Systematic Screening and Assessment of Workforce Innovations in the Provision of Preventive Oral Health Services

Evaluability Assessment Site Visit Summary Report
UK North Fork Valley Dental Outreach Program
Hazard, Kentucky

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Dental Providers in Non-Dental Settings

Site Visitors:
Mary Ann Hall, MPH
Kawonda Holland, MPH

Dates of Visit:
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# Table of Contents

I. **Background and Purpose of Evaluability Assessments** ......................................................... 2  
   - Project Background ................................................................................................................. 2  
   - Project Purpose .................................................................................................................... 4  
   - Evaluability Assessment Questions ...................................................................................... 4  

II. **Methods** ................................................................................................................................ 6  
    - Document Review ................................................................................................................ 6  
    - Site Visit ............................................................................................................................. 6  

III. **Identified Elements of the Program as Planned and Implemented** ...................................... 8  
    - Program as Planned ............................................................................................................ 8  
    - Program as Implemented .................................................................................................. 9  
    - Program Funding .............................................................................................................. 11  
    - Context of Program ........................................................................................................... 11  

IV. **Highlighted Findings** .......................................................................................................... 14  
    - Plausibility ......................................................................................................................... 14  
    - Feasibility .......................................................................................................................... 14  

V. **Evaluation Potential** ............................................................................................................. 15  
    - Evaluation Capacity Building .......................................................................................... 15  

VI. **Recommendations** .............................................................................................................. 17  
    - Program Goals .................................................................................................................. 17  
    - Program Audience ............................................................................................................ 17  
    - Program Funding/Resources ............................................................................................ 17  
    - Program Design and Infrastructure ................................................................................... 18  
    - Organizational and Community Support .......................................................................... 19  
    - Underlying Theory/Scientific Evidence .......................................................................... 19  
    - Data Collection, Monitoring and Evaluation .................................................................... 19  

VII. **Conclusion** .......................................................................................................................... 20  

References ...................................................................................................................................... 21  

Appendices  
A. **Interview Guide Topics**  
B. **Logic Model**
I. BACKGROUND AND PURPOSE OF EVALUABILITY ASSESSMENTS

Project Background

Lack of access to preventive dental care for all ages remains a public health challenge. Currently, potentially promising workforce innovations are being used to improve access to preventive oral health care. Examples include improving the diversity of the workforce, enhancing the education of health care professionals, encouraging the participation of non-dental health care professionals, expanding the roles of existing dental professionals, and developing new types of dental professionals. In most cases, these innovations do not have robust outcome data demonstrating their impact on access to care or oral health status.

This project, the Systematic Screening and Assessment of Workforce Innovations in the Provision of Preventive Oral Health Services, seeks to identify promising workforce innovations that increase access to and availability of preventive oral health services. This is a collaborative effort led by a team from the Robert Wood Johnson Foundation (RWJF) and ICF International. ICF International serves as the project contractor.

For this project, we are interested in identifying promising innovations that increase the workforce and capacity of dental and non-dental professionals in the provision of preventive oral health services, in both typical and atypical settings. We will focus on the following four types of workforce interventions, programs, policies, and models that strive to increase Americans’ access to oral health care, as well as prevent the onset of dental diseases (e.g., tooth decay, gum disease, cavities):

1. **Dental providers in non-dental settings.** Dental providers may expand the public’s access to oral health services through a variety of programs and settings such as WIC, Head Start, classrooms, congregate meal sites, public health and social services centers. Dentists, dental hygienists, and other dental providers may provide oral health education, fluoride, sealants, and other services in these diverse settings. For example, a dental hygienist may work with schools to deliver fluoride treatments and sealants to school children.

2. **Non-dental providers in non-dental settings.** Non-dental providers may include physicians, nurse practitioners, physician assistants, nurses, nutritionists, childcare and outreach workers, and others. With the appropriate education and training, these professionals can educate patients, perform dental screenings, and make referrals for dental treatment. A specific example is caregivers of seniors and adults with disabilities, who are trained to prompt, assist or perform oral health prevention services with their clients.

3. **New types of dental professionals trained to provide preventive services.** New dental professionals who focus on preventive services may be added to the dental team, function independently in a collaborative program with a dentist or program under general supervision of a dentist. Examples of these new types of dental professionals may include dental health aids, dental health coordinators, oral preventive assistants, advanced dental hygiene practitioners, and expanded function dental auxiliaries.

Throughout this protocol, the following terms are used interchangeably:

- Innovations
- Interventions
- Programs
- Policies
- Models
4. **Innovative preventive practices in traditional dental settings.** Dentistry and dental education are increasingly moving toward a medical model of dental disease that prioritizes prevention, risk assessment, and disease management. This approach is likely to change how dentistry is practiced and delivered in offices and clinics. Examples might include dental practices or clinics that have changed the way they deliver anticipatory guidance, risk assessment, and prevention services (e.g., via group dental wellness visits and similar innovations).

We use the Systematic Screening and Assessment (SSA) Method to identify and screen real-world interventions and select those that are both ready for evaluation and highly promising in terms of their plausible effectiveness, reach to the target population, feasibility, and generalizability (Kettel Khan, Dawkins, & Leviton, 2010). The SSA Method integrates expert review with evaluability assessment (EA) as a means to identify promising practice-based strategies worthy of more rigorous evaluation studies (Leviton & Gutman, 2010) and includes the following steps: (1) requesting nominations of programs and innovations; (2) engaging a panel of experts with knowledge in oral health, health workforce, health education and promotion, and evaluation to conduct an initial review of the initiatives and identify those that merit further study; (3) conducting evaluability assessments (EAs) of the selected programs; (4) facilitating a second review by the expert panel of the selected programs after considering the results of the EA, and having the expert panel rate their promise and readiness for evaluation; (5) using the results to position the most promising interventions for rigorous evaluation; (6) providing constructive feedback to the programs for further refinement; and (7) providing the list of the most promising programs for further evaluation and program development. The funnel diagram in Figure 1 below depicts the overall process of this project.

**Figure 1. Funnel Process of the Systematic Screening and Assessment of Workforce Innovations Designed to Promote Oral Health and Prevent Dental Disease**
Project Purpose

The overall goal of this project is to identify promising innovations that increase the workforce and capacity of dental and non-dental professionals in the provision of preventive oral health services, in both typical (e.g., dental) and atypical (e.g., non-dental) settings. Based on findings from this SSA project, programs may be evaluated for effectiveness and/or for adaptation purposes. The SSA method will assess plausibility, implementation, data availability, design, and analytic issues among the programs.

The innovations selected for EA are the result of a systematic review by a panel of experts using the criteria described in Figure 2.

Figure 2. Criteria for Selecting Innovations for an Evaluability Assessment

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential impact</td>
<td>The potential for the innovation to increase access to oral health care. Estimate of potential impact can be based on “face value,” program documents, and/or expert input.</td>
</tr>
<tr>
<td>Reach to target population</td>
<td>The percentage of the target population “reached” or in some other way positively affected by the intervention.</td>
</tr>
<tr>
<td>Acceptability to stakeholders</td>
<td>The potential or actual evidence that the intervention is acceptable and even attractive to pertinent collaborators, gatekeepers, and other necessary groups, such as dental clinics, dentists, and patients. Conversely, the limited likelihood that stakeholder opposition to the intervention might hamper its effectiveness, sustainability or replication.</td>
</tr>
<tr>
<td>Feasibility of implementation</td>
<td>The likelihood that the intervention, as designed, can be or has been implemented fully, given: the clarity of its goals, objectives, and strategies; complexity and leadership requirements; financial and other costs; and training and supervision requirements.</td>
</tr>
<tr>
<td>Feasibility of adoption</td>
<td>The potential for other sites or entities to adopt the intervention—particularly for multiple States, regions or racial/ethnic groups.</td>
</tr>
<tr>
<td>Transportability or generalizability</td>
<td>The degree to which the intervention demonstrates or has potential to be adapted for other settings that differ in size, resources, and demographics.</td>
</tr>
<tr>
<td>Intervention sustainability</td>
<td>The likelihood that the intervention can continue over time without special resources or extraordinary leadership.</td>
</tr>
<tr>
<td>Staff and organizational capacity</td>
<td>Sponsoring organization and staff have the capacity to participate fully in a brief assessment, learn from it, and further develop the program.</td>
</tr>
<tr>
<td>Sustainability of health effect</td>
<td>Will the intended health effect of the intervention endure over time?</td>
</tr>
</tbody>
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Evaluability Assessment Questions

At the core of the SSA Method is the Evaluability Assessment (EA). Each will consist of reviews of documents followed by a three-day site visit where trained project staff members will assess implementation, data collection, and options for evaluation. The objectives of the EA are to examine the following:
1. The *plausibility* that the innovation will produce the desired outcomes
2. The *feasibility* of fully implementing the innovation
3. The options for *further evaluation*

As part of the site visit, a limited amount of onsite technical assistance (TA) will be provided to each site; this TA may focus on topics such as the program’s logic model and evaluation. On the basis of the findings of the EAs, the expert panel will identify a program that shows promise in increasing access to and availability of preventive oral health services and readiness for rigorous evaluation.

Questions guiding the EA are noted below. These questions form the basis of the guides for data collection, analysis, and reports.

1. Is it *plausible* that the program will produce the desired outcomes, leading to the provision and/or improved access to preventive oral health services?
   a. Is the program based on scientific theory or evidence?
   b. Is the logic or theory of change plausible?
      i. What are the components of the program?
      ii. What are the goals and expected outcomes of the program?
      iii. Are the links between program components and expected outcomes in the logic model appropriate and plausible based on logic, scientific theory, or evidence?
      iv. Is there agreement among key informants on the program logic model?
2. Is it *feasible* that the program will be fully implemented as intended?
   a. How far has implementation progressed?
   b. Have there been any barriers in implementing the program?
   c. How is the program funded?
   d. Who is the target audience? Is the program tailored to this audience?
3. What are options for *further evaluation*?
   a. What is the capacity of the parent organization and staff for evaluation and their receptivity to it?
   b. Is there an ongoing documentation or formal evaluation component?
   c. What are the available data sources? Are the available data sources appropriate indicators of achievement?
   d. Is there sufficient baseline data to use in further evaluation?
   e. How might the timeline of the program impact evaluation methods if selected for a more formal evaluation?
   f. Are there sufficient nonmonetary resources to conduct a more formal evaluation?
II. METHODS

Document Review

The site visit team reviewed various documents as part of the background review on the program. The document review served as a source of background information about the site. Prior to the visit, the documents helped site visitors gain a general understanding of the program structure. The materials also served as a reference during analysis and report writing to provide clarification or a more comprehensive context for the data collected throughout the EA. The site visit team reviewed the following documents:

1. A compilation of materials selected from grant applications and funding proposals that detailed the history and ongoing efforts of the program
2. “LKLP-UK Head Start Dental Outreach Program: Description of Program & Invitation to Participate”- program information and consent forms for Head Start children to participate
3. The program’s Dental Report Card, which describes a child’s dental status in clear, easy to understand Red/Yellow/Green light format
4. The April 2012 Ronald McDonald Care Mobile Newsletter with information about the program

Site Visit

The site visit to Hazard, Kentucky took place between September 11–13, 2012. Using semistructured interview guides, the site visit team conducted a total of 11 interviews. See Appendix A for a list of the interview guide topics. Prior to the visit, ICF requested a list of suggested interviewees from the site. Once received, ICF team members talked with the site visitors and the site contact to discuss the roles of those suggested, considered any important persons who may have been missed, and confirmed those who would be interviewed. The site visitors conducted a total of nine in-person interviews during the visit (two individuals, Ms. Tyree and Ms. Sexton, were interviewed together), and an additional interview was conducted over the telephone. Respondents read an informed consent form, which emphasized that the purpose of the visit was not to conduct an actual evaluation, but rather to learn about the program. The document also stressed that interviewees’ responses would be confidential. Table 1 shows the number of interviews by interviewee type.

<table>
<thead>
<tr>
<th>Lead Administrator/Manager(s)</th>
<th>Other Staff</th>
<th>Partners</th>
<th>Other Stakeholders</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>
These interviews were conducted with the following people:

1. Nikki Stone, DMD, Mobile Dental Outreach Director
2. John Sampson, Director of Community Based Practice at University of Kentucky HealthCare
3. Joe Kingery, CEO & Medical Director of UK North Fork Valley Community Health Center
4. Sharon Turner, D.D.S., J.D, Dean, College of Dentistry at University of Kentucky (interview conducted by telephone)
5. Fran Feltner, DNP, Director of the UK Center for Excellence in Rural Health
7. Tisha Bowling, Chavies Health Start Teacher
8. Melissa Tyree, Head Start Health Specialist
9. Renee Sexton, Head Start Director
10. Fran Combs, Chavies Elementary Family Resource
11. Pam Cornett, Hygienist & Mobile Dental Outreach Program Manager

All interviews were conducted with individuals with the exception of Ms. Tyree and Ms. Sexton, who were interviewed together. On average, the interviews lasted approximately 1 hour.
III. IDENTIFIED ELEMENTS OF THE PROGRAM AS PLANNED AND IMPLEMENTED

The review of program documents and the site visit interviews helped the site visitors identify various elements of the program as planned and as it currently is being implemented.

Program as Planned

Brief History of the Program
In the summer of 2004, the University of Kentucky (UK) Colleges of Medicine and Dentistry collaborated to open UK’s first regional dental program in Hazard, KY on the first floor of the UK Center for Excellence in Rural Health building, which also houses the North Fork Valley Community Health Center, a Federally Qualified Health Center (FQHC). The town of Hazard is located over two hours away from the main University campus, in the heart of the rural Appalachian coalfields. In May of 2005, Ronald McDonald House Charities Global donated a Ronald McDonald Care Mobile to the program. The innovative dental outreach programs piloted here have been presented at a series of statewide trainings for the Kentucky Oral Health Network and are now being replicated statewide as other regional dental programs are developed in collaboration with the University. The program has been in existence since 2007, and currently aims to serve all Head Starts and all public elementary schools in the FQHC’s four-county catchment area (Leslie, Knott, Letcher and Perry [LKLP] Counties).

Planned Components of Program
The program was conceptualized as a way to provide preventive oral health care on site to children at Head Start and in elementary school locations, with a limited amount of restorative care provided on site, and referral and patient navigation provided by a registered dental hygienist for children in urgent need of care. Oral health education is offered to Head Start staffers as part of their annual training. Parents of Head Start students are required to attend a certain number of parent education trainings each year, and the dental program regularly offers oral health education nights to fulfill this requirement. Elementary school resource staff, administration and teachers are asked to assist with recruitment for the program. Children who receive services are given kits with toothbrushes and toothpaste, along with a simple “oral health report card” to take home to their parents.

Goals and Expected Outcomes
Currently the children entering the program have levels of untreated decay that are among the highest in the nation, with 70% of students presenting untreated decay in some locations served by the program (Stone, D.N. et al. 2007) Early Childhood Caries Disparities in Rural Communities of Kentucky. A poster presentation at the 2007 International Association for Dental Research 85th General Session, New Orleans, LA identified the children as having the second worst rates in the country when compared to rates published in the 2007-2008 National Health and Nutrition Examination Survey (NHANES). The program aims to reduce the incidence of untreated tooth decay; increase the number of participants receiving preventive oral health services; and increase compliance and treatment completion. Over the long term, the program seeks to counter cultural fears around dentistry and the belief that baby teeth do not need dental care; to protect the future health of children as they age by
treating existing issues and normalize regular dental care and hygiene, including establishment of a
dental home either at the FQHC or a local dentist.

**Planned Target Audience**

The target audience consists of children in Head Start programs and elementary schools in the four-county LKLP area, their parents and families, Head Start instructors and staff. Elementary schools in this area serve children from kindergarten through 8th-grade, so the target audience also includes children older than the traditional K-5 age groups.

**Program as Implemented**

**Changes to Program Design During Implementation**

There have been a few changes to the program design over time. During the program’s first year, a passive consent model was used, in which children received services unless parents stated that they could not. This practice was discontinued after the first year, and though participation rates dropped in the year after the change, they have been steadily rising in recent years. Another change that has occurred is related to oral bacterial count tests. These tests were offered during one year of the program as part of a grant project, but the director felt that they did not deliver enough information to justify the return on investment (though the program is open to using them again if the tests improve). When the FQHC served as a residency site for UK’s general practice residency program, the services of residents were incorporated and focused on pediatric experiences. However, when UK lost grant funding, the program reached out to local pediatric dentists so that services continued uninterrupted. At the time of the site visits, some schools in one county were not receiving visits, since an area dentist had offered a competing program and the schools had participated, putting them in breach of the signed cooperative agreement with the UK North Fork Valley dental outreach program. Site staff members described this as a very unusual situation and were working to remedy the problems.

While the mobile dental unit is helpful for providing services, when it was offline for repair for a five month period several years ago, the program was able to continue offering services using a portable dental chair.

**Implemented Program Components**

There are two types of outreach, one to children attending Head Start locations and one to children attending public elementary schools, both conducted by a team consisting of a dentist, a dental hygienist and a dental assistant. All children are given consent forms for their parents to sign to grant permission to participate; in Head Start settings, these forms are often provided during home visits by Head Start staff who can then assist parents in completing them (the area has low literacy levels). Elementary schools offer the forms at Back to School nights and in the general school information packets sent home with students during the first week of school. Staff at both Head Starts and elementary schools indicated that most parents return the forms, and that the staff perform follow-up to ensure that all eligible children have the chance to participate. The consent forms contain fields for contact information, and a data collection checklist with a brief 12-item dental health risk assessment with yes/no items such as “child is put to bed with a bottle of milk/formula/juice/pop,” a 7-item dental health history with items like “how long has it been since your child visited a dentist? Never/1 year/2 years,” and a 10-item general health history.
All participants receive a comprehensive dental exam, an oral health report card, a new toothbrush kit, a prophylactic cleaning, fluoride varnish, any referrals for dental care (if needed), and an appointment with a pediatric dentist if urgent care is needed.

The team travels to all local Head Start locations (in the FQHC’s four-county catchment area) and provides brush cleanings, exams, and fluoride varnish, using a lap-to-lap model of care within the classroom setting to reduce fear and expose children to dental care as a normal, painless part of life. Head Starts are visited every three months. Children are given oral health report cards which list their status as “green light” (no decay found), “yellow light” (six or fewer cavities), or “red light” (seven or more cavities OR severe decay in fewer than seven areas and/or infection/pain). Children who receive a red light qualification are assigned an appointment with a pediatric dentist in the FQHC’s fixed dental clinic on the spot, and the information is sent home to parents in the form of a paper report card included with a small dental kit. Contact information is provided to the program by the Head Start staff, and the program’s dental assistant and hygienist perform extensive (two or more hours daily) case management in order to ensure that children attend appointments. These young children receive restorative care in the fixed dental clinic from two local pediatric dentists who perform services and receive Medicaid or Kentucky Children’s Health Insurance Program (KCHIP; state children’s insurance) reimbursement. Children who miss three or more appointments are referred to social services, since failure to treat their needs falls under the legal definition of neglect. Program staff reports that this is very rarely necessary.

The same three-person team also travels to all the elementary schools in the four-county area, where they perform cleanings, exams, fluoride varnish application, and sealants to participating children. The program visits each elementary school once per year. Instead of a lap-to-lap model, children receive services in a mobile dental unit that was obtained under a grant from the Ronald McDonald House Charities. However, program staff feel that the mobile unit is not pivotal to program operation—the unit was sidelined for approximately five months during one school year due to mechanical problems, yet the program was able to continue outreach uninterrupted using a van and a mobile dental chair.

As noted above, very young children who are defined as in need of urgent care, who are suffering from pain, infection, or have “rampant” caries (defined as seven or more teeth) are sent to the fixed dental clinic located within the FQHC, where a pediatric dentist performs consultations one day a week. Those who need extensive care are scheduled to be seen by the pediatric dentist in the adjacent hospital operating room weekly to complete complex restorative needs. Older children with urgent or early dental needs that are not as extensive are treated by the family dentist who sees both children and adults in the fixed dental clinic. The dental assistant allocates approximately 40% of her time to case management and patient navigation in order to ensure that children receive care. Most services are provided at the FQHC’s fixed clinic; however, the program refers children who already have a dental home to their current service provider.

In addition to the oral health education offered to Head Start staff and parents, the program also offers a short 45-minute oral health education lesson to each 3rd-grade class in each school once per year. The program also works to provide educational information to the elementary school staff that assists them with the program. Stakeholders shared that this exposure to oral health information has
been highly beneficial to them personally, and many are pleased to take on a role as informal oral health advocates in their communities.

All services offered by the program are tailored for the surrounding community. For example, educational materials heavily stress that young children should not consume sugar-sweetened carbonated beverages, and specifically mention Mountain Dew, since this product is heavily consumed by children locally. The dentist and dental hygienist refer to fluoride varnish as “princess sparkles” for little girls and “Spiderman webs” for little boys, much to the children’s delight.

Program services are offered by staff members who are known in the community and aware of the disadvantages many of the children experience. As one stakeholder recounted, some children may come in with visible signs of neglect, such as dirty clothing and poor hygiene, and the staff takes care to treat such children just as lovingly as they treat any others, and with dignity: “They hug every kid who wants a hug.”

**Progression of Implementation**

The program is fully implemented. Currently, it is running at full capacity; there is a loophole in existing State regulations, applicable only to FQHC-affiliated dentists, that requires the dentists to accompany the hygienist and assistant on all visits to provide care. There is ongoing lobbying and legislative work to change this law to allow for general supervision. This would give the program latitude to greatly increase the number of children who could be served because it would allow the dentist to conduct examinations, work with the mobile unit, and focus on children in need of non-operative restorative care, while the hygienist visits other children for cleanings and fluoride varnish. The program model has been replicated with modifications in other counties of the State with a significantly different population that is equally disadvantaged.

**Program Funding**

The program has several sources of funding. It is primarily supported by funds from Medicaid and KCHIP reimbursements, but also receives Federal and State funds from the FQHC. Salary and equipment costs for the mobile outreach team amount to approximately $350,000. The services provided in the fixed dental clinic are reimbursed by Medicaid or KCHIP. The program receives assistance from the University of Kentucky’s Kentucky Medical Service Foundation, which handles much of the program’s billing and incorporates it into the University medical systems’ malpractice insurance and liability coverage scheme. However, this service is provided to the program at market cost, not as an in-kind donation. A car is provided by the State of Kentucky via the FQHC, and members of the FQHC staff serve as drivers for the mobile unit. The program also enthusiastically applies for grant funding, although it has no dedicated staff for seeking out these funding opportunities; such efforts are made during personal time and the rare moments when the staff is not offering services.

**Context of Program**

**Organizational Context**

Currently, the program is offered to all Head Start and public elementary students in Leslie, Knott, Perry and Letcher Counties in the area of mountainous rural Appalachia surrounding Hazard, KY.
The program is situated physically and organizationally within the University of Kentucky’s Center for Excellence in Rural Health’s UK North Fork Valley Community Health Center, a Federally qualified health center (FQHC) offering medical and dental services, including mental health services and a Women’s Center, to residents of Perry and surrounding counties. As mentioned above, the current dental outreach program has existed in its current form since 2007.

The program team consists of three individuals: the dentist, a dental hygienist, and a dental assistant. Mobile unit driving services are provided by FQHC staff. Staff turnover is very low, and the three main team members have all been involved for years; the dentist/director, Dr. Stone, founded the program.

**Community Context**

The region of Appalachia where the program is located is wooded, and extraordinarily beautiful, with dramatic vistas and rolling green mountain ranges. The area was and continues to be a center of coal mining, with a history of extreme poverty and deprivation (due in large part to the misappropriation of mineral rights by outside interests from local residents, which has resulted in a deep mistrust of outsiders). The geographical area served was identified as the worst congressional district in terms of several health indicators: obesity and edentulism rates are extremely high; poverty, unemployment and low educational attainment are widespread; and the area is suffering from a severe epidemic of prescription opiate abuse in tandem with rising use of methamphetamine. Many children (anecdotally, as many as 40% in the Head Starts and elementary schools served by the program) are being raised by noncustodial relatives due to substance-abuse related parental abandonment.

The high poverty rates result in a large portion of the local population being eligible for Medicaid; as a result, most local dentists accept Medicaid. However, in 2011, the State of Kentucky moved abruptly to a managed care organization (MCO) model for Medicaid. There have been two primary results from this which have had a negative impact on the target audience. First the MCO model has resulted in a greatly increased administrative burden on providers; more and more dentists in the area are declining to accept Medicaid patients. Also, there are three separate MCOs serving the State, each of which include a different set of providers that require patients to use dentists and physicians within the same MCO. Patients whose medical doctors are included in a different MCO than their dental providers often stop going to that dentist. These two factors have created additional barriers to care for the target population.

The UK North Fork Valley Community Health Center has been in successful operation for several years, and has partnered with a variety of community members including the Perry County Board of Education, the Leslie County Board of Education, the LKLP Head Start Community Action Council, the New Beginnings Daycare, the Perry County Health Department WIC Program, the Kentucky River District Health Department, and the Rotary Free Clinic, Incorporated.

The founding director and dentist is a member of the local community who grew up in one of the four counties. The program was guided by an Advisory Board from the beginning, and the Director conducted extensive work to create relationships with elementary school and Head Start staff, local dentist, and other stakeholders. Because of high levels of mistrust of outsiders, the program worked to recruit staff from the local population. As noted above, when they have contact with parents, Head Start and elementary school staff also work to recruit children to the program.
Community members trust the program staff; this trust helps counteract fear of dentists and of outsiders. The stakeholders appreciate the program staff’s ability to provide unbiased, quality dental care to children in need, who are often suffering from neglect. The program staff is involved in stakeholder events such as health fairs and back to school events. This gives the program staff an opportunity to engage the stakeholders and build rapport. Most of the Head Start students recognize and are excited to see the program staff. Local dentists have a good relationship with the program, since the program staff always defer to a patient’s existing dental home and do not try to “poach” patients.
IV. HIGHLIGHTED FINDINGS

Information collected through the site visit interviews and review of documents provides some suggestions of the program’s plausibility for attaining the desired goals and the feasibility of its full implementation.

Plausibility

The logic underlying the program model is highly plausible. The program’s objectives proceed logically from its inputs, activities and outputs. The program has collected a large amount of data regarding its past and current services. The limited analyses of these data that have taken place to date indicate significant success in accomplishing program goals. For example, the rate of untreated decay seen in participating elementary school students declined from 58% in 2007-2008 to 44% in 2010-2011; and completion of treatment among Head Start students rose from 8% in 2007-2008 to 64% in 2008-2009, due in large part to the program’s partnership with and linkage to services from a pediatric dentist. During the site visit interviews, stakeholders indicated a high level of agreement on program goals and a clear understanding of, and agreement with, the program model as presented in the logic model. Developed with the input of program staff during a debriefing on the third day of the site visit, the final logic model is presented in Appendix B.

The program was designed under the auspices of the University of Kentucky College of Dentistry and was modeled on the American Academy of Pediatric Dentistry guidelines; program staff continue to review the most current developments in the field and incorporate best practices and revised guidelines when appropriate.

Feasibility

The program is fully implemented with capacity to expand, if funding is increased and the regulations regarding supervision by the team dentist during outreach are updated. The dental outreach currently has a stable source of resources needed to operate. In addition to Medicaid and KCHIP reimbursement and FQHC funding for space, it has culturally competent staff dedicated to carrying out the goals of the program. The program utilizes the Head Start’s and elementary schools’ family resources specialists to recruit, explain the program benefits, and follow up on urgent care needs. The program has office space, computers, printers, copiers, telephones, and storage to conduct in office activities, provided by the FQHC. The program also has access to a university vehicle, mobile dental van, and commercially certified licensed drivers to operate the mobile unit. The program has external resources such the support from staff and faculty within the University of Kentucky’s Colleges of Dentistry and Medicine. And if the mobile unit is functionally down for any reason, the program has four portable dental chairs that can be utilized instead.
V. EVALUATION POTENTIAL

Evaluation Capacity Building

The program currently collects (and stores in an accessible manner) a great deal of data that could be used to access its progress in achieving desired outcomes. The data collected seem likely to capture most meaningful service provision and outcome indicators; patient satisfaction measures may require different data collection tools and procedures.

The program collects the following data on an ongoing basis:

- Consent form with risk assessment and health and dental history, described above;
- Number of participants recruited
- Number and names of sites receiving services
- Number of overall encounters, types and number of services provided (including payer source)
- Number of referrals provided and outcome (whether treatment was completed), including percentage of children with urgent care needs who complete treatment
- Percentage of eligible children who participate
- Clinical chart data with data on decay location and severity; behavioral data are also tracked with use of the Frankl Behavioral Scale to measure a child’s behavior at each visit.

These data are currently stored electronically; a full chart for every child served by the program exists electronically. Formerly, the State asked the program to collect data using an electronic tablet which had to be synced each night to the server in Lexington. The program moved away from this model to on-site electronic data entry using Access. The dental outreach is very eager to import the previous data into its current system for additional analysis, but has no plans to do so at present, due to time constraints and competing demands. The program has performed some outcome evaluations; it has baseline information on children, both from the clinical exams and regarding treatment but also some basic household data (such as parental educational attainment) for a large subset of children (these items are included on the consent forms but many parents leave these sections blank, likely due to low literacy).

As noted, current available data sources include consent forms with caries risk assessment, dental and health history and household information; Microsoft Access records of patient encounters and visits over time, which include levels of decay and treatment completion. These data sources provide an excellent natural comparison group for evaluation of the success of Head Start outreach efforts: records for children who were served by the program’s outreach in Head Start and continue to receive services into elementary school are available for comparison to children who received services in elementary only.

The program is interested in assessing patient and parent satisfaction but past attempts have met with extremely low response rates. The program is open to including additional knowledge, attitude and behavior (KAB) items on the consent forms, but data collection is a challenge; as with consent
forms, follow-up to parents also results in low response rates. Basic KAB items could also be incorporated into the charts to be asked of elementary children prior to exams. It would be theoretically possible to link dental records with medical records if the child receives care at the FQHC to see whether improvements in oral health are correlated with general good health, and if exposure to children is correlated with higher levels of dental care utilization by parents; however, the two systems are not currently electronically linked.

Program staff is extremely interested in further evaluation, understand basic evaluation and statistical methodologies, and has conducted some simple outcome analyses. The primary barrier is time and lack of experience designing rigorous outcome studies and performing inferential statistical analyses. Technical assistance with these issues would likely provide sufficient support for the program to conduct its own outcome evaluation. The program staff has demonstrated their ability to synthesize and present data regarding their efforts, presenting their work regionally at the Kentucky Primary Care Association and the Kentucky Dental Health Coalition, nationally at the National Oral Health Conference, the National Network for Oral Health Access Conference, and the National Rural Health Association, and twice internationally at the International Association for Dental Research. In the past, the staff has participated in both pilot and funded research projects, including a Health Resources and Services Administration (HRSA) training grants for dental residents in pediatric dental care, NIH Early Childhood Caries Surveillance projects, a local foundation-funded Oral Health Navigator project, and a pilot Youth Oral Health Diabetes Surveillance.

Overall, the program staff is collecting useful, informative data and storing the data in an appropriate and accessible way. The primary barriers to further analysis are: the division where the program data are stored (some data are stored in the old State system, while other data are currently stored in an Access database); the lack of significant inferential statistics and quantitative data analysis experience by program staff; and the need to prioritize limited time and resources to service provision.
VI. RECOMMENDATIONS

The program is fully implemented in a sustainable manner that has already demonstrated successful outcomes (albeit in fairly informal analyses). In the section below, we note the program’s current strengths across a number of areas and provide suggestions for future program planning.

Program Goals

- Strengths: The program’s goals are closely linked to program components, and can realistically be achieved based on program activities.

- Recommendations: At the present time, we do not have any recommendations to offer the program.

Program Audience

- Strengths: The population served is in high need, and the program provides services to many children who would not otherwise have access to preventive (and restorative) dental care. However, a significant proportion of young children in the area who are in need of such care do not participate in Head Starts and therefore have no way to receive services.

- Recommendations: The program serves a large proportion of children in the area but many still do not have access; the program could attempt to broaden access to these children as well. This may be more feasible once the problem of supervision between FQHC-affiliated dentists and dental hygienists is resolved. Program staff indicated that there are significant legislative and administrative barriers to provision of care to children who attend day care programs that are not affiliated with Head Start; however, such efforts have the potential to greatly increase population-level access. Outreach to faith-based groups may also provide another way to reach children outside of Head Start; in addition, though past efforts to work with local WIC offices were unsuccessful, the FQHC’s Women’s Center may provide opportunities to reach pregnant women and mothers of young children who are receiving OB/GYN care.

  - An outcome evaluation could compare children served by the program in Head Start and elementary school with those served only in elementary school; if a significant difference is found, it would strengthen arguments for additional funding to reach children younger than kindergarten age. Additional future evaluative efforts could include comparison of the outcomes of the program with similar initiatives in states with less restrictive supervisory/practice regulations (e.g., Vermont, where hygienists can practice independently) to inform policy discussions on workforce models, and serve as a tool for policy development. Work of this sort could highlight how regulations regarding roles/responsibilities and different levels of training affect efficiency in terms of children served and cost.

Program Funding/Resources

- Strengths: The program operates within a sustainable funding model, with cost covered by stable sources of reimbursement.
Recommendations: As the program grows, staff may wish to consider looking for funding to expand services to more children younger than elementary age, and to increase the number of visits to elementary school children each year. A potential source for this funding may be the Appalachian Regional Commission, which specializes in such efforts.

- In the past, the program was able to utilize the services of dental residents through an HRSA grant-funded residency program. In collaboration with the Center for Excellence in Rural Health, the program could consider participating again in such a program, offering training, community service and outreach.

Program Design and Infrastructure

- Strengths: The program provides services to children in high need, in a manner that appears to successfully mitigate the structural and socio-economic barriers to care which many face. Notably, unlike many other programs that incorporate the use of a mobile dental unit, the UK North Fork Valley Dental Outreach Program is able to provide services without the mobile unit; the program is not dependent on it. The small program team is able to be flexible in response to changing circumstances (i.e. mobile unit malfunction, change in Medicaid management processes) and provides culturally tailored services to a highly needy and wary population.

- Recommendations: We noted several programmatic infrastructure issues that, taken together, suggest that the addition of a staff position might be of benefit to the program:
  
  - At the time of the site visit, the dental hygienist devoted approximately 40% of her time to patient navigation.
  - Various staff members from the FQHC drive the mobile unit when it is in use.
  - The billing services provided by University of Kentucky’s Kentucky Medical Service Foundation could likely be completed at a similar cost by a staff member at the clinic; stakeholders did not see this service as saving an appreciable amount of time or money.
  - The new State Medicaid MCO billing structure is burdensome for patients, who find it confusing, and for area dental providers, who find it to be administratively burdensome.

- A staff member whose job description was based on patient navigation, billing and reimbursement could provide assistance to patients to keep appointments and increase treatment completion, help establish dental homes by advising patients and providers about MCO-related issues, and free the dental hygienist to provide additional direct service (again, if the supervision loophole is closed). This individual might also be able to take on some driving services (the site visitors have seen mobile units in other locations in which driving staff also took on administrative duties successfully).

- Currently, families must provide consent forms for children to participate in the program each year. If possible within the program’s regulatory environment, the program could consider providing multi-year consent forms that would allow students to participate as long as they continued to attend a particular Head Start or elementary school, thereby increasing participation.
Organizational and Community Support

- **Strengths:** The program receives extensive support from UK affiliates, administration and faculty; the program in turn advances the public health (and potentially, the research) goals of these service providers. The program understands and respects the local context, and, reciprocally, the community enthusiastically supports the program. **Recommendations:** The sole organizational support that appears somewhat unnecessary is the University of Kentucky’s Kentucky Medical Service Foundation’s billing provision; the program might be able to more efficiently handle this work in house, particularly with the addition of a new staff member, as noted above.

Underlying Theory/Scientific Evidence

- **Strengths:** The program is highly evidence-based, and is adapted with continual quality improvement per current guidelines. Program staff is engaged in the literature and retain academic relationships and credentials that keep them well informed about emerging theoretical and practice considerations.

- **Recommendations:** An outcome evaluation of the program could demonstrate the impact and utility of provision of early preventive care, and referral to restorative care, with use of an outreach program within an FQHC context. These results could inform the field of effective strategies, particularly for organizations in other rural and impoverished areas.

Data Collection, Monitoring and Evaluation

- **Strengths:** The program has engaged in comprehensive data collection; reaching back to the start of the program, and there have been few changes in the system over time. The program has charts for every child served since 2007.

- **Recommendations:** Program staff may consider engaging a graduate student as an intern to obtain and integrate the two existing data sources and to ensure that all chart data are available electronically and in one system. A source for such assistance may be the program’s close relationship with the University of Kentucky. Evaluation assistance could be provided by a master’s- or doctoral-level student from the statistics, biostatistics or community health departments of the school of public health, in addition to the school of dentistry.
VII. CONCLUSION

The UK North Fork Valley Dental Outreach Program offers a simple, cost-effective model for providing services to a very vulnerable population that could be implemented in other settings. The model has served as a pilot for a program serving pregnant women through the WIC program in western Kentucky, for example. The program has the ability to adapt to changing circumstances (as when the UK pediatric residency program was discontinued at the FQHC and when the mobile unit was unusable) and is able to offer services to children in familiar settings. This program demonstrates the success and utility of recruiting and utilizing local, culturally competent staff, from the dental director on down to the school staff who work with the program. This familiarity with local conditions and sensitivity to local concerns, along with significant relationship-building and outreach, has allowed the program to achieve successful collaborations with the state university system, elementary schools, Head Starts, local dental providers, and families, as well as civic groups and elected officials.

Program staff understand and respect evaluation and evidence-based practice and demonstrate a high capacity for outcome evaluation, both in terms of data collection, storage and in statistical analysis. A fairly minor investment in terms of evaluation TA could likely facilitate a significantly informative outcome evaluation.
REFERENCES


APPENDIX A
INTERVIEW GUIDE TOPICS
APPENDIX A. INTERVIEW GUIDE TOPICS

SYSTEMATIC SCREENING AND ASSESSMENT OF WORKFORCE PROGRAMS IN THE PROVISION OF PREVENTIVE ORAL HEALTH SERVICES: DENTAL PROVIDERS IN NON-DENTAL SETTINGS

INTERVIEW TOPICS

During the evaluability assessment site visits, we hope to learn more about your program. Some of the topics that we would like to discuss with the identified interviewees include the following:

**Lead Administrators**

- Background and history of the program
- Basis for the program
- Program’s goals, expected outcomes, activities, and services
- Program components
- Program setting(s) and rationale for site selection
- Staffing, training, roles and responsibilities
- Administrator’s role and responsibilities
- Challenges and successes with implementation
- Community awareness and involvement
- Program’s reach to target audience
- Current or potential partnerships
- Strengths and weaknesses of the program
- Success(es) of the program
- Key lessons learned with overall experience
- Data collection activities
- Financial resources and funding challenges
- Start-up costs, ratio of costs across program components, cost of administration

**Managers**

- Manager’s role and responsibilities
- Basis for the program
- Program’s goals, expected outcomes, activities, services
- Program components
- Key staff members and their roles
- Program setting(s) and rationale for site selection
- Community awareness and involvement
- Program’s reach to target audience
- Current or potential partnerships
- Strengths and weaknesses of the program
- Key lessons learned with overall experience
- Success(es) of the program
- Data collection activities
- Financial resources and funding challenges
- Start-up costs, ratio of costs across program components, cost of administration

**Staff**

- Staff member’s role and responsibilities
- Program’s goals, expected outcomes, activities, and services
- Community awareness and involvement
- Current or potential partnerships
- Strengths and weaknesses of the program
- Successes of the program
- Key lessons learned with overall experience
- Data collection activities
- Financial resources and funding challenges

**Partners**

- Partner’s involvement, role, and responsibilities
- Program’s goals, expected outcomes, activities, and services
- Community awareness, involvement, and reaction
- Benefits from partnership
- Other potential partners
- Strengths and weaknesses of the program
- Success(es) of the program
- Key lessons learned from experience with the program
- Funding sources and their effect on partnership
Evaluators

- Evaluator’s role and responsibilities
- Program’s goals, expected outcomes, activities, and services
- Program components
- Program’s reach to target audience
- Community awareness, involvement, and reaction
- Other potential partners
- Success(es) of the program
- Evaluation design
- Data collection methods
- Analysis of data and dissemination of results
- Key lessons learned from experience with the program and efforts with evaluation
- Financial resources and funding challenges

Other Stakeholders

- Background and history of the program
- Program’s goals, activities, and services
- Stakeholder’s role and involvement with the program
- Program’s reach to target audience
- Audience’s awareness and reaction
- General impression of the program
- Success(es) of the program
- Key lessons learned from experience with the program
APPENDIX B
LOGIC MODEL
**APPENDIX B. LOGIC MODEL**

**UK North Fork Valley Dental Outreach Program**

**Workforce Interventions Designed to Promote Oral Health & Prevent Dental Disease Project Rationale:** Providing preventive oral health services to children in Head Start & elementary school settings that are convenient to the target population increases access & availability of preventive oral health care.

### Inputs

**What do we need to achieve our goals?**

- Funding
- Partners: Head Start (HS) & elementary (K-8) school staff
- Portable equipment & supplies, including a mobile dental unit
- Mobile dental team: dentist, dental hygienist, dental assistant, & mobile unit driver
- Culturally competent staff
- Oral care supply kits
- Site (e.g., schools, Head Start)
- Cooperative agreement with pediatric dentist
- Database(s)
- Forms
- Medicaid reimbursement mechanism
- Transportation to sites
- Secure medical office & storage space for charts & supplies

### Activities

**What do we have to do to ensure our goals are met?**

- Establish collaborative relationships with site administrators, staff, family resource coordinators, local practitioners, & parents
- Recruit & support HS & school staff to recruit participants & engage parents (during home visits, back to school nights, etc.)
- Provide preventive oral health services (fluoride varnishes, oral health assessments, basic cleanings) using lap-to-lap care in HS, 3x/year
- Provide preventive oral health services (sealants, fluoride varnishes, oral health assessments, prophylactic cleanings) on mobile dental unit 1x/year at elementary (K-8) schools
- Provide all participants with oral health kits
- Provide teacher/staff & parent trainings in HS settings
- Document decay levels, services provided, & referrals made
- Provide oral health report card for parents (including educational materials & referral information, including appointments)
- Educate teachers & child care providers on oral health; offer 3rd-grade education classes
- Collect participant & parent data
- Referral of participants to pediatric dentist or their existing dental home for additional services
- Perform case management to ensure appointments are made & kept
- Monitor & evaluate activities & outcomes
- Integrate innovative evidence-based practices into program

### Outputs

**What do we need to document our activities?**

- # of participants recruited
- # of sites receiving services
- Children: 1700/year receiving preventive services, ~20% with urgent care needs
- Types of services provided
- Patient source
- # of referrals provided & outcome
- # of children with urgent care needs who complete treatment
- # of eligible children who participate
- Charts
- Completed consent forms
- # of encounters per month

### Short-Term Outcomes (~1-3 yrs)

**What are the short-term changes we expect?**

- Increased # of participants receiving preventive oral health services
- Improved parental compliance with follow-up dental care & improved treatment completion rates
- Improved child & parent knowledge, attitudes & behaviors around preservation of baby teeth & oral health in general
- Increased # of participants locating a dental home
- Raised population awareness of safety net dental health and Medicaid services
- Early detection of tooth decay; decreased amount of tooth decay
- Reduced dental fear among children & adults
- Treatment completion in urgent children increased
- Improved school educational outcomes & test scores
- Establishment of good dental hygiene practices among participants’ families
- Participants establish dental homes with local providers
- Population “dental IQ” raised

### Long-Term Outcomes (~3-6 yrs)

**What are the long-term changes we expect?**

- Improved quality of preventive oral health services
- Increased # of participants receiving preventive oral health services
- Expanded types of preventive oral health services provided
- Urgent dental needs & early decay levels decreased
- Improved school educational outcomes & test scores
- Establishment of good dental hygiene practices among participants’ families
- Participants establish long-term dental homes with local providers
- Population “dental IQ” raised

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**Systematic Screening and Assessment of Workforce Innovations in the Provision of Preventive Oral Health Services**

ICF International ● Evaluability Assessment: UK North Fork Dental Outreach Program ● Appendix B
Corporate Headquarters
9300 Lee Highway
Fairfax, Virginia 22031
Phone: (703) 934-3000
Fax: (703) 934-3740

Atlanta Office
3 Corporate Square NE, Suite 370
Atlanta, Georgia 30329
Phone: (404) 321-3211
Fax: (404) 321-3688

www.icfi.com