Integration of Oral Health and Primary Care Practice
Integrated Models Survey Results: Embedded Dental Providers

October 2019
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Introduction
Integration of oral health and primary care practice (IOHPCP) is a strategy to increase access and improve health outcomes. In 2011, the Institute of Medicine recommended the Health Resources and Services Administration (HRSA) to develop oral health core clinical competencies for health care professionals to improve the health outcomes of vulnerable and underserved populations. In response, HRSA developed the IOHPCP initiative to increase access to oral health services for early detection of oral diseases. Additionally, the initiative aimed to increase access to oral health preventive interventions.

In 2014, HRSA released the white paper, *Integration of Oral Health and Primary Care Practice*.\(^1\) The document outlined five oral health core clinical competency domains for primary care providers: risk assessment, oral health evaluation, preventive interventions, communication and education, and interprofessional collaborative practice. In 2015, National Network for Oral Health Access (NNOHA) partnered with HRSA to then pilot these competency domains, developing the *User’s Guide for Implementation of Interprofessional Oral Health Core Clinical Competencies: Results of a Pilot Project*.\(^2\) This resource outlined lessons learned and promising practices from health centers who piloted the five competencies with their primary care providers.

Over the last five years, NNOHA has continued to monitor the progress of IOHPCP initiatives in health centers throughout the country. Recently, NNOHA noticed the emergence of a new and alternative integration model, embedding a dental provider in the medical clinic. Part of NNOHA’s mission is to identify and assess emerging, innovative models of oral health care delivery that could impact health center populations and as a result, NNOHA began to study this new model of integration.

In 2019, NNOHA conducted a survey of health centers on different models of medical and dental integration: providers engaging in oral health activities and dental providers embedded in the medical clinic to provide oral health services. The survey gathered information from health centers about how dental providers are being utilized in the medical setting. The survey was distributed online via SurveyMonkey. There were 297 respondents. The results from this survey are outlined in this document. The survey tool is available in Appendix A.

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Survey Results – General Integration

Question 1: Health center location
Respondents were asked to indicate in what state their health center is located. Thirty-seven states were represented. The greatest representation was from California with 13.01% of respondents, followed by Pennsylvania (6.16%), Colorado, and Illinois (5.82%). All ten HRSA regions were represented in the survey.

Question 2: Co-located dental and medical sites
This graph shows the number of health center respondents that have co-located medical and dental sites. Co-location is defined as having medical and dental programs located at the same site/building. Almost 34% of respondents indicated that over 50% of their sites had co-located medical and dental clinics. More than 25% of respondents said that all of their health center sites had co-located programs. Only 6% of respondents did not have any co-located dental and medical sites.

Question 3: Electronic medical record and electronic dental record interoperability
Respondents were asked to describe their health center’s electronic medical and dental record interoperability. Interoperability was defined as the ability of different IT systems to connect in a coordinated manner, within and across organizational boundaries to access, exchange, and cooperatively use data. Over 46% of respondents stated that their medical and dental records were “somewhat interoperable” while over 39% of respondents stated that they were “fully interoperable.” About 14% of respondents stated that their systems were “not interoperable” meaning that there is no shared connection between the medical and dental records, likely serving as a barrier for medical and dental integration.
Question 4: Electronic dental records

The graph below shows the electronic dental records (EDR) used by the survey respondents. Those who said “Other” specified other EDR’s like Eaglesoft, iDentalSoft, Axium, paper records, or no EDR.
Question 5: Electronic medical record
The graph shows the electronic medical records (EMR) used by survey respondents. The 14.29% that stated “Other”, specified other EMR’s such as Intergy, Cerner, Allscripts, Aprima, and SuccessEHS.

![Graph showing EMR usage](image)

Question 6: Dental providers embedded in the medical clinic
Respondents were asked to answer “yes” or “no” if they have a dental provider embedded in the medical clinic. Embedded was described as having a dental provider performing dental procedures in the medical clinic. The majority (66.33%) of respondents indicated “no”, they do not have dental providers embedded in the medical clinic while 33.67% of respondents stated “yes”, they do have dental providers embedded in the medical clinic.
Survey Results – Embedded Dental Providers
If respondents stated “no” to Question 6, they were directed to the end of the survey and did not answer any additional questions. For those that responded “yes” to Question 6, they continued on with the remainder of the survey. There were 99 respondents that were directed to continue to remainder of the survey (33.67% of original respondents). However, only 81 respondents continued and completed the survey (27.5% of original respondents). The following section of this document outlines the responses for those respondents that have a dental provider embedded in the medical clinic.

Question 7: Hours per week in the medical clinic
The table below shows the total number of hours per week that dental providers serve in the medical clinic. The average number of hours per week is 31.9 hours. The lowest number of hours per week was 2 hours and the highest number of hours per week was 53 hours. It is possible that some respondent health centers had multiple dental providers working in the medical clinic, resulting in weekly total hours greater than 40 hours per week.

<table>
<thead>
<tr>
<th>Type</th>
<th># hours per week</th>
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<tbody>
<tr>
<td>Median</td>
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<tr>
<td>Mean</td>
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<td>Mode</td>
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<td>Lowest</td>
<td>2 hours</td>
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<td>Highest</td>
<td>53 hours</td>
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Question 8: Length of time with an embedded dental provider
Survey respondents were asked how long has there been a dental provider embedded in the medical clinic. About 40% of respondents indicated that they had an embedded dental provider in their medical clinic for more than 5 years. Over 35% of respondents stated that they have only had an embedded dental provider for 0 to 2 years.
Question 9: Delivery model for oral health services in the medical clinic

The survey asked how dental services are delivered in the medical clinic. There are many different models for the provision of dental services in the medical clinic. This is often dependent on the space available in the medical clinic and the types of services offered. Survey respondents could select from: dental operatory in the medical clinic, portable dental equipment set up in a medical exam room, utilization of a medical exam room without portable dental equipment, or other. For those that selected “Other”, they specified using a combination of these delivery methods depending on the site. The majority stated that they have an actual dental operatory in their medical clinic (56.79%).

![Bar chart showing delivery models](chart.png)

Question 10: Type of dental staff in the medical clinic.

Health centers may utilize different types of dental team members in their integration program. Survey respondents selected which staff members are embedded in their medical clinic. Respondents were able to select all that apply to their health center. The highest utilized dental staff member in the medical clinic is the dental hygienist (83.95%) followed by dental assistants (67.90%) and dentists (62.96%). Very few health centers use dental therapists in their medical clinic (1.23%). Some health centers utilize non-clinical dental staff in their medical clinic (29.63%). The types of providers used in the medical clinic may vary based on dental state practice acts for supervision requirements and state Medicaid reimbursement.
Question 11: State dental practice act for dental hygienists

State dental practice acts outline allowable services for dental hygienists under the supervision of a licensed dentist. These guidelines may influence how health centers use dental hygienists in the medical clinic to deliver dental services. The graph below shows responses from the survey when asked, “Does your state dental practice act allow dental hygienists to perform oral health services in the medical clinic?” The majority stated that their state dental practice acts do allow dental hygienists to perform oral health services in the medical clinic (79.01%). A small percentage state that their dental practice act does not allow this. States that responded “no” were Illinois, Louisiana, and North Carolina (4.94%). There were some respondents that said “I don’t know” (16.05%).
Question 12: Dental services completed in the medical clinic by dental providers
Survey respondents were asked to select all the dental services completed in the medical clinic by an embedded dental provider. The type of services offered may vary depending on state dental practice acts and Medicaid reimbursement. Nearly all respondents provide oral health education (98.75%) and fluoride treatment (97.50%). The next highest provided dental service is dental prophylaxis (78.75%). Of those that selected “Other”, oral surgery, scaling and root planing, root canals, prosthodontic services, and caries risk assessments were identified as other services provided by embedded dental providers in the medical clinic.

Question 13: Billing of dental services in the medical clinic
The survey asked if the embedded dental provider bills for the dental services provided in the medical clinic. The majority of respondents said “Yes” (95.06%).

Question 14: Patient population
Many health centers may choose to prioritize high risk populations for dental services offered by embedded dental providers in the medical clinic. Survey respondents were asked which patients are seen by the embedded dental providers. They were able to select all that apply. The highest patient population seen by the embedded dental provider are children under 20 (90%) followed by pregnant women (75%). Other patient populations were indicated by survey respondents, including geriatric patients and patients with hypertension.
Question 15: Number of dental encounters in the medical clinic
Survey respondents were asked how many dental encounters their medical clinic had in 2018. Over 50% of respondents stated that they had over 1,000 dental encounters in their medical clinic in 2018. Nearly 21% said they had 0-250 encounters and over 23% said they had 251-1,000 encounters.

Question 16: Oral health activities completed by primary care providers and support staff
Respondent health centers were asked if they engaged in traditional Integration of Oral Health and Primary Care Practice (IOHPCP) by having primary care providers and primary care support staff (i.e. medical assistants) engage in oral health activities. The graph below shows the types
of oral health activities completed by primary care providers and primary care support staff. Survey respondents were able to select all that apply.
Focus Groups

Survey respondents were asked their willingness to share more about their integration models in the form of small focus groups. NNOHA staff conducted focus groups with dental providers and dental management staff from 9 organizations. These sites represented five different states. The aim of the focus groups was to gain deeper understanding of the various models for embedded dental providers in the medical clinic including their history, funding, and operations. From the survey results, NNOHA identified three different models to deliver care with an embedded dental provider. The three models are 1) permanent dental operatory in the medical clinic, 2) portable dental equipment in the medical clinic, and 3) dental provider in the medical exam room without equipment. This section will review the results of the focus groups based on the three various models. The focus group interview guide is available in Appendix B.

Factors in Embedded Delivery Model Selection

Permanent Dental Operatory in the Medical Clinic
This model integrates a dental provider into the medical clinic with a permanent dental operatory into the medical clinic. This includes a permanent dental chair and equipment within the medical clinic. Focus group participants with this model stated that they selected this model over others because they wanted to establish more permanent dental care at sites that does not have a dental clinic. Also, grant funding had a part in deciding what model was used for one participant.

Portable Dental Equipment in the Medical Clinic
This model integrates a dental provider into the medical clinic with portable dental equipment. The equipment may include portable dental chairs, portable dental units, etc. The dental provider brings in the portable dental equipment into a medical exam room or conference room in the medical clinic to deliver care. Focus group participants using portable dental equipment explained that they chose this model over the others because it offered more flexibility in where dental care could be delivered. Participants said that they were able to take the equipment to multiple sites. Also, participants expressed that it was more affordable than a permanent dental operatory.

Dental Provider in the Medical Exam Room Without Equipment
This model integrates a dental provider into the medical clinic by having the dental provider go into the medical exam room without dental equipment to deliver care such as toothbrush prophylaxis, fluoride varnish, and oral screenings. Focus group participants said that they selected this model over others because it was cost effective and required minimal overhead. Additionally, this offered flexibility to have this program at multiple sites. One participant explained that they have dental co-located with medical at the location already. Having the dental provider embedded in medical further enhanced medical and dental integration work at that organization without having to purchase equipment.
Reasons for Starting an Embedded Dental Provider Integration Program

Most of the focus group participant’s embedded dental provider integration programs are fairly new with some starting in 2016 and others as recently as January 2019. The use of dental providers in the medical clinic for interdisciplinary practice has become a recent emerging trend with more flexible state practice acts for dental hygienists and the drive for a patient-centered health home.

Focus groups participants indicated that these integration programs were initiated by the need for dental care in their organizations and community. One participant said that nearly 80% of their patients only accessed medical care at their health center. Another participant explained that they had struggled for many years to manage patients with high A1C’s to get dental care like warm hand-offs and referrals to dental. However, these methods did not prove effective because patients would often no-show for dental visits or did not have time to walk over to the dental clinic for a same-day visit.

Nearly all participants explained that not all of their health center locations had dental co-located at the same site as medical. As a result, patients experienced challenges receiving dental care such as transportation to a site with a dental clinic. Many participants expressed that a barrier to expanding access to oral health care was funding. Most of the focus group organizations did not have the funding to expand their current dental clinic by adding new dental chairs or to build out a new dental clinic. Placing a dental provider in the medical clinic to deliver some oral health services was the most cost-effective option and stimulated integration at the organizational level.

One participant explained that the dental department was approached by the Director of Pediatrics. The pediatric providers witnessed many patients who had not received dental care. The Director of Pediatrics and the dental department decided to embed a dental provider in the medical clinic to help reach more pediatric patients and increase access to care.

Six of the focus group participants piloted their embedded dental provider at a single site before expanding the program to other locations. All of the participants started with only one dental provider in the medical clinic. Some sites only started with seeing a specific population of focus such as children, patients with diabetes, or pregnant women. Many of those sites have since expanded to include other populations.
Funding Start-Up Capital Expenses
Capital expenses is a primary concern for organizations considering starting an embedded dental provider integration program. Many participants received grant funding for the start-up costs like portable equipment, permanent dental equipment, and dental supplies. Participants received grant funding from the Health Resources and Services Administration (HRSA), local foundations and programs, and local insurance companies.

Costs for the integration programs vary by model type. Programs that use a dental provider in the medical exam room without equipment had fairly low overhead cost because there is little equipment needed for this model. Participants said there were very minimal cost barriers for purchasing supplies for this model like fluoride varnish, gloves, masks, and prophylactic paste. For organizations that are using portable dental equipment or a permanent dental operatory, their start-up costs were covered through grant funding. Many focus group participants said that their program have been financially self-sustaining after the grant funding ended.

Promising Practices

Staffing
Focus group participants shared their various staffing models for their embedded dental program. All but one focus group participant utilized registered dental hygienists as the embedded dental provider. The other focus group participant used a dentist. The driving factor for what type of dental provider is used in the medical clinic is based on the dental state practice act. The one focus group that utilized a dentist only used a dentist because dental hygienists are unable to practice without a dentist on site. The other participants explained that their dental state practice act allows dental hygienists to practice without a dentist present. Two participants explained that their dental state practice act requires an additional certification in order for the dental hygienist to practice without a dentist present. The essential piece for organizations looking to embed a dental provider in the medical clinic is to review their dental state practice act. It is strongly encouraged that dental providers are utilized to the top of their license.

Four of the focus group participants had dental assistants to help review the primary care provider’s (PCP) schedules ahead of time to identify eligible patients. Dental assistants are also used to help sterilize dental equipment and for patient care coordination. One focus group participant previously had a medical dental integration (MDI) coordinator. The MDI coordinator was a dental assistant and oversaw the program’s scheduling and processes.
Interdisciplinary Practice

Focus group participants shared how the medical and dental team interact as part of their medical and dental integration program. The amount of interaction between disciplines varies. However, all participants agreed that working as a health care team is essential to the success of the integration program.

Four focus group participants stated that they established regular huddles with the medical team and embedded dental providers. One health center had daily huddles with their embedded dental hygienist and primary care staff to review patients who were eligible for dental care. Another participant had weekly huddles with their embedded dental hygienist and primary care staff. In addition, they would meet with the nurse practitioner at the end of each clinical day to review the medical patients seen by the dental hygienist and discuss patient’s future care plans for medical and dental.

Focus group participants also mentioned the need to develop a workgroup or committee for the integration project. One health center explained that at the start of their integration project, their biggest mistake was not including all disciplines in the planning process. The majority of the decisions were made by the dental team. This resulted in very few dental referrals and pushback from the primary care providers (PCP). The organization has since developed an integration committee that includes a lead from each discipline (medical, dental, and behavioral health). They have been able to strategize ways to integrate with each other more effectively, leading to improved processes.

The physical design of a building can also promote interdisciplinary practice. One focus group participant described their clinic design which includes the medical exam rooms along the perimeter of the clinic and the providers work alongside each other in the center of the clinic. The workspace for the providers are not divided by discipline so a dental hygienist may have their workspace right next to a nurse practitioner. This physical design allows for easy collaboration.

Some focus group participants discussed leveraging their IT systems for improved communication and interaction between medical and dental. One health center uses a dental hygienist in the medical clinic. That dental hygienist is able to send flags and notes to the PCP’s when a patient is in need of dental care. This alerts the PCP to notify the patient that a dental staff member is in the medical clinic that day. Another participant described their instant messaging platform which allows medical and dental to communicate with each other. This also streamlines the workflow for the dental provider to see the patient.

Leadership and Participation

All focus group participants said that having strong leadership support for an embedded dental provider integration model was critical to its success. One participant explained that establishing a relationship with the leadership team was helpful in receiving buy-in for the project.
To receive buy-in and participation from the medical staff, focus group participants expressed the importance of an oral health champion from the medical team. Oral health champions do not have to be a PCP; they can be support staff members such as medical assistants or front office staff. The oral health champions can help communicate the message about oral health to other medical team members. For the sites that started with a population of focus, many of them expressed that it did not take a lot of effort to receive buy-in from the medical team. Participants said that the PCPs were already aware of the need for oral health care particularly for high risk populations like children and pregnant women. One respondent explained that the PCPs expressed that one of the most common chief complaints of pregnant women was bleeding gums. According to the focus group respondents, when approached to embed a dental provider into the medical clinic, the medical staff and PCPs were nearly always receptive.

Focus group participants also discussed the importance of having a dental provider who is willing to work in the medical clinic. Provision of oral health care in the medical setting is different from working in the dental clinic because there are different dynamics, different types of team members, and different workflows. Also, some of the services provided can be limited depending on the type of model. For example, programs that use a dental hygienist in a medical exam room without equipment may not be able to provide services like scaling and root planing (SRP) and are limited to services like prophylaxis and fluoride varnish. To mitigate this, one participant said that their health center informs potential new dental hygienists of this integration program during the interview process to gauge their interest and willingness to work in the medical clinic.

Another focus group participant explained that it is part of their health center’s culture for a dental hygienist to be embedded in the medical clinic because all dental hygienists rotate through the medical clinic. They have some dental hygienists that are full time in the medical clinic, while others are at least 20 hours a week in the medical clinic.

Clinical Care Systems
The clinical workflow for an embedded dental integration program may include various health care team members such as the embedded dental provider, PCP, and medical support staff. The focus group participants explained that it is important to conduct small scale testing like Plan-Do-Study-Act (PDSA) cycles when establishing the embedded dental provider. It may take multiple different approaches before finding the process that works best for the care team and patients. The results of the focus groups indicate that the workflows for the embedded dental provider vary by model type.

Permanent Dental Operatory in the Medical Clinic
The focus group participants with a permanent dental operatory in the medical clinic expressed that the workflow with the embedded dental provider is an ongoing process. It has taken multiple different strategies to find a flow that works efficiently. For many participants either the embedded dental provider or a dental assistant will review the medical schedule beforehand (i.e. day before, week before). They identify patients who are eligible for dental
services. The embedded dental provider communicates with the PCP to determine the best time to go into the medical exam room to meet the patient and introduce dental services. One focus group participant had a dental assistant call the eligible patients the day before to offer a dental appointment following their primary care appointment.

Many focus group participants stated that the patient is seen the same day for oral health care, following the primary care appointment. The embedded dental provider will retrieve the patient when they are done with their primary care visit, or the medical assistant will take the patient over to the dental operatory. If the embedded dental provider does not have availability for a same day visit, one focus group participant explained that they are scheduled for another day. These patients tend to return for the dental appointment because the location of the health center is more convenient than the other health center dental clinic locations. The services provided in the dental operatory in the medical clinic mostly include all dental hygiene services (i.e. prophylaxis, SRP), oral health education, fluoride varnish, dental hygiene screenings, and radiographs. One focus group participant stated that they provided silver diamine fluoride treatment in the medical setting.

Portable Dental Equipment in the Medical Clinic
All focus group participants with portable dental equipment in the medical clinic reviewed the medical schedule beforehand to identify patients eligible for dental care. One participating clinic calls the patient 24-48 hours before to inform them that oral health services will be on site at medical clinic. They are asked to arrive at least 15 minutes early to their appointment if they would like to be seen by the embedded dental provider. The reason for this is that this organization’s electronic dental record (EDR) and electronic medical record (EMR) are not interoperable. If the patient is going to receive both medical and dental care at the medical site, it takes additional time to check them into the appointment.

One focus group participant said that their organization has made the oral health services offered at the medical site part of the patient’s medical care plan, in particular, with pregnant women. With new pregnant patients, a care coordinator will schedule the patient for various appointments, including dental. Oral health care at the dental site has been presented as part of the prenatal care plan. All focus group participants said that they prioritize making same day appointments for medical and dental services.

The focus group participants explained that when patients have completed their visit with the medical provider, they are directed to the dental provider in the medical clinic. Some participants explained that patients may see the dental provider before the medical appointment, depending on availability. If this is the scenario, the patient is then transferred to the medical staff when their dental appointment is completed. One participant explained that
patients can be seen at varying times of the medical appointment. If it is a quick appointment, they can be seen while waiting for their labs or if the medical schedule is running behind. Overall, the key aspect that came from the focus group participants was that communication between the dental provider and the medical staff was essential to ensure efficient clinical flow.

_Dental Provider in the Medical Exam Room without Equipment_

It is important to note that all the focus group participants with this model utilize a dental hygienist as their embedded dental provider. Focus group participants expressed that the use of a dentist would not be practical or cost effective for this particular model since there is no dental equipment. The only services that are provided are preventive such as oral health education, fluoride varnish, and dental sealants.

The dental hygienists at all of the focus group organizations explained that they are responsible for reviewing the medical schedule ahead of time to find patients who are eligible for oral health services or are overdue for oral health care. One respondent said that after the dental hygienist reviews the schedule, they will provide a list of those eligible patients to the medical assistant. The medical assistant will then notify those patients that a dental hygienist will come during their appointment. Another participant explained that their IT department developed a report that is run every morning. The report provides a list of patients being seen in the medical clinic for that day who has no dental history and have not had a recent fluoride varnish application. That report also includes the time of the patient’s appointment so the dental hygienist is able to monitor when those patients have completed the PCP visit.

All focus group participants said that the PCP and support staff discuss oral health with their patients to prepare them for the dental hygienist. Two focus group participants explained that the patients have learned that multiple providers from different disciplines will talk to them during their medical appointment. During the primary care visit, patients are often visited by the nutritionist, behavioral health staff, and more. One respondent said that the medical exam rooms now have oral health posters in them so that patients are aware that oral health will be discussed during the medical visit.

All focus group participants that provide oral health care in the medical exam room without equipment stated that they go into the medical exam room after the patient has completed their visit with the PCP. All focus group participants said that if the PCP is running behind, they will provide the oral health services before the medical appointment to help with the clinical flow. One participant said that it usually does not take any longer than 15 minutes with child patients because they receive a toothbrush prophylaxis, oral health education, and fluoride varnish.

The majority of the focus group participants said that the providers are responsible for checking in and checking out the patients who are seen in the medical exam room so that oral health services are billed correctly. One focus group participant said that the front office staff in the medical clinic is able to check the patients out. Another focus group participant explained that
their organization utilizes a financial counselor. The financial counselor discusses insurance coverage and costs for the oral health services with the patient.

**Recordkeeping**
A key aspect of an embedded dental provider is the clinical documentation process. All but one focus group participant had a method to document findings from the appointment and schedule appointments electronically. Focus group participants with portable dental equipment or who use a medical exam room without equipment use laptop computers with direct access to their EDR. One focus group participant that has a dental operatory in the medical clinic uses the computer that is in the operatory instead of a laptop to access the EDR.

Having direct access to the EDR from the medical clinic allows the providers to easily document any findings during the patients’ visits. Those findings can be reviewed if the patient goes to the dental clinic. Many of the participants who used a dental hygienist as their embedded provider utilize the concept of teledentistry. For example, if the dental hygienist sees an urgent area of concern, they are able to take radiographs or intraoral photos which are then immediately uploaded into the EDR. They can then notify a dentist at the dental clinic to review those images and determine what next steps are needed.

**Referrals and Care Coordination**
Programs that utilize an embedded dental provider may have a limited scope of service due to the type of dental provider being used, location of the clinic, and equipment that is available. As a result, it is essential that these types of integration programs have a care coordination system in place for patients that may require more treatment that can be provided in the medical clinic.

Some patients that are seen by the dental provider in the medical clinic may present with more urgent needs. As explained earlier, some focus group participants utilize the concepts of teledentistry for their embedded dental model. The dental hygienist can upload radiographs and intraoral pictures into the EDR. A dentist in the dental clinic is then contacted to review the images in the EDR. If the patient requires more care the dentist is able to notify the dental hygienist of the treatment options. For some of the focus group participants that had a co-located dental site, the dentist is able to come to the medical clinic if needed to complete a more in-depth evaluation of the patient. Other focus group participants also explained that they have the capacity for same day visits at their dental clinics for patients that have urgent needs.
For patients that do not need emergency dental care, but need further treatment such as a comprehensive evaluation or restoration, the focus group participants shared different strategies for care coordination. Most of the focus group participants said that the dental provider will schedule the dental appointments on site because they have access to the dental department’s schedule. Three of the focus group participants also use warm hand-offs to get the patient an appointment with the dental clinic. The dental provider walks the patient over to the dental clinic (if at the same site) or to the front office, where the patient can schedule an appointment for more care. One participant utilizes a care coordinator. The care coordinator will receive an alert from the dental provider in the EDR to schedule an appointment at the dental clinic if needed.

Three of the focus group participants discussed referrals to dental clinics outside of their organization. These referrals were mostly for specialty care like a pediatric dentist if the child patient presented with many areas of concern. One of the three participants explained that they would refer the patient to a dental clinic outside of their organization if the health center did not take their insurance or if it would be more convenient for the patient.

The focus group participants were asked if the patients who get referred to the dental clinic for further treatment actually complete those appointments. All of the focus group participants said that most of the patients who are referred to the dental clinic will get their treatment completed. For all of the focus group participants that provide a wider scope of services in the medical clinic (i.e. prophylaxis, restorative care), the dental patients seen in the medical clinic will continue to receive their dental care in the medical facility. This is mostly due to capacity of the dental department and convenience for the patient.

Patient and Provider Feedback

All focus group participants stated that they have received positive feedback from patients who have received oral health care through the embedded dental provider. The patients seem very satisfied that they are able to get their dental care the same time that they are able to receive medical care. The common factor for positive satisfaction from patients is convenience of receiving dental and medical care on the same day and in the same place. Many of the focus group participants said that it has been especially convenient leading up to the school year. Many school districts require a “back-to-school” medical and dental evaluation. By having a dental provider embedded in the medical clinic, the patients are able to get their medical and dental evaluation on the same day. This reduces the need for the parent to take time off of work and coordinate travel to the health center. Most focus group participants also said that the patients are now learning about the embedded dental provider program and request to see the dental provider when they are being seen in medical.

In addition to patient satisfaction, provider and staff satisfaction is a critical aspect of the success of an integration program. All focus group participants said that they have received positive reception from the dental providers and staff. The dental team shows satisfaction because they are able to get more patients care with the additional dental provider in the medical clinic. The embedded dental providers are also highly receptive to the program, saying
that they enjoy working alongside the medical team and learning from them. A couple of the focus group participants explained that it is important to find the right dental provider to work in the medical clinic because it requires the provider to have more communication with outside departments, work in a non-traditional environment, and offer a more limited range of dental services depending on the model. If the dental provider is not open to this new model of care, they are more likely to have low satisfaction at work.

All focus group participants said that the PCP and medical staff at their organization had positive feedback with the embedded dental provider once the program was established. Some focus group participants explained that there was some hesitation from PCPs when developing the program regarding available space for the dental provider and workflow. Once the program was established, the concerns were resolved. Focus group participants explain that PCPs now go out of their way to make sure that patients are getting seen by the dental provider. PCPs are also receptive because they are happy that their patients are getting access to oral health education and dental care. Because the PCPs are not directly providing the oral health services, it places little burden on them to have the dental provider embedded in the medical clinic.

Program Results and Success Stories
The focus group participants shared some success stories and overarching results from the embedded dental provider integration program. Some focus group participants said that the program initiated more integration efforts in their organization. One participant explained that dental and medical now collaborate with additional disciplines like behavioral health.

Focus group participants also said that the integration program introduced more conversations and collaboration among PCP and dental providers. These two groups now have more discussions about the relationship between oral and systemic health. The dental clinic has become more aware of medical concerns, completing more screenings for conditions like diabetes during the dental appointment. All focus group participants said that this program allowed more patients to be seen for dental care. Many of the dental clinics had limited capacity for new dental patients. The embedded dental provider in medical is able to alleviate some of those capacity issues. As a result, providers and patients are happier.

One focus group participant shared a story of a patient who had a high HbA1c level, 14. The PCP asked the dental hygienist in the medical clinic to see the patient to discuss oral health and diabetes. The dental hygienist was able to complete an oral screening and provide oral health education. The dental hygienist also completed a warm hand-off to the dental clinic where the patient was able to get treatment from the dentist. After some dental treatment and regular visits, the patient now has a more stable HbA1c of 7. This was an example of how medical and dental collaborated to ensure that a high-risk patient received necessary dental care.
Another focus group participant shared a story of collaboration among multiple disciplines as a result of being embedded in the medical clinic. It involved a patient that had a suspected eating disorder. The PCP brought on the behavioral health specialist, dietician, and dental hygienist to help with the patient’s case. The behavioral health specialist and dietician met with the patient, then the dental hygienist completed an oral screening to evaluate for teeth erosion. The patient was then scheduled with the dental clinic to receive more comprehensive care.

One focus group participant provided dental care to a pregnant woman in the medical clinic. The patient expressed to the dental provider that she was thankful to have dental embedded in the medical clinic because she was unaware of the importance of oral health care during pregnancy. She explained that had she not received the dental care in the medical clinic that day, it was very likely that she would not have gotten dental care during the course of her pregnancy.

Challenges and Barriers
Focus group participants also shared some of the challenges and barriers they experienced with their embedded dental provider in the medical clinic. One particular barrier that resonated with nearly all the focus group participants was the EDR and EMR relationship. Many of the focus group participants’ EDR and EMR are not fully interoperable creating a barrier for full integration. The embedded dental provider will often review the medical schedule ahead of time to identify eligible patients and review their medical history. Also, the PCP may also want to reflect on what dental care was provided by the embedded dental provider. If the EDR and EMR do not “speak to each other”, it creates an additional step for the provider by having to develop a workaround to access the other health record. Most focus group participants have mitigated this barrier by giving the embedded dental provider access to the EMR.

Other barriers that organizations may experience with an embedded dental provider is billing and scope of practice. It is important that each organization investigate their state Medicaid guidelines for billable services by type of dental provider. For example, it would be important to determine if a dental hygienist may bill for dental services delivered in the medical clinic. Dental state practice acts may serve as a barrier for an integration program like this. Only one of the eleven focus group participants did not use a dental hygienist as their embedded dental provider. The reason the organization chose to use a dentist instead of a dental hygienist as their embedded dental provider is because of a limiting state practice act for dental hygienists. In their state, dental hygienists are not allowed to provide services without a dentist on site. For many organizations, it may not be financially feasible to have a dentist as an embedded dental provider. Also, some of these integration programs do not provide a full scope of dental
services; therefore, utilizing a dentist as the embedded dental provider may not be cost-effective. Organizations that are looking to implement an embedded dental provider are encouraged to review their state practice acts to determine what type of provider is allowable.

Some of the focus group participants stated that space in the medical clinic was an initial barrier to starting this program. For some focus group participants, the PCP expressed concern regarding where the dental provider would deliver services and were not as willing to give up a medical exam room for the dental provider to use. One focus group participant that uses portable dental equipment said that the medical clinic did not have an available exam room to use. To overcome this challenge, they opted to use a conference room in the medical clinic for their portable dental equipment. It is important for organizations to be flexible when developing this program so that creative solutions like this can be made.

One challenge with an embedded dental provider in the medical clinic is that it may put the onus of oral health strictly on the dental provider. PCPs are encouraged to engage in oral health conversations and activities with their patients. This includes the five IOHPCP oral health core clinical competencies: oral health risk assessments, oral evaluations, preventive interventions, oral health education and communication, and interprofessional collaborative practice (referrals to the dental clinic). Similarly, dental providers are also encouraged to engage in other activities like depression screenings and diabetes screenings. As health centers begin to establish embedded dental provider programs in their medical clinic, it is important that health centers continue to increase the competency of their PCPs and medical staff in oral health. For many focus group participants, the embedded dental provider is only in the medical clinic part-time. As a results PCPs should be knowledgeable about the importance of oral health to systemic health so that oral health services (i.e. oral health education, fluoride varnish, clinical screenings) can still be provided to medical patients when a dental provider is not present. Additionally, the presence of a dental provider in the medical clinic should not take away the importance of PCPs and medical staff prioritizing oral health as an aspect of whole-body health.

Future Directions
Focus group participants were asked to share future directions for their embedded dental provider program. The majority of participants expressed interest in expanding their program. This includes expanding to offer more dental services in the medical clinic. The one focus group participant with that uses a dentist would like to include a wider scope of services since they are using a dentist. Another participant expressed interest in having their dental hygienist place interim therapeutic restorations (ITR) since it is allowable in their state.

Other future plans included expanding the embedded program to include more patient populations. Some of the participants are only working with a specific group of patients like children or pregnant women. These participants would like to include other populations since they have established the program and tested with one group. Focus group participants also said that they have future plans to expand their integration program to other sites within their organization, particularly sites that do not have a dental clinic on site. Some of these
participants have already begun the process of expanding to other sites including hiring additional dental hygienists or acquiring additional portable equipment to use at another site.

One focus group participant that used portable dental equipment noted that they would be able to expand their program to another site easily because they are only at their current medical clinic part-time, allowing for the portable dental equipment to be taken to another site during the other days of the week. Another focus group participant that used portable dental equipment discussed the possibility of making their embedded dental provider program more sustainable by creating a permanent dental operatory in the medical clinic in the future.

**Closing Remarks**

There are many organizations that are using embedded dental providers in the medical clinic to enhance integration efforts and create new access points for oral health care. In response to this emerging trend, NNOHA surveyed safety-net organizations on their use of this model. The results from this survey provided information on the current state of integration efforts like this in safety-net organizations. The focus groups also gave useful information for organizations to consider when developing and implementing an embedded dental provider in the medical clinic.

With on-going changes in the way that health care is delivered, safety-net organizations will have to be adaptable and utilize creative strategies to expand access to oral health care. It should be noted that the results of the survey and focus groups may not be applicable to all health centers due to the small sample size. Nevertheless, the results are indicative of embedded dental providers in the medical clinic as an emerging trend for medical and dental integration. This report should be used to inform organizations on effective embedded dental provider models and ways to increase access to care.
1. What state is your health center located in? *Drop down with states.*

2. What percentage of your health center medical sites have co-located dental (medical and dental located at the same site)?
   a. All sites
   b. > 50% of sites
   c. <50% of sites
   d. No sites have co-located dental services

3. Describe your electronic medical and dental record’s interoperability. (Interoperability – the ability of different IT systems to connect in a coordinated manner, within and across organizational boundaries to access, exchange, and cooperatively use data).
   a. Fully interoperable
   b. Somewhat interoperable
   c. Not interoperable

4. What electronic dental record is your health center using?
   a. Dentrix
   b. QSI(NextGen)
   c. eClinicalWorks
   d. Wisdom(EPIC)
   e. VisDental
   f. Open Dental
   g. MediaDent
   h. Other: (please specify)

5. What electronic medical record is your health center using?
   a. eClinicalWorks
   b. EPIC
   c. NextGen
   d. GE Centricity
   e. Greenway Health Primesuite
   f. Athena
   g. Other: (please specify)

6. Does your health center have a dental provider embedded into the medical clinic (a dental provider performs dental procedures in the medical clinic)?
   a. Yes
   b. No *Goes to the end of survey*
7. How many hours a week is your dental provider in the medical clinic?

8. How long have you had a dental provider embedded in your medical clinic?
   a. 0-2 years
   b. 3-5 years
   c. More than 5 years

9. How are the oral health services delivered in the medical clinic?
   a. Dental operatory in the medical clinic
   b. Portable dental equipment that is set up in a medical exam room
   c. Medical exam room without portable dental equipment
   d. Other: (please specify)

10. What dental staff is embedded into your medical clinic? Check all that apply.
    a. Dental hygienist
    b. Dental assistant
    c. Dentist
    d. Dental therapist
    e. Non-clinical dental staff

11. Does your state’s dental practice act allow dental hygienists to perform oral health services in the medical clinic?
    a. Yes
    b. No
    c. I don’t know

12. What services does your embedded dental provider complete in the medical clinic? Check all that apply.
    a. Prophylaxis
    b. Oral health education
    c. Oral exam
    d. Oral cancer screening
    e. Fluoride treatment
    f. Radiographs
    g. Dental sealants
    h. Therapeutic restorations
    i. Restorative care
    j. Silver diamine fluoride
    k. Other: ___

13. Does your embedded dental provider bill for the services provided in the medical clinic?
    a. Yes
    b. No
14. What patients are being seen by your embedded dental provider? Check all that apply.
   a. Ages 0-5
   b. Ages 6-20
   c. Ages 21+
   d. Diabetic patients
   e. Pregnant women
   f. Other: (please specify)

15. How many dental encounters did your health center have in the medical clinic in 2018?
   a. 0-250 encounters
   b. 251-1,000 encounters
   c. 1,000+ encounters

16. Check all the oral health activities currently being performed in the medical clinic by a
    primary care provider or support staff (i.e. medical assistant).
    a. Fluoride varnish by PCP
    b. Fluoride varnish by primary care support staff
    c. Oral health risk assessment by PCP
    d. Oral health risk assessment by primary care support staff
    e. Oral evaluation/screening by PCP
    f. Oral evaluation/screening by primary care support staff
    g. Oral health education by PCP
    h. Oral health education by primary care support staff
    i. Referral to dental clinic by PCP
    j. Referral to dental clinic by primary care support staff

17. May we contact you to gather further information on your embedded dental program? (If
    yes, please provide your Health Center’s name and a contact email address).

18. What is your role at your health center?
    a. Dental director
    b. Staff dentist
    c. Dental hygienist
    d. Dental assistant
    e. Non-clinician dental staff
    f. Non-clinician dental leadership
Appendix B – Focus Group Interview Guide

History
1. Describe your program. What is the model (portable unit, dental operatory in medical)? Why did you choose this model?

2. What were the circumstances that led you to start this MDI program? What was the need? Did someone approach you?

3. How have you funded the capital expenses of your program? (i.e. fixed operatories, portable equipment, etc.)

4. Can you describe how the program was developed? Did you pilot at a single site or with a single provider?

Operations
5. How much interaction is there between medical and dental?

6. What types of providers are in the medical clinic? Do you utilize dental assistants or other support staff in the medical clinic?

7. Describe the workflow of the embedded dental provider’s appointment. What are the roles of dental staff and medical staff? How do you inform patients of dental being in the medical clinic?

8. Who schedules the dental appointments for the embedded dental provider?

9. Describe the care coordination for patients that require more care. (i.e. who inputs the referrals, what is the follow up for those referrals?) Do patients tend to attend these follow-up appointments?

10. Does your state allow for dental hygienists to perform dental services without a dentist on site? (If no, how do you mitigate this?)

11. What oral health services are provided in the medical clinic by the embedded dental provider?

12. How many hours a week is the dental provider in the medical clinic? How many patients does the dental provider see each day?

13. What are the results that you have seen with this program? (i.e. number of pts seen, reception from patients and providers)
14. What is the clinical (chart) documentation process? What electronic dental record and electronic medical record do you use?

Future Plans

15. What advice do you have for health centers that are looking to embed a dental provider?

16. How strong is the political and administrative support for medical and dental integration in your health center?

17. What do you think is in the future of your program?
Credits
NNOHA would like to thank the safety-net organizations that participated in the Integrated Models survey. Also, a special thanks to the dental professionals that shared their experiences in the Integrated Models focus groups.

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The National Network for Oral Health Access (NNOHA) is a nationwide network of dental professionals and supporters in safety-net settings. These providers understand that oral disease can affect a person’s speech, appearance, health, and quality of life and that inadequate access to oral health services is a significant problem for low-income individuals. The members of NNOHA are committed to improving the overall health of the country’s underserved individuals through increased access to oral health services.

For more information on NNOHA, visit www.nnoha.org, email info@nnoha.org, or call 303-957-0635.