
Final Report
Cite as


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PIOHQI project staff developed numerous reports that provided the foundation for this report; their efforts are greatly appreciated.

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Introduction

To reduce the prevalence of oral disease in pregnant women and infants at high risk for oral disease through improved access to high-quality oral health care, the Health Resources and Services Administration’s Maternal and Child Health Bureau funded the Perinatal and Infant Oral Health Quality Improvement (PIOHQI) initiative from September 2013 through July 2019. The document discusses the significance of oral health care throughout pregnancy and infancy, provides an overview of the PIOHQI initiative, details the project’s strategies to improve perinatal and infant oral health, and highlights efforts to support the PIOHQI projects.

Significance

Receiving oral health care is important and safe throughout pregnancy. Because pregnant women may be receptive to changing health behaviors to improve the health of their unborn child, pregnancy is an opportune time for oral health promotion and interventions. Therefore, it is essential for pregnant women to receive appropriate and timely oral health care, including preventive, diagnostic, and restorative treatment, as well as education about how to maintain their own and their infant’s oral health. Counseling women about good oral health behaviors may reduce the transmission of bacteria from mothers to infants and young children, thereby preventing or delaying the onset of tooth decay while also helping to improve the woman’s own oral health. Receiving oral health care is important during infancy too.

Since medical professionals are often first to assess pregnant women’s and infants’ health and can promote oral health care, they play a critical role in connecting the oral health care and medical care systems. Incorporating oral health care (e.g., risk assessment, screening, anticipatory guidance, referral) into primary care delivered by medical professionals to pregnant women and infants is a promising strategy for reducing oral health disparities.

In addition to a knowledgeable workforce, adequate reimbursement for oral health care is key to ensuring that pregnant women have access to care. Dental coverage is mandatory for infants, children, and adolescents from birth to age 21 enrolled in Medicaid through the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) program, which helps increase access to care. Pregnant adolescents up to age 21 can receive dental coverage through Medicaid’s EPSDT program.

States are not required to provide a comprehensive Medicaid dental benefit for adults. Adult dental services are available in all 50 states; however, some
states provide only emergency services. There is considerable variation among states in eligibility policies and scope of dental coverage for women with low incomes during the perinatal period. As a result, Medicaid dental coverage for adults varies tremendously across states and is limited in some cases to emergency services such as tooth extractions or to specific populations such as pregnant women. In several states, pregnant women with low incomes are eligible for Medicaid dental coverage and thus have access to care that they don’t have during other periods of their lives. In recent years there has been some improvement in pregnant women’s ability to access oral health care, partly due to the establishment of a safety net that helps meet the oral health needs of individuals with low incomes.

**PIOHQI Initiative**

The expected outcomes of the PIOHQI initiative were increased access to and utilization of oral health care and improved oral health. Specifically, PIOHQI projects worked toward:

- Increasing pregnant women’s utilization of preventive oral health care.
- Increasing the percentage of children who have dental homes by age 1.
- Reducing the prevalence of oral disease in pregnant women and infants, ultimately reducing dental caries throughout early childhood.
- Reducing oral health care expenditures.

The initiative’s ultimate aim was to enable sustainable integration of oral health care into primary care, resulting in improved overall health and well-being among pregnant women and infants.

The PIOHQI initiative funded 16 projects. Three pilot projects—Connecticut, New York, and West Virginia—were funded through 2018, and 13 expansion projects—Arizona, California, Colorado, Maine, Maryland, Massachusetts, Minnesota, New Mexico, Rhode Island, South Carolina, Texas, Virginia, and Wisconsin—were funded through 2019.
Information about the initiative, including project abstracts and contact information, is available from the PIOHQI webpage hosted by the National Maternal and Child Oral Health Resource Center.

PIOHQI Strategies to Improve Perinatal and Infant Oral Health

During the project period, PIOHQI projects engaged in numerous wide-ranging activities to reduce the prevalence of oral disease in pregnant women and infants at high risk for oral disease through improved access to high-quality oral health care. These activities fall under seven strategy areas:

- Network development
- Workforce enhancement
- Community outreach
- Process and procedure development
- Program development
- State practice guidance development
- Data collection, evaluation, and reporting

Below are selected examples of individual project achievements and successes as well as an overview of challenges and lessons learned by the projects for each strategy area. These examples represent but a few of the PIOHQI projects’ many achievements and successes; the tables in Appendix 1 present a comprehensive picture of PIOHQI activities for each strategy area.

Thirteen of the PIOHQI projects submitted examples that illustrate various elements or dimensions of a best practice approach for improving perinatal oral health that appear in the report *Best Practice Approach: Perinatal Oral Health.* (See Appendix 2: Examples of PIOHQI Activities Appearing in *Best Practice Approach: Perinatal Oral Health.*)

In addition, the PIOHQI projects developed and disseminated numerous resources to support efforts to reduce the prevalence of oral disease in pregnant women and infants at high risk for oral disease through improved access to high-quality oral health care. (See Appendix 3: Resources Developed by PIOHQI Projects.)

Network Development

To maximize support for their work, PIOHQI projects engaged a broad range of partners, stakeholders, and champions. All projects were required to establish a project advisory board or committee to provide input and oversight. Many projects offered opportunities for oral health professionals and other health professionals to collaborate with one another.

Massachusetts Department of Public Health

The Massachusetts PIOHQI project worked with early intervention sites in two communities to develop a two-question oral health screening form for use during intake sessions and an oral health training module for staff. At the intake sessions, children who needed oral health care were referred to
a dentist, and at the 6-month follow-up visit, staff determined whether the child had a dental visit. Over a 4-month period in 2018, the percentage of children who were seen by a dentist increased from 41% to 53%. The project shared findings with the state early intervention program to successfully make the case for incorporating the oral health questions into its existing intake form, referring children to a dentist as needed, and incorporating an oral health training module for staff onboarding.

**Northern Arizona University**

The Arizona PIOHQI project partnered with the Hopi Tribe Department of Health and Human Services; the Hopi Indian Health Service (IHS) dental and nutrition departments; the Hopi Judicial Branch; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); community health representatives; Head Start; and the Arizona American Indian Oral Health Coalition to improve oral health for pregnant women and infants on the Hopi Reservation. Regular facilitated discussions focused on the population’s oral health needs led to (1) training in fluoride varnish application, (2) an oral health education and awareness campaign, (3) warm hand-off referrals to the IHS dental department, and (4) the judicial system mandating an oral health evaluation for infants and young children entering foster care. The partnership and the campaign helped the tribe engage in a cultural shift in how tribal members view oral health.

**South Carolina Department of Health and Environmental Control**

The South Carolina PIOHQI project partnered with community systems directors (CSDs) in four public health regions to expand the state’s regional oral health networks. Two of the project’s goals were to (1) collaborate with community organizations to improve access to preventive oral health care for pregnant women and infants and (2) use networks to disseminate messages and resources to oral health, medical, and social services professionals about the safety and effectiveness of receiving oral health care during pregnancy and infancy. Using network analysis, the department measured a three-fold
increase in the size of the networks, which suggests an increase in the capacity of CSDs in regional offices to identify local oral health, medical, and social services professionals for collaboration.

Challenges and Lessons Learned

Key lessons learned include the importance of securing a commitment from leadership to achieving project goals and of cultivating and sustaining leadership’s interest and engagement. PIOHQI projects emphasized that breakthroughs often occurred when nontraditional partners who worked with pregnant women and families with infants, but who hadn’t previously incorporated oral health into their services, were involved. Turnover at leadership levels created challenges for projects, highlighting the value of having a large advisory board with a variety of perspectives, areas of expertise, and community connections.

Workforce Enhancement

PIOHQI projects reached out to oral health, health, and social services professionals to improve their capacity to educate and/or provide oral health care to pregnant women and families with infants. All projects developed in-person or online training programs. Some projects encouraged collaboration between oral health professionals and medical professionals by coordinating networking and educational events, while others developed oral health curricula for dental schools, dental hygiene programs, medical schools, or nursing schools. Most projects developed and/or disseminated educational materials to support their workforce-enhancement activities.

Children’s Dental Services (Minnesota)

The Minnesota PIOHQI project used workforce innovations, such as collaborative practice dental hygienists, advanced dental therapists, and teledentistry, to expand access for pregnant women and infants to oral health services, particularly in WIC clinics and early childhood programs located in rural and remote areas. The workforce innovations enabled project staff to provide oral health care to more pregnant women and infants while decreasing per-patient costs.

Children’s Hospital of Wisconsin, Inc.

The Wisconsin PIOHQI project developed a course, Healthy Smiles for Mom and Baby Oral Health Training for Professionals, for health professionals in Wisconsin working with pregnant women, infants, and toddlers. The training combines oral health information with conversation techniques for effective family-centered discussions. Each module includes reflection activities and videos demonstrating how to guide a discussion with families. An educational package and toolkits for use with families are sent to each organization once five of its members have completed the training. To gain access to the modules, registration is required.

Health Research Inc./New York State Department of Health

The New York PIOHQI project worked with one maternal and infant community health collaborative (MICHC) site to improve health outcomes of mothers and infants by integrating oral health screening, education, and referrals into primary care. The team developed a manual and toolkit and provided trainings to MICHC staff and community partners. Using lessons
learned from the pilot site, the team trained staff at the other 22 MICHC sites across the state. Four regional train-the-trainer sessions, incorporating the manual and toolkit, enabled staff at all MICHC sites to train their community health workers. Where possible, MICHC sites worked to identify oral health champions in their communities, share information with and/or train health professionals, and/or educate community partners at network meetings. Oral health screenings, education, and referrals are now a standard of practice at the 23 MICHC sites.

**Texas Department of State Health Services**

The Texas PIOHQI project, through its Healthy Texas Smiles for Moms and Babies project, collaborated with home visiting programs in Texas to educate home visitors about prenatal and early childhood oral health to help them educate and empower those they serve. The PIOHQI project offered workshops, learning activities, and a resource guide to home visitors. Project staff also met with home visiting leaders to discuss ways to provide additional learning opportunities and how to make institutional changes that support oral health, such as including performance measures for tracking referrals from home visitors to pregnant women and parents of children for a dental visit. The project also entered into a contractual agreement with the Texas Oral Health Coalition to increase the number of trainings in Texas for pregnant women and their children.

**University of New Mexico Health Sciences Center**

The New Mexico PIOHQI project developed didactic learning modules on oral health assessment, issues, and treatment for family nurse practitioners (FNPs), primary care nurse practitioners (PCNPs), and midwives. FNP and PCNP students also participated in an interprofessional experience with University of New Mexico dental residents to learn how to conduct an oral exam, identify dental caries and periodontal disease, and discuss management
appropriate for a primary care setting. During the project period, 79 nursing students completed an interprofessional experience with the dental residents.

**Virginia Department of Health**

The Virginia PIOHQI project developed a training for home visitors, family support workers, family educators, community health workers, and community health nurses to enhance collaboration among local health and social services programs and improve access to oral health care for pregnant women and infants. The project targeted health districts that had strong working relationships with home visiting partners, provided training, established a referral system for pregnant women enrolled in the home visiting programs, and worked with home visitors to increase their capacity to provide referral and follow-up to ensure that oral health treatment needs were met. Training outcomes were evaluated and project activities were modified based on lessons learned. The project’s training model was accepted as an emerging practice in the Association of Maternal and Child Health Programs’ Innovation Station, a database of cutting-edge, emerging, promising, and best practices from public health programs across the United States.

**Challenges and Lessons Learned**

Staff turnover, especially among nonclinical staff, posed a major challenge to conducting outreach and providing education to staff working with pregnant women and families with infants. PIOHQI projects learned that training modules available online or via thumb drive were necessary to meet the training needs of new staff. In addition, in response to workload challenges for both clinical and social services professionals who have many important topics to cover during visits, projects simplified oral health messages for professionals to use with pregnant women and families of infants. Projects also learned that training and education are important but do not necessarily result in practice change. Some projects learned that sharing ideas for how to engage private dental practices, including strategies for scheduling to minimize missed appointments and for welcoming Medicaid beneficiaries into a dental clinic or office, can help effect practice change. In addition, a lack of dentists, especially in rural areas and health professional shortage areas, was a universal challenge; low or no Medicaid reimbursement further hindered oral health access to and utilization of oral health care for pregnant women and infants. Some PIOHQI projects used teledentistry and dental hygienists and dental therapists to improve access to and utilization of oral health care.

**Community Outreach**

PIOHQI projects developed educational materials and conducted outreach activities to educate women during the prenatal period and families with infants about the importance of oral health care and to motivate them to get care. Some projects conducted surveys, interviews, and focus groups to better understand the barriers that pregnant women and families face in obtaining oral health care and to identify ways to overcome them.

**Connecticut Department of Social Services**

The Connecticut PIOHQI project, through the Connecticut Dental Health Partnership (CTDHP), developed educational materials for pregnant women and families with infants and for community partners, including obstetrician/
gynecologists (OB/GYNs), pediatricians, and community agency staff. Six CTDHP regional dental health care specialists (DHCSs) conducted outreach with community partners, disseminated materials, and provided training about the importance of oral health care and how to make referrals to dentists using CTDHP’s call center and directory. The project also reached out to dentists enrolled in Medicaid or CHIP to encourage them to provide care to pregnant women and infants. Utilization for preventive care for children under age 3 rose consistently during the project period. Utilization of perinatal oral health care did not increase during the project period, but the data suggest slight decreases in utilization of care for all women enrolled in Medicaid during the same period.

**Maryland Department of Health and Mental Hygiene, Office of Oral Health**

The Maryland PIOHQI project, in partnership with the University of Maryland School of Public Health, conducted surveys, interviews, and focus groups with pregnant women with low incomes, WIC staff, home visitors, prenatal care professionals, and oral health professionals to (1) increase understanding of barriers that pregnant women face in obtaining oral health care, (2) develop strategies for improving access to and utilization of oral health care during pregnancy, and (3) increase understanding of oral health care (e.g., education, referral) that home visitors provide to women during pregnancy. The activities informed development of a message to use with health professionals and social services professionals and pregnant women that oral health care during pregnancy is safe, important, and covered by Maryland Medicaid. The project created data and goal-setting forms and educational materials for use during home visits.

**West Virginia Department of Health and Human Resources**

The West Virginia PIOHQI project collaborated with West Virginia’s four managed care organizations to provide incentives to OB/GYNs to promote oral health care for pregnant women ($25 per member for a completed dental visit) and incentives to pregnant women to use the services offered ($25 per
visit for up to two visits through 60 days postpartum). Claims data showed that initially pregnant women did not use the services despite the incentive. To encourage pregnant women to seek and use oral health care, project staff developed a patient-outreach campaign.

**Lessons Learned**

PIOHQI projects learned to shift their community outreach from a broad reach, such as public-awareness campaigns and health fairs, to a direct reach to health professionals, including oral health professionals, and social services professionals who provide care to pregnant women and infants. Projects learned that by focusing community outreach with a direct reach to health professionals, they were able to measure the outcomes of outreach efforts by determining the number of pregnant women and infants who received care. In addition, CTDHP learned that it was not necessary for all dentists to treat pregnant women; identifying an adequate number of dentists willing to treat pregnant women to meet demand for treatment was sufficient. Projects learned to test messages with their target audiences and modify the messages to address the audience’s needs.

**Process and Procedure Development**

PIOHQI projects developed, tested, and implemented processes and procedures to identify referral sites and integrate oral health services (e.g., screening, assessment, education, referral) into prenatal care settings, pediatric clinics, and social services programs. Most projects were able to develop operating procedures in health settings and/or social services settings.

**California Department of Public Health**

The California PIOHQI project worked with a consortium of health centers to increase the dental visit rate for infants. Petaluma Health Center used a multipronged approach, including oral health education for the medical team, building a coordinated scheduling system between the medical and dental electronic health record systems, creating standard protocols to identify infants eligible for dental visits, and providing incentives to medical assistants for increasing the number of dental appointments for infants. Over a 21-month period in 2017 and 2018, the number of infants with a well-child visit who visited the dentist by age 12 months rose from 68 per month to nearly 200 per month, and the number of surgery center referrals for dental procedures and the rate of dental caries for children who received care at the center fell.

**Colorado Department of Public Health and Environment, Oral Health Program: Cavity Free at Three**

The Colorado PIOHQI project tested promising practices to integrate prenatal oral health screening, education, and referral to oral health professionals into health-care-delivery systems that serve populations at high risk for oral disease. The first pilots were launched at two federally qualified health centers (FQHCs). Later, the project expanded to private clinics. Most clinics were awarded approximately $5,000 per year to offset staff time devoted to the project. Project components consisted of clinical training for staff, a quality improvement approach to test strategies to increase access to oral health care during pregnancy, and development of referral systems between oral health professionals and medical professionals. Preliminary results indicated that
integrating prenatal screening, education, and referral into health-care-delivery systems resulted in approximately four times as many patients receiving oral health care during pregnancy.

**MaineHealth**

The Maine PIOHQI project worked on a statewide pilot to integrate oral health screenings, assessments, and referrals into prenatal medical visits. The project trained over 324 staff from 15 OB/GYN and family medicine sites to increase their awareness about the importance of prenatal oral health. Eighty-seven percent (1,093) of pregnant women at the sites received an assessment. Ten of the 15 sites exceeded the assessment goal of 80%. Project staff made “secret shopper” calls to general dentist offices to identify referral sites. During the call, staff posed as pregnant women or parents and asked about the availability of care, types of services provided, and dental coverage accepted. The project also developed a training module and conversation tools and trained over 200 community service organization staff (Head Start, Maine Families, WIC) to provide consistent oral health messaging about perinatal and infant oral health.

**Rhode Island Department of Health**

The Rhode Island PIOHQI project worked with two FQHCs to test and track ways to increase referrals for pregnant women between medical practices and oral health practices. Strategies tested include conducting routine oral health training with medical and front office staff, regularly identifying and sharing lists of pregnant women with oral health staff, and incorporating oral health into organizational strategic and incentive plans. At one FQHC, the percentage of pregnant women receiving oral health care increased from 14.66% to 31.05% during the project period. A contracted dental hygienist worked with private medical practices to integrate infant/toddler oral health assessment, fluoride-varnish application, and referral into practice workflow. Fluoride varnish application rates in the medical practices increased from 4.6% to 10.2% during the project period for children ages 2 and under enrolled in Medicaid.
Challenges and Lessons Learned

Processes and procedures had to be adapted locally to enable functionality at the individual sites—a one-size-fits-all approach did not work. While sites agreed to ask oral-health-screening or risk assessment questions, the number and depth of those questions varied by site and required testing to determine the smallest possible number of good questions to ask to achieve the desired outcome. Creating a set of standard questions in an electronic record is the ideal, but making those changes and getting the data back out of the electronic record to track progress is difficult. Many PIOHQI projects faced challenges with integrating medical and dental electronic health records. Projects learned that facilitating relationships between oral health professionals and other health professionals or with social services professionals and ensuring that professional cultures meshed was important for implementing processes and procedures more effectively and efficiently.

Program Development

All PIOHQI projects were able to provide education to increase partners’ awareness and knowledge to inform programmatic decisions related to oral health, including improvements to oral-health-financing or regulatory systems. Many projects conducted data analysis and reporting, while others developed briefs or conducted surveys. All projects were able to integrate perinatal and infant oral health activities into organizations’ strategic plans.

Northern Arizona University

The Arizona PIOHQI project analyzed Medicaid (Arizona Health Care Cost Containment System) 2016 and 2017 dental claims data to understand the state’s oral health workforce capacity and its impact on access to and utilization of oral health care. After completing the analysis, project staff developed charts, graphs, and heat maps to help partners advocate for legislative change, including the addition of an adult emergency dental benefit, passed in 2018, and of a pregnant women’s benefit, reintroduced in 2019.
South Carolina Department of Health and Environmental Control

The South Carolina PIOHQI project collaborated with the South Carolina Department of Health and Human Services to establish a new dental periodicity schedule and fluoride varnish reimbursement policy that allows reimbursement up to four times a year. Fluoride varnish can now be applied during well child visits, and application by an oral health professional does not count toward the allowed number of applications per year that a child can receive in a primary care setting. Children at risk for dental caries benefit from increased application frequency (every 3 to 4 months). The change resulted in a statewide increase in fluoride varnish applications among infants and children from birth through age 4 from 15,207 applications in 2016 to 18,439 in 2018.

Challenges and Lessons Learned

Projects learned that policy change comes about slowly and to be ready when an opportunity for change presented itself. Having oral health champions with relevant data to make the case for the importance of perinatal and infant oral health was essential to effect change. A few projects learned that long-awaited policy changes didn't work as anticipated and required further adjustment. Projects found that resources (people, time, and money) are needed to improve perinatal and infant oral health. Projects also learned not to waste time trying to change policies they couldn't affect.

State Practice Guidance Development

Several PIOHQI projects developed statewide prenatal and infant oral health practice guidance during their grant period (see Appendix 2: Resources Produced by PIOHQI Projects).

Maryland Department of Health and Mental Hygiene (DHMH), Office of Oral Health

The Maryland PIOHQI project with assistance from an interprofessional steering committee produced Oral Health Care During Pregnancy: Practice Guidance for Maryland’s Prenatal and Dental Providers. Selected content was adapted from Oral Health Care During Pregnancy: A National Consensus Statement. The document provides recommendations and resources for prenatal care professionals and oral health professionals to increase utilization of oral health care and improve the oral health of pregnant women and infants throughout the state. The document was mailed to about 7,600 dentists, dental hygienists, OB/GYNs, and nurse midwives and was sent electronically to professional organizations and academic and public health programs in Maryland.

Texas Department of State Health Services

The Texas PIOHQI project adapted Maryland’s prenatal oral health practice guidance, with permission from the Maryland Office of Oral Health, to provide recommendations and resources for prenatal care professionals and oral health professionals to increase utilization of oral health care and improve the oral health of pregnant women and infants throughout the state. To determine the best methods for dissemination, the project used information from market
research and results of its survey about Texas dentists’ knowledge and attitudes relating to providing oral health care to pregnant women and infants.

Challenges and Lessons Learned

PIOHQI projects that developed practice guidance learned that the process can be very time-consuming. To overcome this challenge, a few projects adapted content from *Oral Health Care During Pregnancy: A National Consensus Statement* and state practice guidance rather than starting from scratch. Projects also learned that engaging a broad base of key stakeholders to discuss content resulted in buy-in to the process and helped with dissemination of the guidance. In addition, projects found that working on practice guidance created opportunities for groups, who may never have worked together, to meet and collaborate on the practice guidance and other related activities—a positive, unintended consequence of the activity.

Data Collection, Evaluation, and Reporting

All projects established data-collection systems to monitor, assess, and report on progress toward project goals. Projects also collected, analyzed, and reported on process-level data at learning lab sites to identify effective interventions for increasing pregnant women’s and infants’ utilization of oral health care.

**Children’s Hospital of Wisconsin, Inc.**

The Wisconsin PIOHQI project integrated oral health education, preventive care, and structured dental referral into prenatal-care-coordination programs and WIC. Process-level data collected from six implementation sites were analyzed to identify strategies to increase utilization of oral health care and key educational messages that resonated with the target population. Two models emerged: closed-loop referral for dental appointments (i.e., referring agency sends referral to dental clinic, which schedules appointments and sends information with patient consent back to referring agency) and integrated preventive oral health services (i.e., services are integrated into patient workflow at WIC clinics through a partnership with either an FQHC outreach dental hygienist or a public health nurse). Information about the project was compiled in the *Healthy Smiles for Mom and Baby Implementation Guide*, which will be disseminated statewide to organizations looking to develop oral health programs for the target population.

**Massachusetts Department of Public Health**

The Massachusetts PIOHQI project delivered oral health training to oral health professionals and medical professionals at three community health centers (CHCs). Each CHC participated in workflow-mapping sessions and received data-collection technical assistance and training to develop a referral process between oral health professionals and medical professionals. Project staff formulated a plan for collecting data to develop a sustainable and replicable referral system. The plan considered each CHC’s data-collection capabilities and defined data-collection points related to oral health care access. Project staff developed feedback reports for each CHC highlighting data collected to date and potential next steps. Each CHC increased the percentage of pregnant women and children under age 3 receiving oral health care at the center. The project used lessons learned to develop a CHC-integration toolkit, which it plans to test and share statewide.
Challenges and Lessons Learned

Data are essential for monitoring the impact of project activities; unfortunately, the lag time between collection of state-level data and the data’s availability from national databases, such as the National Survey on Children’s Health and the Pregnancy Risk Assessment Monitoring System (PRAMS), is too long to make these data useful for PIOHQI projects. Projects learned that key partners and stakeholders care about data and metrics that are attached to funding and/or linked to performance measures. Getting information technology staff involved in the project early helped make data collection and data requests realistic and more timely. Projects also learned the importance of being transparent with data (i.e., sharing data reports with sites often) and referring to data as a learning tool, not as a grade or a judgment.

PIOHQI Learning Collaborative and Technical Assistance

The PIOHQI projects participated in a learning collaborative (LC) coordinated by the Center for Oral Health Integration and Improvement (COHSII), a cooperative agreement awarded to the National Maternal and Child Oral Health Resource Center. COHSII PIOHQI activities were led by OHRC and the Association of State and Territorial Dental Directors with assistance from FrameShift Group.

PIOHQI projects consistently reported that their participation in the PIOHQI LC contributed to their project’s success. The LC provided peer-to-peer learning opportunities for participants to share information about successes and challenges in common implementation areas to accelerate the achievement of common goals. The LC served as a space for participants to share resources, discuss best practices, and, most important, troubleshoot problems. In all areas of LC activities, the content shared was project-driven.

The LC comprised several components, including monthly learning events (webinars) hosted through Zoom, biannual in-person learning sessions (meetings), a discussion list, a web portal, and on-demand individualized technical assistance (TA) provided by national partners.

On the PIOHQI Learning Collaborative and Technical Assistance feedback form, respondents indicated that their preferred formats for learning events were group discussions (peer-to-peer) and webinars that are 60 minutes in duration. Respondents’ preferences for in-person learning sessions included resource sharing, project presentations, and small group one-on-one discussions. Respondents were very satisfied/satisfied with special interest group web conferences and on-demand TA.

Conclusion

This report highlights the important contributions that PIOHQI projects made and the lessons they learned about how to increase access to oral health care for pregnant women and infants at high risk for oral disease and ultimately reduce the prevalence of oral disease in this population.
Systems-level barriers, such as an insufficient number of dentists practicing in rural areas and low Medicaid reimbursement rates, will remain major challenges, in some states more than in others. Despite the barriers, the projects had noteworthy achievements in seven strategy areas including network development; workforce enhancement; community outreach; process and procedure development; program development; state practice guidance development; and data collection, evaluation, and reporting. Furthermore, PIOHQI projects were able to accelerate progress on achieving their goals by learning from other PIOHQI projects within the supportive structure of the LC.

PIOHQI projects were able to promote access to care by developing training for health professionals; improving data collection, analysis, and reporting procedures; sharing information to promote statutory and regulatory enhancements; realizing effective electronic health record system changes; and engaging key community resources such as Head Start programs, home visiting programs, and WIC clinics.

And, perhaps most important, the projects were able to establish the relevant partnerships and collaborations needed to build and expand upon the success of their work into multiple networks and matrices beyond the PIOHQI initiative period. Success stories from the PIOHQI initiative mark the beginning of a roadmap that key federal, state, and local stakeholders can follow, but the journey has only begun. Clearly, more work is needed if further progress in improving perinatal and infant oral health is to be made.

References


## Appendix 1
### PIOHQI Activities for Each Strategy Area

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## Network Development

### Key Partners and Stakeholders

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## Network Development

### Key Partners and Stakeholders

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- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- University schools of medicine, nursing, and/or public health
- Women and/or families with infants
- Community health workers
- Head Start program staff
- Home visitors
- Indian Health Service staff (medical and/or oral health services)
- Local health and/or social services department staff
- Nonprofit organizations staff (e.g., health, housing, oral health, social services)
- Oral health professionals (e.g., dentists, dental hygienists, dental assistants)
- Pediatric medical professionals (e.g., physicians, nurse practitioners)
- Prenatal care professionals (e.g., obstetricians, family practitioners, nurse midwives)
- School-based health center staff
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) staff
- Tribal community health representatives

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- Analyze social networks
- Collaborate interprofessionally (i.e., between medical professionals and oral health professionals)
- Establish advisory board or committee
- Identify and engage champions, partners, and stakeholders

(continued from page 16)

## Workforce Enhancement

### Target Population

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- Community health workers
- Head Start program staff
- Home visitors
- Indian Health Service staff (medical and/or oral health services)
- Local health and/or social services department staff
- Nonprofit organizations staff (e.g., health, housing, oral health, social services)
- Oral health professionals (e.g., dentists, dental hygienists, dental assistants)
- Pediatric medical professionals (e.g., physicians, nurse practitioners)
- Prenatal care professionals (e.g., obstetricians, family practitioners, nurse midwives)
- School-based health center staff
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) staff
- Tribal community health representatives

### Activities

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- Conduct focus groups
- Conduct in-person trainings, academic detailing, and/or ongoing coaching
- Conduct online trainings
- Conduct outreach (e.g., conduct site visits, hand deliver materials, offer presentations)
- Convene oral health summit
- Develop curricula for dental schools and/or dental hygiene programs
- Develop curricula for medical schools and/or nursing schools
- Develop integration toolkit
- Disseminate resources (e.g., perinatal oral health guidelines, brochure, RX pad, video clips)
- Establish communities of practice and/or communities of learning and engage participants
- Organize Dining with Dentists, educational seminars, and other events to bring together oral health professionals and medical professionals
- Participate in professional conferences (e.g., presentations, exhibits)
## Community Outreach

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## Process and Procedure Development

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<td>Develop standard operating procedures in social service settings (e.g., Head Start, home visiting programs, local health departments, WIC clinics)</td>
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<td>Identify referral sites for oral health care (includes secret shopper activities)</td>
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<td>Integrate oral health education into Head Start, home visiting programs, local health department, and/or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) clinics</td>
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<td>Integrate oral health preventive services into Head Start, home visiting programs, local health department, and/or WIC clinics</td>
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<td>Integrate oral health professionals into pediatric clinics (e.g., dental hygienist imbedded in pediatric clinic)</td>
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<td>Integrate oral health risk assessment and/or oral health preventive services into pediatric clinics</td>
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<td>Improve oral-health-financing systems</td>
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### State Practice Guidance Development

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### Data Collection, Evaluation, and Reporting

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Appendix 2
Examples of PIOHQI Activities Appearing in
Best Practice Approach: Perinatal Oral Health

Thirteen PIOHQI projects submitted examples that illustrate various elements or dimensions of a best practice approach for improving perinatal oral health. Below is a list of PIOHQI projects and links to examples that appear in the Association of State and Territorial Dental Director’s report *Best Practice Approach: Perinatal Oral Health*.

California Department of Public Health  
Infant Dental Quality Improvement Projects  
Summary  
Report

Children's Dental Services (Minnesota)  
Children's Dental Services WIC and Early Childhood  
Collaborative Project  
Summary  
Report

Children's Health Alliance of Wisconsin  
Healthy Smiles for Mom and Baby  
Summary  
Report

Colorado Department of Public Health and  
Environment, Oral Health Program:  
Cavity Free at Three  
Prenatal Oral Health Partnership  
Summary  
Report

Connecticut Department of Social Services  
Connecticut Perinatal and Infant Oral Health Project  
Summary  
Report

MaineHealth  
Integration of Oral Health Assessment, Education and Dental Referrals into Perinatal Care  
Summary  
Report

Maryland Department of Health and Mental  
Hygiene, Office of Oral Health  
Developing Practice Guidance on Oral Health Care During Pregnancy for Prenatal and Dental Providers in Maryland  
Summary  
Report

Northern Arizona University  
Data Analysis and Reporting to Improve Oral Health Access  
Summary  
Report

Partnerships and Cultural Relevancy: Changing Perceptions of Oral Health Within a Native American Tribe  
Summary  
Report

Rhode Island Department of Health  
Oral Health Program and Home Visiting Partnership  
Summary  
Report

South Carolina Department of Health and  
Environmental Control  
Building a Statewide Network to Address Perinatal Infant Oral Health  
Summary  
Report

Texas Department of State Health Services  
Healthy Texas Smiles for Moms and Babies (HTSMB): Training Partnership for Home Visiting Programs  
Summary  
Report

University of New Mexico Health Sciences Center  
Advancing Oral Health for New Mexico Perinatal Populations Through Community Training  
Summary  
Report

Virginia Department of Health  
Virginia's Experience: Improving Oral Health Outcomes for Pregnant Women and Infants  
Summary  
Report
Appendix 3
Resources Developed by the PIOHQI Projects

The PIOHQI projects developed and disseminated numerous resources to support efforts to reduce the prevalence of oral disease in pregnant women and infants at high risk for oral disease through improved access to high-quality oral health care. Listed below is a selection of these resources, which are all available from the National Maternal and Child Oral Health Resource Center's library.

**California Department of Public Health**
*Health Disparities in the Medi-Cal Population: Dental Visits During Pregnancy*
This fact sheet explains the importance of good oral health during pregnancy and provides statistics on rates of oral health visits during pregnancy for women who participate in Medi-Cal (California's Medicaid program), women who have private health insurance, and women ages 15 and older.

**Children's Dental Services (Minnesota)**
*Dental Therapy: How Mid-Level Providers Can Increase Access to Care, Lower Costs, and Help Increase the Effectiveness of Community Clinics*
This booklet explains why advanced dental therapists and dental therapists are needed in Minnesota and lists one university that offers an advanced dental therapist degree and two universities with dental therapist programs.

**Children's Health Alliance of Wisconsin**
*Educational Curriculum on Perinatal and Infant Oral Health Care: Current Standards of Care for Dental and Dental Hygiene Students*
This curriculum contains four modules that provide information about perinatal and infant oral health care designed to be integrated into a dental school and dental hygiene program curriculum. To gain access to the modules, registration is required.

**Healthy Smiles for Mom and Baby Implementation Guide**
This guide describes an approach to increase pregnant women's and infants' utilization of oral health services by implementing two models for obtaining oral health care: (1) a closed referral system and (2) integrating preventive oral health services into Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) clinic services. The guide also highlights education activities for health, oral health, and social services professionals who provide care to pregnant women and families with infants.

**Colorado Department of Public Health and Environment, Oral Health Program:**
*Cavity Free at Three*
*Cavity Free at Three Dashboard*
This dashboard contains population and program data for Cavity Free at Three, an organization that teaches health professionals how to deliver preventive oral health services to pregnant women and young children.

**Tips for Successfully Incorporating Medicaid Patients into a Dental Office**
This document outlines tips for incorporating Medicaid beneficiaries into a dental office and strategies for scheduling, staffing, and providing care to young children.

**Connecticut Department of Social Services**
This report describes the Pregnancy Risk Assessment Monitoring System (PRAMS) in Connecticut and how PRAMS data were used to evaluate and improve the Perinatal and Infant Oral Health Quality Improvement (PIOHQI) project in Connecticut.

*Perinatal and Infant Oral Health Quality Improvement Project: Monitoring the HUSKY Program's Capacity for Caring for Pregnant Women and Infants*
This report presents findings from a study to determine the impact of the PIOHQI project on access to care supported by the HUSKY Health program, Connecticut's program for pregnant women and children enrolled in Medicaid or the Children's Health Insurance Program.
Health Research Inc./New York State Department of Health

MICHC Oral Health Manual and Toolkit
This document, developed for Maternal and Infant Community Health Collaborative partners and prenatal health and oral health professionals in New York, provides recommendations and tools for promoting oral health during pregnancy, infancy, and early childhood.

MaineHealth

Tips for a Healthy Mouth for Mom and Baby
This flip book, developed for health professionals to share with pregnant women and families with infants, covers oral health and oral hygiene during pregnancy and infancy.

Tips for a Healthy Mouth for Mom and Baby: Oral Health Training for Community Organizations
This training designed for social services professionals provides information about perinatal and infant oral health, reasons that preventive oral health is important, and key messages to use with pregnant women and families with infants.

Maryland Department of Health and Mental Hygiene, Office of Oral Health

Oral Health Care During Pregnancy: Practice Guidance for Maryland’s Prenatal and Dental Providers
This document provides guidance on oral health care during pregnancy for prenatal health professionals and oral health professionals in Maryland. A pharmacological considerations chart for pregnant women, a referral form, tips for good oral health during infancy (available in English and Spanish), and an infographic are included and are also available in stand-alone format.

Oral Health Literacy and Dental Care Among Low-Income Pregnant Women
This article describes a study conducted to determine the impact of oral health literacy on utilization of oral health services during pregnancy and on knowledge and behavior related to dental caries prevention among pregnant women with low incomes in Maryland.

Northern Arizona University

Arizona Oral Health Data Page
This web page contains charts, graphs, and maps developed from Arizona Medicaid 2016 and 2017 dental claims data to illustrate the state’s oral health workforce capacity and its impact on oral health services to help oral health advocates promote legislative change.

Rhode Island Department of Health

Family Visiting and Oral Health
This presentation was designed to educate home visitors who work for the Rhode Island Family Home Visiting Program about the importance of oral health during pregnancy and infancy and about how to engage families in a discussion about oral health.

Good Dental Health: A Partnership Between You & Me
This flip book, developed for health professionals to share with families, covers the basics of good oral health for infants and young children. The front of each page features simple messages (written in English and Spanish) and pictures and illustrations for families, and the back of each page contains conversation tips for health professionals.

South Carolina Department of Health and Environmental Control

Connecting Smiles: Improving Health Through Oral Health Integration
This training contains five modules for health professionals and their staff about oral health and children, caries risk assessment, oral health anticipatory guidance for families, the benefits of fluoride and fluoridated water, fluoride varnish, and strategies for integrating oral health into a medical practice. The training is recognized by the South Carolina Medicaid agency as a prerequisite for applying fluoride varnish and billing for this service.

Pregnancy, Oral Health and Your Baby
This video clip for women provides information about the importance of oral health for a healthy pregnancy and tips for oral health care. The video is available in English and in Spanish.

Texas Department of State Health Services

Oral Health and Dental Services for Pregnant Women
This training for health professionals who work with pregnant women presents information about the importance and safety of oral health care during pregnancy. It also provides tips for promoting good oral health habits and finding affordable local oral health services.

Texas Dental Perinatal and Infant Knowledge and Attitudes Survey: Report of Findings
This report describes responses to a survey of oral health professionals in Texas to capture their opinions related to perinatal and infant oral health care.
University of New Mexico Health Sciences Center
*Improving the Oral Health of Pregnant Women, Children and Families*
This training contains six modules that cover oral health basics; oral screening; oral health in pregnancy, infancy, and early childhood; how to help pregnant women and families improve their oral health; and oral health advocacy. The training has been approved for 5.75 continuing education units for community health workers and community health representatives and 6.25 continuing medical education units.

*New Mexico Perinatal Oral Health Quality Improvement Project: Resource and Implementation Manual*
This manual contains standards, procedures, and other materials for health professionals and staff to incorporate oral health into clinical services for pregnant women and infants. It also covers how to conduct an oral exam and caries risk assessment, develop a patient self-management goal, refer a patient to a dentist, and code and bill for oral health services.

*Virginia Department of Health*
*Oral Health During Pregnancy: Practice Guidance for Virginia’s Prenatal and Dental Providers*
This document presents clinical practice guidance for oral health professionals and prenatal care professionals in Virginia and includes a pharmacological considerations chart, a sample dental referral form, and educational resources to share with pregnant women.