Dental Public Health Activity Descriptive Report Submission Form

Please provide a more detailed description of your **successful dental public health activity** by fully completing this form. Expand the submission form as needed but within any limitations noted.

ASTDD Best Practices: Strength of Evidence Supporting Best Practice Approaches
Systematic vs. Narrative Reviews: http://libguides.mssm.edu/c.php?g=168543&p=1107631

NOTE: Please use Verdana 9 font.

CONTACT PERSON PREPARING THE SUBMISSION AND TO ANSWER QUESTIONS
Name: Kelly L. Close **Title: Early Childhood Oral Health Coordinator** **Agency/Organization: NC Oral Health Section** **Address: 5505 Six Forks Road, 1910 Mail Service Center, Raleigh, NC 27699-1910** **Phone: 919-707-5485** **Email Address: Kelly.Close@dhhs.nc.gov**

PROVIDE CONTACT INFORMATION FOR ONE ADDITIONAL PERSON WHO COULD ANSWER QUESTIONS REGARDING THIS PROGRAM
Name: Sarah Tomlinson **Title: State Dental Director** **Agency/Organization: NC DHHS, Oral Health Section** **Address: 5505 Six Forks Road, 1910 Mail Service Center, Raleigh, NC 27699-1910** **Phone: 919-707-5488** **Email Address: Sarah.tomlinson@dhhs.nc.gov**

SECTION I: ACTIVITY OVERVIEW

Title of the dental public health activity:

North Carolina's Into the Mouths of Babes Program

Public Health Functions*: Check one or more categories related to the activity.

"X"	**Assessment**
	1. Assess oral health status and implement an oral health surveillance system.
	2. Analyze determinants of oral health and respond to health hazards in the community
	3. Assess public perceptions about oral health issues and educate/empower them to achieve and maintain optimal oral health
	Policy Development
X	4. Mobilize community partners to leverage resources and advocate for/act on oral health issues
X	5. Develop and implement policies and systematic plans that support state and community oral health efforts
	Assurance
	6. Review, educate about and enforce laws and regulations that promote oral health and ensure safe oral health practices
X	7. Reduce barriers to care and assure utilization of personal and population-based oral health services
X	8. Assure an adequate and competent public and private oral health workforce
X	9. Evaluate effectiveness, accessibility and quality of personal and population-based oral health promotion activities and oral health services
X	10. Conduct and review research for new insights and innovative solutions to oral health problems

***ASTDD Guidelines for State and Territorial Oral Health Programs that includes 10 Essential Public Health Services to Promote Oral Health**

Healthy People 2020 Objectives: Check one or more key objectives related to the activity. If appropriate, add other national or state HP 2020 Objectives, such as tobacco use or injury.

"X"	**Healthy People 2020 Oral Health Objectives**	
X	OH-1	Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth
X	OH-2	Reduce the proportion of children and adolescents with untreated dental decay
	OH-3	Reduce the proportion of adults with untreated dental decay
	OH-4	Reduce the proportion of adults who have ever had a permanent tooth extracted because of dental caries or periodontal disease
	OH-5	Reduce the proportion of adults aged 45 to 74 years with moderate or severe periodontitis
	OH-6	Increase the proportion of oral and pharyngeal cancers detected at the earliest stage
X	OH-7	Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year
X	OH-8	Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year
	OH-9	Increase the proportion of school-based health centers with an oral health component
X	OH-10	Increase the proportion of local health departments and Federally Qualified Health Centers (FQHCs) that have an oral health component
	OH-11	Increase the proportion of patients who receive oral health services at Federally Qualified Health Centers each year

	OH-12	Increase the proportion of children and adolescents who have received dental sealants on their molar teeth
	OH-13	Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water
	OH-14	Increase the proportion of adults who receive preventive interventions in dental offices
	OH-15	Increase the number of States and the District of Columbia that have a system for recording and referring infants and children with cleft lips and cleft palates to craniofacial anomaly rehabilitative teams
	OH-16	Increase the number of States and the District of Columbia that have an oral and craniofacial health surveillance system
	OH-17	Increase health agencies that have a dental public health program directed by a dental professional with public health training

"X"	**Other national or state Healthy People 2020 Objectives: (list objective number and topic)**	

Provide 3-5 Key Words (e.g. fluoride, sealants, access to care, coalitions, policy, Medicaid, etc.) These will assist those looking for information on this topic:
Preventive oral health services, access to care, medical providers, fluoride varnish, early childhood caries

Executive Summary: Complete after Section II: Detailed Activity Description. Please limit to 300 words in one or two paragraphs.

Provide a brief description of the dental public health activity. Include information on: (1) what is being done; (2) who is doing it and why; (3) associated costs; (4) outcomes achieved (5) lessons learned, both positive and negative.

NC's Into the Mouths of Babes (IMB)program trains and pays primary care medical professionals to provide preventive oral health services (POHS) to Medicaid-insured children from tooth eruption to age 3 ½. Core partners include the NC Department of Health and Human Services Oral Health Section, NC Medicaid, UNC Schools of Public Health and Dentistry, NC Academy of Family Physicians and NC Pediatric Society. NC continues to address a dental workforce shortage and maldistribution, although dentist participation in Medicaid has improved since the project beginning in 2000. POHS in IMB visits include oral evaluation, risk assessment, parent counseling, fluoride varnish application, and a dental referral as indicated. Use of a NC-developed priority oral health risk assessment and referral tool is part of the training and can be used to prioritize referrals of the children at highest risk of caries in workforce shortage areas where referring every child to a dental home at age 1 is not an option. The American Academy of Pediatrics Bright Futures Guidelines encourages provision of preventive oral care as a joint responsibility between oral health and other health professionals, particularly when resources are limited. Associated costs include approximately $8 million annually for Medicaid claims totaling between 155,600 and 165,000 Into the Mouths of Babes (IMB) visits each year since 2014.

Outcomes include improved access to POHS for young Medicaid-insured children as well as an increased number of dental visits, an approximate 17% reduction in tooth decay for children receiving four or more IMB visits before age three, and reductions in decay rates and disparities at the statewide kindergarten level beginning in 2004 (references in outcomes section). Lessons learned are numerous and documented in the publications linked throughout this report.
The fundamental factor for success is equal commitment and effort from each of the partner organizations.

- Hagan JF, Shaw JS, Duncan PM, eds. 2017. Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents (4th ed.). Elk Grove Village: American Academy of Pediatrics.
- https://brightfutures.aap.org/Bright%20Futures%20Documents/BF4_OralHealth.pdf

SECTION II: DETAILED ACTIVITY DESCRIPTION

Provide detailed narrative about the dental public health activity using the headings provided and answering the questions. Include specifics to help readers understand what you are doing and how it's being done. References and links to information may be included.

Complete using **Verdana 9 font.

Rationale and History of the Activity:

1. What were the key issues that led to the initiation of this activity?

North Carolina's challenges in the mid-1990s, which included:
- Increasing prevalence of early childhood caries in low-income children.
- Dental workforce shortage and maldistribution.
- Limited dental access for young, low-income children.
- 25% dentist participation rate in NC Medicaid.

2. What rationale/evidence (may be anecdotal) did you use to support the implementation of this activity?

The challenges stated above, followed by the success of a demonstration project, Smart Smiles, in the Appalachian region of the state informed the implementation of this project. Key features included an extensive partnership of a dozen agencies, service delivery integrated into the existing medical care delivery system and using established community-based networks to reach high-risk children.

Primary medical care providers in private practice as well as health department staff were trained to provide oral evaluation, parent counseling, and application of fluoride varnish to Medicaid-insured children under age three. The success of the Smart Smiles project prompted statewide pilot testing in 1999-2000 and Medicaid began providing reimbursement in February 2000. At that time Medicaid renamed the statewide project "Into the Mouths of Babes."

3. What month and year did the activity begin and what milestones have occurred along the way? (May include a timeline.)

IMB statewide pilot with limited participation began in February 2000 with training and reimbursement available statewide in February 2001. Additional federal funding was obtained to conduct medical provider education and evaluation during the statewide rollout.

Responding to medical provider feedback, NC Medicaid extended the eligibility from 3 to 3 ½ years of age (42 months). This provided additional opportunities for an eligible child to receive six maximum preventive oral health services.

When federal grant funding for the project coordinator position ended in 2005, the NC Department of Health and Human Services, Division of Public Health, OHS, converted a position to accommodate an Early Childhood Oral Health Coordinator, who coordinated the IMB Program.

In 2012, IMB training added a priority oral health risk assessment and referral tool (PORRT) developed by NC pediatricians and dentists, which was based on a UNC Gillings School of Global Public Health scientific literature review. The PORRT was a product of the Carolina Dental Home pilot funded by a federal grant.

Over 2013- 2016, IMB partnered with Community Care of NC Quality Improvement Specialists to increase utilization and referral to the dental home through the Children's Health Insurance Program Reauthorization Act (CHIPRA) Project.

Since 2015, the NC OHS public health dental hygienists have provided IMB training in medical practices and health departments across NC, awarding providers CME credit.

An online IMB E-learning training module will debut in August 2019 in partnership with NC Area Health Education Centers (AHEC).

References questions 1-3:

- Silberman P, Wicker DA, Smith SH Jr, DeFriese GH. Assuring access to dental care for low-income families in North Carolina. NC Med J 2000; 61:95-8.
- North Carolina Institute of Medicine, Task Force on Dental Care Access. Report to the North Carolina General Assembly and to the Secretary of the North Carolina Department of Health and Human Services. Chapel Hill, NC: NC Institute of Medicine, 1999.
- Rozier RG, King RS. Defining the need for dental care in North Carolina: contributions of public health surveillance of dental diseases and conditions. *NC Med J* 2005; 66:438-44.
- Dubay KL, Parker MA, DeFriese GH. Assuring the accessibility of basic dental care services: issues of workforce supply, organization of care, and education. NC Med J 2005; 66:430-37.
- NC Latino health, 2003. Durham, NC. NC Institute of Medicine, February 2003.
- Beil HA Rozier RG. Primary health care providers' advice for a dental checkup and dental use in children. Pediatrics 2010. 126 (2)

The sections below follow a logic model format. For more information on logic models go to: W.K. Kellogg Foundation: Logic Model Development Guide

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES

1. What resources were needed to carry out the activity? (e.g., staffing, volunteers, funding, partnerships, collaborations with various organizations, etc.)

Although the program is 20 years old, this report addresses the last decade, years 2011-2019.

Staffing included a project coordinator and OHS public health dental hygienists. From 2013 to 2016, Community Care of North Carolina quality improvement specialists provided IMB training and Quality Improvement as part of the CHIPRA project.

Funding: See Budgetary Information

Partnership: the original six partners continue to work together and convene regularly as part of the NC Early Childhood Oral Health Collaborative (ECOHC). Collaborations with other organizations have developed to advance early childhood oral health and these organizations have joined the original six as members of ECOHC.

INPUTS	**PROGRAM ACTIVITIES**	OUTPUTS	OUTCOMES

2. Please provide a detailed description the key aspects of the activity, including the following aspects: administration, operations, and services.

Day to day administration of IMB is performed by the NC OHS. A project coordinator oversees operations including statewide training by the OHS staff. The coordinator develops and updates training materials, applies for annual continuing medical education (CME) credit in partnership with the NC Academy of Family Physicians, the American Academy of Family Physicians and NC Area Health Education Centers (AHECs), serves as a liaison between NC Medicaid and medical practices by providing coding and billing support, chairs the NC Early Childhood Oral Health Collaborative advisory

to IMB, partners with agencies and organizations in securing grant funds for program evaluation, pilot projects, and training expansion.

OHS staff provide a one-hour CME live training to medical professionals and staff. Physicians, physician assistants, nurse practitioners, and public health nurses under physician standing orders may bill NC Medicaid for providing IMB services: oral evaluation and risk assessment, parent counseling, fluoride varnish application, and dental referral. A child may receive these services up to six times between tooth eruption and age 3 ½ (42 months) in addition to dental visits.

Once a medical practice receives training, they may use IMB program materials to train new staff and others without awarding CME credit.

INPUTS	PROGRAM ACTIVITIES	**OUTPUTS**	OUTCOMES

3. What outputs or direct products resulted from program activities? (e.g., number of clients served, number of services units delivered, products developed, accomplishments, etc.)

Approximate outputs 2011-2018
Live CME training sessions: 289
Participants: 2160

Number of NC Medicaid-paid procedures in 2018: 155,600

During 2008-2012 the OHS completed a federal grant with partner UNC Gillings School of Global Public Health and medical and dental providers in a three-county region of eastern NC. This pilot project, Carolina Dental Home, explored barriers pediatricians encounter when referring young children to the dentist. Training was provided to general dentists on providing a dental home and preventive care to infants and toddlers, with a pediatric dentist serving as the safety net. This group of medical and dental providers developed a priority oral health risk assessment and referral tool and guidelines, now incorporated into IMB training. This tool assists primary care providers in determining risk when confronting an inadequate dental workforce.

https://publichealth.nc.gov/oralhealth/partners/IMB-toolkit.htm
The Priority Oral Risk Assessment and Referral Tool (PORRT) video, with Referral Guidelines

An online IMB E-learning module is currently in development with a completion target date of August 2019. The one-hour CME will give medical providers a web-based training option.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	**OUTCOMES**

4. What outcomes did the program achieve? (e.g., health statuses, knowledge, behavior, care delivery system, impact on target population, etc.) Please include the following aspects:
    a. How outcomes are measured
    b. How often they are/were measured
    c. Data sources used
    d. Whether intended to be short-term (attainable within 1-3 years), intermediate (achievable within 4-6 years), or long-term (impact achieved in 7-10 years)

Partner UNC Gilliings School of Global Public Health colleague Dr. Gary Rozier, one of IMB's founders, oversees project evaluation. Several scientific papers have been published addressing IMB adoption, barriers, quality, access to care, costs, effectiveness, and population impact. Key outcomes include:

- Children receiving four or more IMB visits before age three show a 17.7% reduction in tooth decay. Kranz et al. Pediatrics. 2015, 136(1) 107-114. http://pediatrics.aappublications.org/content/136/1/107

- Setting and provider type did not influence effectiveness of preventive oral health services on children's overall health. Kranz et al. American Journal of Public Health. 2014, 104(7) e91-99. https://ajph.aphapublications.org/doi/full/10.2015/AJPH.2014.301972

- IMB contributed to a statewide decline in decay rates since 2004 and helps reduce the gap in tooth decay between preschool-age children from low and other-income families at the community level. Achembong et al. Pediatrics. 2014, 133(4) 827-834. http://pediatrics.aappublications.org/content/133/4/e827

Budgetary Information:
NOTE: Charts and tables may be used to provide clarity.

1. What is the annual budget for this activity? Costs are approximate.

   Federal and state dollars: $8 million in NC Medicaid claims annually

2. What are the costs associated with the activity? (Including staffing, materials, equipment, etc.)

- OHS staff coordinate and provide training and support as part of work activities. (cost undetermined)
- Materials include a supply starter kit for trained practices new to the program. ($16.00 each)
- Training and parent educational materials available on the IMB website for printing as desired.

3. How is the activity funded?

   Federal and state dollars

4. What is the plan for sustainability?

The OHS integrated IMB Coordinator duties into the Early Childhood Oral Health Coordinator responsibilities and expanded training responsibilities to all OHS public health dental hygienists serving the state. North Carolina Medicaid continues the commitment to improve oral health access for very young children with continuous funding of IMB claims since 2000.

The ECOHC, composed of representatives from agencies and organizations statewide, continues supporting policy change, advocacy, and research.

The IMB one-hour E-learning training module will provide a web-based training option in addition to the one-hour live session offered by OHS staff. Both award CME to medical providers.

Lessons Learned and/or Plans for Addressing Challenges:

1. What important lessons were learned that would be useful for others looking to implement a similar activity? Was there anything you would do differently?

Some early lessons and barriers to adoption were addressed in a published paper: https://pediatrics.aappublications.org/content/125/3/509

Key to IMB success is initial commitment and involvement of all partners. Each continues to have an active role in the program. Thoughts from partners on what they would do differently: 1) track preventive visits for dental as well as medical providers from the program's beginning so growth can be measured and compared, 2) include quality improvement as a training component or as follow-up to training, and 3) designate targeted resources to assist and track practices addressing barriers including connecting families to dental homes.

2. What challenges did the activity encounter and how were those addressed?

Initially, organized dentistry was resistant to medical professionals providing oral preventive care to young children. Fortunately, this was resolved on a national level with CDT and CPT codes, along with policies developed supporting the partnership of medical and dental providers sharing responsibility for young children's oral preventive care.

IMB may face challenges when NC Medicaid managed care begins phasing in November 2019. The IMB procedure is "carved out," meaning it will continue to be reimbursed as a fee for service. However, previous research on medical practice barriers to IMB implementation revealed changes in practice routine as one of the most difficult to overcome. Approaching managed care as an opportunity will be imperative.

Available Information Resources:

Share any models, tools, and/or guidelines developed by the program specifically for this activity that may be useful to others seeking additional information. Hyperlink resources if possible.

Information about the IMB program is located on the NC OHS website at https://publichealth.nc.gov/oralhealth/partners/IMB.htm
Numerous publications have appeared in scientific journals describing IMB outcomes and effectiveness. Several are linked from the IMB webpage above and throughout this document.

TO BE COMPLETED BY ASTDD	
Descriptive Report Number:	36010
Associated BPAR:	Perinatal Oral Health
Submitted by:	NC Division of Public Health, Oral Health Section
Submission filename:	DES36010NCimbprog-2019
Submission date:	September 2019
Last reviewed:	September 2019
Last updated:	September 2019