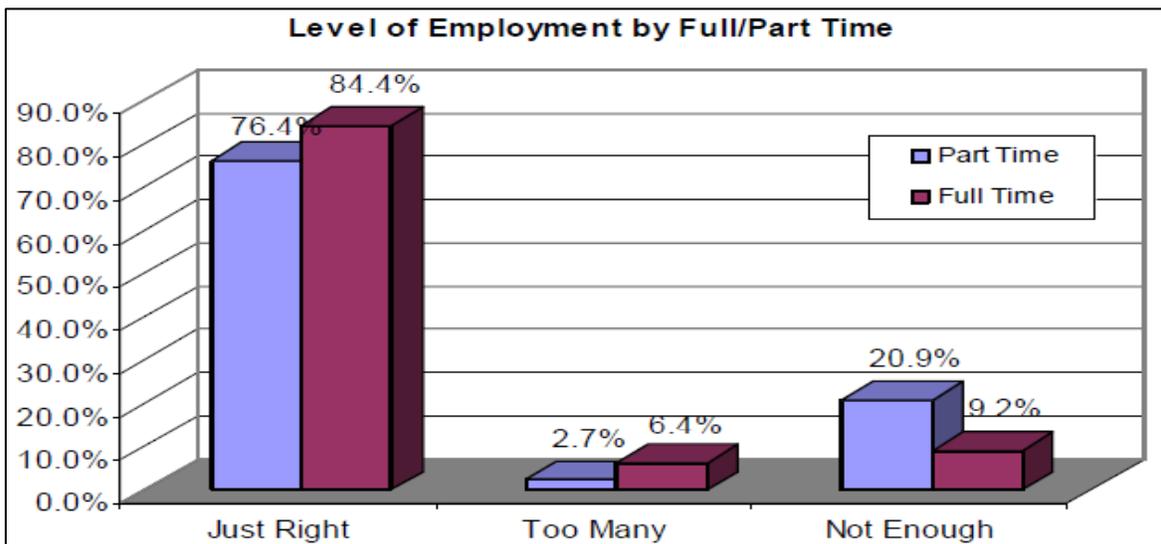
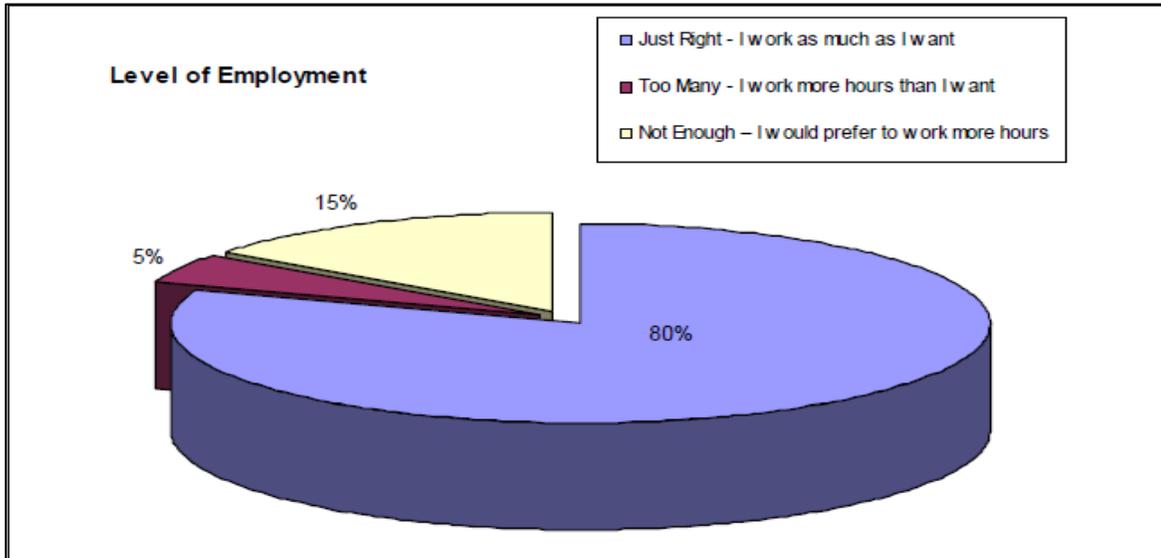


- Paid time off for vacations and holidays are the most commonly offered benefits, available to 80% and 76% of hygienists respectively. Earned flex time was offered by another 10.5% of hygienists' employers.
- Health Insurance and paid sick leave are offered to approximately half of hygienists. Dental insurance is offered to 1 in 5 hygienists. Note, however, that free/discounted dental care for staff and/or their families is listed as an 'Other' benefit by some hygienists, and may be offered as an alternative to dental insurance.
- Disability insurance is available to only 16% of hygienists, despite many comments noting job-related injury and the physical demands of hygienist practice. This question focuses on benefits offered through the hygienists' employer, and would not reflect coverage purchased independently, such as that offered through the American Dental Hygienists' Association.
- Other benefits included a variety of items, such as child care, free/discounted dental care, uniforms/uniform cleaning service, and bonus/profit-sharing.

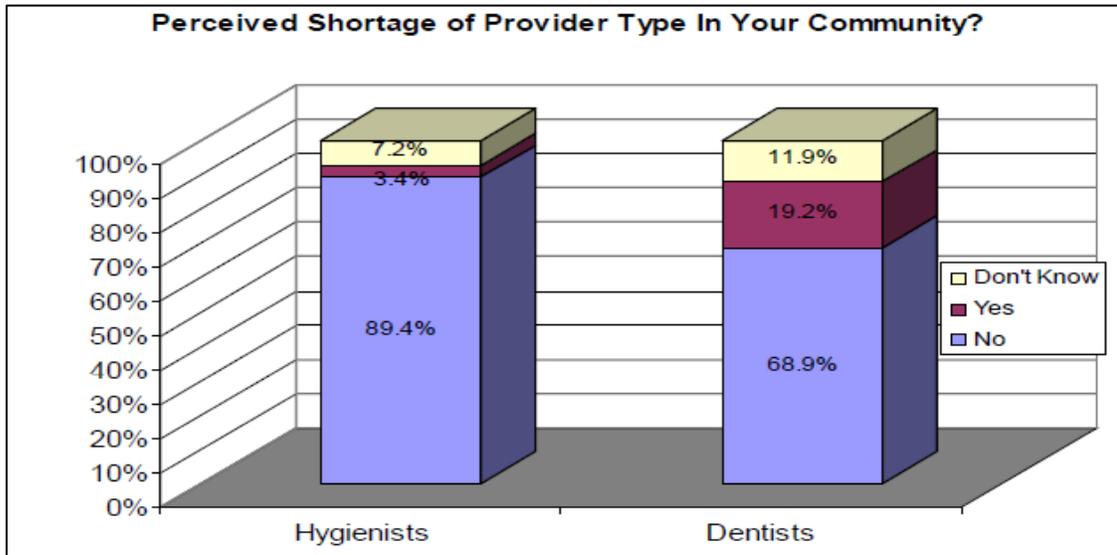


- Desire to work with patients/families was the most cited reason for entering the field of dental hygiene (42%), and the strongest factor influencing hygienists to stay in the field.
- Just under 10% felt that good pay was the primary reason for entering the field of dental hygiene, but earnings potential was the second strongest factor in favor of hygienists staying in the field.
- Job flexibility was the second most commonly cited reason for entering the field of dental hygiene, cited by nearly 19% of respondents.
- Benefits was the least cited reason for entering the field, garnering almost no response, but neutral in terms of their influence on staying in the field.
- Opportunities for advancement and the physical demands of the job both had a net negative impact hygienists' overall desire to stay in the field.

## Hygienist Employment Opportunities and Supply:

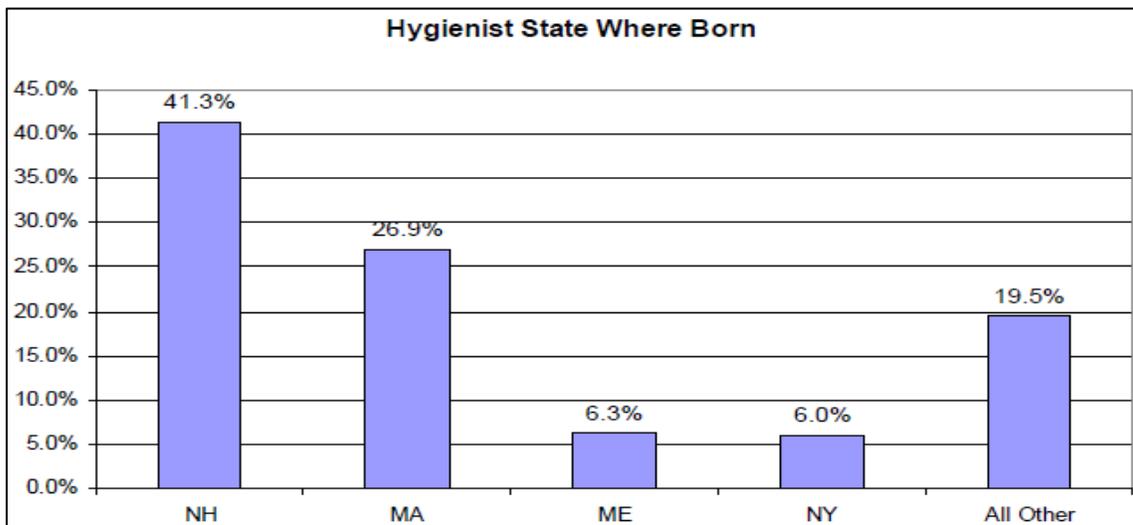


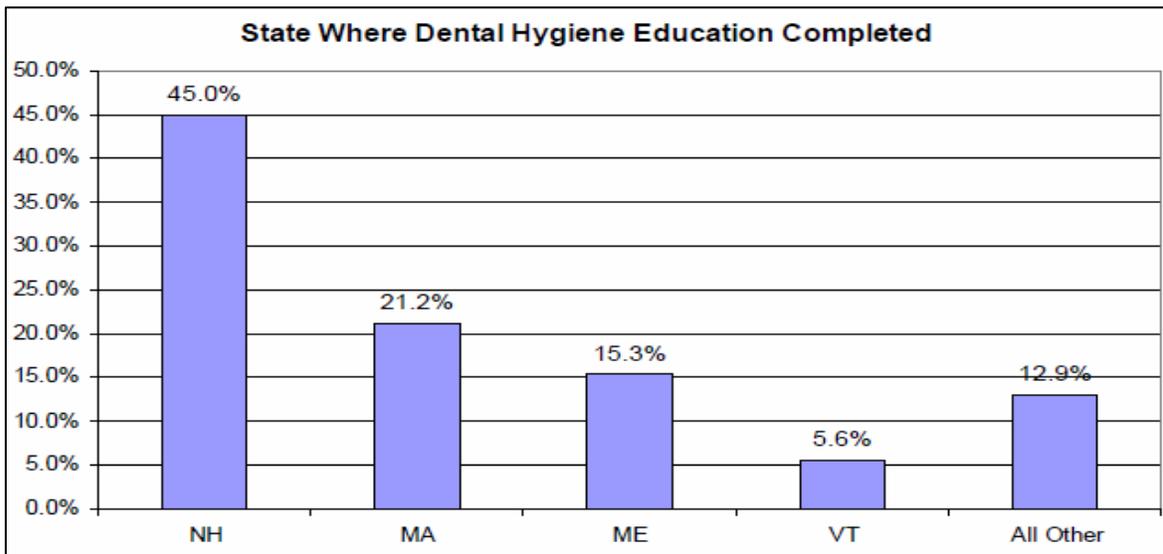
- Most Hygienists (80%) feel they work the amount of time they want.
- 15% of Hygienists overall feel they are under-employed (would prefer to work more hours).
- More than one in five (21%) of those working part time felt that they did not work enough hours.
- Just over 6% of those working full time felt they were working too many hours, but over 9% felt they were not working enough. This may reflect the ability to earn more due to the hourly nature of many hygienists' pay, or the desire to work more hours at a single job for those that split time.



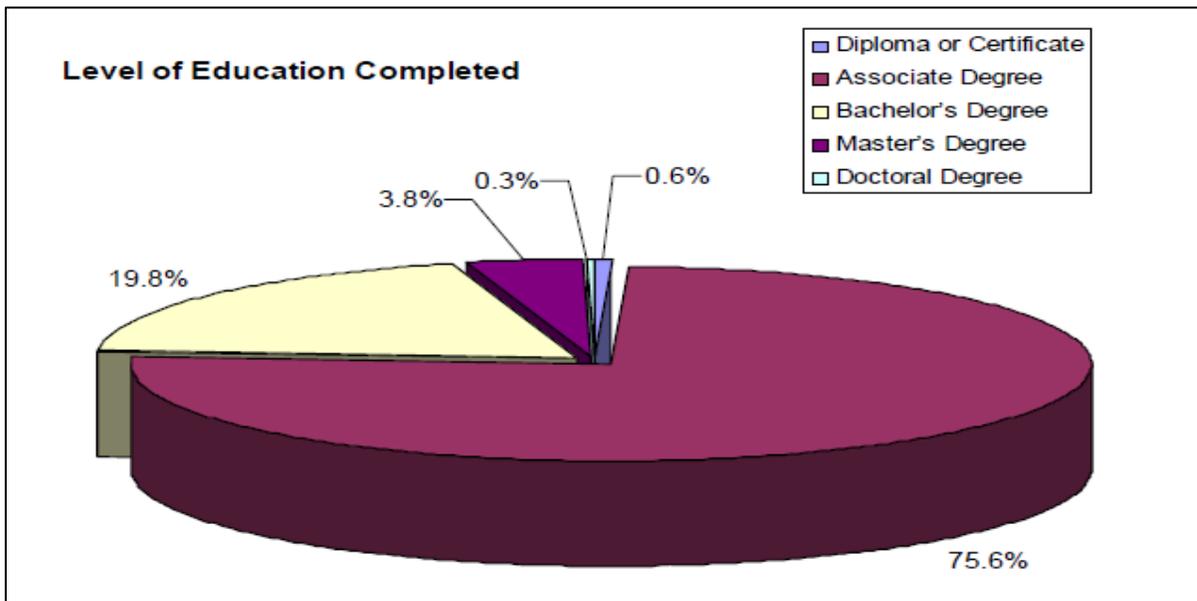
- Less than 4% of hygienists perceived a shortage of hygienists in their community, and most (all but 7%) felt they knew about the local hygienist workforce. The 2004 survey reported that 50% of hygienists felt that there was a shortage in their profession, representing a marked decrease over a 5 year period.
- Dentists were more than twice as likely to perceive a shortage of hygienists, though less than 10% of dentists felt there was a shortage in the profession.
- Approximately one in 5 hygienists felt there was a shortage of dentists in their community. This rate is more than double the percentage of dentists that perceived a shortage in their profession. This perception may relate to employment opportunities to some degree, as hygienists must work with dentists and are largely employed in dentist-owned practices.
- Hygienists were less certain of the supply of dentists than of the supply of hygienists.

**Hygienist Geographic Origin, Education, and Licensure:**

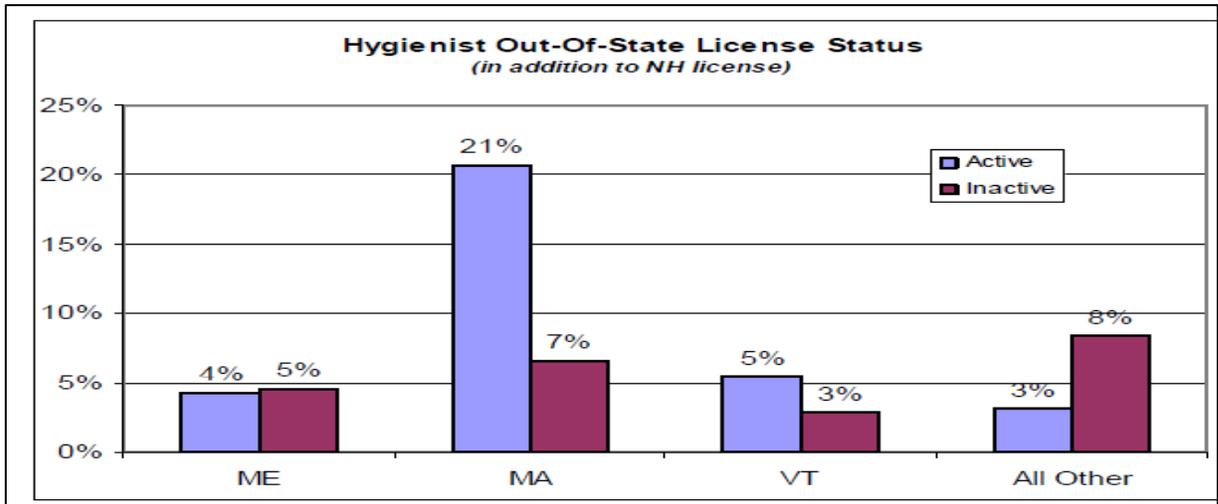




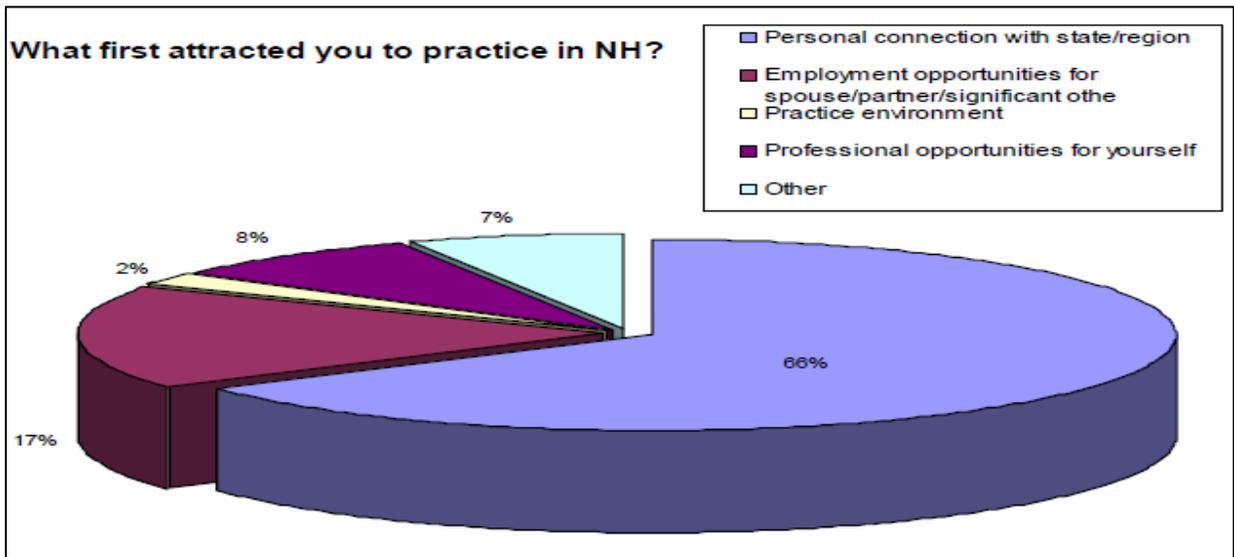
- The greatest proportion of hygienists were born New Hampshire (41%). The next most common state of origin is Massachusetts at approximately 27%.
- An even greater proportion of hygienists completed their clinical education in New Hampshire, accounting for 45% of the total hygienist workforce. This is more than twice the percentage of hygienists that completed clinical training in Massachusetts; the next most commonly reported state. Maine accounted for just over 15% of hygienists' education.
- The hygienist workforce is far more 'locally-grown' compared to dentists, amongst whom both birth and undergraduate education in NH represented 14-15% of the workforce. Clinical education is not comparable as NH has no dental school.



- Over 75% of hygienists hold an associate’s degree. Hygienist associates degrees can take longer to complete than equivalent degrees in other fields due to higher credit requirements.
- Approximately 20% have a Bachelor’s level education – a slight increase over 2004 (17%). It should be noted that a Baccalaureate degree in dental hygiene degree is not offered in NH.
- Nearly 4% of hygienists report holding a Masters’ degree. It should be noted that the question did not specify that the highest degree completed be a degree in dental hygiene.

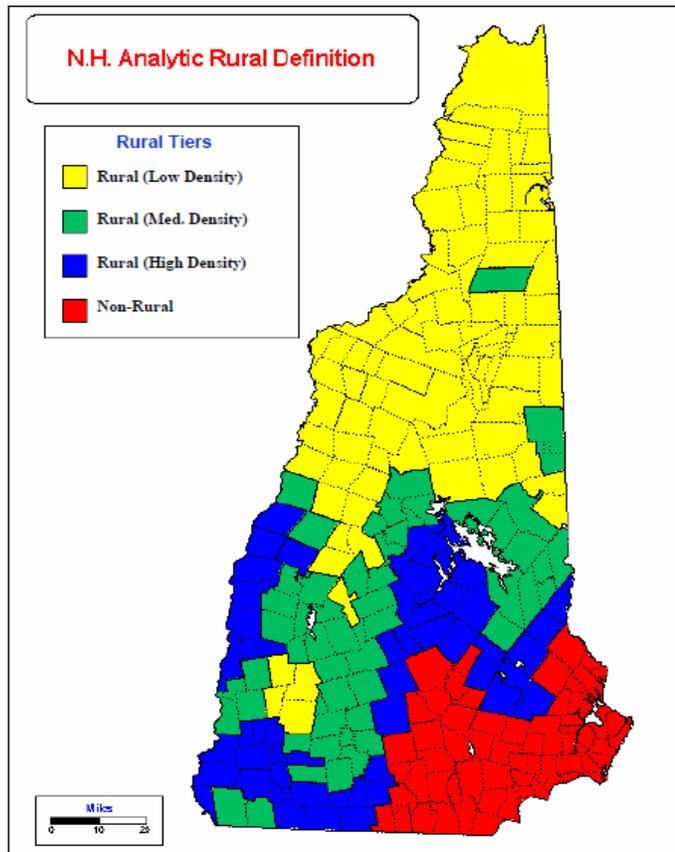


- More than one in five actively licensed NH hygienists also hold an active license in Massachusetts, and 4-5% hold active licenses in Maine and Vermont.



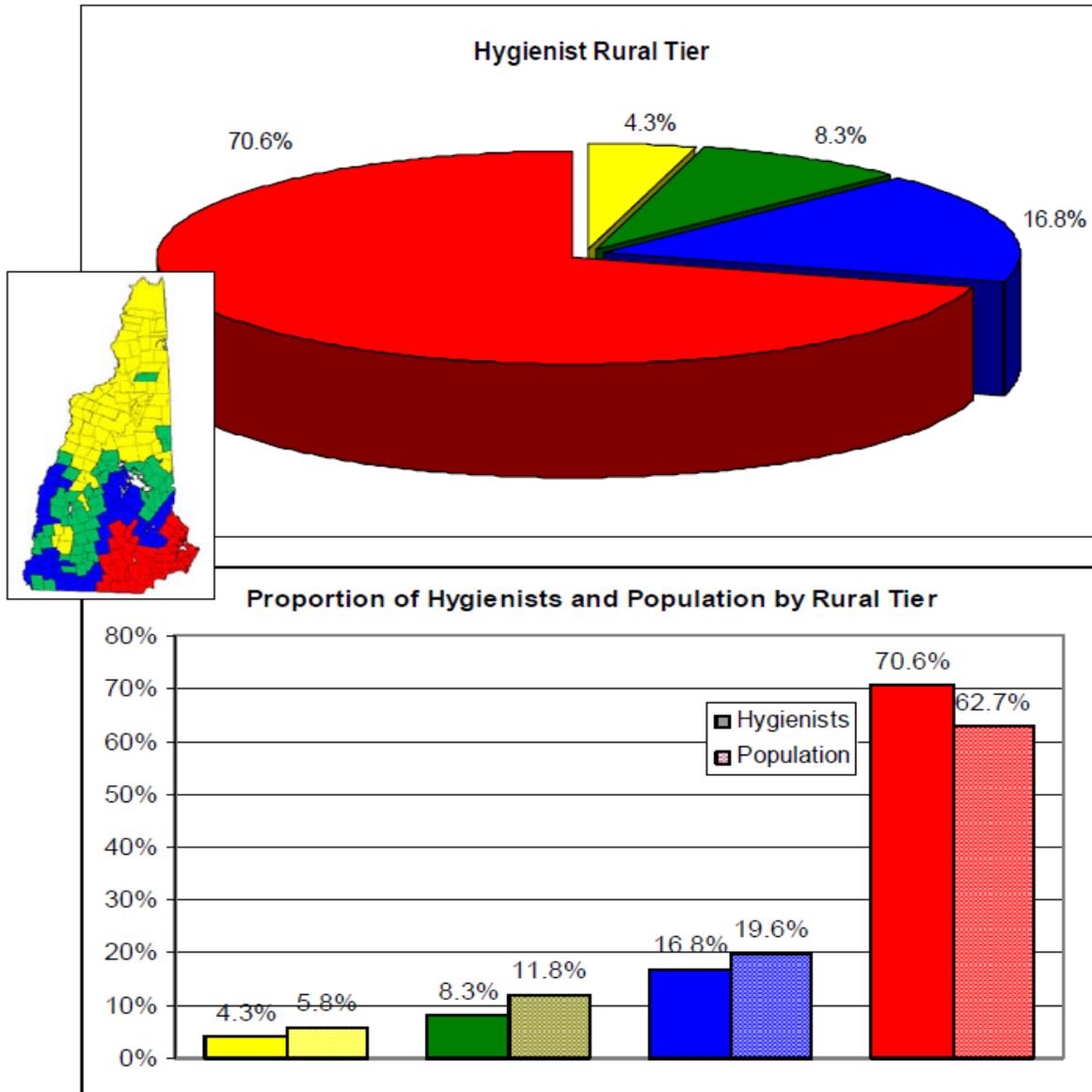
- Two thirds of hygienists in NH were attracted to practice here by a personal connection to the state/region.
- Only 10% combined selected the two options construed as professionally-related, including the practice environment and professional opportunities in the state. A greater proportion, 17%, cited employment opportunities for their spouse/partner.

## Hygienist Geographic Distribution and Rural Analysis:

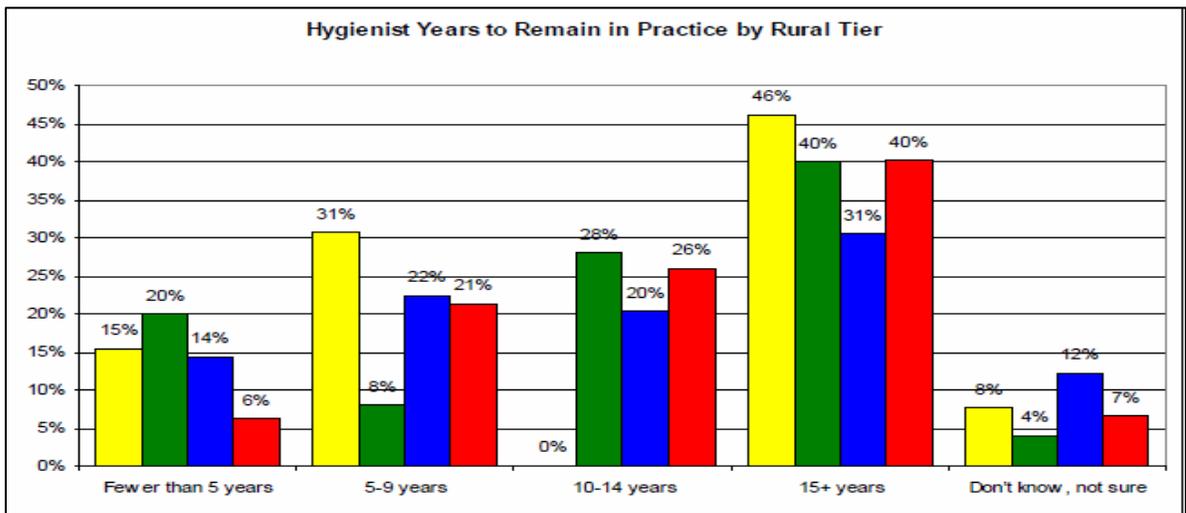
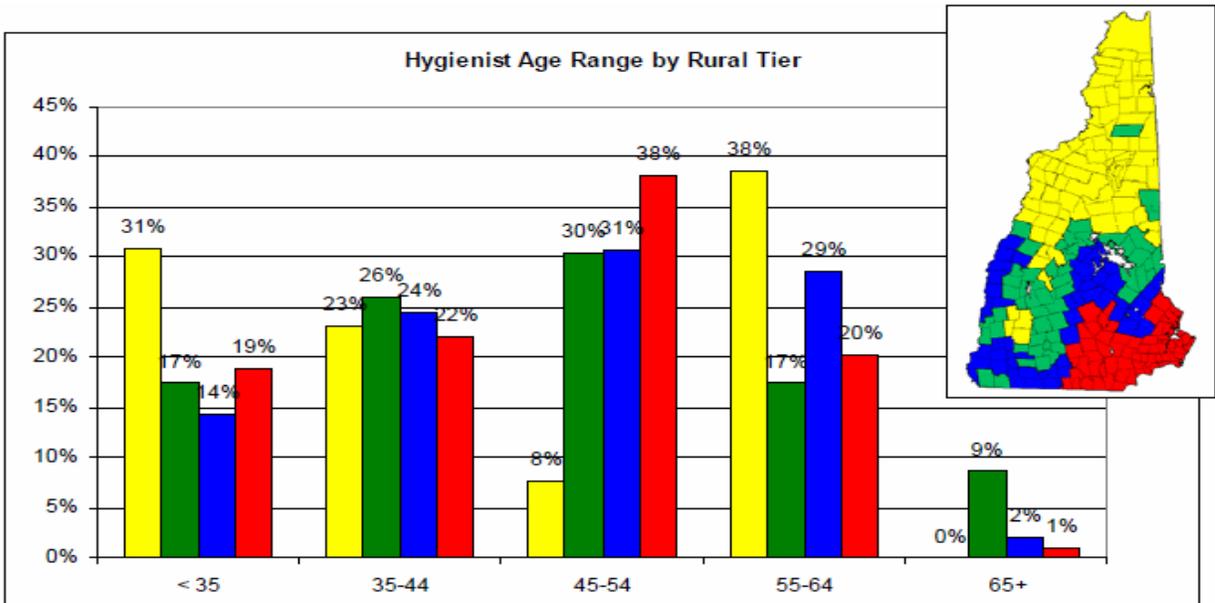


	Population	% Pop.	Cumulative Population	Cumul. % Pop.	Area (Sq. Miles)	% Area	Cumul. Area	Cumul. % Area
Rural Low Density	71,881	6%	71,881	6%	3,860	42%	3,860	42%
Rural Med. Density	146,160	12%	218,041	18%	2,034	22%	5,894	64%
Rural High Density	242,204	20%	460,245	37%	1,822	20%	7,716	84%
Non-Rural	775,305	63%	1,235,550	100%	1,437	16%	9,153	100%

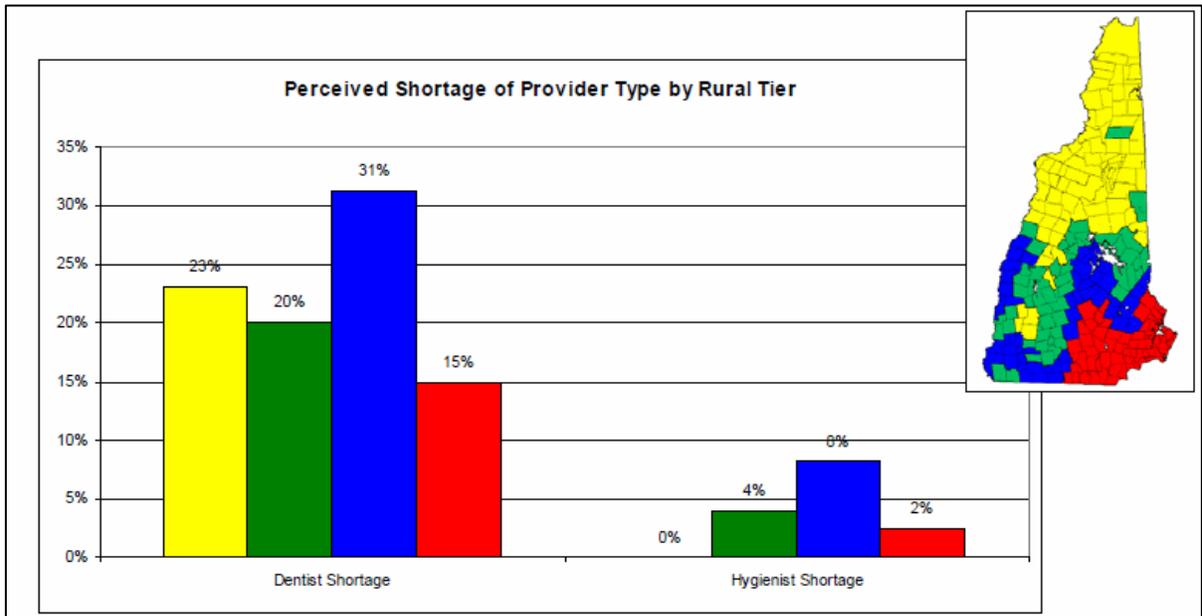
- To examine geographic distribution, the analysis broke responses down by a tiered rural definition developed for NH Department of Health and Human Services' State of Health in Rural New Hampshire report, released in 2004.
- The definition is based on a calculated population density within a 10-mile radius of the center of each city/town in the state, including areas and populations outside the state for municipalities on the border. The definition relies on 2000 census data for population and was cross walked to match zip codes in the state.
- Hygienists were assigned to a rural tier based on the zip code where they reported practice the greatest number of hours per the survey.



- Non-Rural areas of the state have almost 71% of the licensed hygienists, but just under 63% of the population based on the 2000 census.
- All rural tiers have a smaller portion of hygienists compared to the population. The two most rural tiers have the greatest proportional deficit between hygienists and population.
- The three rural tiers account for 84% of the land area in the state, but just under 30% of the hygienists. Much greater area and fewer hygienists in rural communities indicate a more sparse distribution of services and likely longer travel times to reach a provider.



- Hygienists in rural areas of the state are somewhat more likely to be over age 55 and to be planning to leave field within 5-10 years.
- Overall, however, hygienists appear reasonably well distributed by age and years remaining in practice across rural/non-rural tiers.



- The greatest perceived shortages of both dentists and hygienists are reported by hygienists in the ‘high density’ rural tier (blue). A similar pattern of perceived shortage in hygienists was seen amongst dentists located in this tier.
- Relatively small percentages of hygienists perceive a shortage of hygienists in any area of the state.
- The perceived shortage of dentists is somewhat greater in rural areas overall compared to the non-rural tier (23-31% percent perceiving a shortage, compared to 15% in non-rural areas). The difference is less pronounced than the difference in perceived shortage of dentists amongst dentists where non-rural dentists were far less likely to perceive a shortage.

## **Summary of Open-Ended Responses:**

At the end of the survey, respondents were asked to comment on any other aspects of their life as a hygienist that they wished to communicate. Responses mirrored many of the themes gleaned from other aspects of the survey with additional depth. These points are grouped by attractions and challenges for the profession:

- Attractions for Profession:
  - Many simply stated that they love being a dental hygienist and found it to be a rewarding career, particularly related to working with patients and the sense of value in the services they were providing.
  - Job flexibility, and specifically the ability to spend time with family, was frequently cited as a key positive career factor for many hygienists.
  - Some noted that pay level was a positive factor, particularly at the Associates' degree level.
- Challenges for Profession:
  - Market saturation and the lack of jobs and opportunity for advancement was the most commonly cited issue. Many expressed that this was a recent or emerging development in the field and the expansion of the New Hampshire Technical Institute program was specifically cited as a perceived factor by many holding this view.
  - The physical demands of the job was also a common theme, with neck and back injuries specifically cited in several comments. Some stated that this was influencing their ability to continue practicing as long as they would wish.
  - Lack of benefits, diminishing pay, and the inability to find full time employment were also stated as challenges. These sentiments were often related back to the issue of market saturation.
  - The desire to practice independently from dentists and to have a separate licensing board was expressed in several ways. Some felt that that self regulation and autonomy was important to advance the profession while others felt that it was unfair to be regulated by the group that hygienists must rely on for employment. A concern was raised about the dynamic of a declining population of dentists limiting opportunities for hygienists due to the oversight requirement.

## Appendix I

### Complete List of Task Force Recommendations

<b>I. Regularly analyze and document the needs for oral health services across New Hampshire's population</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
A. Identify and routinely convene a Statewide Healthcare Work Group of key leaders and policy makers to monitor the changing needs of the population and the healthcare workforce	NH DHHS		
B. Expand the state's capacity to maintain a comprehensive epidemiological oral health surveillance system to identify, investigate and monitor NH's oral health and oral health services	NH DHHS		
C. Review practice acts, licensure and professional requirements and revise as necessary to enable providers to deliver oral health services to high risk populations	Statewide Healthcare Workforce Work Group		
D. Collect key demographic data from dentists and hygienists through the licensure process to establish and maintain a database of provider demographics, and periodically distribute in an accessible format	NH Board of Dental Examiners		
E. Create and maintain a registry of dental assistants including key demographic data, and periodically distribute in an accessible format	NH Board of Dental Examiners		
F. Conduct periodic evaluations of the current workforce model, and refine as necessary to address the evolving needs and demands of the population	Statewide Healthcare Workforce Work Group		
G. Maintain a workforce that includes a minimum of five (5) general/ pediatric dentists per 10,000 population, and eight (8) hygienists per 10,000 population	Statewide Healthcare Workforce Work Group		

<b>II. Implement prevention strategies that will enable the workforce to manage the state’s oral health needs</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
A. Develop and implement a statewide fluoridation plan to educate the public about the importance of fluoride and to ensure optimal availability of fluoride in municipal water supplies	NH DHHS, NH Dental Society, NH Dental Hygienists’ Association		
B. Provide access to dental sealants for all New Hampshire children	NH DHHS, NH Department of Education		
C. Support initiatives to reduce the burden of oral disease among New Hampshire residents	NH DHHS, NH Dental Society, NH Dental Hygienists’ Association		
1. Maximize the availability of and remove barriers to dental hygiene evidence-based preventive services	NH DHHS/Oral Health Program, NH Dental Society, NH Dental Hygienists’ Association, Bi-State Primary Care Association		
2. Increase awareness among all New Hampshire residents of the importance of oral health to overall health (Awareness isn’t demand. We need to increase demand for oral health and for oral health services relative to other demands)	NH Oral Health Coalition		
a. Emphasize the importance of oral health to overall health with the general public, health care providers and public policy makers	NH Oral Health Coalition		
3. Incorporate preventive services including assessment, education, fluoride varnish, and referral for treatment in schools and settings that serve high risk populations, such as Head Start, WIC, nursing homes and senior centers	NH DHHS, NH Department of Education		
4. Build referral networks for follow-up care for children identified as at risk for oral disease	NH DHHS, New Hampshire Dental Society		
5. Incorporate comprehensive oral health guidelines into the Foundation for Health Communities prevention guidelines	Foundation for Healthy Communities, NH DHHS/ Oral Health Program, NH Dental Society, NH Dental Hygienists’ Association, NH Oral Health Coalition		

a. Develop and disseminate preventive guidelines to all primary medical care and dental offices	Foundation for Healthy Communities, NH Dental Society, NH DHHS, NH AHEC		
<b>III. Integrate oral health and general medical care</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
A. Develop comprehensive health homes inclusive of oral health for New Hampshire residents, with emphasis on those at high risk	NH Medical Society, NH Dental Society, NH Dental Hygienists' Association, Bi-State Primary Care Association, NH DHHS		
1. Build and expand awareness among all health professionals of the importance of oral health to overall health	NH Medical Society, NH Dental Society, Bi-State Primary Care Association, NH DHHS, NH AHEC		
B. Build collaborative practice models between medical and oral health providers	NH Medical Society, NH Dental Society, NH Dental Hygienists' Association, NH AHEC, NH DHHS		
1. Establish and routinely disseminate protocols for basic oral screening for primary care and prenatal medical providers	NH Dental Society, NH Dental Hygienists' Association, NH Medical Society, NH AHEC NH Nurse Practitioner Association; NH Academy of Physician Assistants		
2. Provide training for primary care and prenatal medical practitioners who provide oral assessment, preventive and referral services	NH DHHS, NH AHEC		
a. Explore reimbursement models for primary care and prenatal medical practitioners who provide oral assessment, preventive and referral services	NH DHHS/Medicaid, Commercial Medical and Dental Insurers		
3. Establish and routinely disseminate protocols for basic medical screenings for oral health professionals	NH Medical Society, NH Dental Society, NH Dental Hygienists' Association, NH AHEC		

Activity	Potential Partners	Timeline (TBD)	Resources Required
4. Provide training for oral health professionals who provide basic medical screenings	NH DHHS, NH AHEC		
a. Explore reimbursement models for oral health providers who provide oral assessment, preventive and referral services	NH DHHS/Medicaid, Commercial Medical and Dental Insurers		
C. Establish and implement oral health assessment, treatment and referral protocols for hospital emergency departments	NH Dental Society, NH Dental Hygienists' Association, NH Hospital Association		
1. Build referral relationships between hospital emergency departments and oral health providers	NH Dental Society, NH Hospital Association, Bi-State Primary Care Association		
D. Implement general practice (GPR) and pediatric dental residency programs in New Hampshire hospitals to increase exposure and provide opportunity for better integration of oral health with overall health	NH Dental Society, NH Hospital Association, NH County Nursing Homes, VNAs, Home Health Agencies		
E. Ensure access to preventive and restorative services for homebound individuals and residents in long term care facilities by supporting models that create a comprehensive oral health team for the delivery of preventive, therapeutic, restorative and emergency services	NH Dental Society, NH Dental Hygienists' Association, NH Health Care Association, NH County Nursing Homes		
1. Support models that maximize the role of hygienists in providing preventive services	NH Dental Society, NH Dental Hygienists' Association, NH Health Care Association		
2. Train long term care givers in the basics of oral health interventions	NH Health Care Association, NH Dental Hygienists' Association, NH Dental Society, Home Health Agencies, VNAs		
3. Create on-site oral health service delivery capacity within long term care facilities	NH Dental Society, NH Dental Hygienists' Association, NH Health Care Association		

4. Establish collaborative relationships between long term care facilities and community-based oral health providers	NH Health Care Association, Bi-State Primary Care Association, NH Dental Society, NH Dental Hygienists' Association		
<b>IV. Address the needs of high risk populations such as young children, older adults, and individuals with special needs, as well as those residing in rural areas of the state, and cultural minorities</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
A. Expand the capacity of the safety net	Bi-State Primary Care Association		
1. Create and/or expand dental programs in all Community Health Centers in New Hampshire	Bi-State Primary Care Association		
2. Identify appropriate sites, create and/or expand community based public/private model clinics	NH DHHS/Oral Health Program		
3. Establish oral health programs in nontraditional settings such as WIC, nursing homes, senior centers, etc.	NH DHHS/Oral Health Program		
4. Strengthen the collaboration between primary care and oral health providers to address the health requirements of individuals with special needs	NH Medical Society, NH Association of Pediatrics, NH Dental Society, NH Dental Hygienists' Association		
B. Include preventive and restorative benefits for adults in Medicaid	NH DHHS, NH Medicaid		
C. Establish regional public health dental supervisors to expand the practice of dental hygiene in public health settings	NH DHHS – Oral Health Program		
D. Implement direct reimbursement for services delivered by dental hygienists working in public health	NH DHHS, Medical and Dental insurers/administrators		
E. Expand school based programs to all New Hampshire schools to include evidence based preventive and restorative services	NH DHHS, Bi-State Primary Care Association		

<b>V. Improve the ability of the oral health workforce to address the needs of New Hampshire residents, particularly high risk populations</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
A. Elevate the knowledge, skills and ability of the New Hampshire workforce to address the oral health needs of high risk populations	NH Dental Society, NH Dental Hygienists' Association, NHTI, NH AHEC		
1. Expand educational opportunities to encourage faculty development for oral health training and education	NHTI, University System of NH, NH Dental Society, NH Dental Hygienists' Association		
2. Provide loan repayment and loan forgiveness to oral health professionals willing to serve New Hampshire's underserved areas, indigent and high risk populations	NH DHHS		
3. Build and maintain state and private foundation support for recruitment and training of oral health providers who see high-risk populations	Bi-State Primary Care Association/Recruitment Center		
a. Establish scholarship programs to encourage New Hampshire residents to pursue careers in public health oral health	Bi-State Primary Care Association/Recruitment Center		
B. Increase the number of providers who work with high risk populations through strategies such as licensure for certain categories of dentists who agree to work in public health settings	UNE, NHTI, University of NH System		
1. Increase the number of, and encourage oral health professionals' attendance at, continuing education programs that focus on the needs of special populations	UNE, NHTI, University System of NH, NH Dental Society, NH Dental Hygienists' Association, NH Dental Society		
2. Increase the proportion of New Hampshire hygienists with bachelor's degrees in dental hygiene	NHTI, NH Dental Hygienists' Association		
a. Expand the curriculum at the New Hampshire Technical Institute (NHTI) and/or other educational institutions to prepare practitioners to meet the needs of the underserved	NHTI, NH AHEC		

b. Establish a bachelor's degree program for dental hygienists in New Hampshire	NHTI, NH Dental Hygienists' Association		
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
4. Support the development of a dental school at the University of New England (UNE)	NH DHHS, Bi-State Primary Care Association, Endowment for Health, NE Delta Dental, NH Dental Society		
5. Increase the proportion of New Hampshire dentists who have residency training and/or hospital privileges	UNE, NH Dental Society, NH Hospital Association		
a. Establish dental residency programs within New Hampshire	UNE, Bi-State Primary Care Association, NH Hospital Association		
b. Establish general practice residencies (GPR) in selected New Hampshire hospitals	UNE, NH Hospital Association		
c. Create advanced education in general dentistry residencies (AEGD) within public health practices	UNE, Bi-State Primary Care Association		
d. Establish dental training opportunities within public health practices	UNE, Bi-State Primary Care Association, NH Dental Society		
6. Increase the proportion of New Hampshire dental assistants who have certification	NHTI		
a. Revise the practice act to establish the role of the expanded function dental assistants (EFDA)	NH Board of Dental Examiners		
b. Use EFDAs as appropriate to enhance productivity	NH Dental Society, Bi-State Primary Care Association		
7. Develop training programs for lay oral health workers	NH AHEC		
8. Monitor the development and implementation of alternative workforce models and implement those models in New Hampshire as appropriate	NH Dental Society, NH Dental Hygienists' Association, NH Board of		

	Dental Examiners		
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>
C. Maximize the ability of New Hampshire students to pursue careers in oral health professions	NH DHHS, NH Department of Education, NH AHEC		
1. Promote career counseling at all New Hampshire high schools to encourage students to pursue careers in oral health	NH Department of Education		
2. Establish educational pathways to encourage those who pursue careers in oral health professions to commit to practicing within the state	NH Department of Education, NH DHHS, UNE, NH AHEC		
3. Establish mentoring programs for students interested in the oral health professions	NH Dental Society, NH Dental Hygienists' Association		
D. Encourage oral health professionals to pursue roles in both professional and community education and training	UNE, NHTI, NH Dental Society, NH Dental Hygienists' Association		
E. Develop and manage a statewide network of oral health practitioners willing to accept referrals of high risk individuals	NH DHHS/Oral Health Program, NH Dental Society		
1. Build and sustain community-based care coordination services for high risk individuals	NH AHEC, Bi-State Primary Care Association		
a. Develop and disseminate best practice models for community-based care coordination services	NH AHEC, Bi-State Primary Care Association		
F. Encourage volunteerism among oral health professionals in public health settings	NH Dental Society, NH Dental Hygienists' Association		
1. Establish a website listing volunteer opportunities in public health settings	NH AHEC, NH DHHS/Oral Health Program		
2. Provide training for oral health professionals who volunteer in public health settings	NH AHEC		
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>

3. Develop a professional liability insurance program for retired oral health professionals who volunteer in public health settings	NH DHHS/Oral Health Program		
4. Facilitate licensure pathways for retired oral health professionals who volunteer in public health settings	NH Board of Dental Examiners		
G. Facilitate collaborative relationships between oral health providers and medical providers who are involved in serving high risk populations	NH Medical Society, NH Dental Society, NH Dental Hygienists' Association, NH AHEC		
H. Expand the collaborative practice model to improve the reach of the dental team	NH Dental Society, NH Dental Hygienists' Association, NH DHHS/Oral Health Program		
I. Develop and disseminate assessment and treatment protocols for individuals with special health care needs	NH AHEC, NH Medical Society, NH Dental Society, NH Dental Hygienists' Association		
1. Investigate, and use as appropriate, tele-dentistry and tele-medicine to access specialty input for treatment of high risk populations	UNE, NH Dental Society		
<b>V. Evaluate the implementation and success of the oral health workforce strategic plan</b>			
<b>Activity</b>	<b>Potential Partners</b>	<b>Timeline (TBD)</b>	<b>Resources Required</b>