CLINICAL SCHOLARS

A Robert Wood Johnson Foundation program

Toolkit for Oral Health in Communities and Neighborhoods

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ABOUT THE PROGRAM

Clinical Scholars is a national leadership program of the Robert Wood Johnson Foundation led by the University of North Carolina at Chapel Hill. Learn more about RWJF's Leadership for Better Health programs by visiting: rwjf.org/leadershipforbetterhealth

ABOUT THE TOOLKIT

This toolkit should serve as a general guide on methods to increase access to oral healthcare for vulnerable populations. For more information, contact: cemoore@emory.edu

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Toolkit for Oral Health in Communities and Neighborhoods

Poor oral health in low income communities is a wicked problem that causes many burdens on children and adults alike. Oral health is important because untreated caries (cavities) can lead to problems with eating, speaking, and attending school or work. In addition, untreated caries and periodontal (gum) disease will lead to tooth loss. CDC survey data shows that low-income adults suffer more severe tooth loss than their wealthier counterparts. For example, adults in families earning less than $15,000 per year were more than 2.5 times as likely to have lost six or more teeth from decay or gum disease as adults in families earning $35,000 or more.

Increase access to oral health education and services

The Oral Health in Communities and Neighborhoods (OH I CAN) project seeks to address the vast oral health disparities that exist for low income and minority families in the Atlanta metropolitan area by creating a community wide comprehensive oral health network. Other goals include using the Transformative Technology Evaluation and Assessment Model (2TEAM) to:

- Increase the number of healthcare professionals in low resource areas trained to provide basic preventive oral health care and head and neck cancer screening;
- Train primary care registered nurses, nurse practitioners, and physician assistants to provide basic preventive care;
- Improve community knowledge about preventive oral care;
- Increase access by allowing dental hygienists to perform preventive dental care via general supervision; and
- Increase capacity and improve the quality of low-cost oral healthcare.

The CDC reports:

- **1 in 3 children** ages 2-5 with family incomes below $10,000 annually experienced **at least one decayed tooth** that had not been treated
- While only 1 in 10 preschool children with family incomes of $35,000 or higher had untreated cavities
- Adults in families earning less than $15,000 annually were more than **2.5 times likely to have lost six or more teeth** from decay or gum disease than adults in families earning $35,000 or more

Planning

This initiative was designed in response to a community needs assessment (CNA) in the target zip codes of 30311, 30314, and 30318 (Atlanta, GA) in 2013 which was re-confirmed in 2016. The results show the great demand for oral health services in this area and give strategic insight into planning the most effective type of oral health services. A dental residency program has shown great success, but there is more demand in west side of Atlanta than the residency program alone can satisfy.

RATIONALE

Poor oral health afflicts many low-income and other vulnerable populations. Lack of access to preventive oral health can lead to unnecessary tooth decay, periodontal disease, pain and even the quiet and deadly advancement of oral cancer. It also leads to unnecessary and expensive visits to the Emergency Department to treat pain of tooth decay and periodontal disease but not the causal conditions. Finding ways to improve oral health in low-income communities is essential to good health and will help individuals and families move from poverty to middle class status. It requires a collaborative effort of a diverse array of health care workers.

INTERDISCIPLINARY TEAM

After treating a large number of patients with stage four oral cancer from the west side of Atlanta, Dr. Charles Moore went outside of the clinic and began traveling to the community in 2006. He started by providing cancer screenings and eventually recruited other volunteers, primary care providers, and specialists to create the HEALing Community Center. The Center is now a safety net Federally Qualified Health Center (FQHC) with two locations serving more than 5,000 patients per year. Dr. Moore also created a dental diversion program for Grady's Emergency Department that has directed over 500 patients to the HEALING Community Center for low cost dental care.

As Chief of Dental Medicine for Grady Health System, Dr. David Reznik has focused on training other health professionals to care for low resourced and medically complex patients, including the provision of comprehensive dental care for people with HIV. He also established a dental residency program in order to demonstrate how providers can be effective in working in low resourced communities.

As Clinical Assistant Professor at Emory University's Nell Hodgson Woodruff School of Nursing, Dr. Hope Bussenius trains nursing students to provide exceptional care to low income patients both locally and internationally. She trains her students on how to perform comprehensive oral examinations and apply fluoride treatments to prevent tooth decay. This cross disciplinary training will help increase the number of health care providers who can provide fluoride rinses and education on how to prevent oral disease to patients.

TEAM COMPOSITION

- Charles Moore* – Professor and Otolaryngologist
- Hope Bussenius* – Assistant Professor and Nurse Practitioner
- David Reznik* – Adjunct Clinical Professor and Dentist
- HEALING Community Center – Federally Qualified Healthcare Center
- Eunice Chay – Dental Resident
- Faith Lyles – Volunteer Public Health Professional

**Clinical Scholars Fellows*

FUNDING

OH I CAN was initially funded through a $315,000 grant from Clinical Scholars, a program of the Robert Wood Johnson Foundation. There was a need for additional funding to expand our ability to address oral health issues in communities that were low resourced. A team member with extensive experience working with the Atlanta philanthropic community led the opportunity to engage philanthropic organizations. The initial step was to identify which organizations had an interest in oral health issues that would align with our project's goal. Once the organizations were identified, we identified the following needs to expand our project:

- Space within the community to provide oral health services
- Dental equipment and supplies for the facilities
- Staffing to provide the services
- Resources for advertising

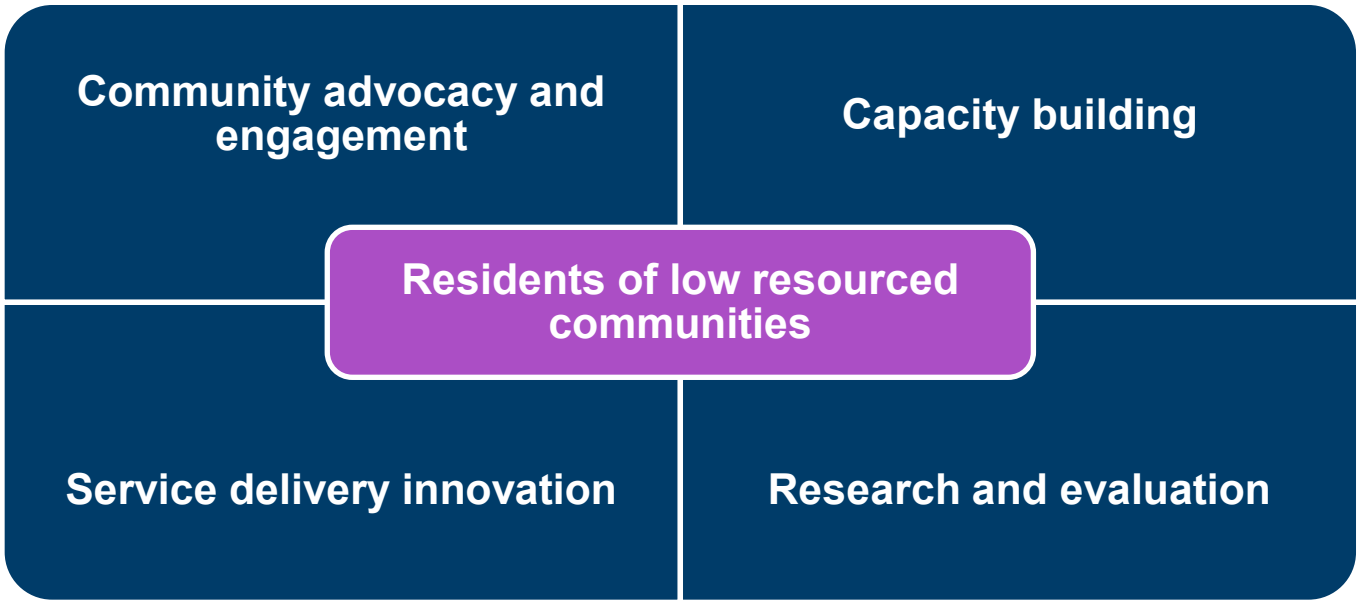
The Howard Dobbs Foundation, Atlanta chapter of LINKS, Inc. and Emory Urban Health Initiative provided additional funding. Additionally, we secured the space in kind along with a portion of the requisite salaries for a dentist, dental hygienist and assistant. Public health students from several Atlanta universities were enthusiastic to be involved in this type of work in the community and assisted with our survey work.

To define a program's goals, start by answering:

1. What problem is the program trying to solve?
2. What steps are being taken to solve that problem?
3. How will program staff know when the program has been successful in solving the problem?

Project work

First, the goals of the OH I CAN initiative were defined using the schematic below:



COMMUNITY NEEDS ASSESSMENT

The urban neighborhood environmental scan provided a needs assessment specific to the West Atlanta neighborhoods. The needs assessment informed the team's understanding of which oral health services are most in need and how to best offer these services. The assessment included interviews with community and organizations, county health and education departments, and the Georgia Department of Public Health. Some of the questions guiding the needs assessment were:

1. What oral health services do community members currently have access to and utilize?
2. What are the community members' current attitudes and practices regarding oral health?
3. What type of need is there for head and neck cancer screening and care (as assessed through tobacco use and other carcinogenic inhaled substances)?
4. What would encourage the community members to utilize oral health services offered at schools or health centers?

INTEGRATE ORAL HEALTH INTO PRIMARY CARE

The 2TEAM is a conceptual model for all healthcare providers and students to bridge clinical practice, education and training, research, and health policy to provide basic oral examinations and cancer screenings.

This conceptual model incorporates the use of technology in an effort to expand the ability to reach patients through the provision of a quality of life questionnaire that is accessible in an App format. This format bridges the traditional approach to health education with the ability for information to be obtained in a real-time repository. This allows for the opportunity for training of the individual patient, the provider and the potential to contribute to future scientific and community-based literature based on the results gleaned by the use of the technology.

CAIRO'S STORY

Second grader Cairo was missing school for tooth pain and refusing to eat vegetables. His high school aged sibling Sonja stayed home with him when he was unable to go to school. Their parents had not been able to take him to a dentist out of fear they could not afford the service and they would lose their jobs if they missed work.

With the introduction of the oral health unit into the school, Cairo was able to get his oral health issues addressed. He and Sonja are now able to go to school and are doing well.

INCREASE CAPACITY OF LOW-COST ORAL HEALTH CARE

The HEALing Community Center is located in the target neighborhood and is easily accessed by public transportation on a main thoroughfare in West Atlanta. Increased support of the oral health program at this facility has allowed for increased services to be provided and increased availability of services.

An additional mechanism to increase availability is through the provision of trained oral health professionals with experience working in marginalized communities. Providing additional training within underserved environments allows learners to gain an appreciation for the barriers to oral healthcare experienced by community members while also refining the skillset of the learner in a supervised, controlled setting. The goal is to encourage providers to continue to practice long term in similar settings. With this in mind, the Grady-based dental residents all rotate through the HEALing Community Center. In 2019, Good Samaritan Atlanta was added as a new site to the dental residency program. Similar to other programs in the residency, this program serves low-resourced individuals and families and also sponsors a full clinic for the homeless population.

Schools and afterschool programs present an excellent opportunity to reach entire families and give them the tools to improve their oral health. Working with the HEALing Community Center, we opened a school-based health program in a target area school providing integrated primary care and oral health services to students, their families, and teachers. This also initiated a fluoride rinse and fluoride varnish program where community health workers visit schools and afterschool programs.

Future work will allow this program to train nurses and nurse practitioners who work in other neighborhood schools to perform oral exams, provide oral home care instructions, and show students how to use the OTC fluoride rinses. The nurse practitioner will refer students who currently do not have a dental provider to a dentist or dental hygienist who visits the school weekly to provide basic dental services such as cleanings and sealants.

ADVOCACY

The OH I CAN team successfully moderated a change in Georgia State law that has increased access to preventive dental care for low resource families in both urban and rural settings. Instead of advocating for a specific piece of legislation, the team educated members of the legislature on the existing unmet oral health needs throughout the state and practical ways to address said unmet need.

Georgia is the most recent state to allow dental hygienists to perform preventive care through general supervision after a comprehensive exam by a licensed dentist has occurred. The key to this effort was finding a way to balance the conversations between the Georgia Dental Association (GDA) and the Georgia Dental Hygiene Association (GDHA), who for years had been on the opposite side of this issue. This law will allow a patient to see the dentist only once a year if there were no caries (cavities), yet still have preventive care (cleanings, fluorides and sealants) as needed. This would increase access and availability of dentist appointments and reduce the cost of routine preventive care.

ROSALYN'S STORY

Rosalyn had only a few viable teeth and felt limited in her ability to socialize, search for jobs, and eat nutritious foods. She believed her ability to present herself in a manner that would truly reflect who she was would not be received. Her church had a SMILE (Saints Ministering in Laughter and Enjoyment) ministry that she desperately wanted to participate in, but she felt too self-conscious.

Upon visiting one of our sites, she was able to get her oral health issues addressed and also obtain dentures. Now Rosalyn is smiling at everyone she sees and has obtained a job.

The OH I CAN team worked with the GDHA and GDA to create an implementation toolkit for this new law. Additional conversations and work with GDA and GDHA leadership will occur to address implementation concerns. All members of the team are on the board of the Georgia Oral Health Coalition, which has taken leadership on increasing implementation of dental hygiene general supervision.

INNOVATIVE TECHNOLOGY

There are various transformative healthcare models that focus on innovative changes. An important potential tool includes the use of technology. Using technology provides an avenue to reach a wide audience of end users consisting of both providers and patients. The OH I CAN team developed several products to assist with increasing our audience on the local, national and international setting. Together, these technologies represent the 2TEAM conceptual model created to help align clinical practice with education, research, and policy using technology. 2TEAM is not specialty-specific, but rather may be leveraged to improve care delivery in any area. This model enables the effective dissemination of health information to multiple and varied audiences by seamlessly integrating educational materials into tech platforms.

Additionally, 2TEAM work represents an important contribution to nursing, medicine and dental curriculum and continuing education. This model involves creating/evaluating educational practices and tools for nursing, medical and dental faculty in conjunction with any clinical protocols a researcher might develop. For example, OH-I-CAN® is not only impacting clinical practice and policy (i.e. through data sharing and protocol distribution) but promoting a paradigm shift in how health students are taught to think about oral health as a development milestone. Through the OH-I-CAN® website, professors and curriculum planners may easily access documents on how to "put the mouth back in the body" when teaching students assessment and routine clinical care skills. A key mission of the site is to empower non-dental providers to recognize oral health needs and address them in a timely manner (within scope of practice).

These tools provide educational and training materials as well as the capability for research endeavors through an online repository. The OH I CAN app contains the Oral Health Impact Profile (OHIP-14) plus questions on blood pressure and head and neck cancer screening. The OHIP-14 is a measure of oral health related quality of life. This tool can be used to study specific populations (i.e. zip code, medical conditions including HIV, head and neck cancer, diabetes) in a very easy to use interface that connects to the online repository.

- Website: OHICAN.org
- Smartphone App: iOS | Android
- Online Repository:
- Twitter: @OHICAN1

OH I CAN APP SCREENSHOTS

Evaluation and dissemination

Our team used a monitoring and evaluation plan to assist with tracking and assessing the results of the interventions throughout the life of the program. The document pictured below was hosted in Google Drive to refer to and update on a regular basis.

MONITORING & EVALUATION PLAN: ORAL HEALTHCARE IN COMMUNITIES AND NEIGHBORHOODS (OHICAN) PROGRAM

I: COMMUNITY ENGAGEMENT AND ADVOCACY							
Objective 1: To provide dental screening and prevention services to 90% of students in Hollis Academy							
Activity	**Sub-activity**	**Process and Output Indicator**	**Baseline Data**	**Target Data**	**Source of Data Collection/ Means of Verification**	**Frequency of Data Collection**	**Responsible Person & Team**
Establishment of (OHICAN) PROGRAM coordination team and development of Strategic Implementation	Assessment of (OHICAN) PROGRAM -supported sites and service facilities to obtain baseline information on (OHICAN) PROGRAM related activities	No. of (OHICAN) PROGRAM - supported sites and service facilities assessed for baseline information on existing OHICAN	0	???	Baseline Assessment Reports	Once LOP	◆ OHICAN Project coordination Team ◆ OHICAN Project Manager
	Establishment of (OHICAN) PROGRAM coordination Team	(OHICAN) PROGRAM -supported sites with established / Functional (OHICAN) PROGRAM coordination team	0	???	Minutes of site-level OHICAN meetings	Monthly	◆ Site Project Manager ◆ OHICAN Project manager
	Development of	No. of (OHICAN)	0	??	Copies of OH	Monthly	◆ OHICAN Project

BUSINESS PLAN

The team created a fluid model for download by individuals, practices and/or teams to develop a high-level plan to determine financial requirements for establishing dental clinics in underserved urban, rural, and frontier areas. This model allows the user to toggle in volumes to determine loss portion/capital outlay needed based on revenue assumptions for a dental clinic. Other benefits and features include:

- Estimated total costs will increase/decrease based on supply costs, overhead costs, labor costs, and costs associated with the clinic setup.
- Case mix and payor mix can vary based on desired inputs.
- User can choose to provide basic to comprehensive dental services.
- Different revenue model summaries will be provided based on the desired service model (e.g. Federally Qualified Health Center, multi-payor, donations).
- Clinic layout estimated 1,000-2,000 square feet (3-4 dental suites, waiting room, dentist office, sterilization area, and lab).

Challenges, successes, and lessons learned

As with all projects, there are always hurdles that must be overcome. The group faced time limitations establishing effective partnerships. Working to educate key players involved in a legislative process to help increase equitable access to dental care was time intensive as well. Not only did we need to educate key legislators on the human toll of unmet dental need, we had to moderate between the two main constituents in the legislative process: the Georgia Dental Association and the

KEY MESSAGES

- One cannot be healthy without oral health.
- Technology can bridge clinical practice, education and training, research, and health policy.
- The importance of providing learners an opportunity to improve their oral health skillset.
- Increasing access to preventive and basic dental care can reduce the increasing number of non-traumatic dental emergency department visits.
- Creating a dental diversion referral program in emergency rooms can allow patients to obtain definitive dental care, avoid unnecessary antibiotics, opioid prescriptions and the costs associated with emergency department visits.

Georgia Dental Hygiene Association. Even after the governor signed the legislation into law, implementation of a new legislative change is taking a significant amount of time to take hold and make a difference in access. We had a 2nd year dental resident put together an implementation toolkit for the new legislation. In over a year and a half since the legislation granting dental hygienists the ability to perform preventive dental care under general supervision was signed into law, only a handful of practices have taken advantage of this new program. Team OH IC AN are members of the Georgia Oral Health Coalition and are involved in the implementation of the program.

One of the main barriers to expanding access to oral health care is the expense of starting a dental practice. Dental equipment and supplies are very expensive. Whether you build a two operatory or four operatory clinics, there will still be a need to purchase basic equipment such as a compressor, suction, autoclaves, X-ray units, developing equipment, an assortment of handpieces, and an electronic dental record. Staffing is substantial expense. Building a new program does not mean the patients will automatically show up for care. Time and effort are needed to market the program to those most in need. Salaries for dentists and dental hygienists are expensive. Even with exceptional outside assistance from Emory University's Goizueta School of Business, developing a working business model was time intensive.

Initiating a school-based program involves numerous steps including working with school leadership and families. A lot of time is needed to establish relationships and gain approval for a new service in a school. As one of our consultant colleagues said, a lot of spaghetti dinners are involved to gain acceptance from families and school leadership.

SHIFTS IN THINKING

The initial plan assumed if you build a new oral health program in an area of high unmet needs, the patients will be lining up for the service. Regretfully, this was not the case. Oral health literacy for most Americans is lacking. Education and marketing must occur early in the process. Whereas this is time intensive, the benefits outweigh the use of resource to ensure equitable access to dental care.

Dental students are graduating with enormous educational debt. There are Dental Service Organizations, many backed by hedge funds or other sources of investment, that are actively recruiting new graduates and even residents prior to the end of their residency programs. The combination of economic pressure and promises of very high salaries from the corporate dentistry, makes it difficult to recruit dentists in public health settings.

Using 2TEAM as an innovative conceptual technology model, the OH I CAN pilot study was instrumental in shifting focus to oral health and the developmental milestone stage starting during prenatal care. The 2TEAM model was key to collecting and analyzing metrics to better identify social determinates of health to improve patient outcomes.

SUCCESSES

The OH I CAN team had a number of tangible products created through the process of addressing this wicked problem including:

- Publications
- Presentations
- Educational software
- Trainings on oral health screening and preventive care such as application of fluoride varnish or fluoride rinses
- Extramural funding
- Website
- Smartphone app
- Healthcare provider protocol
- Interactive oral health business plan

The purpose of these products is to further increase awareness on oral health issues and to perpetuate continued activity to address this issue. All of the examples above are intended to be continued and updated as additional information is obtained.

Recommendations

If tackling this oral health issue in your community, you should:

- Secure extramural funding
- Expand training opportunities for learners
- Ensure there is community buy-in
- Be prepared to increase the number of dentists in residency programs, Federally Qualified Health Centers (FQHC) or FQHC look alike dental programs
- Secure site-specific data analysis
- Map out potential sites for expansion of new access points for care
- Explore social media rollout resources

We would not recommend you proceed without community input/needs assessment(s), or too broad of a pilot phase. Instead keep your initial activities confined to local efforts for quality improvement prior to initiating next steps. If your initiative is intended to open new points of access, we suggest avoiding opening too many sites at the same time. Ensure that the systems that you have created are functioning well and then develop a detailed plan before expanding.

BEST PRACTICES

A project like this will consume much more time than you might anticipate with additional job responsibilities. It might also take much longer than expected to accomplish your goals, so it is best to ensure that your local institution/employer supports the needed effort for your project. You should also expect that your initial plan may change many times, so be open to new opportunities. It is also important to ensure all components of the effort are on the same page throughout the project. Wicked problems take a lot of time and effort to address and take many twists and turns. Communication from the highest levels to those on the ground remain vital.

Our best pieces of advice are:

- Keep communicating throughout both high and low moments. Also, remember not to forget to laugh because it is an amazing opportunity to share and help those who cannot help themselves.
- Working toward a goal to address a wicked problem can be hard work. Know that it is good work! And work worth doing!

TAKE2HEART INITIATIVE

Take2Heart® is a web-based expansion of PediaBP®.

- Twitter
- Website

Take2Heart.com is a program that can be used in conjunction with the OH-I-CAN Smartphone App to assist with the integration of primary care and oral healthcare.

It provides easy access to the app, as well as learning modules for nursing, medical, and dental students.

Its curriculum is informed by the National High Blood Pressure Education Program (NHBPEP) and includes a tutorial on how to take pediatric BPs correctly.