PORTRAIT OF ORAL HEALTH IN NORTH CAROLINA

An Overview of Our Current Realities and Opportunities for Change

A Report from the North Carolina Oral Health Collaborative
A program of the Foundation for Health Leadership & Innovation

NC ORAL HEALTH
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Perspective on the State's Oral Health: Is it Time for a North Carolina Dental Moonshot?

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Remarkable progress has been made in addressing the oral health of North Carolinians over the last several decades. A look back at but one outcome measure provides a revealing picture. In the early 1960s more than 2,000 students in North Carolina had lost all of their permanent teeth to dental disease before graduation from high school. There was only 1 dentist for every 4,000 people at that time, fewer than 100 dental hygienists practiced in the entire state, and only 15% of the population was drinking fluoridated water.

Today, a downward trend in dental caries in permanent teeth of children and adolescents first identified in the 1970s has reached historic low levels. Complete tooth loss from dental disease has plummeted in the last 50 years and has all but been eliminated in upper-income groups. In short, dramatic reductions in the burden of disease are possible and have been achieved for many North Carolinians.

One negative trend stands out: now, for the most part, dental disease is concentrated in lower-income populations. This gap in dental disease between lower- and other-income groups should come as no surprise when one considers concurrent trends in social determinants of disease. The population is growing, and as it does, is getting older, more diverse and more deeply divided by income.

"Every system is perfectly designed to get the results it gets!" is a short, magical quote that has become a guiding principle for healthcare change in the United States. It is increasingly apparent that the current healthcare system is unable to respond effectively to the growing inequalities in oral health. The current dental care system will continue to benefit many people, but simply improving access to this care is unlikely to be entirely effective in high-risk individuals.

It is time for North Carolina to undertake an aggressive agenda, a moonshot if you will, that includes strategies that deal with the underlying social, economic and political causes of oral health inequalities. Strategies are important on three major fronts.

• First, we need to continue to address traditional access barriers to the current dental care system, such as lack of dental insurance, through innovative solutions that consider social determinants (e.g., integration of oral health services into medical care and social service programs).

• Second, strategies are needed to improve dental care for those who have access so that more productive interactions occur with patients having low literacy or language barriers (e.g., patient-centered care, provider communication skills training).

• Third, broader policies need to be considered that will help reduce inequalities caused by social determinants (e.g., promote the availability of oral health preventive services in programs such as Head Start, WIC and long term care; provide intense family support services for high risk individuals; give priority to prevention and early intervention).

Such a multifaceted approach involving access, improvements in the current dental care system and policy development is not without its challenges. It would be complex to plan and implement, difficult to engage fully the necessary disciplines inside and outside of dentistry, challenging to develop a consensus vision around how to move forward, at risk of falling back on current approaches that are not working for many people, and would require community-by-community action in addition to regional and state activities. But then it is a moonshot that we need!

Executive Summary

North Carolina has made noteworthy progress in the arena of oral health in recent years, yet inequities in access to care are unacceptably pervasive. Poor oral health results in more than just tooth decay. It has consequences that dramatically lower quality of life, impacting overall health, self-esteem, the ability to learn and employability. While there is a proven connection between individual health literacy and health outcomes, inequities in oral health among North Carolina residents are largely a function of how our oral health care system is structured.

The Portrait of Oral Health in North Carolina is intended to provide a rich overview of the current state of oral health in North Carolina, acknowledging the progress that has been made since the 1999 NC Institute of Medicine Report[8], while highlighting the challenges that persist and the opportunities for systemic change.

Accessing the North Carolina Oral Health Care System:

The U.S. health care system is structured such that a person's ability to access care is largely determined by his or her ability to pay. This is even more so the case for oral health care. The out-of-pocket expenses for dental care can be prohibitive, even for someone with private insurance. On average, out-of-pocket expenses for dental care are more than three times higher than for medical care. Furthermore, lack of dental coverage and/or ability to pay pose even greater barriers for rural populations, who are already challenged by fewer dental providers to access for care.

In addition to costs, geography and limited capacity of safety net clinics also pose barriers to care. Such inequities in access have and will continue to perpetuate disparities in oral health outcomes unless systemic changes are made.

Through the Lifespan: How Well is the System Meeting the Need?

NC Statistics at a Glance:
Citations for all statistics within the Executive Summary appear in the body of the document.

- Emergency department dental visits per 10,000 population in NC: 87.8 (more than twice the national rate and the fastest growing compared to other southeastern states).
- 13% of kindergartners with untreated decay.
- 55% of American Indian and 52% of Hispanic children (compared to 30% of white children with untreated tooth decay.).
- 21% of North Carolinians over age 65 have lost all of their natural teeth.
- Dentists are heavily concentrated in 1/5 of the counties. There are 3 counties with no dentists.
- 27% of dentists in NC participated in Medicaid in 2014 (compared to 42% nationally).

Children & Adolescents: Tooth decay continues to be the most common chronic disease of childhood. Poor oral health has great impact on the development and well-being of children. Children with dental problems and pain are more likely to have performance issues during the school day, nearly 3 times more likely to miss school, and less likely to complete homework assignments.

Adults: Poor oral health can significantly diminish quality of life in a number of ways – the most obvious being a person's ability to eat, sleep and speak. However, there are also social and economic consequences that can impact a person's job readiness and performance, and ultimately the economic stability of communities.

Pregnant Women: A woman's health plays an important role in the health of her children, and this includes oral health. When parents suffer from dental decay, they can transmit the harmful bacteria that causes decay to their children through seemingly innocent behaviors such as sharing eating utensils.

Frail Elderly: Older adults, particularly those residing in assisted living and long-term care facilities, also suffer disproportionately from oral diseases and conditions. If they are able to access care, most older adults experience high out-of-pocket expenses as Medicare does not cover dental services.

Workforce: The dentist-to-population ratio in North Carolina continues to lag behind the national average. However, far more concerning is the fact that North Carolina dentists are heavily concentrated in one-fifth of the state's counties–primarily suburban and urban areas.

Community Water Fluoridation: Fluoridation of community water systems has contributed greatly to the decline in tooth decay in the U.S. Of North Carolina residents served by public water systems, 88% receive fluoridated water – higher than the national average.
It is critical that North Carolina at least maintain this level of coverage and avoid rolling back decades of progress in fighting dental decay.

Opportunities for Action

Over the last 40 years, oral health status has improved dramatically for those with access to care, but not for those populations that struggle with systemic barriers to accessing care. There are opportunities before North Carolina to make systemic change that addresses both the supply and demand for oral health care, and effectively begins to close the gaps in oral health access and outcomes.

Supply-Side Strategies:

Address Shortage and Maldistribution of Dentists: Strategies should be considered that incentivize dentists from oversaturated areas to provide care to these rural communities as an extension of their practices. Employing new service delivery models, such as the Virtual Dental Home via teledentistry, is a proven vehicle for extending needed preventive care into communities and referrals through the effective and efficient use of the allied dental workforce.

Maximize Use of Existing Supervision Provisions in the Dental Practice Act: Provisions have been made to allow dental hygienists to provide care in certain settings with out direct supervision by a dentist, via 16W Public Health Hygienists and 16Z Limited Supervision Hygienists. Given that these provisions are underutilized, additional efforts to enable allied dental personnel to work to the full extent of their education and training to meet the needs of more North Carolinians should be considered.

Expand Access to Dental Hygienists: While it varies by state, 39 states allow a licensed certified dental hygienist to assess patients and offer a limited scope of treatment without the specific authorization or on-site presence of a supervising dentist. Allowing hygienists to provide these services, which are well within their training and experience, would increase access to preventive services in high-risk populations and community settings including nursing facilities, schools and day cares.

Increase Medicaid Reimbursement Rates: Increasing Medicaid dental reimbursement rates has been shown in North Carolina and other states to quickly increase provider participation and patient utilization rates. Because the vast majority of North Carolina dental providers are private practitioners, they are critical to closing the disparities gaps. The dental safety net system cannot bear the entire burden and charity care is not a solution.

Common Sense in Value Based System: The health care system is moving toward value-based approaches to financing care. Within such a system the impact of oral disease on costs associated with improved overall health outcomes has the potential to play a significant role. Poor oral health has a direct impact on health outcomes for adults with diabetes and other chronic conditions. The costs and risks related to overall health outcomes for these and other populations, due to poor oral health, will be transferred to those entities responsible for improving population health outcomes.

Demand-Side Strategies:

Protect Existing Medicaid Benefits and Expand Coverage:
The loss of existing dental benefits for children or adults would further disenfranchise a population that is already socially and economically overburdened, and the health care system would eventually bear unnecessary expense. Expanding Medicaid to cover more low-income and vulnerable individuals would greatly improve access for those who currently may be using inadequate or inappropriate sources of dental care, or who are not accessing the system at all.

Bring the Mouth Back Into the Body:
Efforts towards oral health-primary care integration are essential if the public – patients, providers, and payers alike – are to truly embrace oral health as an essential component of overall health. The continued separation of medical and dental, in education, training, clinical practice, payment systems and in reform efforts, undermine integration and send a message that oral health care is ancillary.

Promote and Spread Innovation: There are successful, innovative programs operating all across North Carolina that are increasing access to care for some of the state's most vulnerable populations as highlighted in our NC Oral Health Innovation Bank Report. Investing in statewide adoption of some of these promising practices is one way to ensure North Carolina solutions for North Carolina problems.

Conclusions

Through the implementation of several of the 1999 NCIOM recommendations, innovative strategies in prevention and early intervention, and a robust state dental public health program, North Carolina has certainly experienced gains in oral health in the last 15 years – most notably among its youngest residents. Unfortunately, these improvements have not been equally felt by all children and adults, begging the question: who is left behind, and why?

Given the proportion of underinsured and uninsured individuals in North Carolina, the current oral health care system is not structured to meet the needs of far too many. North Carolina must invest in long-term, sustainable strategies that empower both oral health providers to deliver needed care to more people and patients to seek the care they so desperately need. Recent decades of experience make it clear that we have the technical solutions and the human resources to improve oral health. Therefore, this is not a challenge of science, but rather one of leadership and political will to make oral health achievable for all.

By coming together to modernize our oral health system, we'll not only improve outcomes but also reduce costs. The opportunities to take action have presented themselves time and time again, and the people of North Carolina are saying there is no time like the present.

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About the NCOHC

The North Carolina Oral Health Collaborative (NCOHC) was formed in 2013 with the recognition that there is undeniable power in collective action. The NCOHC convenes diverse stakeholders to identify and resolve consumer-level and systemic barriers to optimal oral health and accelerate implementation of policies and practices that reduce oral health disparities and promote improved oral health for all North Carolinians.

Our collective work is to ensure that all North Carolinians have access to quality dental care, provided by someone they trust, in a timely and compassionate manner, regardless of geographic residence, socioeconomic background, race and ethnicity, age or mental/physical ability.

Transforming the landscape of oral health in our state requires us to work across differences in sectors, political ideology, program silos, and geography towards common goals. Undoubtedly, there is great potential for dramatic change within our lifetime.

The North Carolina Oral Health Collaborative is a program of the Foundation for Health Leadership and Innovation. The Foundation is a nonprofit organization that develops and supports innovative programs and partnerships that advance affordable and sustainable quality health services to improve the overall health of communities in North Carolina and beyond.

Preface

The release of *Oral Health In America: A Report of the Surgeon General* in 2000 prompted significant dialogue around a matter of health that had previously garnered very little national attention. Greater recognition was given to the chronic, yet preventable, nature of oral diseases, the disproportionate burden of oral disease experienced by many of the country's most vulnerable populations, and the broader impact of oral health on overall health and quality of life. This dialogue has subsequently resulted in the development of numerous partnerships at all levels of government and non-profit organizations to develop strategies for improvement, and progress has since been made.[1]

• Fewer children and adolescents have untreated tooth decay and more school-age children are receiving dental sealants.[2]

• Periodontal (gum) disease and untreated tooth decay has decreased among adults, consequently adults are retaining their teeth longer.[3]

• More Americans are benefitting from optimally-fluoridated community water systems.[4]

• The connection between oral health and overall health has been further emphasized by research suggesting stronger relationships between oral health and a variety of conditions, including diabetes, cardiovascular disease and adverse birth outcomes.[1]

However, despite these overall improvements in oral health, some populations continue to be disproportionately plagued by poor oral health.

• Inadequate access to care continues to be a challenge for many Americans, because an estimated 126 million people do not have dental insurance.[1]

• Rural populations tend to have lower dental care utilization, lower rates of insurance, higher rates of poverty, less water fluoridation, fewer dentists per population, and greater distances to travel to access care than urban populations.[5]

• Non-Hispanic blacks, Hispanics, and American Indians and Alaska Natives generally have the poorest oral health of any racial and ethnic group in the United States.[6]

• Adults with less than a high school education experience tooth decay and destructive periodontal (gum) disease nearly three times that of adults with at least some college education.[6]

• Older adults age 65–74 living below the federal poverty level are nearly three times more likely to have lost all of their natural teeth than older adults living above the poverty level.[7]

As the first state to implement a state oral health program nearly 100 years ago, North Carolina has demonstrated a commitment to the oral health of its residents. Through a robust dental public health program, North Carolina has been able to continually monitor the oral health of its children and respond to their needs through the coordinated provision of preventive services such as school-based sealant and fluoride mouth rinse programs, education, and referrals to dental providers. As a result of the program and its emphasis on prevention, North Carolina has experienced clear improvements in overall oral health, particularly for children. However, like other states, North Carolina continues to experience many of the same oral health disparities seen at the national level.

At the direction of the North Carolina General Assembly, the North Carolina Institute of Medicine (NCIOM) Task Force on Dental Care Access was convened in 1998 to evaluate and develop strategies to improve access to dental care, particularly for the state's Medicaid population. The Task Force acknowledged that inadequate access to dental care was commonplace among individuals living in poverty, often resulting in severe or chronic pain, inability to eat or speak, missed days of school and work, and increased susceptibility to other medical conditions.[8] The 1999 final report included 23 recommendations to address 1) dentist participation in Medicaid, 2) the supply of dentists and dental hygienists serving underserved areas and populations, 3) the supply of pediatric dentists and provision of preventive dental services to children, 4) training dental professionals to treat special needs patients, and 5) educating Medicaid recipients on the importance of routine oral health care.[8] *See Appendix for complete list of recommendations.*

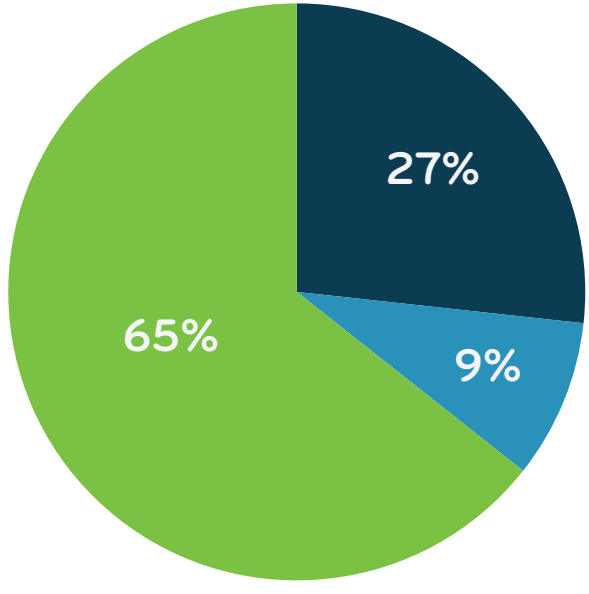
The status of the Task Force's recommendations was reviewed six years later during the 2005 NC Oral Health Summit. Summit participants reviewed the original recommendations to determine their current relevance, what steps had been taken towards implementation, and ultimately made recommendations to either continue with implementation or develop new strategies altogether. Overall, Summit participants concluded that the majority of recommendations had technically been implemented, but stressed the need for ongoing efforts to sustain and improve their impact.[9]

The Portrait of Oral Health in North Carolina is intended to provide a rich overview of the current state of oral health in North Carolina, acknowledging the progress that has been made since the 1999 NCIOM report, while highlighting the challenges that persist and the opportunities for systemic change. As important context to this state of oral health, the report begins with a schematic representation and explanation of the oral health care system in North Carolina and how it is typically accessed by individuals and families based on dental insurance status.

How well the system is meeting the oral health needs of residents at different life stages is then described through the presentation of traditional quantitative data (ie oral health indicators and related data) supplemented by real stories from North Carolinians most directly affected by lingering oral health inequities. Promising programs and practices that are attempting to address access to care issues are also highlighted throughout this section of the report.

The details of these programs have been collected from across North Carolina and beyond as part of a larger project called the Oral Health Innovation Bank. *See Additional Resources.*

Taking into account the current state of oral health and previous attempts to improve access to care, the report concludes with a candid discussion of the opportunities before North Carolina to make substantive change to its oral health care system – change that will bring us closer to achieving oral health equity.



Insurance Status of Private Dental Practice Patients

- Uninsured
- Public Insurance
- Private Insurance

Reference Number: 14

Accessing the North Carolina Oral Health Care System

The U.S. health care system is structured such that a person's ability to access care is largely determined by his or her ability to pay. This is even more so the case for oral health care. In 2015, 84% of North Carolinians with any dental benefit had a dental visit, compared to 61% of those without dental benefits.[10] However, while having dental coverage is certainly more beneficial than no coverage at all, it does not guarantee access to care - or more specifically, the care a person may need.

> "My job does [provide dental insurance], but the dentist that I was going to was costing me too much money to get it done. You can have insurance with your company for dental, but a lot of things aren't covered."
>
> Patient at a Charity Clinic

The out-of-pocket expenses for dental care can be prohibitive, even for someone with private insurance. On average, out-of-pocket expenses for dental care are more than three times higher than for medical care.[11] Two national household surveys of low- and middle-income households with credit card debt found dental expenses to be a leading contributor to medical debt in 2012.[12] Furthermore, lack of dental coverage and/or ability to pay pose even greater barriers for rural populations, who are already challenged by fewer dental providers to access for care. The following narrative briefly describes the various entry points into the North Carolina oral health care system and some of the opportunities and challenges each pose to the patient population.

Private Dental Practices

Private practice, whether a solo practitioner or group practice, is the most common setting in which the general public receives dental care. In 2016 approximately 76% of North Carolina dentists, or 4,566 , are in private practice,[13] the majority of whom are general practitioners, which means their practice typically provides a broad range of dental services. The fees charged in private practice tend to be the highest of the care settings discussed here, which may in part explain why nationally, private practices are largely made up of privately insured patients.[14]

Dental Schools

The University of North Carolina School of Dentistry (UNC), East Carolina University School of Dental Medicine (ECU) and community college Dental Hygiene programs across the state are also a source of dental care for North Carolinians. UNC provides comprehensive primary and specialty dental services through its student and faculty practice clinics. UNC also hosts the Student Health Action Coalition (SHAC) which is a student led organization whose mission is to provide free health services to uninsured and underinsured. The Dental Clinic operates on select Wednesday nights and sees patients on a walk-in lottery system (no appointments). Students also provide charitable care at multiple free clinics in the Triangle area.

Having just opened in 2011, ECU currently provides comprehensive primary services and limited specialty care. The fees charged by dental school clinics tend to be slightly less than those of private dental practice, and both institutions accept most private insurance plans, as well as Medicaid and NC Health Choice. Receiving treatment at a dental school can however come with additional costs: time and travel. Some patients may drive several hours to receive care, if the dental school is their only or best option. Additionally, inherent to receiving care from student providers is significantly longer appointment times – often two to three hours. Yet both institutions attempt to alleviate these barriers by providing free or low-cost services through a variety of community outreach programs. ECU opened with a particular emphasis on providing and enhancing oral health services for underserved North Carolinians and recruiting

qualified students from historically underrepresented groups, disadvantaged backgrounds, and underserved areas, understanding that they are likely to practice in similar communities. In addition to dental services offered at the school's primary location in Greenville, NC, the school also operates eight satellite Community Service Learning Centers in underserved areas across the state. These sites are able to provide some reduced-cost dental care to eligible patients. It is important to note that historically UNC has also been a national leader in enrolling underrepresented and minority students.

There are 12 community college dental hygiene programs in the state.[15] In addition to training future hygienists, these programs operate dental hygiene clinics, whereby the students provide dental cleanings and other basic preventive services to the public; patients requiring additional treatment, such as restorations and extractions, are referred to a dental office.

Dental Safety Net System

The safety net health care system is regarded as the default system of care for uninsured, Medicaid, and other vulnerable populations.[16] The system is not uniformly available throughout the country, nor North Carolina, and because it relies on a variety of financing mechanisms, financial viability and sustainability of these programs can be challenging.[16] Safety-net dental programs face a unique challenge of providing high quality care to the underserved within strict budget constraints. Many of these programs have a limited scope of dental services or prioritize their services for a specific age demographic. There are currently approximately 133 safety net dental access points throughout North Carolina, including local health departments, community health centers, free clinics, school-based dental programs and mobile dental clinics.[16]

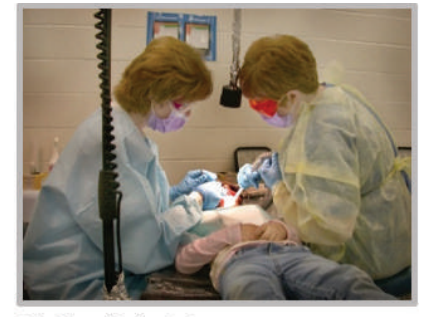
Community Health Centers

Federally Qualified Health Centers and other health centers are nonprofit healthcare organizations with a mission to provide care to underserved populations. They serve largely Medicaid and uninsured populations, but also accept private insurance. Uninsured patients have the ability to apply for a sliding scale discount on services based on their income. Federal grant funding is then used to offset operational costs not covered by patient care revenue. However, this type of funding is insufficient to meet the need for care.

Not all health centers offer dental care, and those that do, may not offer crowns/bridges, dentures and orthodontics. There are currently 39 federally-funded health centers in North Carolina, 25 of which provide some level of dental care at one or multiple clinic sites.[18]

Local Health Departments

Health department dental programs are similar to those of community health centers in regards to patient demographics, services offered, and fee structure. Of the 100 health departments in North Carolina, 36 provide dental services through either fixed clinic sites, mobile dental programs, or both.[19] However, services are often limited to children and, less frequently, pregnant women.



School-based Sealant Project
Photo credit: NC Oral Health Section

School-Based Dental Programs

School-based programs provide students access to dental care in a location that is safe, convenient, and accessible: their school. Schools are often selected based on the percentage of the student body enrolled in the federal free and reduced lunch program.[20] This criteria helps programs target students who are more likely to have unmet health needs. Services are primarily provided by dental hygienists and include oral health screenings, education and preventive services, such as dental sealants and fluoride mouth rinse, using portable dental equipment. Otherwise, students who require additional care are ideally referred to the nearest available dentist. The North Carolina Oral Health Section in collaboration with local health departments provide a significant portion of the school-based dental services offered in North Carolina.

Mobile Dental Clinics

Through the use of portable dental equipment or dental-equipped vans and buses, dental services are taken to populations in need – whether to schools, long-term care facilities, or other community settings. These mobile programs focus largely on children and institutionalized seniors. Restorative care, extractions and other rehabilitative services may be provided depending on the program budget. There are at least 14 North Carolina-based mobile dental programs currently operating across the state.[17,19]

Photo taken by YES! youth staff at NC MOM Clinic

Charity Events and Free Clinics

Charity dental events are typically one or two-day events held annually, semi-annually, or more often depending on the availability of resources. Examples include the North Carolina Missions of Mercy (MOM) Clinics and Give Kids A Smile (GKAS) events. Such efforts rely heavily on grant funding and donations, including volunteer labor. For some charity events, patients will line up several hours prior to the clinic opening and may remain in line several additional hours before receiving care; some patients may not even receive care if the event is on a first-come-first-serve basis. While these events provide patients with care they may not have otherwise been able to receive, they do not provide patients with a regular source of care, or a dental home.

Free clinics are different from charity events, in that they are often fixed operations with a more regular schedule. However, hours of operation and breadth of services provided are limited by the availability of volunteer dental staff, and thus may be irregular. To ensure that resources are directed most effectively in meeting needs, eligibility to receive care is limited to only uninsured individuals and specifically those whose income is less than a designated Federal Poverty Level threshold – commonly 200%.[21,22] Some clinics truly provide free services, while others may charge a flat, nominal fee based on income. For individuals with extremely limited financial means, such as the homeless population, free clinics are often the only possible source of dental care. Long waitlists are not uncommon, and like charity events, grant funding and donations are critical to cover the cost of uncompensated care.

"This is kind of a third-world refugee camp situation. Although I really appreciate the volunteer efforts by the doctors."

Patient at a NC Missions of Mercy Clinic

"I do have [dental] insurance, but it covers 50%. Sometimes my gums swell and I [can't] eat. I don't have molars. Eating is hard. When I went to check with my insurance, they quoted me around $2,000. When I have the money, I will go. Even if I go to a check-up, an appointment can be $350. So, I just stay with [the tooth problem]….Even with my health insurance, I cannot pay."

Oral Health Focus Group Participant

Where North Carolinians Access Dental Care:

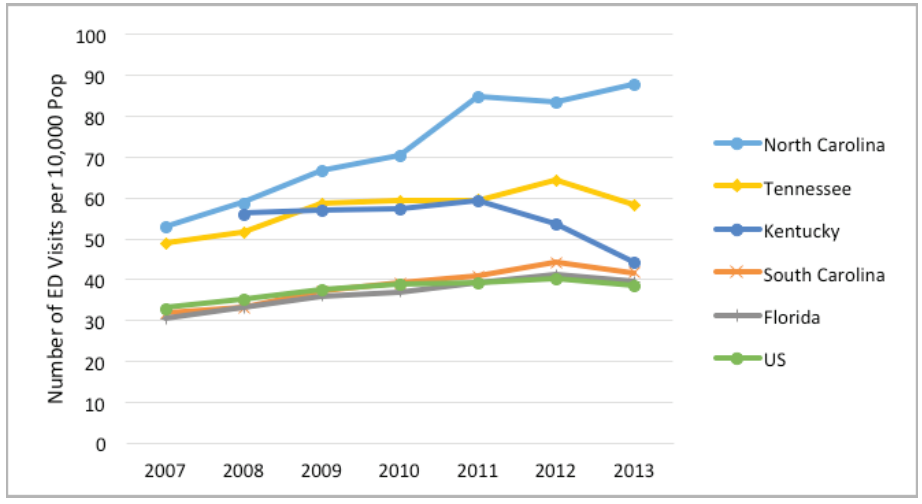
The U.S. health care system is structured such that a person's ability to access care is largely determined by his or her ability to pay. This is even more so the case for oral health care. If you have dental insurance and/or money to pay for care, then your options are many. If you have public insurance, no insurance or limited financial resources, then the options are limited. These are some of the ways North Carolinians access oral health care:

- Privately-Owned Individual or Group Dental Practices
- UNC/ECU Dental Faculty Practices
- Community Dental Centers: FQHC's, Local Health Departments w/Dental Programs, East Carolina University's Community Service Learning Centers, Mobile Dental Clinics
- Dental Hygiene Programs at Community Colleges
- School-Based Dental Programs
- Student Health Action Coalition at UNC
- Hospital Emergency Departments
- Charity Events and Free Clinics (e.g. Missions of Mercy Clinics through NC Dental Society and Give Kids a Smile Day Events)
- Clandestine Clinics

Hospital Emergency Departments

The emergency department (ED) is not a true access point into the oral health care system, because in most instances, there is no direct link to an oral health provider nor definitive oral health care. However, for some populations in the U.S. and North Carolina, the emergency room has become their primary source for "dental care". In 2012, ED dental visits cost the U.S. health care system $1.6 billion, with an average cost of $749 per visit.[23] The per capita rate of ED dental visits in North Carolina is more than twice the national rate and the fastest growing compared to other southeastern states (Figure 1).[24]

Figure 1. Emergency Department Visits for Dental Conditions, per 10,000 Population



Clandestine Dental Care

Clandestine dentistry. Underground dentistry. Street dentistry. Illegal dentistry. The terms are all relatively interchangeable in describing dental care provided by unlicensed dentists, often in their homes or other inappropriate settings.[25] These unlicensed dentists may fill cavities, fit crowns, perform root canals or a host of other dental procedures. Many say they have been dentists in their home countries, such as Brazil, Colombia and Peru, but have not transitioned to legal practice in the United States.[25] The people who seek care from these individuals often do so out of desperation. They cannot afford care in the traditional dental setting.

The Office of the Surgeon General once estimated that over 100 million children and adults are forced to use poorly trained and under-qualified 'dentists' due to a shortage of qualified dental professionals. There were two recently confirmed cases of illegal dental practice in Charlotte, NC in 2015.[26,27] However, given its illegality, the extent of clandestine dental practice in the U.S. and in North Carolina cannot be accurately determined.

Through the Lifespan: How Well is the System Meeting the Need?

Photo taken by YES! youth staff at NC MOM Clinic

Children & Adolescents

In 2000, the Surgeon General identified tooth decay as the most common chronic disease of childhood. Unfortunately, this remains true at present day. Poor oral health has great impact on the development and well-being of children. Children with dental problems and pain are more likely to have performance issues during the school day, nearly 3 times more likely to miss school, and less likely to complete homework assignments.[28,29] Poor oral health in children has also been associated with increased shyness, feelings of worthlessness, unhappiness and reduced friendliness.[28] Dental pain has even been shown to have similar, if not greater, impact on children's quality of life than acute asthma.[30] These findings illuminate the importance of preventing and treating dental disease to help facilitate the academic achievement and psychosocial development of children.

Utilization of Dental Services by Children:

Medicaid insured kids in North Carolina age 1-5 had the greatest increase of all child beneficiaries in utilization between 2008 and 2013.[33] This trend is particularly promising, as the U.S. experienced a significant increase in dental decay among this age group just less than 15 years ago. While increasingly more North Carolina children are visiting the dentist, there are disparities in utilization by age and type of dental coverage.

- 1.3 million Number of NC children age 0-20 enrolled in Medicaid or NC Health Choice– accounting for 71% of all NC Medicaid and Health Choice beneficiaries. [31]

- 47% of NC Medicaid and CHIP beneficiaries received preventive dental services in 2015 (compared to 43% nationally).[32]

- Adolescents age 15-20 consistently have the lowest utilization of dental services of all children.[33]

- Medicaid-enrolled children are less likely to have had a dental visit in the past 12 months that their privately insured counterparts.[34]

These overall improvements in early childhood oral health may be attributed to innovative programs such as Into the Mouth of Babes (IMB). Introduced statewide in 2000, the IMB program provides assessments and preventive dental services to Medicaid-eligible children from birth to age 3 ½ through medical practitioners; high-risk children are then referred to a dental provider.[37] This program addresses three NCIOM recommendations for programming to prevent and reduce tooth decay in preschool-age children and has been replicated by many other states across the nation because of its effectiveness.

While increasingly more North Carolina children are visiting the dentist, there are disparities in utilization by age and type of dental coverage.

Tooth Decay among Kindergarteners

The proportion of children experiencing tooth decay (treated decay and/or untreated decay) by the time they reach kindergarten has gradually decreased in the last 10 years, just short of the national goal of 30% or less.[36] Some groups of kindergarteners disproportionately experience tooth decay:

- 55% of American Indian and 52% of Hispanic children, compared to 30% of white children.[35]

- 42% of children living in rural counties, compared to 35% in urban counties.[35,36]

Untreated tooth decay has also decreased in the last 10 years, now well below the national goal of 26% or less: **13% of NC kindergarteners with untreated decay.**[35] However, some groups of kindergarteners have disproportionately higher rates of untreated tooth decay:

- 29% of American Indian and 23% Asian children, compared to 13% of white children;

- 18% of children in rural counties, compared to 13% in urban counties.[35]

Dental Sealants among Fifth Graders

Dental sealants are thin, plastic coatings that when applied to the chewing surfaces of back teeth (premolars and molars) can prevent 80% of tooth decay.[39] Despite the proven effectiveness of sealants, the majority of children still do not have them, and some groups of children are disproportionately less like to have them:

• 45% NC 5th graders have a Dental Sealant on at least one permanent molar –surpassing the national goal of 28% or more.[35]

• Yet, only 17% of Medicaid-enrolled children ages 6-9 have a dental sealant on at least one permanent molar.[40]

• 34% of African-American 5th graders compared to 50% of white 5th graders.[35]

• As high as 85% of 5th graders in Wilkes County, yet as low as 6% in Warren County.[35]

INNOVATION BANK SPOTLIGHT

MONTGOMERY COUNTY SCHOOL-BASED DENTAL CARE
A program of FirstHealth of the Carolinas

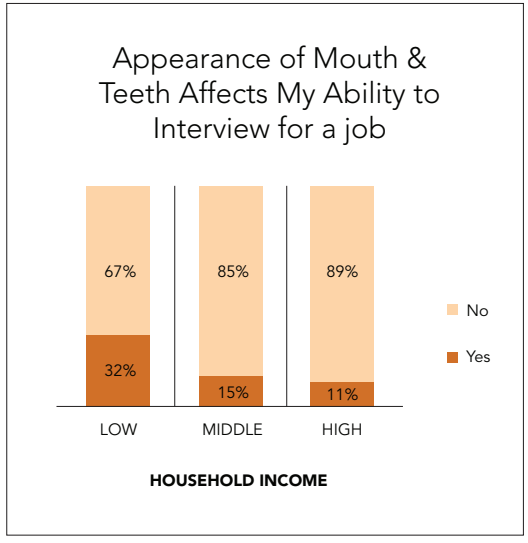
Montgomery is a rural county in south central North Carolina in which nearly 80% of schoolchildren qualify for free or reduced lunch. The county also ranks among the bottom 25 counties in overall health rankings for the state. To ensure that low-income children in the county receive the health care they need to thrive and achieve, FirstHealth Dental Centers and FirstHealth Montgomery County School Health Centers have partnered to develop a new school-based dental program. When the construction of two dental centers at the county's two middle schools is complete in early 2017, dental care will be just a few steps away from students' classrooms. This will enable students to get both preventive medical and dental care and treatment when they need it, and parents will not have to worry about missing work.

"If we did not see these kids, they wouldn't have care."
Dr. Sharon Nicholson Harrell, Director - FirstHealth Dental Care

"The beauty of school-based care is that kids who don't get to the doctor or the dentist will now be able to see a medical professional when they need to."
Regina Smith, Family Nurse Practitioner - Montgomery County School Health Centers

Adults

Poor oral health can significantly diminish quality of life in a number of ways – the most obvious being a person's ability to eat, sleep and speak. However, there are also social and economic consequences that can impact a person's job readiness and performance, and ultimately the economic stability of communities. A survey of North Carolina adults revealed that the impact of oral health on job readiness is greatest among those from low-income households.[41]



Utilization of Dental Services by Adults

Dental Visits in the last 12 Months:

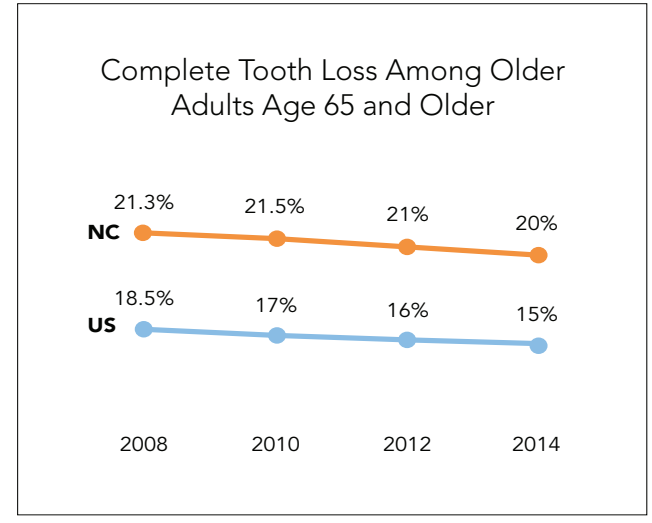
64% of all adults

55% of African American adults

43% of Hispanic adults

Adults making $75,000 or more are two times more likely to visit the dentist than those making less than $15,000.[42]

Tooth Loss in Adults



21% of North Carolinians over age 65 have complete tooth loss

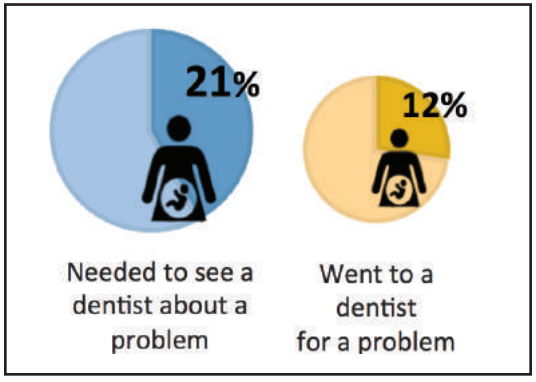
The national trend in tooth loss among adults is that people are retaining their teeth much longer than in previous decades, particularly older adults age 65+. This same trend has been noted among older adults in North Carolina, yet the rate of complete tooth loss has been consistently higher than the national average.[44] Among all North Carolina adults age 18+, the rate of complete tooth loss is only 6.4%. However, this rate varies greatly between and within regions of the state.[42]

INNOVATION BANK SPOTLIGHT

As told by Dr. Bill Donigan
Director, Gaston Family Health Services Dental Clinic

One of my patients—I'll call him "Jim"—once ran a large electric company in (region) North Carolina. He had a big job and was in charge of about 50 electricians. Jim suffered a bout with alcoholism and as a result, lost his wife, his family, his job and ultimately ended up on the streets. He sought help and was approved for Medicaid, which led him to the Gaston Family Health Services Dental Clinic. Jim's teeth were beyond help, so we had to extract them all. While this may sound extreme to many of us, having his diseased teeth removed allowed his health to return. As his energy began to come back, he was able to start working at a convenience store and came back to us to be fitted with dentures. The same day he got them, he was made manager of the store. One year later he showed up and I said, "Wow, you look good!" He had lost weight. I asked if he was still running that convenience store. He said, "Oh, no, I run a crew of 26 electricians now." Jim had come full circle. Stories like his always give me goose bumps. Jim slid off the grid to become one of those people that government has to help. Government, through Medicaid, provided him a step up. Now he is a productive member of society and giving back to the community. That's important. That's how it's supposed to work.

Pregnant Women



A woman's health plays an important role in the health of her children, and this includes oral health. Preventing tooth decay in children actually starts with supporting good oral health for parents. When parents suffer from dental decay, they can transmit the harmful bacteria that causes decay to their children through seemingly innocent behaviors such as sharing eating utensils. Emerging research shows that these bacteria may also be transmitted directly from the mother to the fetus before the child is born.[45] Therefore, increased bacteria in the mother's mouth can make the infant more likely to develop tooth decay later. However, for many reasons, pregnant women are not receiving the oral health care and education needed to ensure both their overall health and that of their children.

Less than half of pregnant women had their teeth cleaned while pregnant.[46]

More than 1/3rd of pregnant women in North Carolina did not have dental insurance

Reference Number: 46

Elderly

Children are not the only vulnerable population in our country and state. Older adults, particularly those residing in assisted living and long-term care facilities, also suffer disproportionately from oral diseases and conditions. If they are able to access care, most older adults experience high out-of-pocket expenses as Medicare does not cover dental services.

Half of assisted living facility residents have untreated decay.[48]

62% of Medicaid beneficiaries in assisted living facilities had untreated decay, compared to 38% of residents without Medicaid.[48]

The loss of teeth is not inevitable with age, however, it does tend to increase with age. Because tooth loss can significantly impact a person's ability to eat, malnutrition is a concern for the elderly.

Assisted living residents with Medicaid are more likely to be missing all their teeth and less likely to have dentures.[48]

INNOVATION BANK SPOTLIGHT
Dental Care for Special Populations

There are an estimated 450,000 individuals with special needs in North Carolina who belong to all age groups and have a variety of physical and/or intellectual disabilities. Sadly, many of these individuals have little or no access to dental care. Based out of Asheboro, NC, Access Dental Care is a mobile dental program that provides high-quality dental care for frail elderly and individuals with disabilities in nursing and group homes, retirement communities, PACE programs, a seven-county HIV/AIDS program and special care patients in the community at large. Five days each week, the dental team and enough dental equipment to support two operatories is transported in a 16-foot truck to a special care facility. The program is in its 16th year of operation, providing care to 3,400 residents throughout the Piedmont area each year. Funding comes primarily from Medicaid reimbursement (75% of patients), some private pay, and a retainer fee charged to the facility. "If you do this right, it takes trained staff, state-of-the-art equipment, communication with facilities, patients and their responsible parties, and constant attention to the needs of the community."

Dr. Bill Milner, Founder & President – Access Dental Care

Workforce

The NCIOM report made several recommendations related to increasing the overall supply of dentists and hygienists in the state with an emphasis on recruiting dental professionals to serve underserved areas and populations.

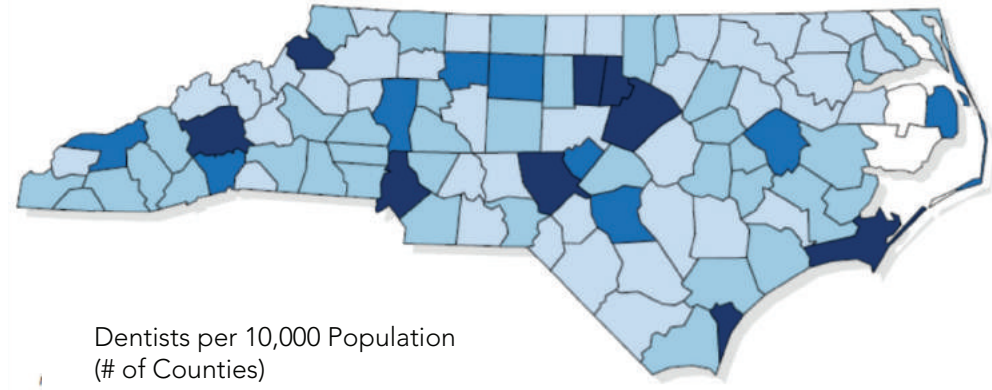
The dentist-to-population ratio in North Carolina continues to lag behind the national average and most states.

However, far more concerning are two other shortage-related facts:

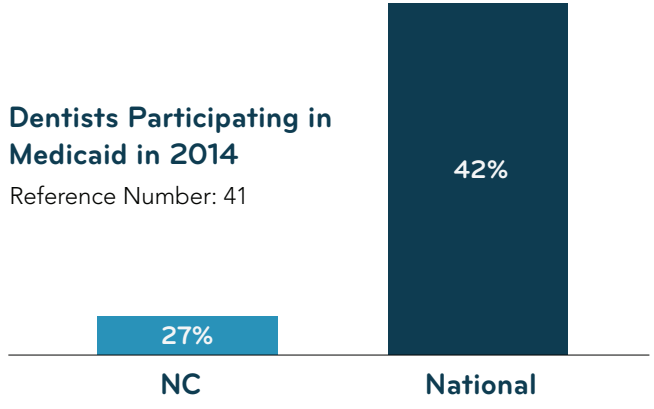
- North Carolina dentists are heavily concentrated in one-fifth of the state's counties – primarily suburban and urban areas;[50]

- Dentist participation in Medicaid and NC Health Choice programs is low.[8,43]

NC Ranked 47th Nationally
Dentist-to-Population Ratio.[49]

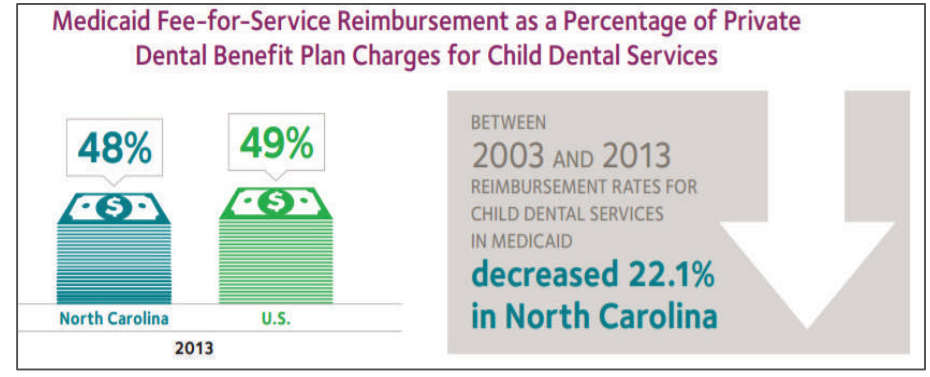


There are 3 NC counties with no dentist.[49]



The number of Dental Health Professional Shortage Areas (DHPSA) in North Carolina has increased since the NCIOM report. Currently, there are 94 counties with designated DHPSAs, but they include a total of 138 individual shortage areas.[8,54] It is important to note that these shortage areas are not just limited to rural counties, but also include metropolitan urban areas in counties such as Wake and Mecklenburg. Fortunately, the number of safety net dental programs has tripled since 1998, from 43 to currently approximately 133. However, with budget constraints and provider recruitment and retention challenges, the safety net dental system cannot bear the entire burden of need.

The NCIOM report specifically noted the need for more pediatric dentists in the state as they tend to provide a disproportionately higher amount of care to underserved children and children enrolled in Medicaid than general dentists.[8] Since 1998, the number of pediatric dentists in North Carolina has more than quadrupled.[51]Unfortunately, they are also largely concentrated in metropolitan areas. The supply of dental hygienists has grown steadily since 1979.[49] However, because the majority of dental hygienists in North Carolina can practice only under the direct supervision of a dentist, their distribution throughout the state mirrors that of dentists.[49] It is also important to note that a dentist in North Carolina can only hire two dental hygienists.



Low reimbursement rates for dental services has been consistently cited as a major reason why more dentists do not participate in the Medicaid program. In 2003, reimbursement rates were raised significantly for select dental procedures, which led to an increase in both participating dentists and Medicaid beneficiaries receiving dental services. However, reimbursement rates have since declined, and consequently provider participation as well.

The NCIOM report recommended a revision of the NC Dental Practice Act to allow specially trained hygienists to provide screenings, preventive services and education under the direction of a public health dentist. This recommendation resulted in an amendment to the Dental Hygiene Practice Act and provision 16W of the Dental Rules of North Carolina State Board of Dental Examiners. The 2005 Summit made a recommendation to extend the applicability of 16W to dental hygienists working in safety net settings other than state or local health departments. In 2008, provision 16Z was implemented, allowing hygienists (in unspecified settings) to work under limited supervision of a dentist.

175 public health hygienists have been trained under 16W since 1999; Largely responsible for sealants in school-based sealant programs, the extent of care provided in other settings is unknown.[53]

In 2014, only 10 dentists utilized Limited Supervision hygienists. Care was provided to nursing and rest homes, long term care facilities, county and state clinics, and non-profit rural community clinics.[13]

Community Water Fluoridation

Fluoridation of community water systems has contributed greatly to the decline in tooth decay in the U.S. since the 1960s. Research has shown it to safely reduce tooth decay in children and adults by about 25%, providing a cost-savings of $38 in dental treatment for every $1 invested in the preventive measure.[55]

However, despite its proven safety and effectiveness, community water fluoridation has been actively challenged in local municipalities across the country, occasionally resulting in the removal of fluoride from the public water system. Of North Carolina residents served by public water systems, 88% receive fluoridated water – higher than the national average.[56] It is critical that North Carolina at least maintain this level of coverage and avoid rolling back decades of progress in fighting dental decay.

INNOVATION BANK SPOTLIGHT

Dr. Paul Glassman, Director - Community Oral Health, Arthur A. Dugoni---School of Dentistry

The Virtual Dental Home (VDH) focuses on improving the oral health of groups who do not receive regular dental care. It is a community-based oral health delivery system in which people receive preventive and early intervention services in community settings. Telehealth technology links allied dental personnel in the community with dentists their offices. These allied dental personnel work under direction of a dentist and may refer patients with complex needs back to the clinic for additional care. VDH was demonstrated for six years in 50 community sites across California, including Head Start Centers, residential facilities and community centers. California has since adopted legislation recognizing teledentistry as a legitimate tool of dental practice and established a mechanism for payment.

"The world is changing. Some of these changes are concerning for the oral health industry, but we also have tremendous opportunity to do something that benefits [both] our dental practices and the population."

Dr. Paul Glassman

Opportunities for Action

North Carolina leaders in oral health, public health and policy have been formally convened on at least three occasions in recent years to discuss issues of poor access to dental care and strategies for improvement. While each convening has resulted in some notable success and overall improvement in oral health status, many of the same problems persist. We know we can do better-- over the last 40 years, oral health status has improved dramatically for those with access to care, but not for those populations that struggle with systemic barriers to accessing care. There are opportunities before North Carolina to make systemic change that address both the supply of and demand for oral health care, and effectively begins to close the gaps in oral health access and outcomes.

Supply-side Strategies

Address Shortage and Maldistribution of Dentists: Strategies should be considered that incentivize dentists from oversaturated areas to provide care to rural communities as an extension of their practices. Employing new service delivery models, such as the Virtual Dental Home via teledentistry, is a proven vehicle for extending needed care into communities through the effective and efficient use of the allied dental workforce.

Maximize Use of Existing Supervision Provisions in the Dental Practice Act: Provisions have been made to allow dental hygienists to provide care in certain settings without direct supervision, and in the case of provision 16W Public Health Hygienists, this has resulted in the delivery of more preventive dental services to schoolchildren. While 16W is limited to a small proportion of practicing dental hygienists in the state, 16Z Limited Supervision Hygienists is not. However, it is grossly underutilized. This may be due to the degree of record-keeping required for compliance, or because dentists simply are unaware of the provision. Either case warrants additional efforts to enable allied dental personnel to work to the full extent of their education and training to meet the needs of more North Carolinians.

Expand Access to Dental Hygienists: Thirty-nine states allow patients to receive dental care services provided by a licensed certified dental hygienist under specific circumstances designed to improve access to care[57]. While the specific limitations vary by state, these programs allow a hygienist to assess patients and offer necessary dental care without the specific authorization or on-site presence of a supervising dentist. These treatment options often include cleanings, radiographs, the application of fluoride varnish, placement of dental sealants or other preventive services. These programs may be limited to certain settings. Dental hygienists are well trained and licensed to provide these services directly to patients. Expanded access to dental hygienists would increase access to preventive services in high-risk populations and community settings including nursing facilities, schools and day cares.

Increase Medicaid Reimbursement Rates: Adequate reimbursement for services provided is critical for any dental provider to remain financially viable and able to serve. Increasing Medicaid dental reimbursement rates has been shown in North Carolina and other states to quickly increase provider participation and patient utilization rates. Raising reimbursement rates would increase private practitioners' participation in the program. Because the vast majority of North Carolina dental providers are private practitioners, they are critical to closing the disparities gaps. The dental safety net system cannot bear the entire burden and charity care is not a solution.

Common-Sense in Value-Based System: The health care system is moving toward value-based approaches to financing care. Within such a system the impact of oral disease on costs associated with improved overall health outcomes has the potential to play a significant role. Poor oral health has a direct impact on health outcomes for adults with diabetes and other chronic conditions. The costs and risks related to overall health outcomes for these and other populations, due to poor oral health, will be transferred to those entities responsible for improving population health outcomes.

Demand-side Strategies

Protect Existing Medicaid Benefits: As previously noted, demand for care is predicated on the ability to pay. North Carolina Medicaid currently offers comprehensive dental benefits to both children and adults, and those benefits must be protected. The loss of either or both would further disenfranchise a population that is already socially and economically overburdened, and the health care system would eventually bear unnecessary expense as a result of any loss of coverage.

Expand Medicaid Coverage: Expanding Medicaid to cover more low-income and vulnerable individuals would greatly improve access for those who currently may be using inadequate or inappropriate sources of dental care, or who are not accessing the system at all. Considering emergency department visits for dental problems are costing the state upwards of $65 million dollars each year,[24,25] the economic rationale for expansion is clear.

Bring the Mouth Back Into the Body: Efforts towards oral health-primary care integration are essential if the public – patients, providers, and payers alike – are to truly embrace oral health as an essential component of overall health. The increased presence of oral health in all aspects of health care will improve oral health literary and the demand for oral health services. The continued separation of medical and dental, not only in clinical practice but in payment systems and reform efforts, undermine any hope for integration and sends a message that oral health care is ancillary.

Promote and Spread Innovation: There are successful, innovative programs operating all across North Carolina that are increasing access to care for some of the state's most vulnerable populations. See Additional Resources for Oral Health Innovation Bank. The problem is they have been operating in silos – each program limited to its geographic area with little or no coordination of ideas and resources. Investing in statewide adoption of some of these promising practices is one way to ensure North Carolina solutions for North Carolina problems.

Conclusions

Through the implementation of several of the 1999 NCIOM recommendations, innovative strategies in prevention and early intervention, and a robust state dental public health program, North Carolina has certainly experienced gains in oral health in the last 15 years – most notably among its youngest residents. Such inequities in access have and will continue to perpetuate disparities in oral health outcomes unless systemic changes are made.

Given the proportion of underinsured and uninsured individuals in North Carolina, the current oral health care system is not structured to meet the needs of far too many. North Carolina must invest in long-term, sustainable strategies that empower both oral health providers to deliver needed care to more people and patients to seek the care they so desperately need. Recent decades of experience make it clear that we have the technical solutions and the human resources to improve oral health. Therefore, this is not a challenge of science, but rather one of leadership and political will to make oral health achievable for all.

By coming together to modernize our oral health system, we'll not only improve outcomes but also reduce costs. The opportunities to take action have presented themselves time and time again, and the people of North Carolina are saying there is no time like the present.

Additional Resources

North Carolina Oral Health Collaborative
http://oralhealthnc.org/

Oral Health Innovation Bank - A project of the NCOHC and Kate B. Reynolds Charitable Trust
(Soon to be available via: www.oralhealthnc.org

North Carolina Oral Health Section
https://www2.ncdhhs.gov/dph/oralhealth/

North Carolina Dental Society
http://www.ncdental.org/

North Carolina Dental Hygienists' Association
http://www.ncdha.org/

University of North Carolina School of Dentistry
https://www.dentistry.unc.edu/

East Carolina University School of Dental Medicine
http://www.ecu.edu/cs-dhs/dental/

American Dental Association
http://www.ada.org/

American Dental Hygienists' Association
http://www.adha.org/

Division of Oral Health, Centers for Disease Control & Prevention
http://www.cdc.gov/oralhealth/index.html

Foundation for Health Leadership & Innovation
https://foundationhli.org/

On April 5, 2017 over 100 committed individuals participated in North Carolina's 1st ever Oral Health Day at the Legislature to deliver an important message: **Oral health is part of overall health. It is time to resolve the barriers to care that prevent North Carolinians from accessing the oral health care they need!** This group made 40 educational visits to legislators and delivered the NC Oral Health Agenda to all 169 members.

Appendix

NORTH CAROLINA ORAL HEALTH AGENDA

What's The Problem?

Although NC has made progress in the arena of oral health in recent decades, we continue to grapple with an unacceptable rate of disease and widening inequities. Poor oral health results in more than just tooth decay. It has consequences that dramatically lower quality of life, impacting overall health, self-esteem, the ability to learn and employability.

Inequities in oral health among North Carolina residents are a function of how our oral health system is structured and are holding our state back. **The good news is that we can work together to implement proven solutions. Join us!**

Oral health is a JOBS issue: For North Carolinians who are unemployed or underemployed and are seeking jobs, having a healthy mouth is key. Poor oral health, resulting from inability to access preventive and treatment services precludes individuals from being confident in their communication, creating barriers to employment and economic stability. For those individuals that are employed, having paid sick leave to attend medical appointments is often an added barrier to care.

Oral health is a RURAL issue: North Carolina is 47th in the nation in terms of dentist/population ratio. Compounding this statistic is the fact that dentists are concentrated in a fifth of North Carolina's counties, mostly urban and suburban. This leaves the vast majority of our state to grapple with a shortage of dentists.

Oral health is an URBAN issue: Even with a great number of dentists practicing in urban areas, there are other access issues that prevent many from getting the care they need. Chief among those issues are high costs, inability to get to a dentist's office, and cultural barriers.

Oral health is a CHILDREN'S issue: Although largely preventable, dental caries remain the most common chronic disease among children, and dental-related illness continues to be the number one reason for school absences in low income communities.

Oral health is an ELDERLY issue: Our seniors suffer disproportionately from oral diseases and conditions, particularly those living in nursing homes, adult care homes and other long-term care facilities.

Oral health is a SOCIAL JUSTICE issue: Access to high quality dental care can be predicted by a persons zip code, income level, and/or race. When an entire community suffers from a health concern, that concern becomes a social justice issue.

Oral health is a POLICY issue: North Carolina has one of the most restrictive Dental Practice Acts in the nation.These restrictions limit the capacity of other dental team members (such as hygienists) to provide needed preventive care in accessible and affordable settings.

Oral health is a HEALTH issue: Poor oral health contributes to preterm births, diabetes, heart disease, and premature or untimely death. Given that oral health is an integral part of overall health, it is no longer feasible or productive for dentistry to be isolated from healthcare. Continuing to treat the mouth as separate from overall health will mean higher costs for hospitals where dental pain leads to emergency room visits, and to consumers, when chronic condition are exacerbated by dental disease.

Transforming the landscape of oral health in our state is possible, but will require us to work across sectors, political ideology, program silos, and geography towards common goals. The NC Oral Health Collaborative is working to create ways for ALL North Carolinians to access affordable, high-quality, culturally-competent oral health care in their own communities by increasing the number of providers that are able and willing to serve individuals at greatest risk—our children, low-income families and seniors.

We welcome your active participation in helping us achieve this aspiration.

1999 NCIOM Task Force on Dental Care Access Recommendations[8]

#1: Increase the Medicaid reimbursement rates for all dental codes to 80% of UCR.	#2: Develop an outreach campaign to encourage dentists in private practice to treat low-income patients. (Contingent on increasing Medicaid reimbursement rates)	#3: Establish a Dental Advisory Committee to work with the Division of Medical Assistance on an ongoing basis.	#4: Establish an Oral Health Resource Program within the Office of Research, Demonstrations and Rural Health Development to enhance ongoing efforts to expand the public health safety net for dental care to low-income populations in North Carolina.	#5: Establish a NC Dental Care Foundation for the purpose of assuring access to needed preventive and primary dental care services in underserved communities and for underserved populations in our state.	#6: Revise the NC Dental Practice Act to permit specially trained public health dental hygienists to perform oral health screenings as well as preventive and educational services outside the public school setting under the direction of a licensed public health dentist.	#7: Explore different methods to use dental hygienists to expand preventive dental services to underserved populations in federally funded community or migrant health centers, state-funded rural health clinics or not-for-profit clinics that serve predominantly Medicaid, low-income or uninsured populations.
#8: Existing and any future loan repayment programs established with the purpose of attracting dental professional personnel to work in rural or underserved areas should be accompanied by more stringent requirements to ensure that the dentists serve low-income and Medicaid patients.	#9: The Board of Governor's Scholarship Program and other state tuition assistance programs should carry a requirement of service in underserved areas upon graduation.	#10: Establish a licensure-by-credential procedure that would license out-of-state dentists and dental hygienists who have been practicing in a clinical setting in other states with the intent of increasing the number of qualified dental practitioners in the state.	#11: Evaluate the competencies required by the different regional examinations to determine if these examinations ensure the same level of professional competence required for dental professionals to pass the North Carolina clinical examination.	#12: Consider a change in the wording in the regulations governing dental assistants in order to increase access to dental services for underserved populations.	#13: Increase the number of positions in the pediatric residency program at the UNC-CH School of Dentistry from two per year to a total of four per year.	#14: Explore the feasibility of creating additional pediatric dental residency program(s) at East Carolina University, Carolinas Healthcare System, and/or Wake Forest University.

#15: Add American Dental Association procedure code 1203 to the Medicaid Dental fee schedule to allow dentists to be reimbursed for the application of dental fluoride varnishes without the administration of a full prophylaxis.	#16: Fund the Ten-Year Plan for the Prevention of Oral Disease in Preschool-Aged Children as proposed by the NC Dental Health Section.	#17: Review and promote practice guidelines for routine dental care and prevention of oral disease as well as guidelines for referring children for specific dental care, to provide all children with early identification and treatment of oral health problems and to ensure that care givers are provided the information necessary to keep children's teeth healthy.	#18: develop a new service package and payment method to cover early caries screenings, education, and the administration of varnishes provided by physicians and physician extenders to children between the ages of nine and 36 months.	#19: Support the enactment of HB 905 or SB 615 which would expand NC Health Choice to cover sealants, fluoride treatment, simple extractions, stainless steel crowns and pulpotomies	#20: Educational programs for dentists, dental hygienists and dental assistants should intensify and strengthen special-care education programs to train professionals on child management skills and how to provide quality oral health services to residents and patients in group homes, long term care facilities, home health, and hospice settings.	#21: Support the development of statewide comprehensive care programs designed to serve North Carolina's special care and difficult-to-serve populations.

#22: Develop or modify community education materials to educate Medicaid recipients about the importance of ongoing dental care.	#23: Pilot test dental care coordination services to improve patient compliance and enhance the ability of low-income families and people with special health care needs to overcome non-financial barriers to dental care.

References

1. Murthy, V. H. (2016). Oral Health in America, 2000 to Present: Progress made, but Challenges Remain. Public health reports (Washington, DC: 1974), 131(2), 224.

2. Dye, B. A., Thornton-Evans, G., Li, X., & Iafolla, T. J. (2015). Dental caries and sealant prevalence in children and adolescents in the United States, 2011-2012. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.

3. Dye, B. A., Thornton-Evans, G., Li, X., & Iafolla, T. (2015). Dental caries and tooth loss in adults in the United States, 2011-2012. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.

4. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health. Community Water Fluoridation: Fluoridation Data and Statistics. Available at: http://www.cdc.gov/fluoridation/statistics/fsgrowth.html

5. Skillman, S. M., Doescher, M. P., Mouradian, W. E., & Brunson, D. K. (2010). The challenge to delivering oral health services in rural America. Journal of public health dentistry, 70(s1), S49-S57.

6. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health. Oral Health Disparities. Available at: http://www.cdc.gov/OralHealth/oral_health_disparities/index.htm

7. Dye, B. A., & Thornton-Evans, G. (2010). Trends in oral health by poverty status as measured by Healthy People 2010 objectives. Public health reports, 817-830.

8. North Carolina Institute of Medicine Task Force on Dental Care Access: Report to the North Carolina General Assembly and to the Secretary of the NC Department of Health and Human Services. North Carolina Institute of Medicine: Durham, NC. May 1999. Available at: http://www.nciom.org/task-forces-and-projects/?dentalaccess

9. North Carolina Institute of Medicine. 2005 NC Oral Health Summit, Access to Dental Care: Summit Proceedings and Action Plan. Durham, NC. October 2005. Available at: http://www.nciom.org/wp-content/uploads/NCIOM/projects/dental/2005dentalupdate.pdf

10. National Association for Dental Plans. North Carolina Dental Benefits Report (2015). Available at: http://www.nadp.org

11. American Dental Association. Health Policy Institute, Research Briefs (2013). National Dental Expenditure Flat Since 2008, Began to Slow in 2002. Available at: http://www.ada.org/en/science-research/health-policy-institute/publications/research-briefs

12. McElwee, S. Enough to Make You Sick: The Burden of Medical Debt (2016). Available at: http://www.demos.org/sites/default/files/publications/Medical%20Debt.pdf

13. North Carolina Board of Dental Examiners. White, B. (email communications, September and December 2016).

14. American Dental Association. Health Policy Institute, Data Center (2015). 2014 Characteristics of Private Dental Practices. Available at: http://www.ada.org/en/science-research/health-policy-institute/data-center/dental-practice

15. North Carolina Dental Hygienists' Association, http://www.ncdha.org

16. Institute of Medicine (2000). America's health care safety net: intact but endangered: Report Brief. Accessed at: http://nationalacademies.org/hmd/reports/2000/americas-health-care-safety-net-intact-but-endangered.aspx

17. North Carolina Department of Health and Human Services. Division of Public Health, Oral Health Section. Safety Net Dental Clinics. Available at: https://www2.ncdhhs.gov/dph/oralhealth/services/safety-net.htm

18. Health Resources and Services Administration. Bureau of Primary Health Care. Health Center Program. Accessed at: https://bphc.hrsa.gov/

19. North Carolina Association for Local Health Directors. Resources: Services – Dental. Available at: http://www.ncalhd.org/services/

20. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health. School-based Sealant Programs. Accessed at: https://www.cdc.gov/oralhealth/dental_sealant_program/index.htm

21. Wake Smiles Community Dental Outreach Clinic, http://www.wakesmiles.org/wp-content/uploads/2016/05/Wake-Smiles-INFO-REVISED-5-2016-for-Website.pdf

22. Moore Free and Charitable Clinic, http://moorefreecare.org/

23. Wall, T., & Vujicic, M. (2015). Emergency department use for dental conditions continues to increase. Health Policy Institute Research Brief. American Dental Association.

24. U.S. Department of Health and Human Services. Agency for Healthcare Research and Quality, HCUPnet: Statistics on Emergency Department Use. Available at: http://hcupnet.ahrq.gov/HCUPnet.jsp

25. Orlando Sentinel. Illegal dentists a danger to Central Florida immigrant communities, officials say (May 23, 2015). Available at: http://www.orlandosentinel.com/news/local/os-illegal-dentists-clinics-florida-20150520-story.html

26. WSOC-9 TV. SBI arrest woman accused of running illegal dental clinic from apartment (February 2015). Available at: http://www.wsoctv.com/news/local/sources-woman-accused-running-illegal-dental-clini/52187151

27. WSOC-9 TV. Documents: Customers' tips lead to arrest in illegal dental clinic (December 2015). Available at: http://www.wsoctv.com/news/local/documents-customers-tips-lead-arrest-illegal-home-/18153300

28. Guarnizo-Herreño, C. C., & Wehby, G. L. (2012). Children's dental health, school performance, and psychosocial well-being. The Journal of pediatrics, 161(6), 1153-1159.

29. Jackson, S. L., Vann Jr, W. F., Kotch, J. B., Pahel, B. T., & Lee, J. Y. (2011). Impact of poor oral health on children's school attendance and performance. American Journal of Public Health, 101(10), 1900-1906.

30. Thikkurissy, S., Glazer, K., Amini, H., Casamassimo, P. S., & Rashid, R. (2012). The comparative morbidities of acute dental pain and acute asthma on quality of life in children. Pediatric dentistry, 34(4), 77E-80E.

31. North Carolina Department of Health and Human Services. Division of Medical Assistance, 2015 Annual Report. Available at: https://ncdma.s3.amazonaws.com/s3fs-public/Medicaid_Annual-Report-State-Fiscal-Year-2015.pdf

32. Centers for Medicare & Medicaid Services. Dental and Oral Health Services in Medicaid and CHIP (2016). Available at: https://www.medicaid.gov/medicaid/benefits/downloads/2015-dental-and-oral-health-domain-specific-report.pdf

33. North Carolina Department of Health and Human Services. Division of Medical Assistance. Eligibility and Dental Recipient Summary Report: Children 1-20 Dental Utilization CY 2008-2013.

34. American Dental Association. Health Policy Institute, State Fact Sheets: Oral Health Care System in the United States – North Carolina. Available at: http://www.ada.org/en/science-research/health-policy-institute/oral-health-care-system/North-Carolina-facts

35. North Carolina Department of Health and Human Services. Division of Public Health, Oral Health Section. County Level Oral Health Assessment Data. Available at: https://www2.ncdhhs.gov/dph/oralhealth/stats/MeasuringOralHealth.htm

36. North Carolina Department of Health and Human Services. Office of Rural Health. Resendes, J. (email communication, October 2016).

37. North Carolina Department of Health and Human Services. Division of Public Health, Oral Health Section. Into the Mouths of Babes. Available at: https://www2.ncdhhs.gov/dph/oralhealth/partners/IMB.htm

38. North Carolina Department of Health and Human Services. Division of Medical Assistance. Report: Medical Visits including IMB Services per Quarter, 2000-2013.

39. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. Vital Signs: Dental Sealants Prevent Cavities (October 2016). Available at: https://www.cdc.gov/vitalsigns/pdf/2016-10-vitalsigns.pdf

40. Centers for Medicare and Medicaid Services. Medicaid Benefits, Dental Care. Annual EPSDT Participation Report Form CMS-416 FY 2015. Available at: https://www.medicaid.gov/medicaid/benefits/epsdt/index.html

41.American Dental Association. Health Policy Institute, State Fact Sheets: Oral Health and Well-being in the United States – North Carolina. Available at: http://www.ada.org/en/science-research/health-policy-institute/oral-health-and-well-being/North-Carolina-facts

42. North Carolina Department of Health and Human Services. State Center for Health Statistics. Behavioral Risk Factor Surveillance System, Oral Health (2014). Available at: http://www.schs.state.nc.us/data/brfss/survey.htm

43. Data Report from Mark W. Casey, DDS, MPH, Dental Director, Division of Medical Assistance, N.C. Department of Health and Human Services

44. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health. Oral Health Data: Adult. Available at: https://nccd.cdc.gov/oralhealthdata/rdPage.aspx?rdReport=DOH_DATA.ExploreByTopic&islTopic=ADT&islYear=2014&go=GO

45. Boggess, K. A., & Edelstein, B. L. (2006). Oral health in women during preconception and pregnancy: implications for birth outcomes and infant oral health. Maternal and child health journal, 10(1), 169-174.

46. North Carolina Department of Health and Human Services. State Center for Health Statistics. Pregnancy Risk Assessment Monitoring System, Oral Health (2012). Available at: http://www.schs.state.nc.us/data/prams/2012/

47. Kaiser Family Foundation. State Health Facts: Births Financed by Medicaid. Accessed December 2016 at http://kff.org/state-category/medicaid-chip/births-financed-by-medicaid/

48. North Carolina Department of Health and Human Services. Division of Public Health, Oral Health Section. Oral Health Status of Adults in North Carolina Assisted Living Facilities (2016, unpublished).

49. Cecil G. Sheps Center for Health Services Research. Health Workforce Research and Policy. Presentation: North Carolina Dental Workforce Trends (2016). Available at: http://www.shepscenter.unc.edu/workforce_product/north-carolina-dental-workforce-trends/

50. North Carolina Department of Health and Human Services. Division of Medical Assistance. Medicaid Dental Provider List (February 2016). Available at: https://dma.ncdhhs.gov/find-a-doctor/medicaid-dental-providers

51. Cecil G. Sheps Center for Health Services Research. North Carolina Health Professions Data System. Report: County Counts of Pediatric Dentists in North Carolina, 2011-2015.

52. North Carolina State Board of Dental Examiners. Rules and Laws. Board Rules: 21 NCAC Occupational Licensing Boards and Commissions, Chapter 16 Dental Examiners. Available at: http://reports.oah.state.nc.us/ncac.asp?folderName=\Title%2021%20-%20Occupational%20Licensing%20Boards%20and%20Commissions\Chapter%2016%20-%20Dental%20Examiners

53. North Carolina Department of Health and Human Services. Division of Public Health, Oral Health Section. Buchholtz, K. (email communication, December 2016).

54. Health Resources and Services Administration. Data Warehouse. Shortage Areas: Dental – North Carolina. Accessed November 2016 at: https://datawarehouse.hrsa.gov/Topics/ShortageAreas.aspx

55. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health. Community Water Fluoridation: Fact Sheets. Accessed December 2016 at: http://www.cdc.gov/fluoridation/factsheets/index.htm

56. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health. Oral Health Data: Water Fluoridation. Available at: https://www.cdc.gov/oralhealthdata/index.html

57. American Dental Hygienists' Association, Direct Access: http://www.adha.org/direct-access