

INNOVATIONS IN ORAL HEALTH CARE



Programs, Projects and Strategies for Improving
Access to Quality Oral Health Care in North Carolina



NC ORAL HEALTH
COLLABORATIVE

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Introduction

In 2013, a group of concerned oral health professionals and advocates joined together to form the North Carolina Oral Health Collaborative. Their mission was to shape a shared agenda for improving access to dental care for every person in every part of the state, including individuals and families with low incomes, complex health problems, and limited connection to dental health services.

One of the goals established by the Oral Health Collaborative in its early days was “to highlight solutions, local and national” to the immense oral health challenges and to share these solutions with the people of North Carolina.

To advance this goal, the Kate B. Reynolds Charitable Trust funded a six-month project to identify exemplary models of oral health care, document those models, and collect the models into a compendium. I was invited to lead this project in coordination with the Oral Health Collaborative.

Over the summer and fall of 2016, I had the privilege of interviewing several individuals who are transforming the delivery of dental care and dramatically improving the lives of people in North Carolina and in other states. Some have been innovating for decades. Others are just getting started. All are creative spirits who are deeply passionate about their work.

Their stories are presented in this report. Each story includes an overview of the history, purpose, structure, and impact of the program, as well as a feature on the innovators themselves. Every effort is made to capture the insights and experiences of the innovators in their own words.

I am deeply grateful for the opportunity that the Kate B. Reynolds Charitable Trust and the NC Oral Health Collaborative have given me to get to know the oral health innovators. These women and men are beyond inspirational! Together, they are bringing hope, better health and bigger smiles to thousands who are in need. I am pleased to have the opportunity to share their stories with you.

A special thanks to

- Members of the NC Oral Health Collaborative Acceleration Team who provided important guidance on the selection of model programs to be included in the report, drawing from their collective knowledge of the oral health field.
- Alexandra Zizzi who prepared the summary of oral health workforce programs located in the appendix and conducted extensive background research for the project. She is a student at the UNC Gillings School of Global Public Health and served as a summer intern for the Foundation for Health Leadership.

Elaine Matthews

Communications and Policy Strategist
Director, NC Oral Health Innovation Project
February 2017

Key Themes

The innovators interviewed for this project share perspectives on many overarching trends, barriers and opportunities. Key themes from the interviews are described below.

Adding oral health to the formula for whole person care

Several of our innovators applauded the fact that North Carolina is making progress in medical integration, but say that oral health remains, for the most part, left out of the equation. In some areas of the state, clinics are co-locating medical and dental services to provide whole person care for their patients. This saves the patient time, facilitates communication among providers and improves overall care. Thanks to North Carolina's nationally recognized Into the Mouths of Babies programs, a number of pediatric practices are now adding oral health screenings and preventive treatments to well child visits. Our innovators see these steps as a positive sign. They are also encouraged that the conversation about oral health is ramping up at the national and state levels and hope that this will lead to increased opportunities for medical-dental integration.

Making oral health education a priority for North Carolina

All innovators, regardless of the nature of their work, stressed the extreme importance of dental health education—for patients and their families, for health care professionals and caregivers, and for the overall health of North Carolina's population. Their concerns ran the gamut—from children who don't own a toothbrush; to teenagers who risk losing their teeth due to poor diet and soft drink consumption; to adults who face increased chances of heart disease and diabetes because of poor oral health; to seniors and special populations who are unable to care for their own teeth and have no one to do it for them.

The innovators said repeatedly that when it comes to a choice between food or medicine or dental care, dental care is the first to go. One of the innovators put it this way: "The mouth is a very important part of the human body because it often dictates the rest of our systemic health." Yet, he lamented, it gets very little attention.

Intensifying the focus on prevention

The dental profession has focused on the prevention of tooth decay and gum disease for decades. What is new is the missionary-like zeal with which our innovators and their colleagues are advocating for action to ensure all North Carolinians—regardless of income or location in the state—gain access to preventive measures. Several stories in this publication focus on partnerships between dental professionals and public schools that are successfully providing preventive oral health services for younger children. Along with preventive measures, they are seeking to connect each child with a dental home, whether in a private practice or public clinic. There is also a growing belief that giving a child a good dental foundation must start as early as possible—beginning with the health and education of the mother before the child is born and good oral health habits established during infancy.

Breaking through the language barriers and building cultural competency

North Carolina's demographic mix is changing rapidly, with the Latino population totaling 890,000 and growing. Given the urgent oral health needs among many Latino residents, the innovators are actively developing strategies to meet the needs of this population. One model presented in this publication employs a translation service to ensure communications with patients are clear and stress-free. Others focus on hiring Spanish-speaking dentists and administrative staff and distributing oral health materials printed in both Spanish and English. "There is a huge difference in health care systems among cultures," said one innovator, stressing the importance of cultural understanding and clear communications to overcome the differences. Unfortunately, most dental practices in North Carolina have no provisions for communicating with non-English-speaking individuals, leaving the state far from prepared to handle this challenge.

Medicaid—the elephant in the room

The innovators were not actively involved in advocating for specific changes in North Carolina’s Medicaid reimbursement rate or in Medicaid paperwork requirements. But they openly discussed the Medicaid challenges they face daily. Those who have been able to establish longer term, sustainable programs describe sleepless nights spent agonizing over funding formulas that will allow their operations to continue. These formulas often depend on establishing a delicate balance of patients with employer insurance, patients with Medicaid insurance and patients who pay a low-cost fee or who are charged on a sliding scale. The Medicaid reimbursement rate has hovered around 40 percent of UCR (usual, customary and reasonable), which has served as a major deterrent for many private practice dentists to accept Medicaid patients in North Carolina and across the nation. In regard to the broader question of Medicaid expansion, one innovator commented that it would make a huge difference. “But until that happens, we’ve just got to try to make ends meet the best we can. Somebody has to serve our people. They’re hurting.” Clearly, if North Carolina is to extend oral health care to all residents in the state, Medicaid must be a major partner.

Embracing technology, improving dental practice

Although North Carolina has not adopted the advanced teledentistry practices used in some other states, the state’s oral health leadership is beginning to explore a range of options. One UNC-Chapel Hill dental surgeon profiled in this publication is leading a large-scale effort to determine the potential role for the university in advanced teledentistry. The decade-old ECU School of Dental Medicine has state-of-the-art facilities at the Greenville campus and at its regional community service learning centers, preparing dental students for the changing world of dentistry. Local innovators report that they are embracing technologies that fall into two main categories: those that allow them to treat patients in nontraditional settings—such as light-weight, portable x-ray machines—and those that allow dentists to consult with specialists to speed up and improve diagnosis and treatment of their patients.

Especially eager to gain access to the new technology are dental professionals in rural areas who see it as a way of overcoming distance barriers and providing their patients with world-class care.

Expanding the workforce to meet the needs of underserved people and places

Nationally, the most hotly debated topic in oral health care is how to increase the number and distribution of qualified oral health care providers. In spite of well-devised plans and inducements, states like North Carolina still suffer from a severe shortage of dental providers for large segments of the population. This has led several states to pass legislation enabling dental hygienists and other “mid-level” dental professionals to assume expanded, and in some cases, more independent roles (without direct oversight of a dentist) in providing prevention services and even treatment. While most of the innovators expressed support for expanded roles, they varied in interpretation. For some, it meant serving as an educator and coordinator of oral health services within the community. For others, it meant “being allowed to work to the full extent of their knowledge and training.” As state leaders consider options for the future, one model worth considering is the Virtual Dental Home program that has been tested successfully in California. It is a community-based oral health delivery system that uses telehealth technology to link allied dental personnel in remote communities with dentists in private practice and public clinics.

Our Challenge Going Forward

From a fragmented system
to a statewide vision

North Carolina is home to fine examples of oral health innovation.

This report features programs with strong track records that are now prime candidates for statewide expansion or replication. It also showcases new ideas, still in the early stages of exploration and development, which promise to provide future direction for improving access and quality of oral health care.

Unfortunately, these innovative programs fail to reach thousands of North Carolinians who need them.

The system of innovation is seriously fragmented, with many programs limited to single organizations and single locations. Our innovators are talented fundraisers and capable managers for programs within their purview. They are not, however, positioned to take their programs to scale statewide. As a result, benefits accrue to a fortunate few.

North Carolina will need to create an environment in which innovation can fully advance the delivery of oral health care for all.

This will require an open discussion, evaluation and, as appropriate, revision of state oral health policies to reduce unnecessary constraints and open up opportunities. It also will require a unified, statewide vision for providing quality oral health care that embraces and supports innovation.

The prospects for the future of oral health care are growing brighter.

The program models featured in this report suggest that North Carolina is indeed fertile ground for innovation in oral health. If we can nurture this innovative spirit, advance sound policy action and build on our existing resources—namely, world-class academic institutions, engaged philanthropic organizations, highly skilled oral health care providers, and passionate advocates—we have the opportunity to vastly improve the health of our fellow North Carolinians.

“If we can get to kids early,
we can change their oral
health trajectory.”

Baby Oral Health

A Program of the UNC School of Dentistry

The Need

In the 1990s, the medical community underwent a major shift in its thinking about dental care for young children. For years, the recommended age for a child's first oral health assessment was age three. Waiting that long, however, meant that some children already had developed cavities. It also meant that the majority of children were not receiving preventive care that could keep their smile cavity-free in the future.

As a result, the American Academy of Pediatrics (AAP) issued new policies in the early 2000s that called for all children to receive an oral health risk assessment from a health care provider by six months of age and to visit a dental home by their first birthday. This guidance presented a new and challenging role for dentists, in clinics and in private practice, who were largely unprepared to serve the needs of children this young.

The Solution

Enter Dr. Rocio Beatriz Quinonez, director of the pediatric dentistry pre-doctoral program at the UNC School of Dentistry. Young and energetic, Dr. Quinonez brought her passion for children and endless creativity to the UNC faculty when she accepted the post in 2006. She soon became immersed in the school's work to serve young children called the Baby Oral Health Program (bOHP, pronounced "bop").

How the Program Works: Baby Oral Health

"The Baby Oral Health Program is an effort to prepare the next generation of general dentists to feel comfortable and confident in caring for infants and toddlers," said Quinonez. Before the program began, the school did not have a clinical component in its curriculum focused exclusively on oral health services for young children. "In the year we introduced bOHP, 10 percent of our dental class participated in the clinical experience," said Quinonez. "Now 100 percent of our dental students participate."

Students gain their hands-on clinical training at various sites, including the Lincoln Community Health Center, a federally-funded health community center in downtown Durham; the Prospect Hill Community Health Center, a component of Piedmont Health; and the UNC school-based clinic in Chapel Hill. In these settings, dental students become skilled in examining infants and advising parents on oral health practices for their children. "We believe that if we can get to kids early, we can change their oral health trajectory," said Quinonez.



The logo tells it all

The mission of the UNC-CH Baby Oral Health Program, as the colorful logo suggests, is to bring smiles to babies through healthy dental practices.

Students also benefit from a powerful multi-media teaching tool developed by Quinonez called the Baby Oral Health Program Kit. Students can log onto the bOHP website and follow a series of step-by-step training modules. The kit is rich in content, upbeat and visually appealing. It combines in-depth instructional material with

videos that show how a dentist—working with a baby and caregiver—can conduct exams, administer preventive treatments and provide caregiver education. The kit is compatible with tablets, making it easy for students to refer to the online training program as they perform their clinical work.

Students are not the only beneficiaries. Experienced dentists who are interested in serving the needs of younger children are encouraged to register online and use any or all of the components in the kit at any time. The website address is <http://www.babyoralhealthprogram.org>.

How the Program Works: Parental Oral Health

Even though bOHP was widely recognized as groundbreaking, Quinonez believed it was not enough. “We were thinking—if we do the age one dental visit as advocated,” said Quinonez, “we have missed the prenatal period when women are much more susceptible to messages about their oral health and the oral health of their babies.”

It was out of this concern that the Prenatal Oral Health Program (pOHP, pronounced “pop”) was born, a collaboration between the UNC School of Medicine and School of Dentistry. Quinonez worked with the schools to test a pilot clinical project at community sites, funded by the Blue Cross and Blue Shield Foundation, and then to establish a prenatal clinic at the School of Dentistry. “Since 2012, we have trained our dental school classes on the principles of prenatal oral health,” said Quinonez. The training has also been made available to medical students who are on clinical rotation at UNC and, since 2014, to the school’s dental hygiene students.

To support the prenatal program, Quinonez led in the production of a second virtual teaching tool, the pOHP kit. Both the clinical program and the pOHP kit are aimed at early dental intervention to give mothers and their children the best opportunity for oral health.

“Our goal is for a pregnant woman to be referred to a dentist by her doctor and for the dentist to provide her with a comprehensive examination,” said Quinonez, adding that the examination could safely include appropriate radiographs. The dentist could then develop a treatment plan and share educational slides from the POHP website that contain key messages, including:

- It’s safe to have dental treatment when you are pregnant.
- You can take steps on your own to ensure a healthy mouth during pregnancy.
- After your baby arrives, you can take steps to ensure your baby’s oral health, including a first dental visit to the dentist by the child’s first birthday.

The website for POHP is <http://www.prenataloralhealth.org>.

Track Record

“The bOHP and pOHP websites are what our students log into every time we’re in clinic,” said Quinonez. “We are also pleased that dentists are using the tools in their practices, although we have not had the money or time to track that closely. We know that people all over the world are viewing the websites and that academic institutions in the United States and Canada have adopted the Baby Oral Health Program as a component of their teaching programs,” said Quinonez. As far as Quinonez knows, the UNC-developed virtual teaching tools are the only ones of their kind in the country.

Funding

Funding for bOHP and pOHP has come from the Blue Cross Blue Shield Foundation, the NC Academy of Pediatric Dentists, the NC Dental Society, the National Children’s Oral Health Foundation and gifts from individual donors.

Looking to the Future

“My goal is to keep the train on the tracks,” said Quinonez. “We want to continue to educate the next generation of dental providers with our mission focused on North Carolina providers, but anybody who wishes to jump on that train is welcome.” She adds that in the future she hopes to obtain funds to secure at least a coordinator for the program and the websites. She has also been asked to create a phone application to make the tools even more accessible to students and dental professionals.

Personal Reflections from the Innovator

"The students and families we care for are the inspiration in what I do. I hope that when I'm 80 years old and sipping on my chai latte, I can look back on a generation of dentists that I helped become more knowledgeable and comfortable about early childhood oral health. I also hope that the platform we created for prenatal oral care has benefited primary care providers and the pregnant women and young children they serve. That's my hope and dream."

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Spotlight on the Innovator



Rocio Beatriz Quinonez, DDS, MS, MPH

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Dr. Rocio Quinonez focuses her abundant energy, creativity and dental expertise on improving the oral health of the nation's children. Quinonez joined the faculty of the UNC School of Dentistry in 2006, where she serves as director of the Pediatric Dentistry Pre-Doctoral Program, Baby Oral Health Program and Pediatric Dental Faculty Practice. She earned her dental degree from the University of Manitoba in Canada and later came to the University of North Carolina in Chapel Hill where she performed her pediatric dentistry residency, received her master's degree in pediatric dentistry and received a master's degree in health policy and administration. Quinonez was the first UNC faculty member to be awarded the Omicron Kappa Upsilon National Dental Honor Society's Charles Craig Teaching Award. The logo tells it all. The mission of the UNC-CH Baby Oral Health Program, as the colorful logo suggests, is to bring smiles to babies through healthy dental practices.

“Going to the dentist is fun.
It really is. We’re cool!”

Greene Access Program

A Program of Greene County Health Care

The Need

Greene County is a farming community in eastern North Carolina. When the agricultural season is in full swing, the county's population of 21,000 increases by several hundred as seasonal workers come in to harvest locally grown crops. The average per capita income in the county is less than \$20,000, and the poverty rate is around 28 percent. Dr. Robert "Rob" Doherty, Dental Director of Greene County Health Care, says that the last time statewide dental statistics were available, Greene County ranked 95th in the state for cavities among kindergarteners and 100th for cavities among children in fifth grade—putting the county at the very bottom of state rankings.

The Solution

Doherty and colleague April Wiggins recognized that major steps were needed to prevent tooth decay in the county's youngest children. Wiggins, a dental hygienist with a passion for children, advocated for starting a dental program in partnership with the local school system. Doherty began to scout around for program models that were resulting in measurable improvements. One that impressed Doherty was the school program of the Gaston Family Health Services Dental Clinic, directed by Dr. Bill Donigan. "He worked with one elementary school that, after three or four years, was caries free," said Doherty. "I thought, that's possible? That's what got me motivated."

So, Doherty and Wiggins began to develop a strategy for Greene County. They first considered busing the children into the clinic, but determined that was not an option due to loss of classroom time for the students. They also considered going mobile, but the purchase of a large RV van outfitted with a dental office was expensive.

"So, we decided to go portable," said Wiggins. "We realized it was the most cost effective approach." By portable, Wiggins means they use equipment that can be easily transported from one school site to another.

The next decision point was the type of services to offer. "We worked closely with school nurses to plan the program, and they advised us to focus exclusively on preventive services at the school sites," said Wiggins. "If children needed further treatment, such as fillings, extractions, space maintenance, etc., their parents could drive them to our clinic for services."

The school board approved the final plan in 2013, and the Greene Access Program (GAP) was launched. April Wiggins was named program manager.

How the Program Works

The first step in the process is outreach to parents. "At the beginning of the school year, we set up informational booths at all the schools, and everyone who comes by gets a free toothbrush and a tooth brushing chart. We let them know what we're going to do and that we'll be coming to the school in September or October to provide services. We make sure we have a Spanish-speaking staff member at the booth so we can respond to everyone's questions."

For children to participate in GAP, a parent or guardian must submit signed paperwork. To make it easier, the paperwork has been reduced to one sheet and requires only one signature along with an informational letter. Informational GAP packets are now being sent to parents by email as well as paper. Wiggins knows that sometimes paper does not make it home and that parents tend to be more attuned to email messages these days.

"At the schools, we do cleanings, a full examination by the dentist, x-rays, a fluoride treatment and sealants—all general prevention," said Wiggins. "Our dentist is great with children and speaks Spanish, which is comforting to some of the younger Hispanic children."

In many ways, the school clinic is just like any dental office—a skilled staff working with standard equipment, taking precautions to ensure infection control. In other ways, things are a bit different. GAP staff wear surgical masks that look like animal faces to keep the children entertained. The children lie back in lightweight zero-gravitation chairs for their treatments. And sometimes kindergarteners have a case of the giggles as they wait their turn to see the dentist.



Smiling GAP team is ready for the day

The Greene Access Program dental team prepares to greet children at G.R. Whitfield Elementary for a morning of dental exams, preventive treatments and education on good dental practices.

To reinforce the importance of good dental habits, students from the East Carolina University School of Dental Medicine conduct an oral health education program in the classrooms. The program promotes lively engagement of K-5 children with ECU dental students on topics related to dental health. “It’s a wonderful collaboration,” said Wiggins.

Once the GAP team returns to the clinic after a day at a school site, they still have much work to do. They convert student paper records to digital files, enter x-rays into the system, and fill out oral health report cards (red means cavity) to send to parents. Parents also receive a copy of their children’s charts so they know what needs to be done. “We give that about two weeks,” said Wiggins. “If we don’t hear from the parents, we send out a follow-up letter. If we don’t hear from that, we start calling them. It’s a lot of work.”

Wiggins said they learned a lot during the first year. We’ve gotten a lot faster and more efficient and work smarter. We can see 25-30 kids a day with one doctor and one hygienist.

Track Record

By the end of the 2015-16 school year, GAP had recorded 1,405 preventative visits, and dental health providers had placed 1,685 sealants on children participating in the program. GAP is now in 12 schools—six in Greene and six added in Pitt County in fall 2016.

Funding

Greene Dental Services started GAP with its own funds. “We did it kind of bare bones. The total cost for the equipment was about \$22,000,” said Doherty. Recently, GAP received grant funds from the Blue Cross Blue Shield Foundation to purchase headlamps for the staff since lighting in schoolrooms is often insufficient for dental work. Funding for the expansion of GAP into Pitt County was provided by the federal Health Resources and Services Administration. Greene Dental files for Medicaid and offers a sliding fee for parents paying out-of-pocket.

Looking to the Future

“We’re still not anywhere near where we want to be,” said Doherty. “We want to be more like a dental home for these kids. For kids who really have a lot of needs, we want to be able to take care of them.” Right now, the nearest specialist is in Raleigh, but that will change soon. Doherty is interviewing candidates for a new pediatric dentist position at the Bernstein Center in Pitt County. “That’s a big step toward our ultimate goal,” he said. A third GAP site will open in 2017 in the town of Bayboro, located in Pamlico County.

Personal Reflections from the Innovators

Doherty says he can see a big difference in children coming to the clinic who have participated in the GAP program in their schools. "They just walk in with no questions about where they're going. They trust us. They get in the chair, and I may do a little filling first. Then we get the rest of the work done."

He stresses that the GAP program would not have happened without Wiggins "just taking it into her DNA. She lives and loves this thing." "I call it my fourth child," said Wiggins who has three children of her own. "Going to the dentist is fun. It really is. We're cool!"

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Spotlight on the Innovator



Robert Doherty, DDS

Director of Greene County Dental
Greene County Health Care, Inc.

Dr. Rob Doherty is known for having a passion for community health and for caring for all his patients, no matter what their background may be. For more than 20 years, Doherty served as a senior dental surgeon of the Commissioned Corps of the U.S. Public Health Service, taking him to Alaska, Pennsylvania, Florida and to countries around the world. Before settling in Greene County, he served as dental director for Wake Health Services, Inc., headquartered in Raleigh. He came to Greene County in 2003 and assumed the position of dental director for Greene County Health Care, Inc., where he has steadily expanded dental services. "Greene County is really where I settled in and found my place," said Doherty. In addition to his role with Greene County, Doherty serves as clinical assistant professor at East Carolina University School of Dental Medicine. He is a graduate of the University of North Carolina at Chapel Hill.

Spotlight on the Innovator



April Wiggins, Registered Dental Hygienist
Manager, Greene Access Program (GAP)
Greene County Health Care, Inc.

April Wiggins is openly enthusiastic when she speaks of her passion for children, her home county and the practice of dental health care. Wiggins received her dental hygiene degree at Wayne Community College, where she was given the community health award. Before coming to Greene County Health Care, she worked in private practice and in a Medicaid office. "Then I found this place," said Wiggins, "and I fell in love with it. I thought this is it, this is for me." For a few years, Wiggins served as manager of both the dental clinic and of the Greene Access Program (GAP). Now that GAP has expanded to new sites, she is focused solely on leading the prevention program in area schools.

“We’ve been engaged for a long time. We’re now going to get married!”

Montgomery County School-Based Dental Care

A Program of FirstHealth of the Carolinas

The Need

Montgomery is a rural county located in south central North Carolina. With a poverty rate of 22 percent, a large portion of the population receives Medicaid or is uninsured, and nearly 80 percent of schoolchildren qualify for free or reduced lunch. In overall state health rankings, Montgomery falls into the bottom 25 percent. It is not surprising that low-income children often do not get the health care they need—including dental care.

The Solution

The good news is that help is coming soon. Construction will soon begin on a pair of dental centers located at Montgomery County's two middle schools, Montgomery East and Montgomery West. When the facilities are completed in 2017, dental care will be just a few steps away from students' classrooms. That means that students will be able to get preventive care and treatments when they need them, and parents will not have to worry about missing a half-day of work.

The new school-based dental program is a result of a positive, long-term relationship between FirstHealth Dental Care Centers and FirstHealth Montgomery County School-based Health Centers. Both entities are affiliated with the non-profit FirstHealth of the Carolinas, which serves 15 counties in the mid-Carolinas.

Here's a quick look at the value that each brings to the partnership:

FirstHealth Dental Care Centers got their start in 1998-1999 when three children's dental clinics were built in Moore, Montgomery and Hoke counties. Dr. Sharon Nicholson Harrell, director of the centers and a practicing dentist, gives credit to two people for making it possible. The first was a dental hygienist serving as director of FirstHealth Community Health who saw the urgent need for dental care and led in program development and fundraising for the children's dental clinics. The second was the CEO of FirstHealth who agreed to launch a dental program at a time when few hospitals had dental care under their umbrella of services. "Today our clinics provide comprehensive dental treatment for low-income children from birth to age 21," said Harrell.

FirstHealth Montgomery County School Health Centers were established on the campuses of East Middle School in 1999 and West Middle School in 2001. Their purpose is to provide convenient, onsite access to health care, available to any child in the Montgomery County School System. Originally housed in mobile units, the centers are now in 1,700 square foot, permanent buildings. Regina (Gina) Smith, program director and a certified family nurse practitioner said, "We're open whenever school is open, five days a week." The centers provide a range of physical, mental, nutritional, and health and wellness services. Centers also provide free sports physicals and all immunizations required for middle schoolers. Prior permission is required from the parents or legal guardian of any child seen in the centers.

How the Program Is Working

Harrell and Smith have worked together for years, serving many of the same students and providing referrals to one another's clinics. In 2015, they partnered on a project that helped 142 middle and high school students who were without a dental home to get treatment for their caries.



Dr. Harrell greets young patient in the clinic

FirstHealth Dental Care Director Sharon Harrell anticipates that the new Montgomery County school-based dental centers will handle more than 1,800 preventive, restorative and emergent visits during the first year of operation.

“When we were doing the screenings here, I thought it sure would be great if Sharon could be here all the time,” said Smith. Then they heard that The Duke Endowment was interested in supporting the co-location of medical and dental services on a school campus. “We told them we had partnered for years, but thought it would be an excellent mode of care to combine the two operations,” Smith stated.

The Duke Endowment approved capital funds for the construction of dental centers at each of the middle school campuses in Montgomery County. Construction on the centers was scheduled to begin in 2017.

Smith and Harrell agree that the project has become much bigger than they originally thought. “If you’re rural, you make the best of what you have,” said Smith, “but now that it’s working it’s so amazing for the kids! “We work well together, we’re both ‘can do’ people,” said Harrell, referring to Gina Smith. “And Gina has been so open to us being partners, so inviting into her space.” I like to say, “We’ve been engaged for a long time. We’re now going to get married,” said Gina with a laugh.

As they prepare for their joint venture, Harrell and Smith are making plans. “Gina always sends a packet home that gives kids permission to be seen at the school based health centers,” said Harrell. “This year she has been able to add an announcement that dental services will be available in the spring. The mailing has gone out to about 4,000 Montgomery school children.”

Asked how the integrated care will work, Harrell gives this example. “If I see little red bumps on the back of a student’s throat when I’m doing a dental exam, I will now be able to ask that student to walk down the hall and get a strep test. It will be that easy.”

“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,” said Smith. “We often hear from parents, I want to take my kids to the doctor, but don’t have gas money.” Smith added that many students live with grandparents over 70 years old who have medical problems of their own and are not able to get out.

Track Record

Harrell anticipates that the Montgomery dental team will handle more than 1,800 preventive, restorative, and emergent visits during the first year of operation. The number of visits is predicted to increase to almost 3,000 in the second year.

Funding

“FirstHealth of the Carolinas has been phenomenal,” said Harrell. “Every year the dental clinics have been in operation, we’ve received operational funds and the option of requesting sponsorships of individual projects. We’ve had great support.” Another lifesaver, says Harrell, is FirstHealth Montgomery’s Kids in Crisis program that provides funds to cover dental costs for children of parents who cannot pay. FirstHealth also helps in other critical ways, such as disbursements from the Foundation of FirstHealth to increase access to dental care for underserved children by offsetting operational losses.

Major capital and operational investments were made in the three dental clinics in 1998 by the Kate B. Reynolds Charitable Trust and The Duke Endowment.

More recently, The Duke Endowment invested in the construction and equipment costs of the new middle school dental facilities.

Looking to the Future

Project leaders anticipate that once the dental programs are fully established, the initial two-day-per-week schedule will expand to five days per week at each center.

Personal Reflections from the Innovators

“Many times when people think of rural they kind of look down on it,” said Smith. “And I’ve found that when you say you are a public health facility, people look down on that as well,” said Harrell. “We’re a dental care center. We’re providing quality care. I don’t want our centers to have the reputation of ‘that’s where the low-income students go.’ They just happen not to have the resources that other patients do.”

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Spotlight on the Innovator



Sharon Harrell DDS, MPH, FAGD

Director
FirstHealth Dental Care

Dr. Sharon Harrell’s philosophy is to treat each patient with the utmost respect while delivering the highest quality of comprehensive, preventive-focused care. Her passion is providing access to care for underserved children and mentoring students and new practitioners on being compassionate to the need of this vulnerable population. Harrell serves as Dental Director for FirstHealth of the Carolinas and is an adjunct professor at the UNC School of Dentistry, where she received her dental degree. She completed her Masters in Public Health training at the UNC Gillings School Global Public Health. Harrell is the recipient of many recognitions, including being awarded the first-ever Pediatric Oral Health Service Award by the NC Academy of Pediatric Dentistry for her work with underserved children.

“It benefits our children,
the community and private
dental practices.”

Children's Dental Home Sealant Project

The Need

Dr. Frank Courts is a native North Carolinian and a pediatric dentist. After working for more than 20 years in a university setting in Florida, he returned to North Carolina and opened a private dental practice in Rocky Mount. There he serves hundreds of area children, including those on Medicaid and Health Choice and more than 300 children with autism, behavioral challenges and other special needs.

Though he has earned many titles along the way, the one he holds dearest is "farm boy from Rockingham County," for it was in the tiny community of Ruffin that his life's mission was formed. "Just growing up with poor kids, I have a passion for making sure their needs are met. Dental decay in young children is the most common reason for kids missing school days," said Courts. "It interferes with their performance, affects their ability to interact with others, and limits their ability to move upwardly in our society."

The Solution

Dr. Courts believes it is possible to prevent tooth decay in a large portion of the state's children if steps are taken early enough. He along with many others has developed a pilot project called The NC Children's Dental Home Initiative to test his strategy. Unlike most school programs, which are connected with safety net organizations, this model will be conducted in collaboration with private dental practices in the community.

The strategy grew out of the work of a task force of the NC Institute of Medicine in 2013, which examined ways to get sealants to young patients more effectively. Sealants are shown to be effective in preventing decay if applied at the time six-year molars first emerge. The project is funded by the Duke Endowment and is supported by the NC Dental Society, a membership organization of North Carolina dentists. It will be conducted by a partnership of private practice dentists and Edgecombe and Halifax schools systems.

Lead dentists for the program are Dr. Elizabeth Miller and Dr. Courts.

"Instead of funding a big public program," said Courts, "we want to provide the incentive for dentists in private practice and their staffs to increase oral health for kids from low-income families." A number of studies, said Courts, have shown that doing this work in public schools is the most effective strategy.



Satisfied customer

Dr. Frank Courts, Rocky Mount, NC, stops to pose with a happy patient following a good check-up.

How the Program Will Work

The groundwork for the project has been laid. Four elementary schools, two in Edgecombe and two in Halifax, have agreed to participate, and four local dentists and their staffs have signed up to provide care—one for each school. The target population will be children in kindergarten through third grade.

An oral health coordinator has been hired to work with teachers and school nurses, set up the facilities for the dental risk assessments, and generate information for children and their parents.

In January 2017, the dentists began performing risk assessments in the schools for children whose parents have returned completed, signed consent forms. The risk assessment includes a baseline of data on the child's oral health status.

In February, children will be treated according to the results of their assessments. Those who are considered to be at moderate to high risk for dental caries will be referred to the assigned dental practice for a comprehensive dental exam and appropriate restorative treatments.

Those with no treatment needs, estimated to be 75 percent of participating children, will be scheduled for preventive measures in

the school setting. A dental hygienist will provide the sealants and dental staff members will provide oral hygiene instructions, dental cleanings and fluoride varnish. (A state oversight committee has approved a rule change that will allow hygienists working on this school-based model to administer preventive treatments without the on-site direction from a dentist.)

“We need oral health education, and we need to prevent the disease from getting too far,” said Courts. “We have the opportunity to empower our dental staff members to provide more effective, community-based dental care, and the easiest place to do that is in our schools.”

All children are expected to be served by May 2017. The risk assessments performed by the dentists will be repeated every six months.

The benefit of this model, said Courts, is that “every single kid who is screened in the school will now have a dental home. They will have a place to go. The dentist that performs their risk assessment at school will be the dentist who sees them for treatment in the dental office.” Courts added, “It benefits our children, the community and private dental practices.” He believes that if dentists go into a rural community and adopt a school, their dental practices will grow and they can be guaranteed a reasonable income. “They can actually make a living,” said Courts. “When you’ve got a huge burden of student debt and have to pay for your practice, it’s hard to do that in a rural community with a traditional dental model. It’s a good way for a dentist to be a part of the community and make a difference in oral health,” Courts said.

Courts noted that dentists will need to receive a fair payment from Medicaid for their services. Right now Medicaid reimbursement for dental fees is about 40 percent of UCR (usual, customary and reasonable). For most dental practices, overhead is 55-60 percent UCR. “That’s a huge problem in dentistry now that we’re trying to address,” said Courts. “If you’re starting out in dentistry and trying to see Medicaid patients in the traditional environment, you will soon go broke.”

Indicators of Impact

The goals of the project are to (1) increase by 20 percent the prevalence of dental sealants in permanent teeth among targeted second grade students; and (2) decrease the amount of untreated disease in permanent teeth by 50 percent by providing dental homes for participating students. The UNC Gillings School of Global Public Health will develop pilot project evaluation methodology.

Funding

The Duke Endowment is providing funds to cover the cost of the project coordinator, evaluation and supplies. Dentists will file for reimbursement for treatment of patients covered by Medicaid and NC Health Choice. The project is funded for two years with a third year available.

Looking to the Future

Courts said the long-term plan is to conduct the project in the two initial geographic areas, to gauge participation and measure effectiveness, and, ultimately, to expand the program to other areas of the state.

The project team will develop a manual of procedures that will serve as a template for the school-based portion of the screenings and care. The manual will include best practices, protocols and procedures for efficient, effective care. The manual also will include a how-to section to help ensure a smooth transition for the children who require follow-up care in an office setting. The team will develop continuing education courses on the use and proper application of dental sealants.

Personal Reflections from the Innovator

"I want our future to be as good as it can be," said Courts. "We need to understand the forces that are interacting with the dental profession and manage those forces to carve out the best oral health program we can in North Carolina. If we can do that, we will have successful dentists and healthy mouths."

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Spotlight on the Innovator



Frank Courts, DDS, Ph.D.

Frank J. Courts Pediatric Dentistry
Rocky Mount, NC

For Dr. Frank Courts, opening a private dental practice in eastern North Carolina after completing a full and productive university career has been a "reinvigorating" experience. It gives him the opportunity to do what he loves—to have hands-on time to treat his patients and to advocate for reforms and policies that support improved care for underserved pediatric and special populations. "I've still got a lot of enthusiasm," said Courts. Courts completed his D.D.S. in Pediatric Dentistry at the UNC School of Dentistry and his Ph.D. in Microbiology/Immunology at the UNC School of Medicine. For more than 20 years, Courts served as associate Professor and Chair of Pediatric Dentistry at the University of Florida, College of Dentistry. He is now the chair of the Physicians Advisory Group Dental Committee of the North Carolina Division of Medical Assistance. Courts is active in the North Carolina Academy of Pediatric Dentistry and the North Carolina Dental Society.

“We’re going to do it right
or we’re just not going to
do it at all!”

Access Dental Care

The Need

Sadly, many North Carolinians living with complicated intellectual and physical disabilities have little or no access to dental care. Known as “special care populations,” they may be homebound or living in nursing homes or group homes. The 2010 Special Care Oral Health Services Advisory Group estimated that there are 450,000 special needs individuals in North Carolina who belong to all age groups and have a variety of disabilities including profound intellectual disability, autism, cerebral palsy, dementia, cerebral vascular disorders (stroke), head injuries, multiple sclerosis, and muscular dystrophy.

The Solution

While the challenge is a big one, there is a strategy that works, as Bill Milner, president of Access Dental Care, has demonstrated for 16 years. Headquartered in Asheboro, Access Dental Care provides on-site, 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 to special care patients in the community at large. Access Dental Care’s service area now extends from Shelby to Raleigh, as a result of acquiring a similar service in the Charlotte area in 2015.

How the Program Works

Access Dental Care is a mobile on-site dentistry program. Five days each week, a dentist, hygienist and one or two dental assistants travel in a 16-foot truck to a special care facility in the North Carolina Piedmont. They transport everything found in a regular dental office: dental chairs, state-of-the-art operating units, lights, digital x-ray and supplies—enough equipment to support two operatories.

Milner and his staff have the process down to a science and are able to wheel the equipment into a designated room and set up in about 20 minutes. This space, usually an activity room, requires electrical outlets, a sink, and some privacy. Milner says that the team can see 15 or more patients per visit.



Dr. Bill Milner unloads the Access Dental Care truck

A two-chair dental clinic is unloaded each day and set up inside a facility in about 20 minutes

Before any patient can be seen, the facility’s social worker must obtain signed permission from the patient’s family. This is required before the dentist can conduct the first exam or perform any treatment. Most patients are brought to the dental room, although a few must be treated at their bedside.

The staff keeps meticulous files on each patient and updates these throughout the day. X-rays are taken with a hand-held device and can be viewed on a laptop computer. Treatments include cleanings, extractions, fillings, dentures and bridges, oral cancer exams and treatments for gum disease.

While this may sound like a fairly normal day in the life of a dentist, it is anything but that. Patients often arrive with dire dental situations—severe pain and equally severe infection. They may not have eaten normal food in weeks. They may not be able to open their mouths. Many cannot explain what their problem is. Many are on medications, including anticoagulants, which means they are at risk of serious bleeding. Some have lost their swallowing reflex. They cannot clean their own mouths and have no one else to do it.

And yet, there is normalcy in the room. The dental team takes it all in stride, making gentle jokes among themselves and with patients. There is happiness; patients smile, even laugh. Before a treatment begins, Dr. Milner and his staff stop and talk with each patient, often placing a reassuring hand on an arm or shoulder. “You have to get it in your DNA,” says Milner. “You have to crawl into the minds of the people you’re serving.”

Track Record

Access Dental Care provides comprehensive dental care to 3,400 residents in 13 Piedmont counties each year. Since its inception, the organization has treated over 15,000 patients during 100,000 dental appointments.

Funding

Funding comes from three sources: Medicaid (75% of patients), which pays slightly more than 40 cents for every dollar of care; private pay including insurance; and a facility retainer fee. The retainer fee insures that the Access Dental Care can break even. Access Dental Care also has received \$1.6 million in capital funding from North Carolina foundations.

Looking to the Future



Elderly patient gets help

Dr. Steven Bryant and Mary Elizabeth Andreyev provide dental care to a resident at a facility.

Milner, ordinarily a cheerful man, is increasingly concerned about finding the right people to do the job and public funding issues. "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. There are not many programs operating in the U.S. that provide consistent, comprehensive continuity of care," said Milner. He is busy these days working on financing strategies for the future as well as considering the possibility of expanding into other areas of the state.

Personal Reflections from the Innovators

Mary Elizabeth Andreyev, a dental assistant who is part of the Access Dental team, said that she enjoys working with this population. "Plus, I like that I am in a different place every day. I'm not in a cubicle," she said with a smile. "I could never do that!"

As for Milner, he has done this work for 41 years and still finds it to be fun. "I have a story to bring to the dinner table every night. One woman told me, with tears streaming down her face, that she had been to many dentists, but this was the first time she had been able to get help for her mother. That's as warm and fuzzy as it gets."

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Spotlight on the Innovator



Bill Milner, DDS, MPH

President

Access Dental Care

Dr. Bill Milner is widely respected for the quality of service provided by Access Dental Care and for its ethical approach to treating patients who often cannot speak for themselves. "We're going to do it right," he said, "or we're just not going to do it!" Dr. Milner received his dental surgery degree from the Baylor College of Dentistry and a master's degree in Public Health Administration from UNC-Chapel Hill. He is the chair of the North Carolina Dental Society Special Care Committee and has served as consultant to the American Dental Association, state dental societies and local health departments. He is the recipient of many awards, including the North Carolina Dental Society's Special Recognition Award for achievement in leadership, academics, research and health care delivery.

“By talking to the patient and family, the dental team can overcome any anxiety or misperceptions.”

Dental Care for People with Developmental Disabilities

The Need

Disability and health consultant Karen Luken recently spent a year talking to hundreds of individuals with developmental disabilities and their families. This work was part of a three-year project, led by Luken and funded by the NC Council on Developmental Disabilities, that seeks to improve whole person care for North Carolinians with developmental disabilities.

Luken says that it's highly important to include families in the conversation because the majority of individuals with developmental disabilities live with their families or are supported by them.

During her fact-finding activities, Luken asked families to name a health care issue they find most challenging. Many responded: access to dental care. "Families tell us dental care is one of the hardest health care appointments to find," said Luken. "It's the one they travel the farthest for. It is not an easy health care procedure for many people to tolerate. And when emergencies arise, it can result in pain, cause behavior changes and may be misdiagnosed."

Poor oral health can lead to tooth decay, bone loss and systemic infection and is associated with heart disease, stroke, respiratory disease and a range of other serious health conditions. In the developmentally disabled population, oral health issues are even more pronounced and access to dental care more limited.

Added to that, a great number of dentists and clinics are not comfortable providing care to patients with disabilities, and many do not accept Medicaid.

"We're not the first to highlight this concern," said Luken, "but dental care and oral health are often left out of discussions about integrated care."

The Solution

To address these challenges, Luken convened a statewide work group made up of dental professionals, educators, families, advocates, disability service providers, public health professionals and healthcare providers. The group agreed to undertake a pilot project in two North Carolina communities to test the potential for increasing dental care for individuals with developmental disabilities by dentists who practice in their home communities.

As soon as the announcement was made requesting volunteers for the project, said Luken, two communities stepped up: Asheville in the west and Dare County in the east. Each locality formed its own workgroup and began planning an all-day training workshop for December 2016. The Asheville workshop was scheduled for December 2, and the Outerbanks session was scheduled for December 9.

A community liaison was selected to coordinate event details at each site, including the recruitment of individuals with developmental disabilities to serve as "teaching patients."

How the Program Worked

The workshops consisted of a didactic session in the morning followed by learning labs in the afternoon.

The Morning Session

The opening session featured presentations by a mix of faculty, including pediatric and adult care dentists, dental hygienists and family advocates. Oral health experts talked about best practices for providing care to patients with developmental disabilities, including how to manage workflow, how to help with a basic exam, how the family can support the patient and the dental team, and how to address different learning and mobility needs.

Luken noted that family members served as faculty for each workshop. “Every time we do things like this, we ask individuals and family members to be part of the team,” said Luken. “When you ask them, they can often tell you what you need to know to provide quality care. It is important for families to be reinforced in the value of their role,” she added. “They know what helps their family member have a quality and smooth experience.”

The Afternoon Session

The afternoon was “learning lab time,” a chance for participating dental professionals to practice what they had learned in the morning. Each site had between six and nine patients—children, adults and seniors. Each patient was scheduled for a one-hour appointment block between 1 and 3 p.m. The patients were individuals with a variety of intellectually and developmental disabilities who are accustomed to dental procedures and who volunteered to participate in the workshops.

“For example, we had a 10-year-old who has Down’s Syndrome, a young adult with autism and a senior who has a moderate intellectual disability and mobility limitations,” said Luken. “We wanted a mix of age and disability so our audience would understand there is not just one profile.

“My hope is that by talking to patients and families, the dental team can overcome any anxiety or misperceptions they might have.”

Luken notes that the workshop, with its morning instructional session and afternoon learning lab, was patterned after a model developed by the Center for Public Health Quality in partnership with the UNC School of Dentistry, Department of Pediatric Dentistry, and the Blue Cross and Blue Shield Foundation. “Their willingness to share information on their use of a pop-up-clinic model to strengthen the oral health safety net for pregnant women and children was extremely valuable and much appreciated,” said Luken.



Workshop in Grandy, NC

Dr. Ford Grant, faculty director at the ECU School of Dental Medicine Community Service Learning Center-Ahoskie, performs a dental procedure during the learning lab.

Funding

All partners contributed to the project in their own way—with dollars, use of dental clinic space, supplies, faculty teaching or in-kind services. The North Carolina Council on Developmental Disabilities provided core funding for the three-year project, and Easter Seals UCP NC and The Arc of NC provided team leadership. In addition, the North Banks Rotary Club of the Outer Banks and Vaya Health MCO in western North Carolina contributed funds. All dental clinic space was donated, along with dental faculty time.

Looking to the Future

“The real innovation” said Luken, “is that we’re bringing people together who are concerned about the issue, but often don’t know each other. Our

hope is that these groups will continue to come to the table in their communities and move education and solutions forward. Often the concern is about how to develop and finance new activities. We hope that we can develop a template for innovative education that other community partners can replicate. For this, what is needed is for a group of community partners to push it forward and assume a leadership role.”

In the longer-term future, Luken hopes to see:

- The oral health learning model repeated in clinics and other dental practice environments.
- Strong regional efforts to increase capacity and access to oral health services, drawing on the talents of a broad range of local health professionals, individuals with developmental disabilities and their families.

- The development of a consultation model for North Carolina that connects primary care physicians and dentists with consultation services when they run into questions; and navigation services so individuals and families can get assistance with connecting the complex world of health and disability services in real time.

Personal Reflections from the Innovator

“We want to increase community capacity by having more people contribute,” said Luken. “The project is not saying to dentists that providing oral health services for persons with developmental disabilities should become their specialty; rather, if a dentist can provide care for some patients with developmental disabilities, it lessens the burden on the patient and the family and on other dentists who are stepping up. Ideally, this will be a shared responsibility.”

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Spotlight on the Innovator



Karen Luken, MS

Project Director
Medical Health Homes for People
with Developmental Disabilities

Karen Luken is deeply interested in developmentally disabled patients, where they live and how their communities can support them. She is project director for the “Medical Health Homes for People with Developmental Disabilities” initiative, funded by the NC Council on Developmental Disabilities and awarded to Easter Seals UCP NC and The Arc of NC. From 2002 through 2013, Karen was with the NC Office on Disability and Health working to ensure that individuals with disabilities were included in ongoing state disease prevention, health promotion and emergency response activities. Prior to her work in public health, she was the associate director of the Center for Recreation and Disability Studies at UNC-CH, teaching and developing innovative services for people with significant disabilities. Luken received her master’s degree in recreation and leisure studies and certificate in public health from UNC-Chapel Hill.

“If every dentist saw just one patient in need, what a difference they could make as a whole!”

Physicians Reach Out

A Program of Care Ring

The Need

Mecklenburg County has a population of more than one million people and vast financial, educational and cultural assets. It also has a strong network of health care resources. Nonetheless, the county faces substantial challenges when it comes to providing health care for thousands of low-income individuals without access to employer-based health care or to a public insurance program.

The Solution

Physicians Reach Out (PRO) is a non-profit program that provides medical and dental care to low-income, uninsured residents in Mecklenburg County. It does this by coordinating a network of doctors and dentists who volunteer to treat patients in their own offices.

PRO is one of three programs run by Care Ring, the oldest privately funded health and wellness agency in North Carolina. Care Ring also manages a low-cost clinic, which serves roughly 3,000 people a year, and Nurse-Family Partnership, which has a team of nurses that provide home-based care. Care Ring is based in downtown Charlotte at the Children and Family Services Center with ample parking and conveniently located near the bus line.

Care Ring Executive Director Don Jonas notes that PRO was modeled after a program that originated in Asheville and was developed by the Mecklenburg Medical Society. "It is important to recognize real genius and that there is a history of innovation that occurred before our time," he said. "The people here—at Care Ring—figured out the machinery of how to make this work. It sounds simple, but it is an extraordinarily complex effort."

How the Program Works

The dental portion of PRO functions much like the medical portion. Individuals who are in serious need of care and have no means to pay for it receive a referral from the department of social services, a free clinic or from one of two local hospitals. Emergency room referrals for dental problems are common. Other individuals may hear about it from a family member or neighbor and make the inquiry themselves.

The process of enrollment begins when the individual visits the Charlotte office, where a PRO staff member assists with the completion of an application. To be eligible, a person must be a resident of Mecklenburg County, be uninsured and have an income of no more than 200 percent of the federal poverty level. Eligible clients are screened by a PRO physician and pay a \$30 enrollment fee for one year. They receive a PRO card and are assigned to a dentist near their home.

From that point on, dental treatment is basically free. Clients may be required to pay a few fees, at a reduced cost, for imaging or diagnostic testing.

"A lot of my patients live in crisis mode," said Toni Lee, who supervises the PRO program and handles the application process. "It takes a special type of person to decipher what they are saying and what they really need. I say, 'How can we help you? Let's work through this.' I really enjoy doing that. This work is very rewarding, very fulfilling."

About 40 area dentists now participate in PRO. For those who run a single-dentist practice, giving back to the community can be a special challenge. But the PRO program helps to reduce the hassle. PRO staff handles financial screenings and coordinates other services such as transportation for patients to appointments. Dentists treat patients in their own offices and do not lose time traveling to another site. Dentists can choose how much work they take on. They usually start with one patient and then accept more once they become more familiar with the program.

Funding

The cost of dental treatment is borne by volunteer dentists. The program, however, depends on contributions to maintain program infrastructure. Care Ring's donors, including Mecklenburg County and The Duke Endowment, have provided substantial grants to support operations.

Track Record

Now in its eleventh year, PRO has a network of more than 1,600 volunteer physicians and dentists who serve 3,500 low-income patients each year. Together, they have donated over \$100 million in health care. In the newer dental program, PRO had linked 117 patients with dental care by fall 2016 for treatment of pain, abscesses, broken teeth and/or gums. The average care donated per dental claim is \$516, with projected care for 2016 totaling \$115,000.

Looking to the Future

While there have been a handful of active dentists participating in PRO from the beginning, there are still opportunities to grow the dental program.

Mecklenburg County Demographics Changing Rapidly

"The number of people we are seeing who only speak Spanish has increased tremendously, reflecting changes in Charlotte," said Carolyn Mullins, chief program officer for Care Ring. Mullins says PRO has been using a translation service, but translation costs have gone up exponentially. She said PRO would try to negotiate the fees for translation or look at hiring more bilingual staff.

Increasing Demand For Dental Services



PRO patient and dentist

Dr. Tricia Rodney, a private practice dentist participating in PRO, has just completed treatment of her patient, Martha Hernandez. Dr. Rodney donated \$9,604 in fillings, root canals

At one point, the waiting list for clients requesting to see a dentist had grown to seven months. In response, PRO implemented a three-pronged approach to address the issue. They recruited 16 more dentists, developed an improved tracking system and, for now, have limited referrals to 10 per month. The workload is now manageable, but staff and advisers are ramping up their efforts to recruit more dentists into the program so they can serve more patients. Mecklenburg has approximately 700 dentists. "If every dentist saw just one patient in need, what a difference they could make as a whole!" Mullins said.

The Overarching Dental Literacy Challenge

"People overall don't understand the importance of oral hygiene, so there is a huge educational deficit even with the general population," said Mullins. "Taking care of your oral health is vital to your overall health. Oral health has somehow just gotten lost. It never has reached where it should be, statewide or even nationally."

Program's Potential for Other Areas

The program has potential for rural areas as well, according to Jonas. "There are PRO-like networks in other parts of the state that have some infrastructure in place. It might be a natural extension for them to add oral health." Jonas noted that a rural program, however, would need to cover a larger geography in order to bring more specialists into the network. And, as always, transportation would be an issue. Jonas acknowledged that he is getting more inquiries from organizations that are interested in the PRO dental model.

Personal Reflections from the Innovators

"I am proud of this team and what they do," said Jonas. "I talk a lot about how this agency is minding the gap. Far too many have fallen into the gap of care and disinterest. There are a lot of things I love about this program and this team, but one of the things I really love is that it provides dignified care. No matter who you are, you are worthy of just as good of care as anyone else. Whether you're undocumented or come from Vietnam or have come across the border, you deserve the best. That's what this team tries to do. I love that quality and level of respect we give to the patients in this program. I am proud and humbled by that."

"I'm amazed," said Mullins. "We're not only helping through the clients in the program, but our clients are reaching out taking care of sick mothers, or they have their grandchildren or they are raising their own families. So the impact we have is not only the couple of thousands of clients we actively see, but their own extended families. The impact to the community overall is astonishing."

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Spotlight on the Innovator



Don K. Jonas, Ph.D.
Executive Director
Care Ring

A native of Charlotte, Dr. Don Jonas has devoted his career to championing a better of life for the people of his city and region. Before joining Care Ring, Jonas served as executive director of the Presbyterian Healthcare Foundation and before that was senior vice president for community philanthropy at the Foundation for the Carolinas. He is an author, writing on topics including the aging of the labor force and the future of America's health system. He is a German Marshall Fund Fellow and serves on a number of boards, including UNC Charlotte's Institute for Social Capital. He received a master of arts from Appalachian State University and holds a doctorate from the University of Kentucky. Jonas believes—and demonstrates—that innovation is a collaborative process and actively encourages staff and partners to share in the leadership of the Physicians Reach Out program.

“Our people truly are working poor. Why would we hold back the person who is trying so hard?”

Community Dentist Volunteers

A Program of the Good Samaritan Clinic, Morganton

The Need

Like other counties in the North Carolina Piedmont, Burke has been hard hit by massive jobs losses in furniture and textile manufacturing. "Now that these jobs are gone, a lot of people are desperate," said Debbie Feduke, clinical operations director of the Good Samaritan Clinic in Morganton. "They have no jobs and no medical benefits and cannot afford to buy insurance. The plants they used to work at now stand vacant."

The Solution

The Good Samaritan Clinic, an interdenominational faith-based organization, provides primary care to people living in Burke County with low incomes who have no health insurance. When it comes to dental care, the clinic has relied on a retired dentist who comes in twice a month. That means the clinic has more than a hundred people on the waiting list and some patients might wait for a year.

Change is underway, though, thanks to a chance conversation that took place in 2015 between Feduke and her personal dentist, Dr. Natalie Whitaker. Feduke admits that she was reluctant to be so bold, but decided to ask Whitaker if she would be willing to see a few patients from the clinic free of charge. Whitaker, who had run a free clinic while in dental school and had volunteered for a while at the Samaritan Clinic, said yes. They agreed to one patient each month.

Especially enthusiastic about the new partnership is the clinic's executive director Dr. Steve Hurd, who some years ago helped establish a highly successful clinic in Colorado that brought dental, medical, mental health and social services under one roof. "I'm from a mental health background, but am pushing on oral health in North Carolina," said Hurd. "I've had a toothache and know how

intense that it. You can't think about anything else." Unfortunately," he said, "the mouth has been pulled out of the body," as health care has settled into silos and specialties. But he is hopeful, as he sees more models of whole person care emerge in the country.

How the Program Works

Dental patients are referred to Dr. Whitaker by the Good Samaritan Clinic, which provides her with a full set of information prior to the appointment. This includes the patient's medical history, medication list, x-rays and a prior exam from the volunteer dentist. Dr. Whitaker's dental office is responsible for calling the patient to set up an appointment time.

"I love the way it's being done," said Whitaker, "because there is a dentist serving as a clearinghouse at the clinic, and all I have to do is put the patients on my schedule. I know what they need. I know what to have ready. It's just like any other appointment. I use the equipment I have," she said.

"One of the things I ran into was that I needed a Spanish interpreter. The clinic provided that interpreter and it was wonderful. The patients have been fantastic. I haven't run into problems at all and the needs that these patients have are true needs that I can actually fix and make a difference. If someone doesn't show up and I know ahead of time, I can stick someone else in.

"This has worked really well for me. It just takes a little material and a little bit of time. I enjoy it!"

Track Record

After one year, the program is working well. Not only are people with serious needs receiving quality dental care, but according to Hurd they are being treated with dignity, one of the primary missions of the Good Samaritan Clinic. "It's also the smart thing to do," said Hurd. "We're keeping people in the workforce and we're preventing more expensive care. It's wise to keep people in the tax-paying class by attending to their health."

Funding

Dental services are basically donated by Whitaker. "I obviously don't do it for the money," she said. "I take what the clinic has advised, \$5.00 per visit."

Looking to the Future

The program is already growing, thanks to Whitaker who recruited two more dentists in late 2016. Each has agreed to see one patient, free of charge, each month. Hurd is delighted, but cautions that the clinic does not want to move too fast. "We can coordinate with four or five dentists now. I want to make sure each dentist is totally satisfied."

Challenges For Dentists

Although there is no official tally of how many private practice dentists in North Carolina are extending care to individuals in need, we know this model is occurring in communities across the state. For dentists who are still considering the possibility, here are some responses from Whitaker to frequently asked questions.

If I put these individuals on my schedule, will they show up?

"My time is my biggest asset. I have had only one patient from the clinic cancel – but that person gave plenty of notice so I could fill in with another patient. It was well in advance. Most come early! They realize the value of being seen."

Will low-income patients fit into my practice?

"These are just people and they look fine and they ARE fine. If the waiting room is really an issue [because of anxiety, for example], then a dentist can choose to see them immediately."



Community spirit

Dr. Natalie Whitaker volunteers time at her Morganton office to treat patients from the Good Samaritan Clinic. "It feels good to help people...My philosophy is you do what is right," says Whitaker.

Will dental supplies be costly?

"There is a little cost involved, but we already have the supplies, and my staff are here any way. Just fixing teeth with fillings or a doing a partial, it's very small in the grand scheme of things."

And this from Steve Hurd:

Would a sliding payment scale work?

"Some dentists would prefer a sliding scale, but this doesn't work for our patients. \$10 is the same as \$1,000. They are often working more than one job. They have no disposable money." Hurd explained, "Paying a flat fee enables the patient to complete the appointment with the bill paid in full."

Personal Reflections from the Innovators

"Our people truly are working poor," said Hurd. "That doesn't mean we deny them health care. Why would we hold back the person who is trying so hard? We want to provide them dental care so they can stay healthy and productive as workers and effectively teach their children how to take care of their teeth."

Commenting on the personal rewards, Whitaker said: "These patients are so appreciative. You know, there is that feel-good factor. It feels good to help people; no matter if it's crazy and nuts and you need to see four other people, it just feels good. My personal philosophy is you do what is right, and money will take care of itself. I'm not money driven, although I've been successful. I'm happy."

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Spotlight on the Innovators



Steve Hurd, Ph.D.
Executive Director
Good Samaritan Clinic, Morganton

Trained as a psychologist, Dr. Steve Hurd has challenged health disparities all his adult career. Prior to accepting his role in Morganton in 2015, Hurd directed the nationally acclaimed Marillac Clinic in Grand Junction, Colorado, an early implementer of team-based integrated care. While in Colorado, Hurd led a primary care delivery system that fully integrated medical, dental, mental health, vision and social services under one roof. He was honored as one of Colorado's health care champions and has frequently spoken at health reform conferences across the country. Hurd attended the University of Notre Dame, where he earned his bachelor's, master's and Ph.D. degrees.



Debbie Feduke, RN, BSN
Clinical Operations Director
Good Samaritan Clinic, Morganton

Debbie Feduke started as the volunteer coordinator at Good Samaritan Clinic and later added the role of operations director. She is known for having a heart full of compassion. In addition to her work as a nurse, Feduke has served for eight years as a court-appointed advocate for children.

“The difference in this community is how our county, hospital and health center all work together.”

Hospital Partnership

A Program of Gaston Family Services Dental Clinic

The Need

Intense dental pain is one of the leading causes for emergency room visits in North Carolina and across the country.

Unfortunately, few hospitals have the facilities or staff to provide comprehensive dental care. Many patients receive only antibiotics or pain medication and a recommendation to see a dentist as soon as possible. That means that patients' underlying dental problems go unresolved, and they often return to the ER within a few weeks with exacerbated dental issues.

Not only is the ER dental visit unproductive for the patient, it is extremely expensive, often costing several times more than a visit to a local dentist.

The Solution

Gaston Family Health Services Dental Clinic and CaroMont Regional Medical Center are pioneering a promising solution. CaroMont Regional Medical Center is a public, not for profit hospital located in Gastonia, NC, and serving surrounding counties. Gaston Family Health Services (GFHS), a Federally Qualified Health Center, is a community-sponsored provider of health care, health education and preventive care services. GFHS serves patients in Catawba, Davidson, Gaston, Iredell and Lincoln counties. Together, the two institutions launched a program in October 2015 that is getting emergency room dental patients the treatment they need and saving costs as well.

How the Program Works

An individual who arrives at CaroMont's emergency room with dental pain is referred to a member of the hospital staff who immediately schedules the patient for an appointment with the GFHS dental clinic. The scheduling process works seamlessly since the clinic has appointment times specifically dedicated for care of patients from CaroMont. Usually a patient is seen within seven to 10 days.

The program has multiple benefits: It establishes a clear dental plan for the patient; the patient receives treatment for the immediate dental problem; and return ER visits are reduced or eliminated.

The program is largely supported by reimbursements to the clinic from the hospital for each uninsured patient the hospital refers. Patients are also asked to pay a small fee themselves as part of their engagement in the program. For Medicaid patients, the clinic files for payment from the Medicaid program. All follow-up care for the specified treatment is provided at no charge.

"The program cost to the hospital is just over \$75,000 a year," said Donigan. "If you put dentists in an operating room and have to pay two dentists for coverage, you're talking about \$350,000 a year just in salaries. This is a great benefit for both sides."

Another innovation that Donigan believes is helping to prevent emergency room visits is the Adult Pain Clinic that the GFHS Dental Clinic runs every Friday. To participate in this program, patients pay a modest, flat fee per tooth. Treatment is provided by local dentists. "Each Monday, the 14 available appointments open up, and they are filled immediately," said Donigan.

Donigan credits Gaston Family Health Services CEO Robert Spenser and hospital CEO Doug Lockett, with "seeing the light" and serving as champions for these programs.

Is the clinic-hospital partnership model likely to be replicated at other sites? Yes, says Donigan. GFHS already has existing relationships with Iredell Memorial Hospital in Statesville, Wake Forest Baptist Medical in Lexington and Catawba Valley Medical Center in Hickory. "When we have enough of a track record, I hope to discuss the possibility of developing similar programs with these hospitals."

Other Collaborations

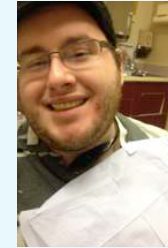
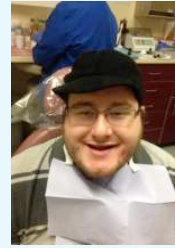
According to Donigan, collaboration among local institutions is the foundation upon which GFHS was built, and the hospital emergency program is just one of the most recent examples of such cooperation.

Creation of the GFHS Dental Clinic. In the mid-1990s, local dentists came together to recommend the creation of a dental clinic to which Medicaid and uninsured residents could be referred. With the support of the county health department, dentists and dental supply companies, GFHS General Dentistry, located in the Gaston County Health Department building, was born.

"We have a simplified understanding," says Donigan. "We are the dental resource for the county health department." GFHS has replicated this successful model in Catawba County.

Mission of Mercy Events. Another example of cooperation is the Mission of Mercy (MOM) program, a two-day event held every two years during which local dentists volunteer to provide dental treatment to hundreds of uninsured individuals at no cost. For the 2015 MOM, Donigan helped to raise the \$40,000 needed to support the core event, and, never one to shy away from an opportunity, raised an additional \$10,000 to cover dentures for a portion of the patients. The entire funding goal was achieved through strong local support. As a result, more than 600 people received care. "We've been able to create this symbiotic relationship that just works," said Donigan. "You don't have that everywhere."

School Outreach Program. One of Donigan's greatest sources of pride is the nationally recognized School Outreach Program that provides dental care to schoolchildren who otherwise are unlikely to receive it. Children are bused to the Gaston dental clinic during



Mission of Mercy patients

Dr. Bill Donigan's patients get bright new smiles thanks to dentures provided by the Gaston Mission of Mercy program

visits this year. The practices are financially sustainable, something many clinics in the U.S. cannot boast. Gastonia serves 55-60 percent patients with Medicaid, 20-25 percent patients with private insurance and the balance is uninsured.

Personal Reflections from the Innovator

Looking back over the programs that the clinic has introduced and expanded during the last few years, Donigan had this to say: "We've just progressed. We're always looking for ways to make life better for our patients. For example, we have a young dentist who is going into our Lexington location. We're putting in intra-oral cameras so she can converse with the pediatric dentists at our other sites 60 miles away. We're doing things differently. We're trying to always think outside the box to continually improve the care we deliver to our patients."

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school hours, where they receive oral health education, examinations, x-rays, prophylaxis, and with consent, sealants as needed. All care is provided at no cost to the parent. In 2015, the program brought nearly 2,800 kids to the dentist in Gaston and Iredell counties. A school program will be launched in Catawba County in 2017.

Track Record

GFHS provides dental services at five sites in Catawba, Davidson, Gaston, and Iredell counties. The five sites have a total of 35 dental chairs, 75 staff members, and 11 full-time and part-time dentists. Donigan expects the clinics to reach 35,000 patient

Spotlight on the Innovator



William (Bill) Donigan, DDS, MPH

Director, Gaston Family Health Services Dental Clinic

Sometimes referred to as a dental “icon” by his colleagues, Dr. Bill Donigan is widely recognized for his rare combination of management skills, creativity and compassion. He takes a patient-centered approach to dental care and operates a large dental center much like a private dental office. “I believe a clinic should be run with patient respect.” A native Kansan, Donigan started out his career in private practice. While still in Kansas, he also worked in two clinics and completed his master’s degree in public health. In 2007, Donigan and his family moved to North Carolina where he became director of Gaston Family Health Services Dental Clinic. Donigan has received numerous awards, including the NC Community Health Center Association’s award for outstanding provider. He was named clinician of the year by the National Network for Oral Health Access; named Gaston County’s Public Health Hero; and has been elected to various positions with the International College of Dentistry.

“We are looking for dental students with a passion to serve rural and underserved populations.”

Community Service Learning Centers

A Program of the ECU School of Dental Medicine

The Need

Providing access to dental care for all North Carolinians is no small matter. Most dental advocates say that it will require these things: having a sufficient number of dental health providers to serve the total population; meeting the needs of all segments of the population; and reaching all geographic areas of the state.

For Dr. Gregory Chadwick, Dean of the East Carolina University School of Dental Medicine, this challenge is up close and personal. "We're the fifth fastest growing state in the union and in 15 years are expected to be the seventh largest," said Chadwick. "When you look at the number of dentists relative to population in North Carolina, we rank 47th, pretty close to the bottom of the barrel. And we have ranked 47th out of 50 since the 1970s.

"When we peel the onion back, we begin to see some of the challenges between the urban and the rural areas," he said. "About 60-70 percent of folks in North Carolina have access to outstanding dental care. We have had a dental school here (UNC-Chapel Hill) for 60 years that has done a wonderful job, but we still have rural areas where patients don't have adequate access to dental care. We have four counties in North Carolina that have no dentists."

The Solution

"Even though it's a challenge, this is an opportunity we have been given," said Chadwick. After years of planning and advocacy by hundreds of business people, local leaders and the university, the NC General Assembly established the ECU School of Dental Medicine in 2006-07 to expand services for North Carolinians who are without dental care.

Chadwick said that from the beginning, he and others understood that to address this goal they would need to look at a new model for the school. "We realized that our students would need both experiences here at the dental school and experiences across the state," he said. That realization led to the creation of a state-of-the-art teaching facility, Ross Hall, at the ECU campus in Greenville and to the development of eight Community Service Learning Centers (CSLs) in Sylva, Elizabeth City, Ahoskie, Lillington, Spruce Pine, Davidson County, Robeson County and Brunswick County.

ECU COMMUNITY SERVICE LEARNING CENTER LOCATIONS



How the Program Works

One of the things that makes the ECU School of Dental Medicine unique is that it accepts only North Carolina residents. "We are looking for students who are from rural and underserved areas and who have a passion to serve those populations," Chadwick said. "Our underlying hypothesis is that a student from a rural area or underserved population is more likely to go back to serve that population."

ECU dental students spend their first three years in Ross Hall, where they receive classroom instruction, laboratory experience and, in their second year, they begin to see patients under the watchful eye of

faculty. In their fourth year, students spread out across the state—each spending a total of 24 weeks working at three different CSLC sites.

“Learning centers are basically dental practices where we have faculty educating our students and faculty-student teams providing care for patients, including Medicaid and low-income patients, from surrounding communities,” said Chadwick. Each center has 16 operatories, or dental workstations. “We want to give our students a robust experience in a real practice environment, and we also want to provide care to individuals who do not have access to adequate care.”



ECU dental student consults with patient

“What drives me is patient education that links oral health to the overall body,” said Jenny Vrikkis, student in ECU’s advanced education general dentistry program.

From a student perspective, the learning centers provide valuable preparation for the future. “I’ve absolutely adored my CSLC experience,” said Jenny Vrikkis, a Blowing Rock native and student in the ECU advanced education general dentistry program. “We see four to six patients a day. Because of that, our dental skills improve, our management skills improve, and our ability to work with a collaborative team improves. And all of that works to the benefit of the patients we’re seeing.”

Vrikkis said that she has seen many patients who have come to the dentist for the first time. “They aren’t just pediatric patients,” she said. “They are older adults who have limited means and access and limited knowledge on how important oral health is to their overall wellbeing.”

Asked what it’s like to live in three different places in 24 weeks, Vrikkis responded, “It’s fun! The school provides housing and we live with each other, usually four students in an apartment or house or townhouse, depending on what is available. It’s cool getting to know other people you didn’t know and talking dentistry together.”

Track Record

As of November 2016, faculty and students at the ECU School of Dental Medicine have served 39,000 dental patients, many who would not have seen a dentist otherwise. These patients represent 98 of the state’s 100 counties.

A total of 101 students graduated in the school’s first two classes in 2015 and 2016. Out of those 101 graduates, 60 percent are now seeing patients in a dental practice in North Carolina. School officials expect several graduates to return to North Carolina once they finish out-of-state dental residency programs.

The school estimates the current economic impact of each Community Service Learning Center to be at least \$1 million each year and expects that value to increase each year.

Funding

The NC General Assembly approved spending of \$91 million for the dental school to cover the cost of building up to ten Community Service Learning Centers and the construction of the four-story, 184,000-square-foot Ross Hall. Since all buildings are owned by the state, maintenance is provided by the state and university system. Other funds come from patient fees and student tuition.

Looking to the Future

Chadwick addressed several areas that will be important to the dental school in the years ahead:

- **Conducting Research.** In the fall of 2016, the dental school held a ribbon cutting ceremony for new research facilities located on the fourth floor of Ross Hall. Research faculty are now being hired.
- **Integrating Oral Health with Primary Care.** Recognizing that many of their patients have not seen a primary care physician recently, the Community Service Learning Centers routinely check patients’ blood pressure when they come in for dental work and connect them with

a doctor for follow-up if needed. Chadwick envisions that the CSLCs will expand screenings to include diabetes and other serious conditions in the future.

- **Preventive Care for Children.** The CSLCs are well positioned to conduct oral health screenings of young children in area schools and to provide education, sealants and fluoride treatments. The dental school hopes to begin that service in the near future and to serve as a dental home for children who need treatment at the local office.
- **Business Skills for Young Dentists.** The dental school recognizes that if graduates want to start out where there are not many dentists, they must know how to run an efficient business. To prepare dentists, the school will continue to deepen and expand its business curriculum.

Personal Reflections from the Innovator

Chadwick, who came to ECU in 2005, is deeply grateful for the opportunities of the past decade. "It has been a great journey, being able to build something like this with community leaders and the university and to see the school come to fruition. It's exciting when you are out working with communities that don't have the oral health assets we have been able to bring with the community service learning centers. And there is much more we still can do. I've not done any of this by myself. If I started at 7:00 in the morning and worked till 7:00 at night, I could not begin to name all the people who played a part in this. It's been a true team effort."

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Spotlight on the Innovator



D. Gregory Chadwick, DDS, MS

Dean
School of Dental Medicine
East Carolina University

Dr. Greg Chadwick, Dean of the East Carolina University School of Dental Medicine, leads one of the newest and most innovative dental schools in the nation. Formerly, Chadwick served as Associate Vice Chancellor for Oral Health at ECU, where he led the effort to establish the dental school. A native of North Carolina, Dr. Chadwick received a bachelor's degree in business administration from the University of North Carolina at Chapel Hill. After graduating from the UNC School of Dentistry, he practiced general dentistry in community health centers in Prospect Hill and Moncure before entering a residency in endodontics. He earned a master's degree in endodontics from the UNC School of Dentistry and then practiced endodontics in his hometown of Charlotte for almost 30 years. He has served as former president of numerous dental organizations, including the American Dental Association and the North Carolina Dental Society.

“It’s coming and it will
come like a tidal wave.
We need to be ready.”

Teledentistry in North Carolina

A Project of the UNC School Dentistry

The Need

Dr. Shaun Matthews is an oral and maxillofacial surgeon who joined the staff of the UNC School of Dentistry two years ago. Along with surgical expertise, Matthews brought to his new position an avid interest and experience in teledentistry.

For the uninitiated, teledentistry involves the exchange of medical information and images over remote distances for the purposes of dental consultation and treatment planning. It is a subcategory of telemedicine, which has been in use in some branches of medicine, such as dermatology, for several years. Teledentistry is still in its infancy although some states are beginning to embrace it as a way of reaching underserved people and places.

“When I came here in December 2014, I found it astonishing that people were travelling four, five, six hours—clear across the state—to see me for an opinion on their problem,” said Matthews. In some cases, he discovered that patients had been referred to him inappropriately. In others, he recognized that patients could have been treated appropriately in their local primary practice. “If telelinks had been available, I could have talked directly with the patient and primary care provider back at home base and found a way to manage the problem with no travel required,” said Matthews.

The Solution

Matthews is making time, over and above the long hours required for his job as a surgeon and professor, to lead the UNC School of Dentistry’s project to explore the potential of teledentistry. The process was launched in March 2015, when the Dean of the School and department chairs gave the project a go-ahead. Matthews stresses that designing a program of teledentistry that is both practical and visionary will require a large-scale collaborative effort within the School of Dentistry and with partners across the campus and beyond.

“We are pulling together colleagues from every single discipline who see the value of teledentistry for their particular domain and how the technology can be taken and molded to help their patients, students and themselves as faculty,” he said.

Matthews said he had heard from a few naysayers, including some concerned that teledentistry would take the place of face-to-face patient consultations. “That is absolutely not the intention at all. Having a certain amount of skepticism, though, is a healthy thing to keep you grounded,” said Matthews. “But all in all, the response has been a resounding, ‘let’s see how far we can take this!’”

A stakeholders group has now been formed, made up of faculty, staff and students who see the benefit of teledentistry and are examining how the project can develop in a more cohesive way. Matthews continues to cast a wide net, speaking to groups like the NC Dental Society, consulting with colleagues who have successful telehealth programs, reaching out to companies with the latest generation of equipment and looking into the prospects of insurance coverage for telehealth services.

“We are trying to break down the boundaries and help our colleagues in the primary care environment,” said Matthews. “This is not about replacing what exists,” he said. “It is a complementary service. More importantly, we have the opportunity to serve rural communities who need this help very badly. It’s such a shame that they don’t have it as yet.”

If ever there was a need for teledentistry ...

Dr. Kara Henderson Jeffries, a Warrenton dentist, got the scare of her professional life in August of 2016.

A 22-year-old patient, seven months pregnant, appeared at the door of her dental practice one afternoon with an abscess in her lower right jaw. Because of concern about both the health of the patient and the unborn child, the dental office sent her to the local hospital for treatment. The hospital prescribed medication for the patient.



The next morning, the patient returned to the dental practice, and when she walked in, Dr. Jeffries almost did not recognize her. The abscess had caused the right side of her face to swell to almost double its normal size. Dr. Jeffries knew the patient needed expert care and needed it fast. She tried calling an ambulance, but the local service was not allowed to travel across county lines.

So, she took matters into her own hands. She helped the patient into her car and told her they were going directly to UNC

Hospitals. On the drive to Chapel Hill, Dr. Jeffries kept one eye on the road and one on her fading patient while making frantic calls to everyone she knew at the hospital. When she pulled up in front of the emergency room, the hospital staff was ready. The patient was taken to the operating room at 1:00 a.m. Thanks to Dr. Jeffries' clear thinking and the skills of the UNC medical and dental staff, the patient was treated and released, both mother-to-be and unborn child safe.

Dr. Jeffries breathed a deep sigh of relief when the emergency was over, but hopes such crises can be averted in the future. "I've been thinking about the potential of teledentistry ever since I heard Dr. Shaun Matthews speak about it at a recent conference," said Jeffries. "We need the technology out here in rural North Carolina! We are used to having to do things ourselves and sometimes you feel helpless. We need super fast connections with the experts in Chapel Hill and other places so we can treat our patients before a troubling situation becomes a near-death experience."

Funding

The first goal, said Matthews, is to explore appropriate funding streams for a well-designed teledentistry pilot project. The pilot, he said, is "critical for generating the kind of data that is required to demonstrate to the authorities that this type of health care delivery model can and does work." The pilot project is intended to be wide-ranging and to incorporate several dental disciplines, all of which may use the technology in different ways.

Looking to the Future

It is anticipated that the teledentistry pilot project will be launched in the first quarter of 2017, once the networking process has been completed. "It is important that a solid foundation of groundwork is laid and that key stakeholders are fully engaged," said Matthews.

"There are all sorts of imponderables that will have to be considered," said Matthews. Examples include the validity of teleconsultation. How the information disseminated through telelinks could stand up in a court of law. How the information gets recorded and stored. "These are the kinds of things that lawyers will spend hours on," said Matthews. "But where there is a will, there is a way. Teledentistry is coming one way or another."

Matthews noted a UNC dental student representative has been appointed to serve on the strategic planning group, at the students' request. "They feel the need to have exposure to this. It is important that students be involved. They want to be involved. Some will go to work in a rural community and will need to have access to this technology and understand it."

As for interest and support by leadership within the School of Dentistry, Matthews noted that the School recently conducted a search for a new dean. "We had five finalists. What's interesting is that every single one without exception talked about information education and mentioned teledentistry, all part and parcel of us teaching the next generation of students."

Personal Reflections from the Innovator

“From the moment that children enter today’s world, they are on their ipads and ipods. Teledentistry is coming and it will come like a tidal wave, and we need to be ready to surf that wave and not be completely drowned by it,” said Matthews. “We’ve got to avoid that from happening. This is a great opportunity to do that.”

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Spotlight on the Innovator



Nigel Shaun Matthews, DDS, MD, FRCS

Clinical Associate Professor

Department of Oral and Maxillofacial Surgery
UNC-Chapel Hill

Dr. Shaun Matthews brings compassion, strong surgical skills and a keen interest in cutting edge procedures and technology to his work in the Department of Oral and Maxillofacial Surgery at the University of North Carolina in Chapel Hill. “I’m staggered that we have patients coming into the department in their teenage years and early twenties whose teeth are just in a desperate state. It breaks my heart. This is the richest country on the planet and there are patients who simply cannot afford to see a dentist. We must do better.” Matthews comes to UNC from London, where he was a consultant at King’s College Hospital. A native of Barbados, Matthews was educated on the island through high school. He subsequently studied in the United Kingdom: first dentistry in Scotland, then medicine in London. During his time at King’s College Hospital, Matthews developed an interest in TMJ problems and created an interdisciplinary group to provide comprehensive care for this population.

“We have the opportunity to do something that benefits our dental practices and the population.”

Virtual Dental Home

A Program of the University of the Pacific School of Dentistry

Dr. Paul Glassman, Director of Community Oral Health at the School of Dentistry, University of the Pacific, San Francisco, is a respected authority in dental health and dental care. He recently directed a six-year project to demonstrate the effectiveness of an innovative community-based strategy for delivering dental care to underserved populations in California. Glassman shared the results of the demonstration and his thoughts about the future of dental care in the United States with a group of North Carolina dental leaders in August 2016. The following project profile is drawn from his remarks.

The Need

In his presentation, Glassman outlined trends in oral health that indicate the need for a new system for delivering dental care in the United States. Among those:

- The price per person for dental care in the U.S. is going up twice as fast as inflation.
- When people don't get dental care, they end up in the emergency room, a high-cost and ineffective solution.
- The nation has experienced gains in dental health, but those gains are not shared across the population. Profound disparities exist for non-white and elderly populations, individuals with disabilities and complicated conditions, low-income families and rural areas.
- The percentage of dental costs covered by insurance and out-of-pocket payments is going down while the cost of public dental programs is going up.
- Single-dentist practices are going away. The growth in dental practices is in firms with 500 or more employees.
- The income of dentists has been declining for 10 years.

The Solution

The demonstration led by Glassman focused on a new system for improving the oral health of groups who do not get dental care on a regular basis and have high rates of untreated dental disease. This system is called the Virtual Dental Home. It is a community-based oral health delivery system in which people receive preventive and early intervention services in community settings. It uses telehealth technology to link allied dental personnel in the community with dentists in dental offices and clinics. The demonstration was conducted from 2010 to 2016 in 13 communities at 50 sites across California.

"You can think about telehealth connected teams as a hub and spoke model, where the hub is the dental treatment center and the spokes are any kind of community site where people go on a fairly regular basis Glassman said. "For kids, these places are Head Start centers and schools. For vulnerable adult populations, it's community centers, residential facilities for people with developmental disabilities, nursing homes—lots of places where you can do this kind of service and the dentist is very involved. So it's not a separate system. It's actually part of a dentist's practice."

As for the telehealth technologies available for dentistry, Glassman said, "Some are in broad use, such as for record sharing and dentist-to-dentist consultations, and some will be coming." Among the anticipated uses of technology are patient-to-dentist interactions; real time video surgical support; and mobile phone applications that do things like allow patients to collect pH samples from the mouth and transmit those to the dentist.

How the Program Is Working

We can imagine the hub and spoke model described by Glassman as being a dental treatment office in the center surrounded by several community dental sites. The dental treatment office can be a private practice or a dental clinic. The community sites, managed by dental hygienists, can be at locations such as schools, nursing homes, even the home of a developmentally disabled person.

The first step is for new patients to see a dental hygienist at a location in their home community. The hygienist provides intake services and collects patients' essential dental information through x-rays, a visual examination and perhaps photographs. That information is transmitted as a cloud-based electronic health record, managed by the University of the Pacific, to the dentist. The dentist conducts reviews of patient records and develops a customized dental treatment plan for each patient.

Central to the treatment plan is determining if a patient requires in-person treatment by the dentist. If the answer is no, the dentist will recommend preventive and early intervention procedures by the local hygienist, who will also provide case management and assist the patient in connecting to educational, social and general health systems. If the patient does require attention by the dentist, the hygienist will provide full educational and preventive services, plus assist the patient in making an appointment for treatment.

Glassman's studies show that most dental care can take place at the community site. In the case of children participating in the project through Headstart and schools, about a third of patients needed to go to the dentist for treatment. The other two-thirds of children only needed preventive care that the community-based hygienist was able to provide. "It's a huge deal when you think of the traditional trajectory for these low income children who get no dental care at all until a small hole gets to be a bigger hole and infection and a toothache are possible," said Glassman. "To be able to keep two-thirds of children healthy with only onsite services is really a very big deal."

Glassman added that when hygienists are at the school sites all year, they can raise awareness of everyone in that location about oral health. "It's a continuous presence system."

In addition to traditional preventive procedures, California added a small expansion of the scope of practice for dental hygiene. "When we first started this," said Glassman, "we found that about 50 percent of the children could be kept healthy by a hygienist doing traditional dental hygiene, and children did not need to see a dentist. When we added the ability to seal caries and very small holes in teeth, it went up to two-thirds. It made a very big difference."



Outlook for teledentistry

In his 2016 white paper, Dr. Paul Glassman provides an in-depth look at how telehealth technology can be used to meet the needs of the nation's underserved populations.

In about 15 minutes, with no anesthesia and no drilling, the caries can be sealed in place. Dentists can monitor the sealed tooth for several years and keep the tooth from advancing into negative consequences.

Glassman said that in California, the dentists that he started talking to about the concept 15 years ago were nervous that they would lose patients. "They are seeing more people now than they were before in their offices, plus there is a net increase in patient capacity and production in the office."

Track Record

"We started with this proof of concept back in 2009," said Glassman, "and demonstrated that we could actually make telehealth connected teams work, could reach underserved people, could apply proven preventive early intervention procedures, could create a continuous presence system and could create community-clinical linkages—meaning we try to do as much as we can in the community, but link to the clinical dental office so they are not in isolation or separation and all are part of one system."

As a result of the demonstration, the California House of Delegates passed legislation in 2014 that recognizes teledentistry as a legitimate tool of dental practice, basically saying that dentists should be able to decide whether to use the tool or not. After a yearlong process of working through regulations, the paying mechanism is now in place. "We have now turned a corner from a demonstration project to a change in our legal environment to being able to do this work and get paid for it," said Glassman. The project tested the ability of dental hygienists to place interim therapeutic restorations. To date, 1,000 have been placed. All of them met criteria with no adverse consequences. "Clearly they were capable of doing it," said

Glassman." This is something the dentist decides when and where it is to be placed and what tooth it goes onto. Then the hygienist performs the procedure under the general supervision of the dentist.

Funding

Approximately 27 funding agencies and organizations provided over \$5.5 million to support the demonstration.

Looking to the Future

Glassman says that he and his team are looking in 2016 and beyond to help other states. "We've now got other states in Oregon, Colorado, Hawaii with funded projects that have duplicated this system," said Glassman. "And we've got seven or eight states that are adopting regulations to allow payment for teledentistry, mostly focused on the Medicaid system." Glassman pointed to many questions that need to be answered across the country, including the kind of training that is needed, how to best reach people, and how to measure and health outcomes over time. "We have some preliminary data," said Glassman, "but we are going to need to be much more rigorous going forward. And then there are many financing and policy barriers to consider."

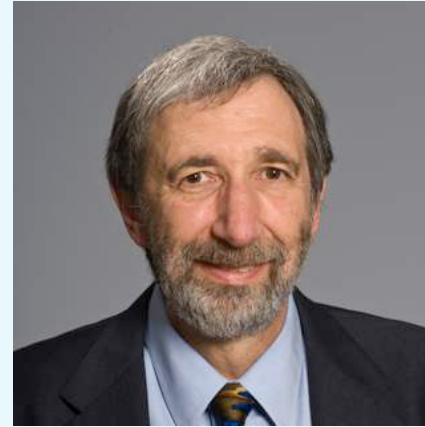
Personal Reflections from the Innovator

"The world is changing," said Glassman. "The situation is somewhat dangerous for the oral health industry, but we have tremendous opportunity to turn that around. And we have the opportunity to do something that benefits our dental practices and the population."

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Spotlight on the Innovator



Paul Glassman, DDS, MA, MBA

Director, Pacific Center for Special Care
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Dr. Paul Glassman is a nationally recognized expert in oral health care for people with developmental disabilities and complex medical conditions and other vulnerable populations. He is director of the Pacific Center for Special Care, serves as the dental school's director of community oral health and is a professor in the Department of Dental Practice. Dr. Glassman is a former president of the Special Care Dentistry Association, an international organization dedicated to improving the oral health of people with special needs. He has participated on many national commissions and contributed to formulating oral health policy including his service on the Institute of Medicine's committee on Rural Health Access to Care.

“It’s our job to keep reminding people: ‘oral health, oral health, oral health!’”

Virginia Oral Health Coalition

The Need

Like many states in the South and across the country, Virginia faces steep challenges when it comes to oral health. Fourteen of the state's 135 counties do not have a dental provider, and 64 counties—almost half the state—lack access to a dental clinic. Complicating matters, said Virginia Oral Health Coalition Executive Director Sarah Holland, are transportation problems, a shortage of dentists who accept Medicaid in parts of the state, a limited Medicaid benefit for non-pregnant adults, as well as basic social determinants of health, which impact all aspects of health, including oral health.

Perhaps the biggest challenge, says Holland, is to get people to think about oral health as an integral part of the Virginia comprehensive health care system. "We've got the traditional silos: oral health and dentistry are over here and primary care, behavioral health, pharmacy, etc., are over there," said Holland. "Virginia now has a better system to integrate [medical] services, but in many cases dental health is still excluded. That's why it's our job to keep reminding people, 'oral health, oral health, oral health.'"

The Solution

The Virginia Oral Health Coalition is a non-profit organization that was created to bring oral health to the forefront of state policy discussions and decision-making.

The stage was set for the creation of the Coalition when a group of dental leaders decided it was time to band together to address the state's oral health challenges. In 2002, the Virginia Dental Association (VDA), the Virginia Department of Health and the Department of Medical Assistance Services joined with nonprofit organizations to create an all-volunteer committee called Virginians for Increased Access to Dental Care (VIADC). VIADC's mission was to invest in children's health and to work collectively to improve access to oral health services for all Virginians.

The committee's efforts met with success: most notably, an increase in the Medicaid reimbursement rate and an update of the Virginia Oral Health Plan.

The Virginia Oral Health Coalition was formed in 2010 with the charge to drive the Virginia Oral Health Plan and carry on the vision of the original group of volunteers. The Coalition's mission is to improve overall health by integrating oral health services, education and referrals into all aspects of healthcare—enabling Virginians of all ages and abilities to achieve optimal oral health.

"Our early decisions turned out to be really important," said Holland. "We were initially going to be almost a subgroup of the VDA, and we were going to pay them a fee to manage us. It became clear pretty soon, though, that this wasn't going to work. We decided to become an independent 501(c)3 nonprofit organization. I think it made an important statement to our partners who look to us to be a voice for them," said Holland. "The decision not to have members, not to be housed in a partner organization, was a good one."

How the Program Works

The Virginia Oral Health Coalition is a 501(c)3—a non-profit organization that accomplishes its mission through three main areas:

- Advocacy to ensure that Virginia laws and policies support access to oral health care;
- Education to increase the capacity of the health care workforce and to integrate oral health into all aspects of health care; and
- Public awareness to ensure that oral health is viewed as a critical component of overall health.

The Coalition is led by a 15-member board of directors and a six-member staff. Holland says that the board was originally involved in the "nitty-gritty" of the organization, but now sees itself as moving into its adolescence. The board is currently more focused on strategic vision. Holland says she is especially proud of their legislative committee that is now composed of both board members and other

individuals representing diverse occupations. “The outside members have brought new voices to the conversation,” said Holland. “It takes longer, it’s messier and it’s harder, but it pays off. And they become our public champions.

“Virginia has a relatively progressive dental association,” said Holland. “The executive director has a very charitable spirit and is an incredible champion for the underserved. He knows the association membership well and has done a really nice job of introducing some challenging subjects when the time is right, while always doing good service to his members.” Holland said they also have a good relationship with state government. “We have a great new commissioner of health, and we have partnered closely with the health department on data for the report card.”

Track Record



Report card unveiled

Sarah Bedard Holland, executive director of the Virginia Oral Health Coalition, presents the first Virginia Oral Health Report Card to a statewide conference in late 2016.

Through grant funding from the DentaQuest Foundation’s Oral Health 2014 initiative, the Coalition grew Virginia’s oral health network to include over 150 individual and organizational partners from dentistry, medicine, academia, safety net health care, philanthropy, insurance and state leadership. The Coalition leveraged this network to focus projects that centered on medical-dental integration, said Holland. One example was a

project that trained pediatric residents in hospitals to apply fluoride varnish to children’s teeth to help prevent tooth decay. The goal was to encourage the physicians to incorporate this procedure in their pediatric practices once their residency programs were completed. The Coalition also partnered with state medical schools, nursing programs, and PA programs to introduce an oral health curriculum into medical coursework. “There has been very little oral health education in medical schools in the past,” said Holland. “This is truly sustainable work.” More recent programs have addressed dental

care for adults with special health care needs. In April 2016, the Coalition released an online Oral Health Integration Toolkit on its website, with resources for health providers who wish to deliver more comprehensive health services.

One of the most recent undertakings of the Coalition is the newly released Virginia Oral Health Report Card. The first-ever statewide report card shows that Virginia earns a C+ for oral health when graded against the nation on nine key indicators that track prevention, collaboration, health status and coverage. Holland says the report card will be issued regularly, giving oral health partners an opportunity to reflect on how far they’ve come and how far they have to go.” The Coalition unveiled the Virginia Oral Health Report Card at its annual meeting in November 2016, and will work with each region of Virginia in the coming months to provide local data. “Numbers don’t lie,” said Holland. “We hope people see areas where we are not doing well and that this will leverage the good work already happening in the communities.”

While Holland believes it’s too early to measure impact statistically—and that impact is always hard for a policy organization to determine—she offers this story: “For a long time, I was the only one who brought up the subject of oral health at state meetings—eventually other folks might bring it up, but whenever that happened they would look at me. About a year ago, I was sitting in a meeting where a group was talking about a lot of heady stuff, and someone brought up the need to add oral health to the agenda. Not a single person looked at me. It means that others now are bringing oral health to the table. This is a big deal! True sustainability is when partners own the mission. I don’t know that there is a bigger win than that.”

Funding

Holland is thankful for an early grant from the DentaQuest Foundation that helped to cover operational expenses. “The folks at the DentaQuest Foundation are strong believers in the power of bringing people together,” said Holland. Other funding sources include grants from health care foundations and other health associations, partnerships with state agencies on federally-funded initiatives,

corporate and individual giving and income earned from the annual conference fees and sponsorships.

Personal Reflections from the Innovator

Holland readily admits that she and other young leaders in the organization were rather naïve in the beginning—but believes it turned out to be an advantage. “I quickly learned the value of being under-estimated,” she says with a smile. “I was surprised that we were characterized negatively by some in the early days,” she said, “but I was raised to be transparent. We’ve posted every meeting on the website, we’ve done nothing behind closed doors, we’ve not tackled a single issue without everyone knowing it.” She adds that when they have made mistakes, they have apologized. “Transparency has allowed us to get things done. As far as we were concerned, we were just doing our job. But in the end, we were creating something that was really powerful.”

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Spotlight on the Innovator



Sarah Bedard Holland, MS
Executive Director
Virginia Oral Health Coalition

Her youthful looks belie her professional experience, self-confidence and grit. Sarah Holland leads the Virginia Oral Health Coalition that serves as a model for states throughout the Southeast. Prior to her work with the Coalition, Holland was with the Virginia Health Care Foundation, the largest funder of dental safety net providers in Virginia. Holland’s background also includes directing public policy and communications efforts for the American Cancer Society and for the University of Arizona Health Sciences Center where she shaped and executed the communications strategy for the Phoenix Campus of University of Arizona’s School of Medicine. In addition to her current position at the Coalition, Holland serves as an adjunct professor for the Virginia Commonwealth University School of Dentistry. Holland holds a master’s degree in communication management from Simmons College and a bachelor’s degree from Virginia Tech.

APPENDIX

Expanding the Dental Health Workforce to Meet the Needs of Underserved and Vulnerable Populations

A Summary of Programs in Other States

by Alexandra Zizzi

The current system of oral health care is failing to reach many Americans, especially those who live in rural areas or are otherwise unable to go to a dentist's office to receive care. Many states are choosing to expand the roles of existing oral health providers or are creating new roles to reach these underserved populations. The new providers are able to increase access to preventive and basic restorative care as well as to increase the productivity of existing dental practices. As of November 2016, 22 states have created new workforce models or are in the process of developing new workforce models, including several that have adopted more than one model.

Dental Hygienists

A dental hygienist is an important part of the dental team. The hygienist has daily interaction with patients in the clinical setting and is often responsible for providing education on proper oral hygiene, nutrition, and other oral health care practices. The hygienist also may provide some clinical services, such as administering fluoride treatments and sealants, removing calculus from the teeth, and taking molds of the patient's teeth¹. In addition, hygienists may provide education in schools and other high-need community settings¹.

Dental hygienists are licensed by their respective state dental licensing board² and bear the title Registered Dental Hygienist, abbreviated as RDH. They must complete their education at a school accredited by the national Commission on Dental Accreditation.

Dental hygienists may be educated at a community or technical college, where they complete a two-year program and receive an associate's degree before examination for licensure². Some universities offer baccalaureate and master's dental hygiene degrees². North Carolina is home to 13 accredited dental hygiene programs, 12 of which are located at community and technical colleges³. The University of North Carolina at Chapel Hill offers a bachelor's and master's degree in dental hygiene⁴. North Carolina does not have reciprocity with other states, which means that a license from North Carolina is not recognized by other states, and dental hygienists licensed in other states must apply for a license in North Carolina⁵.

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Public Health Dental Hygienists

The role of the public health dental hygienist is to provide care and education to patients in the community who are at higher need or may be unable to receive care in traditional settings. Public health dental hygienists frequently work in Head Start programs, public schools, nursing homes, and community health clinics. They are usually registered dental hygienists (RDHs) who have undergone extra training and certification in order to receive approval to work in these high-need locations. Not all states have a statutory role for public health hygienists, but all employ RDHs in community-based settings. Public health hygienists often work independently in these settings to provide education on proper oral hygiene, nutrition and sometimes may provide dentals sealants to children.

North Carolina's Board of Dental Examiners created a rule to allow for the training and licensing of public health hygienists in 1999³. These hygienists are RDHs who have at least five years of clinical experience, have received certification in CPR, and have completed training provided by the Oral Health Section of the N.C. Department of Health and Human Services². They work under licensed public health dentists. There are currently 24 public health hygienists serving North Carolina⁴. The difference between a licensed public health hygienist and a hygienist employed in private practice is that the public health hygienist can provide some services without the presence of his or her supervising dentist under specific circumstances. After the public health dentist has examined the patient and written instructions for treatment, the hygienist can return alone to provide the directed care within 60 days^{1,2}.

Public health hygienists fill an important role in educating the residents of their community on proper care for their mouth and teeth, as well as helping to provide a link to more complete dental care should the need arise.

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Community Dental Health Coordinators

The community dental health coordinator is an allied dental health professional that serves as a patient and community educator and advocate, provides basic preventive services and coordinates care for highly vulnerable patients, usually those who live in rural areas or Native American tribal lands¹. The coordinator's role focuses mainly on primary preventive care⁵. Like many other public health professionals, the coordinators work in schools, federally qualified health centers, local health departments, Head Start centers and other similar locations⁵.

The program was created by the American Dental Association (ADA) as a pilot program in 2006 and by 2012 had graduated 34 coordinators who now work in several states. The program consists of a module-based training program and clinical internship and is open to dental hygienists, dental assistants (including those in expanded function), and community health workers¹. Eight states currently have a functioning program and 10 more have a program in development⁴. At this time, North Carolina has not engaged in this program.

New Mexico adopted the community dental health coordinator program in 2012 in an attempt to better serve its rural and Native

American populations^{2,3}. The New Mexico Dental Board has the power to certify dental assistants, dental hygienists and other trained personnel after satisfactory completion of the education and internship components^{2,3}. The coordinator has many tasks, including patient education and community outreach. The clinical component of the coordinator's job may include taking the patient's health history, taking radiographs, placing temporary fillings and transmitting the patient data to the supervising dentist via teledentistry technology³. Each state governs its providers' scope of practice, but in New Mexico, coordinators can perform their duties without the physical presence of the dentist, in compliance with a dentist's prior examination and treatment plan³.

Results from New Mexico are not available at this time, but results from the ADA's pilot program were positive. The evaluators found that the program enabled many who would not normally receive care to receive it⁵. The coordinators helped to reduce no-show rates and increased the productivity of rural practices¹. The program was well-received by patients⁵. The ADA hopes that states will adopt this role and curriculum into their public health dental practices.

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Registered Dental Hygienists in Alternative Practice

The registered dental hygienist in alternative practice (RDHAP) is a role unique to California, where it was created to expand access to dental care for underserved populations. RDHAPs are required to have a dentist of record who oversees their work¹. RDHAPs go into underserved community settings to reach patients who are unable to go to a dentist's office, utilizing mobile dental equipment¹. They have the same responsibilities as registered dental hygienists, as entry to the educational program requires a current license¹. They work under the general, or non-co-located, supervision of a dentist¹. They also refer patients to dentists, not necessarily the one with whom they are partnered, to receive care that they cannot provide¹. RDHAPs were recently utilized in a pilot program in teledentistry conducted by Dr. Paul Glassman at the Arthur A. Dugoni School of Dentistry².

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Dental Therapists and Advanced Dental Therapists

Dental therapists and advanced dental therapists are mid-level providers whose responsibilities overlap with those of a dentist. They are comparable to nurse practitioners or physician assistants¹. They practice in underserved areas, such as Native American tribal lands¹, health professional shortage areas, federally qualified health centers, Head Start programs, correctional facilities, nursing homes and residences of the homebound⁴. The role was first developed in Alaska, where therapists are approved to work with Native American

populations who often reside in extremely remote areas¹. Alaska, Oregon, and Washington have approved dental therapists to work with tribal populations. In 2009, Minnesota became the first state to create a dental therapy role approved to work with all designated underserved populations^{2,4}; Maine and Vermont also recently passed legislation creating this role¹. The University of Minnesota's School of Dentistry created a dental therapy education program and promoted legislation in response to a campaign by the American Dental Hygiene Association to create an advanced practice dental hygienist⁴. The therapist's role is to increase access to care for underserved populations. At least 50 percent of the therapist's patient load must be from designated underserved populations⁴.

In Minnesota, students may apply directly out of high school for the dental therapy program at the University of Minnesota. Graduates earn either a bachelor's or a master's degree, although both qualify the student to receive a dental therapist's certification upon completion of examination⁴. Metropolitan State University offers advanced dental therapy education⁴. Students in this program receive the same training as dental students in minor surgical procedures⁴. Dental therapists may practice traditional dental hygiene if they also maintain a license in dental hygiene, but the therapy program does not teach students a traditional dental hygiene curriculum^{4,7}.

Each state regulates its providers' scope of practice, but within this scope, therapists are subject to the terms of a collaborative agreement^{3,4}. In order to practice, they must sign a collaborative agreement with a dentist partner that delineates their agreed-upon responsibilities^{3,4}.

Preliminary results showed high patient satisfaction, a decrease in patient travel and wait times, reduced no-show rates, and cost savings for clinics⁵. Employers of the therapists were pleased to report that the therapists had adequate skills and knowledge⁶. However, there are still some kinks to be worked out. Integration into the dental clinic is a challenge, especially in regard to the responsibilities of the dental therapists, since the role may be unfamiliar to other members of the clinic team⁶. In addition, there are some uncertainties around practice liability⁶. Overall, Minnesota appears to be satisfied with the role and continues to maintain its education and certification procedures.

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