SECTION 9
Field-Testing Results and Case Examples

Introduction

The Oral Health Delivery Framework (Framework) was successfully field-tested by 19 diverse primary care practices in Washington, Kansas, Missouri, Massachusetts, and Oregon between 2014 and 2016. These sites included urban, suburban, and rural practices. Collectively, they focused on four unique target populations for their initial pilots and utilized five different electronic health records (EHR). The sites varied in size, and included both private practices (hospital-based, independent, and part of a large integrated delivery system) as well as community health centers (most of which are federally qualified health centers). Summary results and impact data are included in this section, as well as annotated links to in-depth case studies.

Overall Intervention Distribution

Implementation of the Framework varied across the 19 sites, as practices customized the model to fit their circumstances, resources, and clinician interest. Some practices had the resources necessary to fully implement the Framework from the beginning, but as Table 9.1 illustrates, most field-testing sites did not do every possible component of the Framework. Several sites chose to do some additional activities like prescribing chlorhexidine rinse for patients with periodontal disease. All sites focusing on a pediatric target population chose to offer fluoride varnish as a preventive intervention (though the age-range parameters varied), and three sites focusing on an adult population with diabetes also chose to offer fluoride varnish.

Table 9.1: Oral Health Framework Components implemented by field-testing sites by state

Framework Components	Washington field-testing sites	Kansas/ Missouri field-testing sites	Massachusetts field-testing sites	Oregon field-testing sites
	N=4	N=5	N=5	N=5
Screening Assessment: ASK and LOOK	4	4	5	5
Preventive Intervention:	3	5	4	
Changes to the Medication List		2	2	
Fluoride Varnish		4	2	3
Chlorhexidine Rinse			2	
Oral Health Counseling		1	2	
Education Handout	3	2	4	2
Referral	4	3	4	5
Referral Tracking	3	3	1	2

Framework Component Run Charts

Field-testing sites used the Oral Health Data Reporting Template and Run Chart tool to visually display the different components of the Framework that they implemented. Tracking these trends over time allowed sites to follow their progress, determine when their process was stable enough to begin to spread, and in some cases to motivate teams to continue to improve their workflows. This section shows some of the data trends observed among the field-testing sites.

Patient impact

13,771 patients were given the oral health screening assessment during the 20 months of field- testing, across 17 of the 19 sites. Two sites were unable to report this data.

4,518 patients had fluoride varnish applied during the 20 months of field-testing, across eight of the nine sites that selected that preventive intervention. One site was unable to report this data.

1,255 patients were referred to a dentist during 20 months of field testing, across 13 of the 16 sites making dental referrals. Three sites were unable to report this data. This is an under-representation of the actual number of patients connected to dentistry, as additional sites reported making referrals but were unable to capture their referrals to dentistry as structured data in their EHR. Additionally, some sites reported only new dental referrals, and did not track the times where a patient had an existing dental relationship and the primary care clinician referred them for a current concern.

Figure 9.1: Percentage of target population assessed by month of project
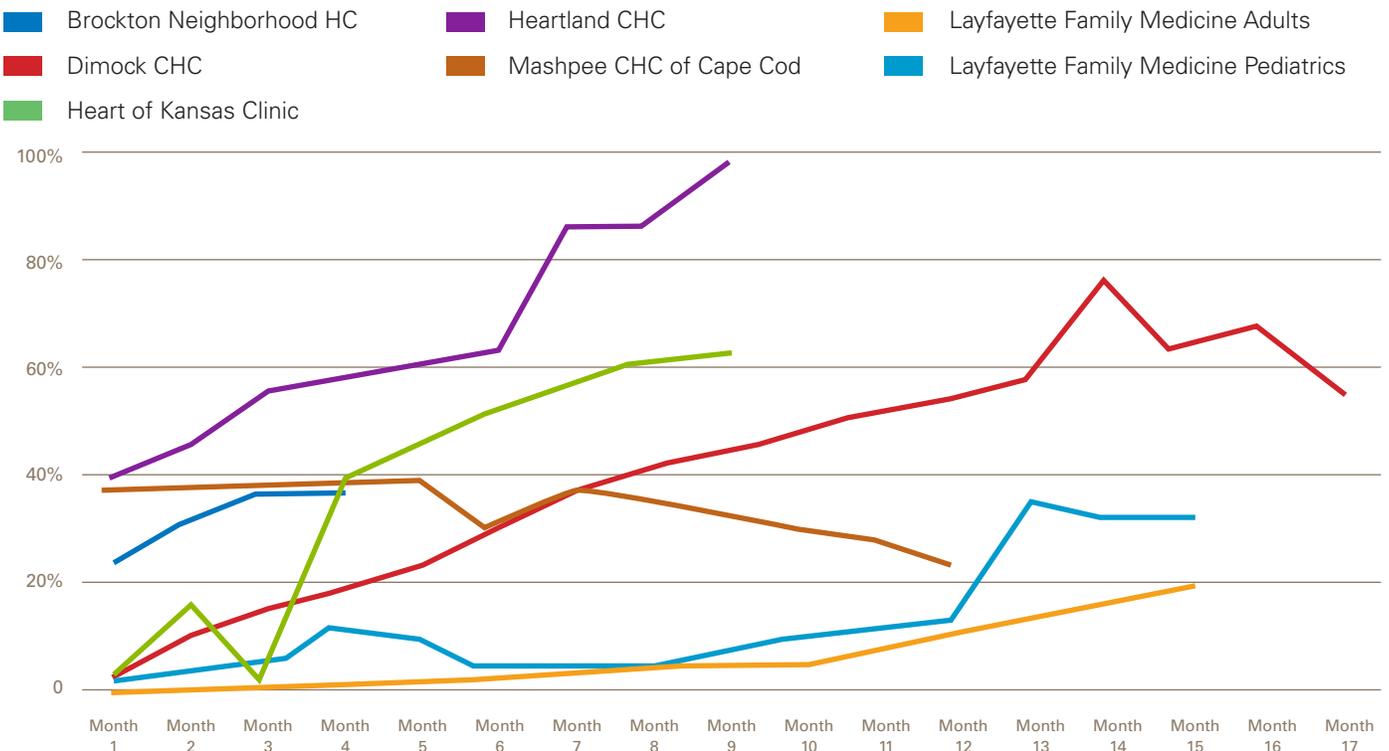

Field-testing sites started the oral health integration work at different times, so Figures 9.1, 9.2, and 9.3 use Month 1, 2, 3 in the x-axis to denote the progress of the sites over time.

Figure 9.1 displays run chart lines for oral health assessments given by pilot teams at a number of different field-testing sites. Some sites were able to progress through the implementation phase rapidly resulting in a steep upward curve as their target population was assessed. Others progressed more slowly. A downward trend, and dips in the upward trend, can occur when the denominator (all patients in the target population) increases significantly from one month to the next without a corresponding increase in oral health screening. At the one year mark, the trends start to shift as patients screened at the beginning of the pilot no longer appear in the numerator of the one year look-back report.

Some sites chose to track the prevalence of signs of oral disease in their patient population. This can be useful to help focus patient education efforts, and to motivate care team members. Other sites were unable track this information as structured data and report it. Sites engaging in an oral health integration program will need to evaluate their report writing resources and prioritize those reports that will be of greatest value to the care teams and their patients. See Section 7: Using Data for Quality Improvement for more information on this process. Figures 9.2 and 9.3 below show the variation in prevalence of signs of disease among different clinics in the Rodgers Health system in different target populations.

Figure 9.2: Prevalence of signs of caries among patients screened at three different practice sites in the Rodgers Health system
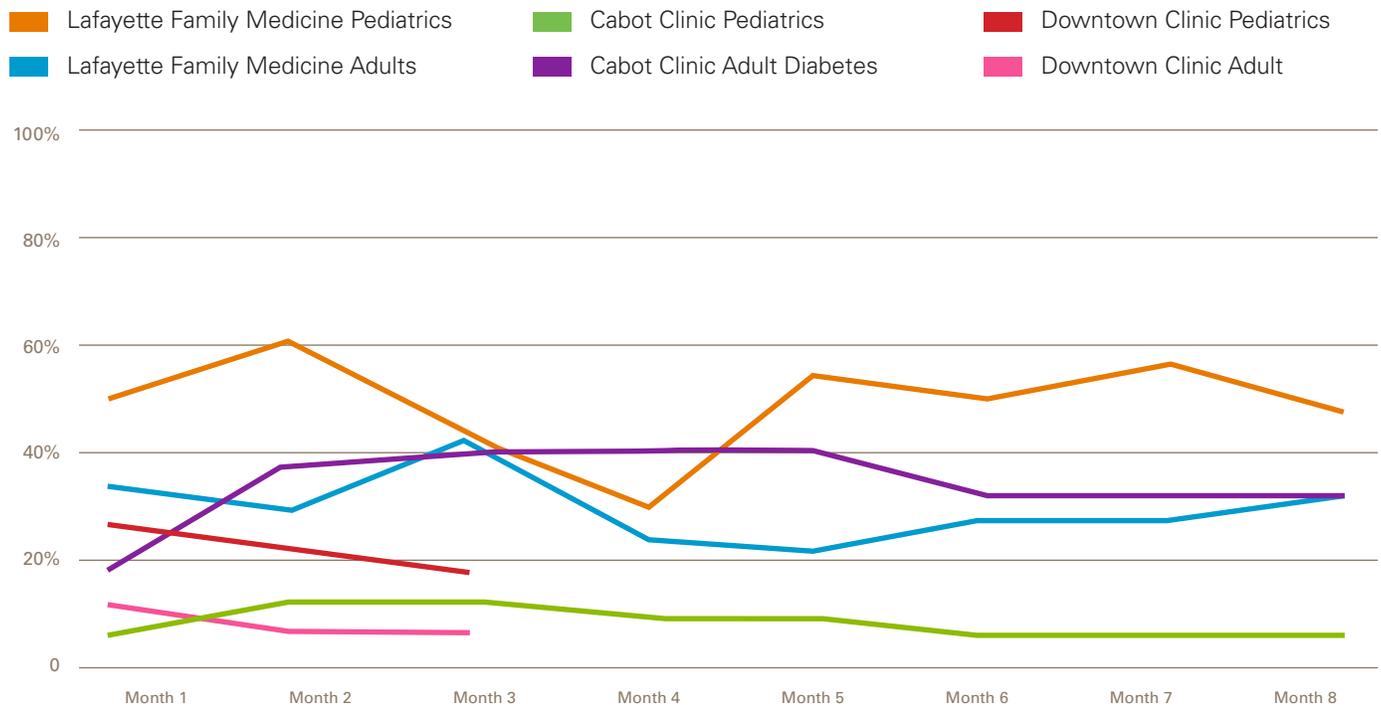
It is interesting that Lafayette Family Medicine shows a high rate of suspected tooth decay in the pediatric population compared to the two urban pediatric sites. Lafayette Family Medicine is located in a county in which a significant percent of the population lacks fluoridated water, whereas the populations served by the other pediatric sites have fluoridated public water. It is difficult to know whether this finding represents an accurate reflection of caries prevalence, or whether other factors may be at play such as a small sample size and variation in clinician sensitivity to identifying signs of oral disease.

Figure 9.3: Prevalence of signs of periodontal disease among patients screened at two different practice sites in the Rodgers Health system
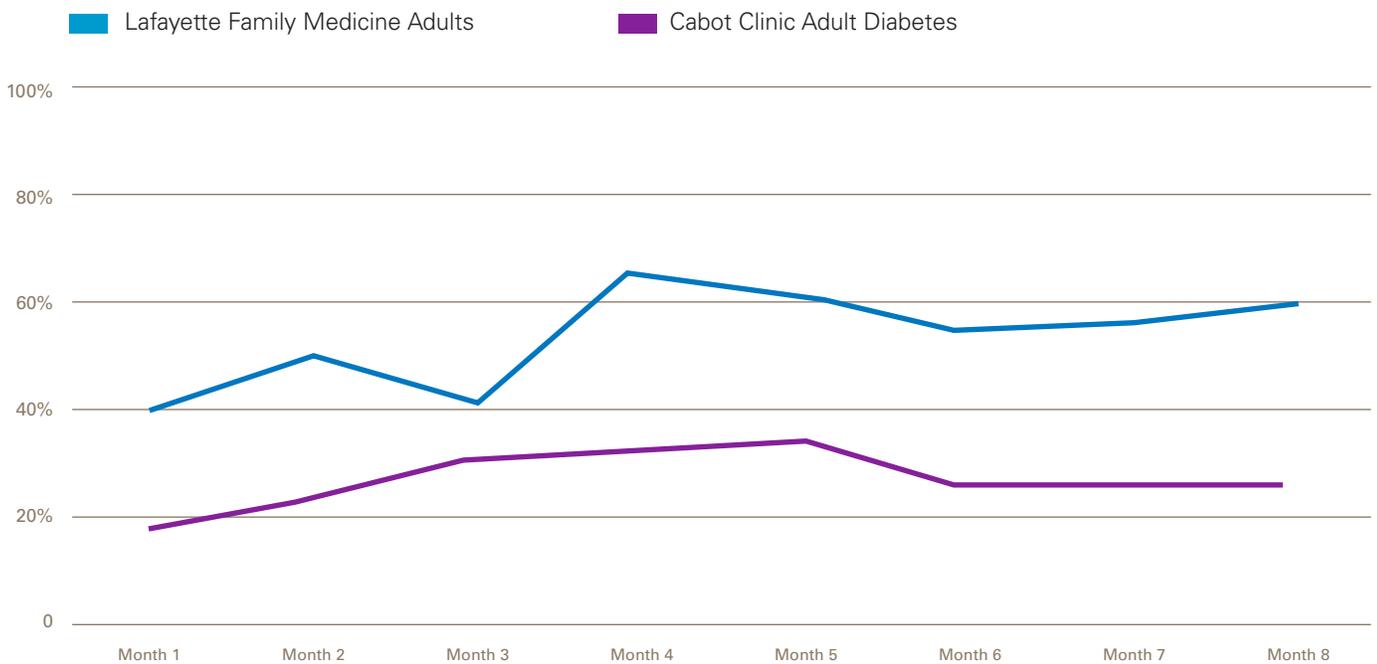
Early months of reporting tend to be outliers due to the small number of patients screened as the pilot is beginning. As the program grows and a larger percentage of the population is screened, trends tend to even out and more accurately reflect a stable observed prevalence in the community.

Figure 9.4: Fluoride varnish rate for pediatric patients at Dimock Community Health Center
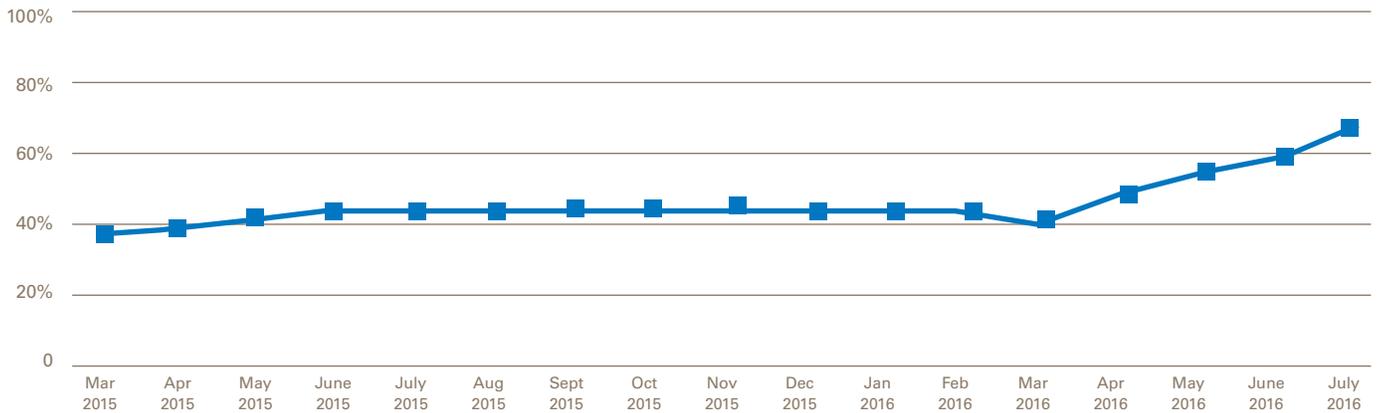

Figure 9.4 is an example of a typical run chart for a preventive intervention offered in the primary care setting. Some field-testing sites chose to offer fluoride varnish to pediatric patients as a preventive intervention, adult patients who screened high risk for oral health problems, or adults who were found to have signs of caries on exam. As the pilot test went on over time, the workflow process improved and the percentage of the screened population receiving fluoride varnish increased.

Figure 9.5: Referral rate to dentistry for signs of gum inflammation at Rogers Health
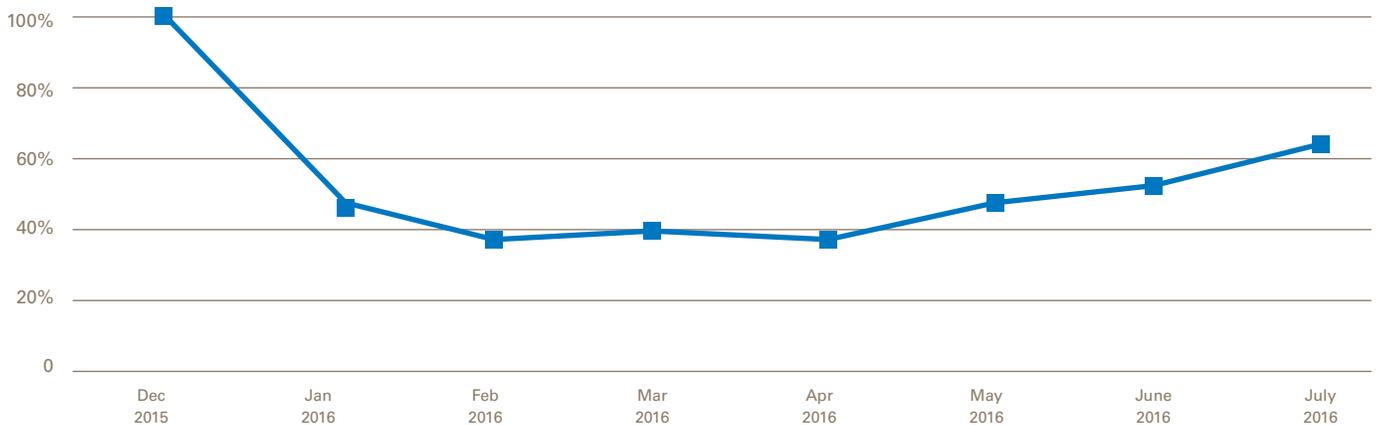

Figure 9.5 shows a common trend among field-testing sites. At the beginning, when the denominator (patients given an oral health assessment and found to have signs of an oral health problem) is small, all patients may receive a referral. Then, as the denominator grows but the workflow processes are still being refined, the referral rate is likely to decrease as patients who should receive a referral do not. Over time, as the workflow processes stabilize, the referral rate will also stabilize around a percent reflecting the reliability of the workflow. The referral rate is unlikely to ever be 100% since some patients may decline a referral and others are likely to already be under the active care of a dentist when the finding is noted on the screening exam.

Reporting the number of patients with a completed dental referral was a far greater challenge for the field-testing sites, and only a few were able to accurately track that information. The barriers included variation in how incoming consultation reports are managed, such as whether the report is attached to the referral order or simply scanned into the EHR as a separate document. In addition, dentists do not normally share consultation reports for their patients with primary care and field-testing dental partners frequently found it a challenge to identify referred patients at the time they were seen. Finally, information exchanged with consultants was, in some cases, stored in a separate database from the EHR in which the referral was ordered, making reporting all the more challenging. Field-testing sites that had an established process for following up on external referrals, and who had staff resources (such as a dedicated referral coordinator) who could regularly communicate with a dedicated contact in the dental office were more likely to be able to follow up on referrals and ensure they were tracked and completed.

Clinician impact

At the outset 27 clinician teams across the 19 field-testing practices engaged in the initial workflow training and piloted the oral health integration program at their practice site. After 20 months of field-testing, 80 clinician teams were engaged in the delivery of oral health preventive services. Spread took place in a variety of ways including:

- From a single target population to multiple target populations.

- From a single care team to other care teams within the same practice site.

- From care teams at one practice site to other sites within the system.

- From a single component of the Framework to multiple components.

Some sites approached spread in a formal manner, utilizing an internal clinical champion (often the medical director or the pilot clinician) to offer oral health clinical content training to other clinicians, sharing the pilot team workflow with other teams, and monitoring data over time to evaluate adoption of the oral health integration components. Other sites saw spread happen more organically, as clinicians and clinical assistants shared their work with colleagues and as EHR changes made decision support and clinical data gathering tools available to all users. One site created a custom EHR template and observed that once it was present in the EHR, some clinicians began to ask the oral health assessment questions during some visits without any formal request to begin assessing oral health.

Figure 9.6 shows two oral health assessment trend lines. One line represents the pilot clinician who participated in the initial clinical content presentation and the workflow optimization work. The other represents a clinician who began assessing oral health status by asking the screening questions for a handful of patients simply because the oral health questions were integrated in the diabetes template. In month 8, the medical director presented the results of the pilot and the clinical information to the EHR remaining clinician teams in the site, and the rate of screening increased rapidly.

Figure 9.6: Two oral health assessment run charts at Sound Family Medicine
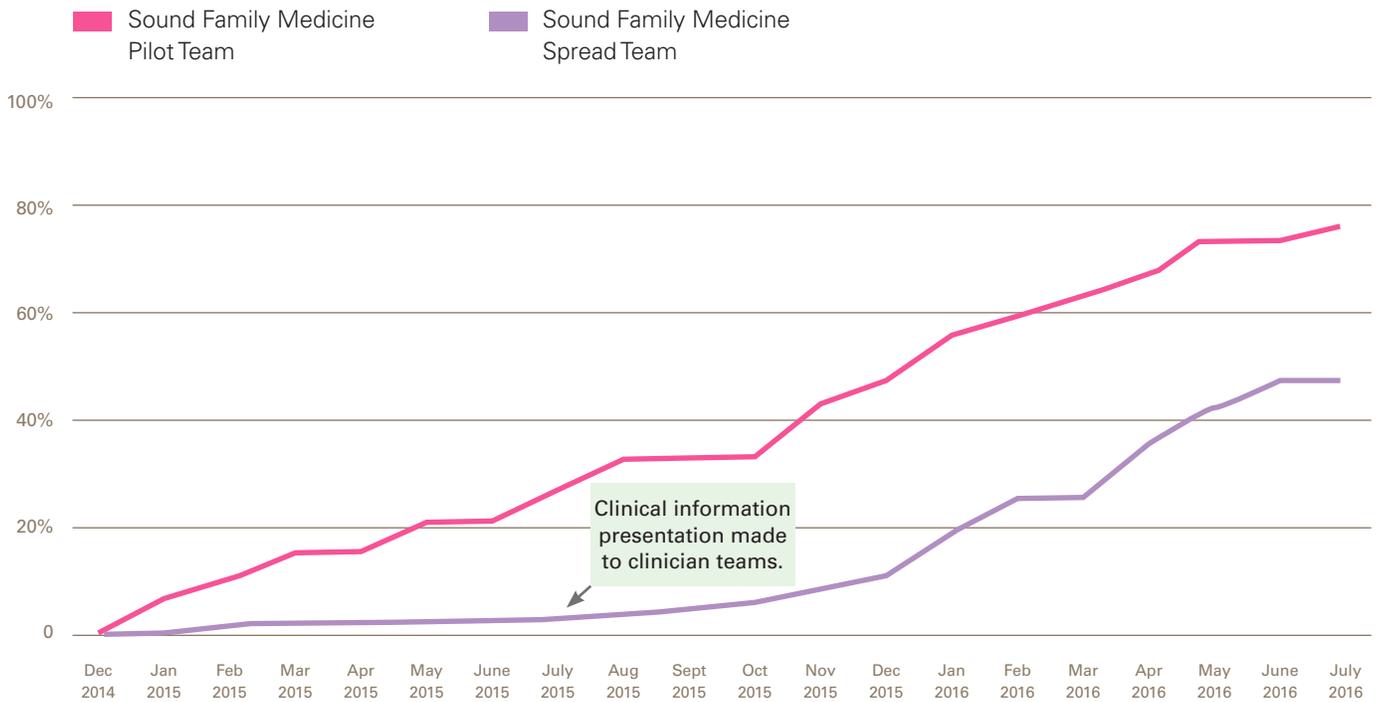
Field Testing Results

Overall, there was a high degree of success in implementing the Framework across the 19 field-testing sites. While implementation varied depending on variables such as location, available community dental partners, internal staff resources, and patient population, all 19 sites were able to implement at least three aspects of the Framework and many implemented all five. All of the field-testing sites are currently focusing on spread and sustainability, with a significant degree of clinician support for the idea that oral health integration is a key component of whole-person care.

All 19 field-testing sites experienced challenges during the course of implementation, and creative solutions and work-arounds were often needed. These ranged from small workflow adjustments, such as deciding to hang an oral health "goodie bag" on the doorknob of the exam room when a patient was due for an oral health exam to help the clinician remember to look in the mouth, to more significant actions such as requesting an EHR vendor to build a specialized oral health template. Detailed stories of selected site experiences are shared in the case examples described below, and quotes and case vignettes can be found throughout the Oral Health Integration Implementation Guide.

Annotated case examples

Early leaders

Expanding Oral Health Access for Children: Early Experience from the Bluegrass Community Health Center: In this case example, Dr. A. Stevens Wrightson, MD, describes the early experience of oral health integration and Bluegrass Community Health Center's (BCHC) experience as a leader in the field. BCHC has been integrating oral health into the primary care of their pediatric population since 2010.

Interprofessional Education and Care at the New York University Nursing Faculty Practice: In this case example, Judith Haber, PhD, APRN, BC, FAAN and Madeleine Lloyd, PhD, FNP-BC, MHNP-BC, describe their experience in an innovative interprofessional teaching practice.

Field-testing sites

Integrating Oral Health into Primary Care: Lessons Learned from Rodgers Health: In this case example, Tina Moore, APRN, FNP-C; Brenda Lierman, Practice Manager, and Patricia Beatty, MBA, Quality Improvement Coordinator share their experience as an oral health integration field-testing site which began with a single rural practice site with two patient populations and spread to three additional urban locations and three patient populations.

Sound Family Medicine Integrates Oral Health into Primary Care for Adults with Diabetes: In this case example, Marc Aversa, MD, Medical Director and Beth Thurman, Quality Improvement Manager share their experience as an oral health integration field-testing site which began with a single suburban practice site focusing on adults with diabetes, and spread to additional practice sites and additional clinicians within the original site.

Implementation of the Oral Health Delivery Framework at Dimock Community Health Center: In this case example, Nandini Sengupta MD, Medical Director of Health Services, Katie Dolan, MSN, CPNP, Pediatric Nurse Practitioner, and Chenelle Norman MPH, Quality Improvement Analyst, share their experience as an oral health integration field-testing site which began with the entire pediatric department focusing on offering fluoride varnish as a preventive intervention.

Common topics of interest

Field-testing sites identified two primary areas of common interest which are discussed in the following case examples.

Oral Health Integration Referral Experiences: A critical component of the Oral Health Delivery Framework (the Framework) is the development of a dental referral network so that as oral health issues are uncovered in the primary care setting, there is a clear protocol to follow to ensure those patients are seen, diagnosed, and treated by a dentist. This case example shares the experience of field testing sites, including those that needed to create a community referral network of dental partners, and those who were able to leverage co-located dental clinics as a referral resource.

Electronic Health Record Use in Oral Health Integration: Every field-testing site struggled with the challenges of modifying their user interface to accept new information as structured data, optimizing decision support features, and creating accurate reports. One of the most important findings was the range of creative solutions that practices were able to devise in order to overcome the barriers they encountered in adapting their HIT to support oral health integration. This case example shares stories from three of the 19 field-testing sites, including EHR challenges encountered and work-arounds developed.