OH-I-CAN

Oral Health In Communities and Neighborhoods

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This toolkit is a resource for clinicians and community partners. It provides the background , development and implementation of the OH-I-CAN device and network. The goal is to bridge medical and dental care in vulnerable communities. It can be used as springboard for other organizations to develop a similar program in their communities.

Our Journey

The OH I Can program addresses significant oral health disparities faced by low-income and minority families in Atlanta, specifically in the 30311, 30314, and 30318 zip codes. This initiative aims to establish a comprehensive oral health network that enhances access to education and services. Through community needs assessments, training for healthcare professionals, and increasing the dental workforce, the program seeks to improve oral health knowledge and capacity for low-cost care. Spearheaded by Dr. Charles Moore and supported by an interdisciplinary team, the program has evolved from providing cancer screenings to establishing the HEALing Community Center, which now serves over 5,000 patients annually. By equipping nurses and other healthcare providers with essential skills in oral health, the program aims to empower communities and reduce reliance on emergency services, ultimately contributing to better health outcomes and socioeconomic mobility.

Background

Poor oral health in low-income communities is a wicked problem that causes many burdens on children and adults alike. There is a wide disparity in untreated tooth decay and school absenteeism. The CDC reports that one in three children ages 2 through 5 who had family incomes below $10,000, experienced at least one decayed tooth that had not been treated. In contrast, only one in ten preschool children whose family incomes were $35,000 or higher had untreated caries. The CDC shows this disparity rate is true for teenagers and adults as well.

Oral health is important because untreated caries can lead to problems with eating, speaking, and attending to learning in children and work attendance in adults. In addition, untreated caries and 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- 2 1/2 times as likely to have lost six or more teeth from decay or gum disease as adults in families earning $35,000 or more. Frequently cited barriers to improving the dental health disparities and achieving these target outcomes include cost, unwillingness of dentists to participate in Medicaid, low Medicaid reimbursement rates, oral health literacy concerns, and a lack of transportation. These barriers contribute to a lack of access for dental care in low income neighborhoods. Beyond the public health consequences of poor oral health are outcomes that affect families and communities in the financial, educational and workforce sectors. These outcomes can prevent families from improving their low-income status.

Wicked Problem Description

Poor oral health afflicts many low-income and other vulnerable populations. Poor oral health can lead to unnecessary tooth decay, periodontal disease, plaque buildup, 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 helping individuals move from poverty to middle class status. It requires a collaborative effort of a diverse array of health care workers.

Dr. Charles Moore & Dr. Hope Bussenius

Project Strategies

To address the vast oral health disparities that exist for low income and minority families, the dental/healthcare neighborhood program seeks to create a community wide comprehensive oral health network in a low income and minority neighborhood to increase access to oral health education and services. The oral health program performed community needs assessments which informed the team's work. Other goals of the project are to:

- Increase the number of healthcare professionals in low resource areas trained to provide basic oral health care/cancer screening
- Train primary care registered nurses, nurse practitioners, and nurse practitioner students to provide basic oral examinations, cancer screenings and how to administer fluoride varnish
- Improving community knowledge about preventive oral care
- Increase the dental workforce by allowing dental hygienists to perform preventive dental care via indirect supervision
- Increase capacity and improve quality of low-cost oral healthcare

Outcomes

- Developing Protocols for NP/Nurses
- Assisting in the development of protocols for general supervision of dental hygienists
- Further enhancement of OH-I-CAN website and APP with registry development
- Developing oral health protocols for primary care
- Oral cavity cancer screening training for providers
- Rural Setting Community Needs Assessment

Completed Outcomes

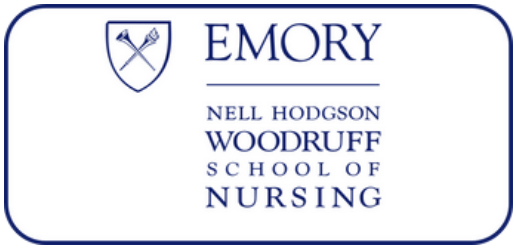
Needs Assessments

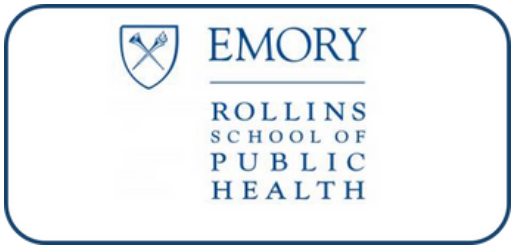
- Completion of OH-I-CAN Smartphone application with connected metadata repository
- Establishment of the OH-I-CAN website
- Both OH-I-CAN app and website launched in local and global, back to school programs in Georgia and mobile clinics in Haiti
- Dental Community Needs Assessment Performed by Rollins School of Public Health
- Develop OH-I-CAN app with registry for patient needs assessment
- Dental Provider Needs Assessment Performed
- Established Advisory Committee • Completed OH-I-CAN informational brochure
- Advocacy • Dental Hygiene Bill Passed – Increased Access for under-resourced children and adults
- Working with Georgia Dental Hygiene Association, Georgia Dental Association and Dr. Chay from the Grady Health System Advance Education in General Dentistry Residency (AEGD) program, an implementation tool kit was created to assist dentists and dental hygienists implement the new law in both the public and private sectors.
- Two lectures were given to well over 250 dental hygienists to inform them of the new law and to discuss best practices.

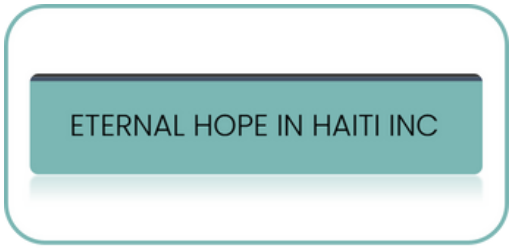
Dental Access

- Launch of OH-I-CAN smartphone application local to global
- OH-I-CAN website used to bridge oral health to clinical practice, research, education and training, and health policy
- OH-I-CAN education and training completed by BSN, ABSN, MSN and AMSN students (n=300)
- Oral health education provided to interprofessional group of medical providers and support staff (n=65)
- Establishing another clinic (Neighborhood Union) to provide oral health services
- Establishing another school-based health clinic with oral health services
- Working with NYU-Langone, HEALing Community Center, Good Samaritan Atlanta, and the Whitefoord Clinic to at least double the number of AEGD dental residents in the Atlanta metropolitan area.

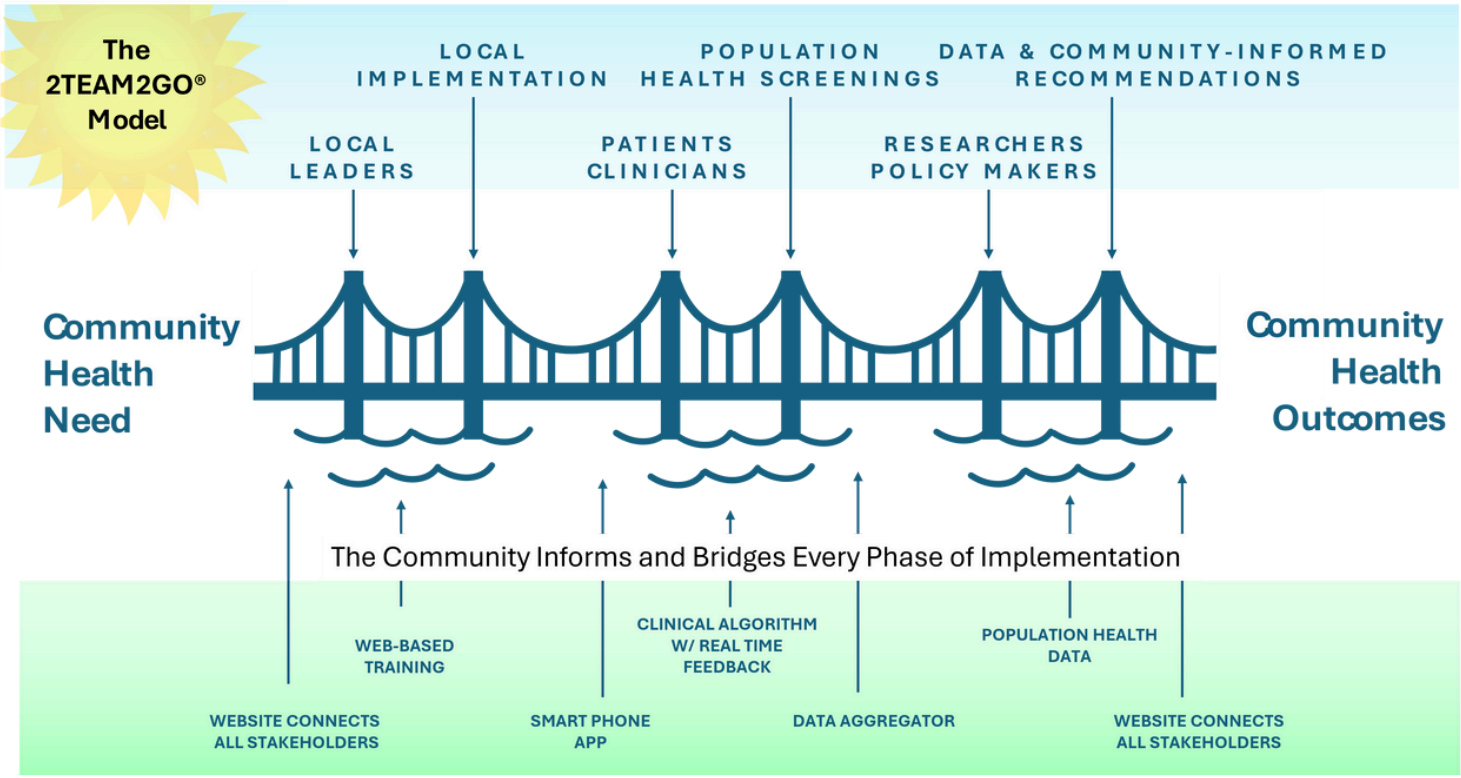
PARTNERSHIPS







Evaluation Strategies



Above is a depiction of the 2TEAM2GO® Model. The figure should be read from left to right. The process starts with a community health need. People and stakeholders (pictured above the bridge) are supported by different technology components (pictured below the bridge) in their efforts to improve community health. For instance, local leaders and clinicians complete web-based training to create local implementation plans; the smartphone app helps clinicians screen patients; a clinical algorithm provides real-time feedback that streamlines and enables effective population health screenings, etc. The community itself informs and 'bridges' each phase of the implementation process. The process improves community health outcomes when project teams and communities 'get to the other side.'

Conducted pre and post intervention surveys at community events and elementary schools

Initiated monitoring and evaluation plan for OH-I-CAN

Medical & Dental Integration

One major goal of the Oral Health in Communities and Neighborhoods (OH-I-CAN) project is to promote dental-medical integration and emphasize the importance of oral health in overall systemic health and vice versa. According to the American Dental Association (ADA), oral health and hygiene has been linked to a variety of systemic diseases such as cardiovascular disease, Alzheimer's and dementia, chronic kidney disease, diabetes, cancers, osteoarthritis, sleep disorders, and more.[1] Consequently, oral and systemic health are perpetually linked.

However, they are often treated separately, and fewer Americans see a dentist in a 12-month period than Americans who see a doctor in the same period. In 2021, only 43.4% of the American population had a dentist visit, with 50.0% of seniors (65+) who saw a dentist in the same year. [1] However, in the same year, the CDC predicted that 82.3% of American adults (18+) saw a doctor in a 12-month period, and 88.1% had a usual place of care.[2] The ADA also reported that less than 50% of racial minority groups as well as those situated at less than 400% of the federal poverty line saw a dentist in 2021. Less than 30% of people who are at 100% or lower of the federal poverty line reported visits to the dentist.

The OH-I-CAN app aims to bring dental care into medical spaces to bridge the gap between oral and systemic health. The app is easy to use which allows medical providers to incorporate oral health into a regular doctor's visit in just a few minutes. After the photos are reviewed by our partnering dental professionals, our team helps to connect patients with licensed dentists to receive the care they need. In addition to bringing dental care to patients in medical settings, our project aims to educate medical professionals on the importance of dental-medical integration, so they inform their patients of the importance of oral health and hygiene.

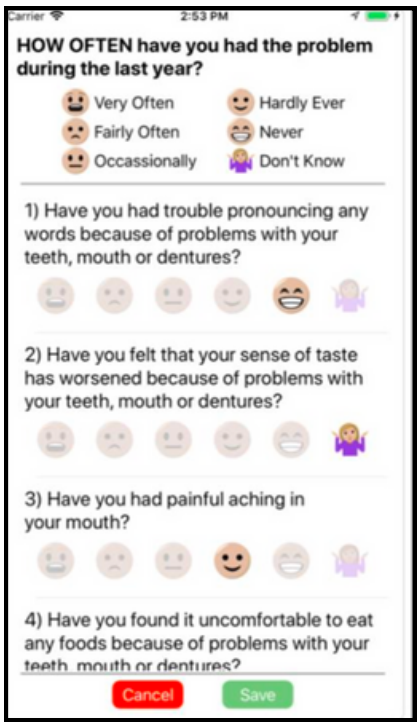
[1] "Oral Systemic Health." American Dental Association, 11 Sept. 2023, www.ada.org/resources/ada-library/oral-health-topics/oral-systemic-health#:~:text=Significant%20associations%20between%20oral%20health,rheumatoid%20arthritis%2C%20and%20several%20cancers.

[2] "National Trends in Dental Care Use, Dental Insurance ..." ADA.Org, Mar. 2024, www.ada.org/-/media/project/ada-organization/ada/ada.org/files/resources/research/hpi/national_trends_dental_use_benefits_barriers.pdf. [2] "NHIS-Adult Summary Health Statistics." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 27 Aug. 2018, wwwn.cdc.gov/NHISDataQueryTool/SHS_adult/index.html.

ORAL HEALTH SCREENING PROTOCAL

A key mission of the OH-I-CAN app is to empower non-dental providers to recognize oral health needs and address them in a timely manner by integrating the OHIP-14 questionnaire. The Oral Health Impact Profile-14 questionnaire (OHIP-14) is a widely recognized tool designed to assess the impact of oral health on quality of life. The OHIP-14 is a comprehensive assessment, focusing on discomfort, functional limitations, and emotional distress, making it an essential tool for understanding the broader implications of oral health on individuals' lives. Questions on blood pressure and head and neck cancer screening are included as well, providing an even more precise understanding of the patient's well being.

Examples of OHIP-14 Questionaire within the OH-I-CAN app



Through the OH-I-CAN app, healthcare providers may easily access data on how to "put the mouth back in the body" when assessing an individual's oral health with easy to interpret results. The app 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, providing educational and training materials for research endeavors as well. By combining assessment tools with educational materials and an online repository, the OH-I-CAN app is a comprehensive approach to understanding and addressing the impact of oral health on quality of life.

OH-I-CAN Roadmap

How to Use the OH-I-CAN app

Download the OH-I-CAN app and conveniently snap pictures or record a video of your mouth using your own mobile device. Safely upload them for review and you will be provided with a referral to a licensed medical professional to address your oral health concerns.

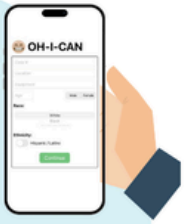
1. Get started on the road to better oral health. Go to our website for step-by-step video instructions at www.ohican.org

2. Search the *OH-I-CAN* app and download

GET IT ON Google Play

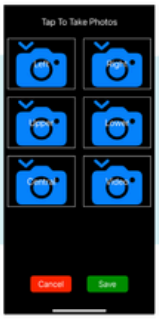
Download on the App Store

3. Submit your responses to the questionnaire



4. Snap pictures of your open mouth

5. Scan QR Code to watch the instructional video



STEP 1: Insert Cheek Retractor

STEP 2: Take 6 Photos

A. Left B. Right C. Upper

D. Lower E. Central F. Video

STEP 3: Click "Save" to submit

6. A member of the OH-I-CAN team will contact you to discuss your findings, treatment options and referral plan

7. Use this Transportation Resource to get to your appointment

NEMT
Non-Emergency Medical Transportation
(404) 209-4000

Empowerline
(404) 463-3333

AgeWell Atlanta
(866) 243-9355

8. Receive a follow-up "Plan of Care" from your healthcare team

If you have any issues using the app, call (770) 597-6222

See Appendix A for example of patient photos and findings

Video on Downloading the OH-I-CAN App

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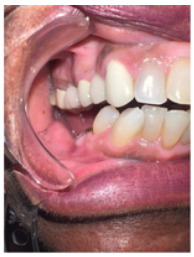
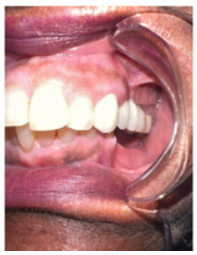
REFERENCES

APPENDIX A

Image Quality Assessment (Geriatric Patients) N=75



Right



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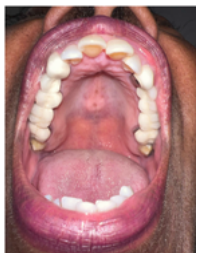
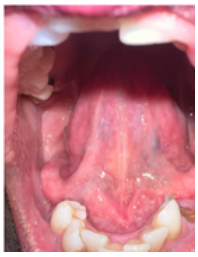
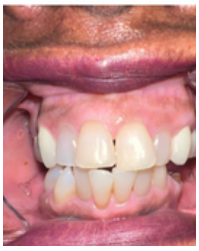


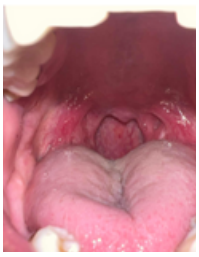
Upper



Lower



Central



Info (Video)

View	Acceptablity (%)	Pathology Visualized (%)	Pathologies
Central	44%	93.3%	Chipped incisal edge, lost restoration, possible root caries, cervical abrasion, dental attrition, dental crowding, discolored restorations on front teeth
Info (Video)	29.3%	56%	Palatal torus, possible tongue pimple, worn porcelain, mandibular incisor crowding, dental attrition, small yellow patch on tongue
Left Right	38.7% 36.1%	93.5% 88.5%	Missing crown, root, caries, chipped incisal, edges, cervical abrasion, gingival hypertrophy, white bump on the tongue (transient lingual papillitis), molar furcation exposed
Upper Lower	37.7% 26.2%	74.2% 77%	Palatal torus, palatal redness, occlusal staining, worn lingual porcelain, white patch in the palate, soft tissue excess in the palate, dental attrition, cervical abrasion, erythema oropharynx, small white patch on maxillary ridge edentulous.

APPENDIX A (Cont.)

Characteristics of Geriatric and Pregnant Patients Recruited to the OH-I-CAN Feasibility Study

Characteristic	Geriatric Patients Total (N=75)	Pregnant Patients Total (N=92)
Age (years) Mean (Range)	80 (66 – 102)	27 (14 - 41)
Sex Female Male	54 (72%) 21 (28%)	92 (100%) N/A
Race White Black American Indian Asian Native Hawaiian/Other Pacific Islander	 15 (20%) 59 (79%) 0 0 1 (1%)	 13 (14%) 78 (85%) 0 0 1 (1%)
Education Never attended Less than high school High school or GED Bachelors/Masters/Graduate/PhD degree Other/Prefer not to say	 3 (4%) 26(35%) 28 (37%) 17 (23%) 1 (1%)	 0 17 (18%) 58 (63%) 4 (4%) 13 (14%)
Income < 35K 35K – 74,999 >75K >100K Other/Don't know/Prefer not to say	 47(63%) 5(7%) 0 (0%) 2 (3%) 5 (7%)	 46 (50%) 10 (11%) 1 (1%) 1 (1%) 34 (37%)