

Assuring the Accessibility of Basic Dental Care Services: Issues of Workforce Supply, Organization of Care, and Education

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The most common form of dental disease is caries (tooth decay).^{1,2} In fact, dental caries is the most common chronic disease among children—five times more common than asthma (59% versus 11%, respectively).³ Nationally, more than half of all children have dental caries by the second grade.^{2,4} In North Carolina, during state fiscal year 2004-2005, 22% of children were found to have untreated tooth decay in kindergarten.⁵ Nationally, 30% of adults have untreated tooth decay.^{2,6}

Many people do not understand the integral role that oral health plays in a person's general health. Studies are increasingly uncovering associations between chronic oral infections and other conditions, such as diabetes, heart and lung diseases, stroke, low birth weight, and premature births.^{1,2} Untreated oral health problems cause unnecessary pain and suffering. They can also decrease the economic productivity of workers through lost work days or distraction, and have a similar negative effect on children's capacity to learn. Individuals with oral health problems may experience a loss of self-esteem, and in some extreme cases, death. Oral and pharyngeal cancers are also significant oral health problems that can lead to serious illness and disfigurement. Further, individuals that delay needed dental care often face higher treatment costs when they do receive care.^{1,2}

Most people experience caries and/or periodontal (gum) disease at some point in their lives. Fortunately, most of these problems are preventable and treatable with a combination of self-care, professional care, and community-based initiatives. Community water fluoridation, for example, has significantly reduced the prevalence and severity of dental decay in North

Carolina and the nation.⁷ Professionally-applied dental sealants, varnishes, and gels, and the use of products containing fluoride, (e.g., toothpaste, mouth rinses, dietary fluoride supplements) effectively prevent dental decay. Self-care practices that include a diet with limited sugars and carbohydrates, regular tooth brushing and flossing, along with regular professional cleanings are also critical to maintaining oral health. Regrettably, many people either cannot access needed dental care, do not know how to access the care they need, or do not realize the importance of dental care to their overall health status.

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Dental care services are one category of healthcare for which there is both the expectation of widespread, if not universal, availability, and yet low levels of consumer demand in comparison with conventional healthcare (i.e., medical) services. Dental care is a segment of overall healthcare where preventive services are of unquestionable primary importance to both the maintenance of health status and the minimization of future costs of treatment. But oral health within communities requires attention to both individual health-promotive behaviors as well

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as collective interventions, such as the assurance of dental care access and the fluoridation of public water supplies.

Patterns of Dental Disease in North Carolina

North Carolina has benefited from more than 30 years of detailed and on-going epidemiological studies documenting the extent and the patterns of dental disease in this state. In addition, the preventive dentistry programs targeted to children in this state set it apart from most others. As a result, it is possible to describe the distribution of dental disease (in terms of need) as well as the success of various programs to address the prevalence of dental disease among North Carolina's children in a way that has made North Carolina the envy of many other states. Drs. Gary Rozier and Rebecca King provide an overview of the history of dental disease trends in North Carolina in a commentary in this issue of the *North Carolina Medical Journal*.⁸

These accomplishments have been realized through an effective and long-term collaboration between the state's Oral Health Section of the North Carolina Department of Health and Human Services (DHHS) and the University of North Carolina at Chapel Hill (UNC-Chapel Hill) School of Public Health. In the 1960s, Drs. John Fulton and John Hughes of the UNC-Chapel Hill School of Public Health worked with state epidemiologists and oral health personnel to develop the first statewide oral health survey.⁹ This landmark study demonstrated widespread patterns of untreated dental decay, endentulism, and periodontal disease and served as the stimulus for legislative action to create a major new initiative in dental public health with a particular focus on the oral health of North Carolina's children. The 1960-1963 Fulton-Hughes study was followed 13 years later (in 1976-1977) by a second statewide epidemiological survey conducted by Dr. John Hughes and Dr. Gary Rozier, which enabled the calculation of oral health rates of change in North Carolina.¹⁰ More recently, in 1986-1987 and 2003-2004, Rozier and his colleagues^{11,12} at the Oral Health Section of the North Carolina DHHS conducted clinical examinations and questionnaire surveys of 80% of North Carolina school children in kindergarten through 12th grade, which included open-mouth dental screenings by dental professionals. Few states have such a resource to track the accomplishments of dental healthcare and preventive services.

Poverty and Access to Dental Care

Oral health status, like general health status, varies according to sociodemographic factors. For example, people who are low-income, minorities, and/or are less well educated tend to have poorer dental health than others. Low-income children are more likely to experience tooth decay, have a severe experience with tooth decay, and have untreated decay.^{3,13}

Between 1999 and 2002, children ages two through 11 with family incomes below 100% of the federal poverty guideline (FPG)* were found to be nearly two times as likely to experience tooth decay as children in families with incomes at or above 200% FPG.¹⁴ Adults and children in poverty were more than twice as likely as their higher-income peers to have untreated tooth decay.¹⁴ Likewise, Latino and African-American children experienced higher rates of tooth decay (treated and untreated) than white children. Poor and minority children are also less likely to receive preventive treatments, such as dental sealants (3% versus 23%, respectively). Similarly, African-American adults are less likely to survive oral and pharyngeal cancers than whites (five-year survival rates are 34% versus 56%, respectively).¹⁵

Education also plays a key role in dental health. Less educated adults are less likely to have a regular oral cancer examination,¹⁷ more likely to experience destructive periodontal disease, and more likely to eventually lose all of their teeth. For example, more than 13% of individuals without a high school diploma have lost all of their teeth, compared to less than 4% of individuals with more than a high school diploma.¹

Special Analyses of Dental Health Issues in North Carolina

All of these socio-demographic differences in dental health have been addressed at the state-level through a series of meetings/conferences with North Carolina dental health professionals and other interested individuals. In 1989, the North Carolina DHHS was asked by the General Assembly to consider the problem of access to primary dental care by low-income persons in our state, particularly those covered by the state's Medicaid program. Subsequently, the Secretary of the Department, Dr. H. David Bruton, asked the North Carolina Institute of Medicine (IOM) to organize a statewide task force that would examine these issues and make recommendations to address the significant problems low-income individuals and those living in rural and other underserved areas have accessing dental care. The North Carolina IOM Task Force began work in 1998 and completed its report to the North Carolina DHHS and the North Carolina General Assembly in April 1999.¹⁶ The work of the Task Force was generously supported by grants from the Kate B. Reynolds Charitable Trust and The Duke Endowment. The 1999 North Carolina IOM report offered 23 specific recommendations for addressing dental care access issues facing low-income persons in the state. Subsequently, the North Carolina IOM followed-up the work of the Task Force with two meetings, in 2001 and 2003, to discuss the steps that had been taken to fulfill the recommendations from the 1999 report. In April of 2005, the Oral Health Section of the North Carolina DHHS evaluated these issues at the North Carolina Oral Health Summit. The recommendations of the 2005 Summit are highlighted herein where appropriate.

* According to the federal poverty guidelines in 2000, 100% of FPG for a family of four was an income of \$18,000.

Policy Approaches to the Problem of Dental Care Access

Since the mid-1990s, it has become clear that an insufficient number of dentists and dental hygienists have been entering practice in North Carolina. Too few dentists are willing to serve low-income populations, particularly those covered by the state's Medicaid program. A number of possible avenues have been suggested for meeting these challenges. While there is general agreement that dental healthcare is a critical aspect of overall population health and making these services available is fundamental to overall health policy in our state, many of these proposed solutions are controversial.

In North Carolina, as in many other states, there is a growing sense that professional dental care is becoming less and less available, particularly as a number of dental schools across the nation have closed, and as the total number of newly licensed dentists has decreased nationally. The Kate B. Reynolds Charitable Trust, one of the state's leading health-oriented private philanthropies, has made access to dental care for low-income populations a high priority for more than a decade. Some of their programs are described by John Frank, Director of the Trust's Health Care Division, in this issue of the *North Carolina Medical Journal*.¹⁸ Dental care in the United States is clearly among the best in the world for those who can afford it and for those who have regular access to professional care. Unfortunately this is not the case for a sizable proportion of our state's population.

Four basic strategies to improve access have been considered over the previous decade: (1) increasing the dental provider participation in the North Carolina Medicaid program, (2) increasing the supply of dentists, (3) increasing dental care availability for special needs populations, and (4) increasing public awareness of the importance of oral healthcare.

Strategy One: Low-Income Access to Dental Care

Of North Carolina's more than 8.5 million population, approximately 18% are Medicaid recipients—881,356 of whom are less than 21 years old.¹⁹ North Carolina provides dental coverage for all eligible Medicaid recipients (adults and children). Unfortunately, use of these services is low. On average, only 27% of Medicaid recipients visited the dentist in state fiscal year 2004, a percentage that varies by geographic location. In 2005, the percentage of Medicaid recipients who visited a dentist ranged from a low of 17% in Swain County to a high of 36% in Wilkes County.¹⁹ Low-income, uninsured individuals face other barriers to access because the entire financial burden for services is theirs. These individuals often look for free or reduced-cost services and safety net clinics.

Medicaid Payment Rates for Participating Dentists. One of the primary factors responsible for low dental service utilization among Medicaid beneficiaries is the limited participation of dentists in the Medicaid program. In 2004, only 25% of the private practice dentists (855 of 3,446) in North Carolina were considered "active participants" in the program, meaning they billed Medicaid for more than \$10,000 in a single year. This is

a 33% increase from 2000, but still too few to serve the needs of the Medicaid population, which grew approximately 11% over the same period. The total number of dentists that served at least one Medicaid patient in 2005 is 1,771. Therefore, the current ratio of private dentists participating in the Medicaid program per Medicaid recipient is 1:885.¹⁹ Given this relatively small number of dental professionals practicing in North Carolina, many Medicaid recipients have difficulty finding a dentist who will treat them.

In an effort to prevent dental caries and reduce the need for dental care treatment within the Medicaid population, a program called *Into the Mouths of Babies* (IMB) was developed by the Oral Health Section and introduced across the state. The IMB program provides dental preventive service packages to health departments and physicians' offices serving Medicaid-eligible children. The packages include targeted oral health education for caregivers and a dental screening and fluoride varnish application for high-risk children from birth to age three. Collaboration is also underway with the Early Head Start program to develop educational materials for use with their clientele, to help their clientele access dental preventive services within the medical community, and to help them to find a dental home. Although this program has been effective in preventing dental caries, it is unable to address the low dental care utilization rates among this population.

To address utilization, it is important to understand why dental health professionals may not serve Medicaid patients. One of the main reasons given for low dental provider participation in the North Carolina Medicaid program is low Medicaid reimbursement rates. The North Carolina Medicaid program pays dentists 73% of the UNC-Chapel Hill Dental Faculty Practice's "usual, customary and reasonable" (UCR) charges for a selected list of dental procedures commonly provided to children. These rates were increased in 2003, from 62%. The increase came as a result of a settled lawsuit. The National Health Law Program filed the lawsuit, *Antrican v. Bruton*, against the North Carolina DHHS on behalf of low-income children, challenging the adequacy of North Carolina's Medicaid dental reimbursement rates. Data indicate that, between 2003 and 2005, the percentage of Medicaid-eligible children ages birth through 21 years with a Medicaid dental visit increased from 29% to 32%, and it is believed that higher Medicaid reimbursement rates may have contributed to this increase. Dr. Mahyar Mofidi offers a review of the North Carolina experience with dentist participation in Medicaid in this issue of the *Journal*.²⁰

Despite the 2003 increase in Medicaid reimbursement rates, there is still a feeling among dentists that rates should increase further and move toward a market-based fee schedule. The UNC-Chapel Hill School of Dentistry fee schedule was initially adopted because it was one generally supported by both dental providers and the Division of Medical Assistance. However, more recently, both groups have begun to discuss the potential benefits of a market-based fee schedule. Dr. Mofidi provides a more detailed explanation of this issue on page 457 of this *Journal*.²⁰

Participants at the 2005 North Carolina Oral Health Summit recommended that moving toward a Medicaid reimbursement rate reflecting the 75th percentile of market-based fees in North Carolina would significantly reduce barriers to access for the Medicaid population. Such a target would indicate that reimbursement rates would be equal to or greater than the rates charged by 75% of dentists in the state. Recently, the North Carolina General Assembly has taken positive steps toward increasing the Medicaid dental reimbursement rates. In the 2005 session, the North Carolina General Assembly appropriated two million dollars in each year of the 2005-2007 biennium to increase Medicaid dental rates. This translates into an approximate increase of \$6.4 million/year after factoring in the federal and county shares of Medicaid costs.

Increasing Volunteer Efforts of Dental Professionals in the Care of the Underserved. Beyond the needs of just the Medicaid population, there are important and impressive voluntary efforts on the part of some dental professionals (both dentists and hygienists) to meet the most urgent needs of all those without adequate access to primary dental care. Some of these efforts are in conjunction with clinics operated by federally qualified health centers (FQHCs), while others are through programs offered by “free clinics” in various communities across the state. In this issue of the Journal, Dr. Steve Slott offers a description of some of these voluntary efforts, but with a clear message that more of this type of volunteer effort would be both welcome and likely to have a sizeable impact among our state’s population who are most in need of routine dental care.²¹

Strategy Two: Increasing the Supply of Dental Professionals

In addition to the challenges related to low dentist participation in the Medicaid program, dental care access is problematic for many because of the limited supply of dental professionals. In 2004, there were 3,628 licensed, active dentists in North Carolina.²² This represents a dentist-to-population ratio of 4.2 dentists per 10,000 population—a rate that is well below the national average of 5.7 dentists per 10,000 population. The need for dentists is particularly acute in four eastern, rural counties (Camden, Hyde, Jones and Tyrell) where there is no practicing dentist. In addition, there are three other counties in North Carolina that have only one dentist each (Gates, Graham, and Northampton).²² Only eight counties have a dentist-to-population ratio equal to or greater than the national average. Seventy-nine counties qualify as federally designated dental health professional shortage areas, meaning that they have a full-time-equivalent dentist-to-population ratio of at least 1:5,000, or between 1:4,000 and 1:5,000, with unusually high needs for dental services or insufficient capacity of existing dental providers.²³

The number of dental hygienists in North Carolina poses less of a challenge to access. In 2004, there were 4,324 active, licensed dental hygienists in North Carolina, which represents an increase of 18% from state fiscal year 2000 to 2004.²² In 2004, North Carolina had 5.1 dental hygienists per 10,000 population, a level greater than the national average of 4.4 per

10,000 population. Unfortunately, dental hygienist shortages remain a problem in certain areas of the state. For example, three North Carolina counties (Currituck, Jones, and Northampton) have only one dental hygienist, and in four counties, there is no active dental hygienist (Bertie, Gates, Hyde and Tyrrell).²²

There are several potential strategies for responding to the shortage of dental health professionals, and they can be divided into short- and long-term strategies. The short-term strategies include making it possible for more out-of-state dentists to enter practice in North Carolina and expanding the role of public health dental hygienists in the provision of educational and preventive dental care services in additional safety net organizations. The long-term strategies include increasing the class size at UNC-Chapel Hill School of Dentistry, developing a new school of dentistry at East Carolina University, and expanding the number of residency training programs and graduates in the specialty of pediatric dentistry.

Attracting Dentists and Hygienists from Out-of-State. In the short run, one strategy for increasing the number of dentists in the state is to make it possible for more out-of-state dentists to practice in North Carolina. Presently, about 40% of all dentists practicing in North Carolina are graduates of dental schools outside of North Carolina.²³ Therefore, dentists educated in other states play a significant role in serving North Carolina residents. It has always been possible for any graduate of an accredited United States dental school to apply for a license to practice in North Carolina. However, prior to 2003, applicants were required to take the North Carolina clinical examinations. These examinations were barriers to out-of-state dentists because they were complicated to schedule and involved extensive logistical and financial commitments of the examinees. As a result, in August 2002, Senate Bill 861 was signed into law (SL2002-37) allowing licensure by credentials for dentists and dental hygienists who have practiced in another state for at least five years without any disciplinary actions. Since that time, 162 dentists (with eight denials) and 182 hygienists (with four denials) have received a North Carolina license by credentials.²³

The North Carolina State Board of Dental Examiners is further pursuing participation in a Southeast Regional Examination procedure through which dental graduates (dentists and hygienists) who take the clinical examination in any participating state in the region can also apply for a license in North Carolina by reciprocity. The Board of Dental Examiners is also actively pursuing participation in a forthcoming national credentialing examination. Participants at the 2005 North Carolina Oral Health Summit supported all three of these initiatives and felt these were important efforts to improve the state’s ability to attract dentists trained in other states.

Expanding the Role of Public Health Dental Hygienists. Another short-term strategy for increasing the capacity dental health professionals in North Carolina is to expand the role of public health dental hygienists to provide educational and preventive dental care services in safety net organizations other than public health department clinics serving low-income populations. In this issue of the Journal, Dr. Rebecca King, Chief of the Oral

Health Section of the North Carolina DHHS, offers a detailed description of dental public health programs in North Carolina.²⁴ In 1999, the North Carolina General Assembly passed legislation to revise the North Carolina Dental Practice Act to permit specially trained public health dental hygienists to perform preventive clinical services outside the public school setting under the direction of a licensed public health dentist (Sec. 11.65 of HB 168).

Under the North Carolina Dental Practice Act, 32 dental hygienists working in local health departments and one working in a safety net special care clinic, had been specially trained to provide services under the direction of a public health dentist by June 2005. In addition, the North Carolina Oral Health Section was able to use the increased capacity of its qualified state public health dental hygienists (36 people) to expand the reach of its sealant program. In the 2004-2005 school year, the majority of the 6,459 sealants provided to 1,911 children by the North Carolina Oral Health Section were placed by hygienists under the direction of a public health dentist. The successes experienced within the state and local public health programs could also be extended to other safety net providers, such as federally-funded community or migrant health centers, state-funded healthcare clinics, or not-for-profit clinics. These programs serve predominantly Medicaid, low-income, or uninsured populations. Allowing hygienists to provide educational and preventative dental care under the general supervision of a dentist employed at such safety net organizations may extend the safety net organizations' capacities to provide preventive care to underserved populations. Participants at the 2005 North Carolina Oral Health Summit requested that the North Carolina State Board of Dental Examiners reconsider the feasibility of allowing these types of arrangements.

Increasing the Productivity of Dental Education Programs. In the long-run, more significant steps need to be taken to increase the number of dental care providers, particularly dentists, in North Carolina. As North Carolina's population continues to grow, the shortage of dental providers will become even more acute. Currently, the UNC-Chapel Hill School of Dentistry is the only dentistry program in North Carolina, and it accepts 80 students each year. Adding seats to each class at the UNC-Chapel Hill School of Dentistry could positively impact the number of dentists in the state. However, there are a number of challenges to increasing the school's class size. Additional laboratory facilities for the teaching of basic clinical sciences, clinical training facilities, and faculty would be necessary. Such changes would require further funding, which is not readily available.

Increasing the Class Size at UNC-Chapel Hill. In this issue of the *North Carolina Medical Journal*, two commentaries address the complex issues associated with increasing the production of dentists from the UNC-Chapel Hill School of Dentistry. Dr. John Stamm, former Dean of the School of Dentistry at UNC-Chapel Hill, summarizes the current dental workforce situation in the state and recent appropriations by the North Carolina General Assembly to support planning for increasing dental school enrollment in North Carolina. In addition, the new dean of the UNC-Chapel Hill School of

Dentistry, Dr. John Williams, describes the complexities of dental workforce issues that bear on the issue of dental class size. His commentary advocates support for an existing plan to expand enrollment at the UNC-Chapel Hill School of Dentistry by 50% (from 80 to 120 students per class).²⁵

Developing a New School of Dentistry at East Carolina University. Another option for increasing the production of dentists in the state is to develop a new, second dental school. A commentary in this issue of the *Journal*, authored by Dr. Michael Lewis, Vice Chancellor for Health Sciences at East Carolina University (ECU) in Greenville, makes the case for a new, "community-oriented" school of dentistry at ECU.²⁶ The ECU proposal is to develop a school of dentistry that will attract individuals who would like to practice professionally in North Carolina communities that need high-level dental care, and have inadequate dental care access. As exemplified by the Brody School of Medicine and the ECU School of Nursing, ECU has a history and culture of exposing health sciences graduates to strategies for serving underserved populations. Moreover, a sizeable proportion of these graduates are motivated to stay in North Carolina and choose primary care as a career path. Therefore, this strategy could be used to reduce workforce shortages in underserved communities, which would improve access to care for underserved populations. Participants at the 2005 North Carolina Oral Health Summit agreed that there is a need to produce more dentists in this state, and they supported further examination of this issue to determine which of these strategies would be most appropriate and feasible.

Increasing the Number of Fellowship-Trained Pediatric Dentists. Finally, beyond the general dentist under-supply problem, there is a need for more fellowship-trained pediatric dentists in North Carolina. Pediatric dentists are very important because, according to the American Academy of Pediatric Dentistry, they provide a disproportionately higher amount of oral healthcare for underserved children and children receiving Medicaid. A 2000 Task Force report from the American Academy of Pediatric Dentistry found that between 1990 and 1998, the number of trained pediatric dentists in the United States declined from 3,900 to 3,600. This decline was attributed to a lack of pediatric training programs rather than a lack of interest in pediatric dentistry training.²⁷ The only graduate program for this specialty in North Carolina is at the UNC-Chapel Hill School of Dentistry. In this issue of the *Journal*, Drs. Michael Roberts and William Vann, Jr., offer an extensive discussion of issues related to the pediatric dental workforce and efforts to increase the supply of pediatric dentists.²⁸

As a response to a perceived shortage of pediatric dentists, the Department of Pediatric Dentistry at UNC-Chapel Hill increased enrollment in the early 1990s from two residents per year to three using insecure funding sources. The success of this recent increase in pediatric residency programs has been very valuable, and it is important that it continues. The pediatric workforce is aging, and its future supply is projected to decrease. Additionally, pediatric dentists are still largely concentrated in urban areas and are unavailable in many communities. The 2005 Oral Health Summit participants supported strategies for

continuing to increase the supply of pediatric dentists through continual support for increasing the number of pediatric dental residents at The UNC-Chapel Hill School of Dentistry and developing at least one additional pediatric residency program in North Carolina.

Clearly, there is a significant need to increase the number of both general and specialty dentists in North Carolina. However, doing so will require significant financial support. In addition, some of these strategies are controversial, and it will be important to evaluate each option closely before undertaking any of the initiatives.

Strategy Three: Increasing Dental Care Availability for Special Needs Populations

Many special needs patients have unique and more extensive barriers to accessing dental care than other demographic groups. Special needs patients often have cognitive and/or physical disabilities that require special care. Many of these patients live in nursing homes, assisted living facilities, or group homes. Even those living independently or with families in the broader community may have trouble accessing care for reasons such as transportation challenges or finding a provider willing to serve them. Dental professionals face a unique challenge when treating special needs patients because each patient is different. Some patients can be served in a traditional private practice environment, needing no additional time or services, while others must be served at their residence, require specific facility capabilities, and/or take significantly longer to serve than traditional patients.

Barriers to accessing dental health services arise from a variety of factors within the special needs community. For some, oral health is simply overlooked due to the patient's inability to provide self-care or a caregiver's lack of knowledge or training. Most dentists are not trained to deal with the needs of this population. Others find it too onerous, since most of the special needs patients are Medicaid recipients and, thus, services are reimbursed at low rates. Even dentists who treat special needs patients may refuse to treat severely uncooperative or disruptive patients because they lack the expertise or resources needed to care for these patients.²⁹

Strategies for better serving the special needs populations were discussed at the 2005 Oral Health Summit. Recommended strategies included developing a data system for gathering information on the amount of training oral health students receive about serving special needs patients; teaching dental professionals techniques that would help practices integrate special needs patients into a more traditional patient base; establishing concentrated special needs clinics with appropriate facility and equipment needs in which dentists could be encouraged to provide part-time services; and developing additional Medicaid reimbursement codes for services to disabled/special needs populations. The commentary in this special issue of the *North Carolina Medical Journal* by Dr. William Milner³⁰ summarizes the complex issues surrounding the organization and provision of dental care to special needs populations and offers a number of concrete suggestions for how this care might be better managed.

Strategy Four: Increasing Public Awareness of the Importance of Oral Healthcare

Given the low rates of participation in the North Carolina Medicaid dental program by beneficiaries (only 27% of eligible beneficiaries in 2004 had at least one dental visit; the percentage for Medicaid beneficiaries 21 years of age or younger was 31%),²² there has been a concern that the importance of dental care and good oral health practices needs further emphasis, especially among younger populations covered by this program. This is a problem of widespread significance within the general public. Even among those with dental care insurance, rates of utilization are far less than for conventional medical care. For this reason, it is considered important to continue to emphasize school-based educational programs in health education, which include units on oral health, prevention, and self-care.

Summary: Policy Options for Dental Care Access in North Carolina

As we move into the 21st Century, it is important that North Carolina can assure access to basic (primary) dental healthcare services for all populations. A focal point of this effort is centered around having sufficient numbers of dental healthcare professionals to provide needed services, and that these professionals will be willing to serve those with only a modest ability to pay for their care, especially when these individuals and families are covered by programs like Medicaid.

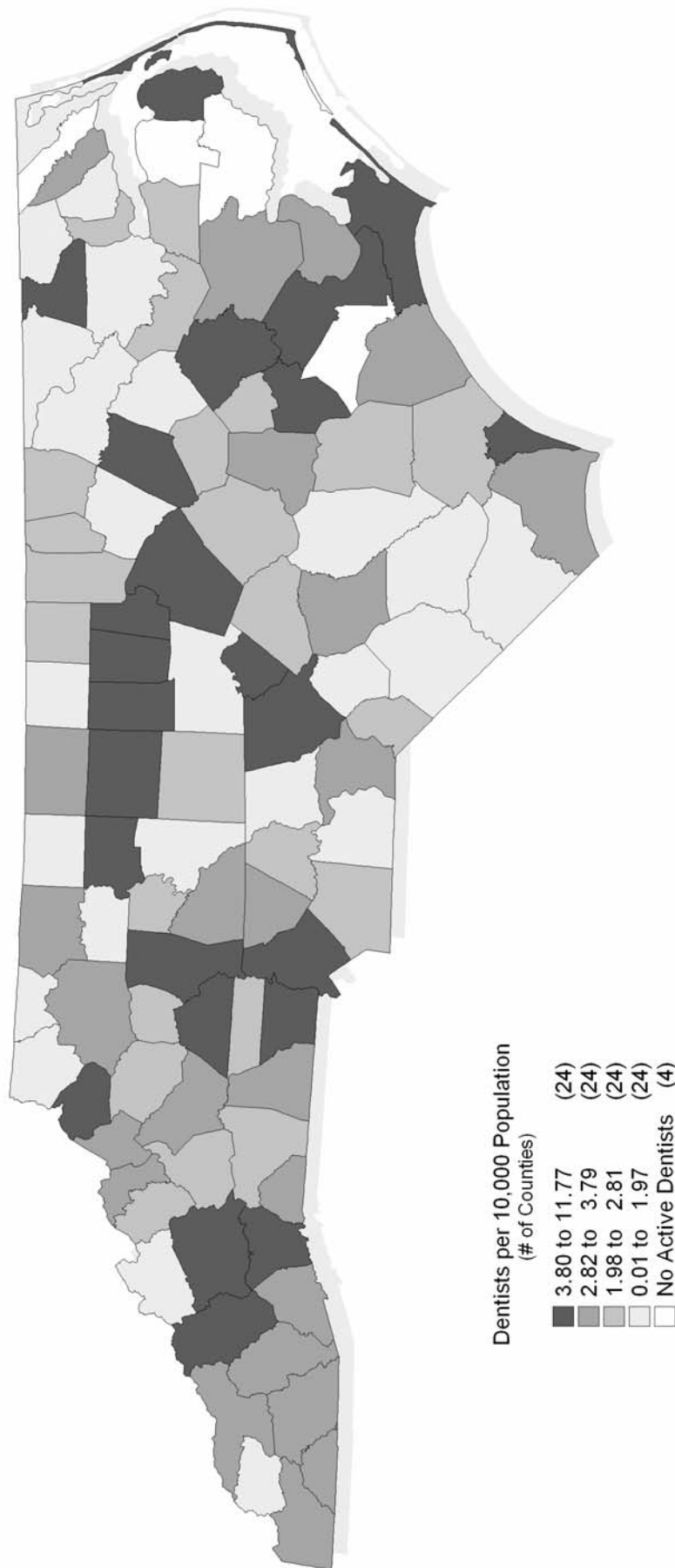
In this regard, six strategies warrant further consideration and debate as policy options for the future:

- Increasing the numbers of graduating dentists and dental hygienists entering practice in North Carolina, and especially those electing to practice in rural and underserved communities.
- Increasing the numbers of graduate-trained practitioners in general dentistry and pediatric dentistry.
- Allowing public health dental hygienists to perform dental preventive services in clinical settings outside of public health departments in order to extend the reach of these services to those most in need.
- Subsidizing the care provision taking place in remote rural areas or inner cities where those most in need are provided access to basic dental care.
- Training more dentists and hygienists and organizing care delivery programs to meet the needs of special care patients.
- Encouraging a greater level of voluntarism among dental care professionals to serve the needs of low-income populations in special clinical care programs, and through active participation in the North Carolina Medicaid program.

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Dentists per 10,000 Population North Carolina, 2004



Source: North Carolina Health Professions Data System, with data derived from the NC State Board of Dental Examiners, 2004.
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*Dentists included are active or have unknown activity status.