# CHOMPERS!
# Bringing Dental Care To Kids
## Cavity Free Kids
## Final Evaluation Report

Findings from the
Cavity Free Kids Program

January 2013

harder+company
community research

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# Executive Summary

IN 2010, the Health Foundation for Western and Central New York (HFWCNY) commissioned Harder+Company Community Research to evaluate *CHOMPERS! Bringing Dental Care To Kids (CHOMPERS!)*, a multi-year initiative designed to improve dental health among young children living in poverty.

Cavity Free Kids (CFK) is a key component of the *CHOMPERS!* initiative, bringing a best practice oral health curriculum to early child care settings. The curriculum includes oral health activities for young children, as well as parent outreach and education. The Health Foundation chose to disseminate the curriculum through a hub-and-spoke design. Six grantees representing seven counties were chosen as hubs for their communities: ACCORD Corporation, Cattaraugus and Wyoming Counties Project Head Start, Holy Cross Head Start, Mohawk Valley Perinatal Network, Orleans Community Health Center, and P.E.A.C.E., Inc. These organizations received CFK training and then trained providers in their communities.

This report presents findings from the first two years of CFK, looking at both implementation and outcomes. The following executive summary includes a high-level summary of the report by evaluation question.

## What services were offered, by whom, and who was served?

- **Services offered.** Together, the six hubs trained 622 teachers between April and October 2011. Some of the hubs provided additional support after the training such as refresher courses, in-person follow-up, or lesson plan review. All hubs noted that they made themselves available by email and phone for any questions that teachers might have.
- **Providers trained.** Most of the providers trained were teachers in Head Start (55 percent) or Early Head Start (13 percent) settings. The next most commonly trained providers were family advocates (ten percent), home visitors (seven percent), and daycare providers (five percent). Others trained include nurses and health workers, administrators, and other preschool teachers outside of Head Start.
- **Number of children reached.** The teachers trained represent 397 classrooms and an estimated 7,465 children.
- **Child demographics.** Based on a survey of 260 parents, most children were 3-4 years old, White, and spoke only English at home. Most parents responding to the survey were born in the United States, had attained a high school degree/GED or higher, and were in low income households. Relatively few children were identified as having cavities.

## How well-implemented was CFK overall?

- **Training quality.** Findings from multiple data sources suggest that CFK was well implemented overall. Teachers were satisfied with the trainings, gained the knowledge necessary to apply CFK in their classrooms,

and felt confident in moving forward with CFK.

- **Application of CFK in early care settings.** The majority of those trained were able to apply the curriculum in their classrooms. In the follow-up survey, 82 percent of teachers noted that they incorporated CFK activities into their classroom at least once a week, and 81 percent of teachers used CFK with parents at least once a month. The most commonly used activities included modeling good oral health, structured group activities with the children, sending materials home, talking about oral health through books and songs.
- **Challenges.** Despite successes in terms of training quality and application in the classroom, two key challenges were encountered during implementation of CFK. First, teachers reported feeling less prepared when it came to working with parents. They also noted that it was relatively challenging to get parents excited about oral health. Second, home visitors as a subgroup experienced special challenges implementing CFK.

## What changes resulted from CFK, and how did they vary among grantees, children, and parents?

- **Parent oral health knowledge.** At baseline, most parents demonstrated awareness of many oral health best practices. They knew that cavities could be prevented, carbohydrates and sugars were bad for the teeth, children should not have juice right before bed, and oral health is connected to overall health. Parents showed less understanding of three oral health best practice areas at baseline: the influence of snacking throughout the day, when children should start seeing the dentist, and the connection between childhood cavities and cavities in adulthood. However, parents also showed the most improvement at follow-up for those three topic areas, suggesting that CFK was effective at improving parents' oral health knowledge.
- **Child oral health practices.** Between baseline and follow-up, child oral health practices also showed improvement. More children were frequently eating fruits and vegetables, using fluoride toothpaste, drinking fluoridated water, and flossing their teeth. However, there were other areas that showed little to no improvement: eating or drinking before bed, drinking juice or soda pop, and eating crackers and sweets.
- **Access to care and support.** Most children reached by CFK had been to the dentist before the initiative began. Of those who had been to the dentist, the vast majority go regularly for dental check-ups. Only a small proportion visited the dentist due to cavities and an even smaller share visited a dentist due to pain. As for reasons why some children have not seen a dentist, 24 percent of parents expressed that their child does not have dental problems, 17 percent do not know of any pediatric dentists, and 15 percent lack transportation to the dental office. Only two percent identified dental coverage as a barrier, and none identified cost as a barrier to accessing care.

## What did evaluation findings suggest about how to improve services?

An important aspect of this evaluation was the real-time use of findings to help improve services while they were underway. For instance, we provided memos and verbal updates to Foundation staff summarizing findings from analyses of data collected as they were completed. The findings highlighted below are based on study completion and are relevant to potential continuation of the program in the future.

- **Bringing CFK to children.** While hubs and teachers rated the CFK curriculum highly, they also identified opportunities for improvement:

- *Incorporating CFK into home visits.* Home visitors are highly mobile and have a range of responsibilities, including social service, health, and early education. Even with oral health kits and supplies tailored to home visits, the visitors have sometimes struggled to incorporate CFK into their work. Activity materials are not easy to transport and some activities, such as acid attack and sugar demonstrations, are not suited for a home setting.
- *Ensuring follow-through.* Although hubs made themselves available to teachers for additional support, they had difficulty monitoring the application of CFK in outside agencies and organizations. In many cases, the frequency and intensity of curriculum implementation is up to the individual motivation and commitment of the teachers.

+ **CFK as a train-the-trainer program.** The Health Foundation employed a train-the-trainer model for CFK whereby hub grantees received training in the curriculum, and then went on to train teachers in their own communities. Hubs' experiences revealed a number of key lessons learned:
  - *Ease of implementation.* Hubs unanimously expressed that the CFK trainings were user-friendly, well-organized and easy to implement. They found that the CFK binders contained everything they needed to deliver the local trainings successfully.
  - *Adapting CFK into different early care settings.* The CFK training applied directly to Head Start and Early Head Start settings, but hub staff found that some minor changes were needed for other settings. Some hubs had difficulty finding time for a long training with daycare providers and nurses. For these populations, hubs shortened the training into smaller modules and supplemented the training with additional follow-up. Other hubs experienced challenges in engaging their local school districts. School districts were hesitant to augment existing curricula with oral health activities, since it is not state mandated.
  - *Extending the use of CFK.* During the evaluation period, most hubs focused on training Head Start and Early Head Start teachers. Since then, hubs also reached out to daycare providers, school districts, faith-based youth groups, and after school programs. Two hubs have not been able to locate additional groups that would be interested in receiving CFK training, so their efforts have focused instead on supporting the work of existing trainees.
  - *Lessons learned and suggestions.* Interviews with hub staff and observations of CFK trainings revealed a number of lessons learned and best practices:
    - Hands-on activities and demonstrations engaged training participants and helped hubs gain teacher buy-in for the curriculum.
    - Shorter trainings may be desirable for very small groups (eight or less) since they can usually move through the material more quickly. For shorter trainings, meeting set-up and preparation is particularly important to make the most of the time allotted.
    - For very large groups (fifty or more), trainers must find creative ways to keep participants focused and engaged for a day-long training.
    - Tailored kits and materials can be useful for home visitors, as well as teachers who primarily work with very young children.
    - Teachers would like to see more tips on how to make the material engaging,

especially for parents. They would also like deeper knowledge and support on oral health science.

- **Sustainability of CFK.** Hubs were confident in their plans to continue conducting trainings and supporting teachers in CFK. However, they did note a desire for continued support, including supplies and materials such as CFK binders and CDs for teachers, toothbrushes and floss for the children, and prizes for teachers and parents. Four of the hubs noted that they will continue to reach out to new groups to train. Two of the hubs found that they have exhausted the opportunities in their communities, and have not been able to find any additional groups that would be interested.
- **Overlap with Portable Dental Care.** Three of the hubs have partnerships with grantees of the *CHOMPERS!* Portable Dental Care (PDC) initiative. The hubs found that having on-site dental care was highly beneficial—it was convenient and less stressful for the children and families, and it connected families with a dental provider to serve as a resource and dental home into the future.

  Two of the three hubs also noted challenges in their experiences with PDC to date. One grantee indicated that it did not have PDC at all of its sites, and encountered some difficulty having to transport children to receive dental care. The other noted miscommunication was with the PDC partner on who would be eligible to receive care.
- **Foundation Support.** Hubs unanimously praised HFWCNY for their support and technical assistance. They appreciated the Foundation's responsiveness to questions and requests, as well as their flexibility in working with hubs when challenges arise.

## Concluding Thoughts

Through the CHOMPERS! initiative, the Health Foundation for Western and Central New York provided oral health education to young children (Cavity Free Kids) and on-site treatment for children in early education settings (Portable Dental Care). This two-prong approach to improve the oral health of young children, and this evaluation explored the potential of this initiative as well as the broader implications of this work.

Over the past two years, the CFK program made significant inroads with regard to improving the oral health of young children living in western and central New York. The CFK trainings were well-implemented and reached 622 teachers and 7,465 children, exceeding goals set at the start of the program year. Teachers found the CFK curriculum easy to use, and were confident about bringing oral health education to their classrooms. Many children in the program had access to care, but not all of them were following oral health best practices in their day-to-day routines to prevent dental decay. While children started eating more fruits and vegetables and incorporating fluoridated toothpaste and water into their daily routines by the end of CFK, some poor oral health habits still persisted—specifically, children continued to consume juice, soda pop, crackers, and sweets.

The findings of this evaluation suggest that CFK is a promising program, with the potential to influence parent knowledge of oral health and children's practices at home. However, the findings point to a need for continued education and support given. It will take time to change beliefs, habits, and behaviors around oral health. Nevertheless, CFK has jump-started this work by getting children excited about oral health and starting a conversation with parents on how best to support their children's oral health. Furthermore, most teachers are working with children to brush at school, ensuring that children only eat during designated snack times, and no longer serving juice in the classroom. These are welcome changes in the classroom, and with more outreach to parents, potentially changes that will be seen at home as well.

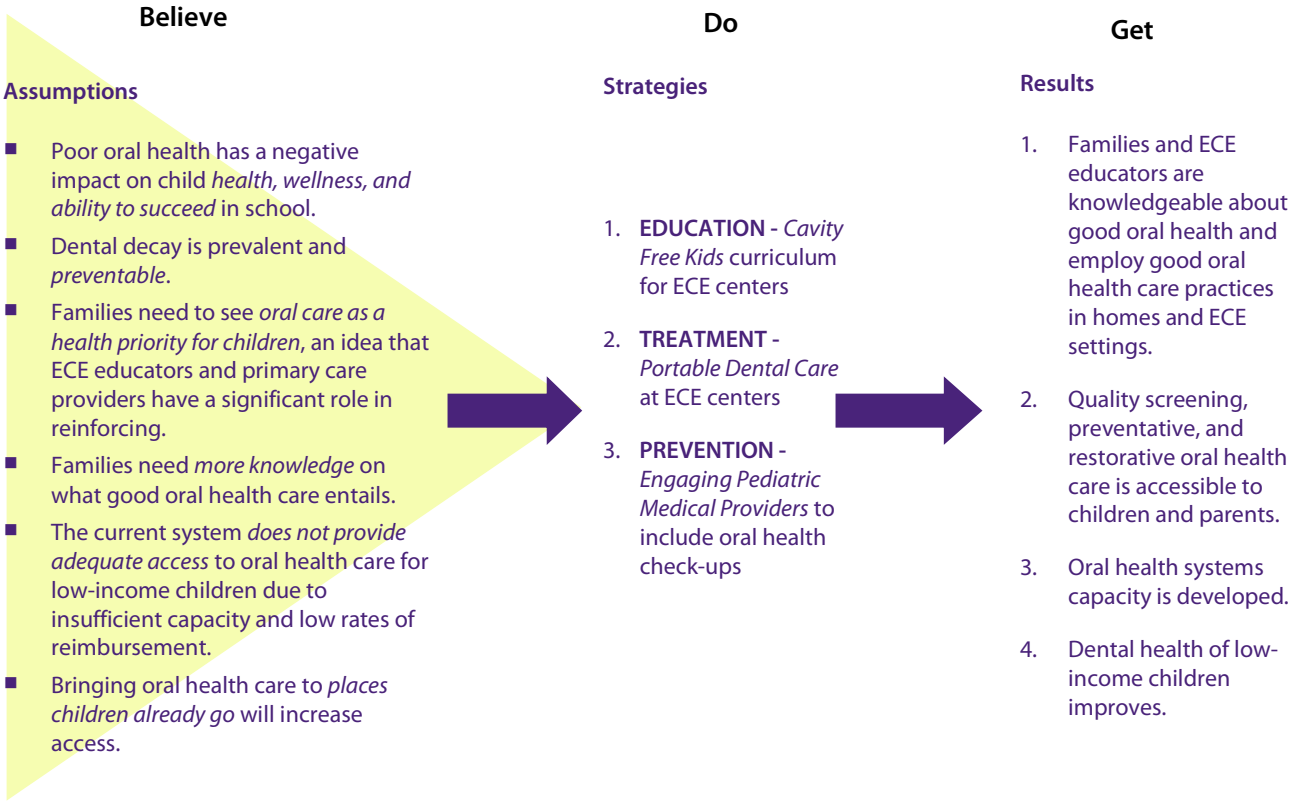
# I. CHOMPERS! Bringing Dental Care To Kids

## Theory of Change

The Health Foundation for Western and Central New York (HFWCNY) commissioned Harder+Company Community Research to evaluate *CHOMPERS! Bringing Dental Care To Kids (CHOMPERS!)*, an initiative designed to improve dental health among young children living in poverty. Launched by HFWCNY in October 2010, this three-year, $1.1 million initiative is designed to address current challenges facing the regions served by the Foundation by building on local resources and assets. The organizing principle behind *CHOMPERS!* is to bring dental education, treatment, and prevention to places where young children already go. The original theory of change for the initiative highlighted three complementary strategies, as illustrated in Exhibit 1:

1. Bringing *Cavity Free Kids (CFK)*, a best practice oral health curriculum, to early child care settings (Education)
2. Deploying *Portable Dental Care (PDC)* equipment to places children already gather (Treatment)
3. Engaging *Pediatric Medical Providers* (PMP) in incorporating oral health checks into their regularly scheduled well child visits (Prevention)[1]

**Exhibit 1. *CHOMPERS! Bringing Dental Care To Kids* Theory of Change**



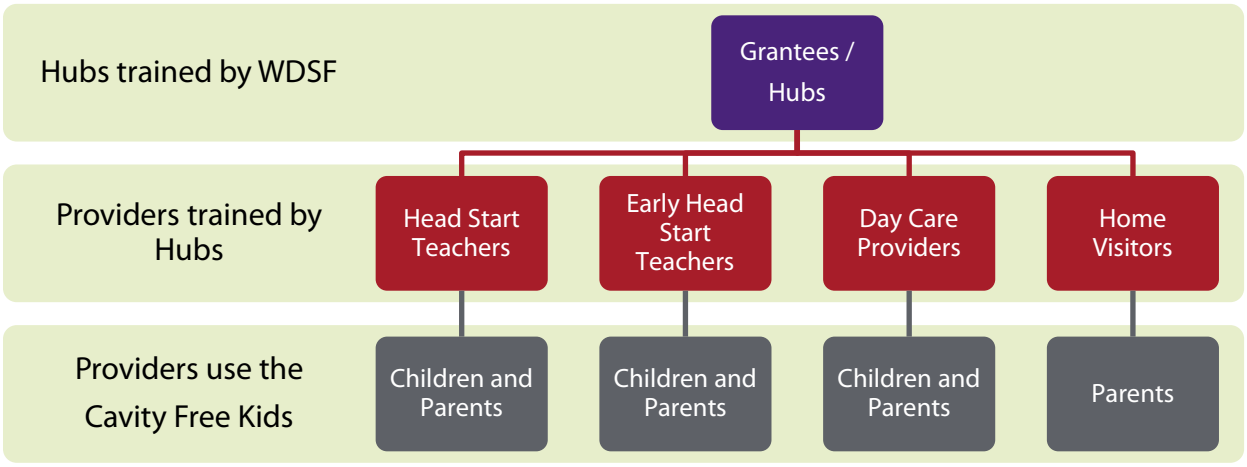

[1] Following subsequent outreach and analysis, this component of the CHOMPERS! Initiative was discontinued.

## Cavity Free Kids (CFK)

The focus of this report is the Cavity Free Kids component of the *CHOMPERS!* initiative. The Cavity Free Kids (CFK) curriculum was developed by the Washington Dental Services Foundation (WDSF) for the purpose of integrating oral health into early education settings. Though the curriculum was initially designed for Head Start and Early Head Start, it has been adapted for numerous other early learning settings such as daycare and home visits. The curriculum includes parent outreach and education modules, as well as child-friendly activities integrated into the classroom.

Through *CHOMPERS!*, HFWCNY has brought CFK to much of western and central New York. The Health Foundation chose to disseminate the curriculum using a hub-and-spoke model, designed to embed CFK expertise in local organizations who could then disseminate CFK to organizations throughout their communities (Exhibit 2). Six grantees representing seven counties were chosen as hubs for the Cavity Free Kids curriculum in their communities: *ACCORD Corporation* (Allegany County), *Cattaraugus and Wyoming Counties Project Head Start* (Cattaraugus and Wyoming Counties), *Holy Cross Head Start* (Erie County), *Mohawk Valley Perinatal Network* (Oneida County), *Orleans Community Health Center* (Orleans County), and *P.E.A.C.E., Inc.* (Onondaga County).

**Exhibit 2. *CHOMPERS!* Cavity Free Kids Program Design**




## Evaluation Approach

This evaluation examined implementation of CFK beginning in October 2010 with initial hub training and through the end of the 2011-12 school year. The evaluation had three primary goals: (a) to provide HFWCNY, CFK grantees, and the technical consultants with information that can be used to *improve program implementation* and promote learning, (b) to *document key outcomes and accomplishments* of the initiative as a whole and of its individual components, and (c) to *identify lessons learned* that are relevant to HFWCNY and other stakeholders interested in improving the dental health of children living in poverty.

The overall *CHOMPERS!* evaluation design is based on Francine Jacobs' Five-Tiered Approach (see Appendix A), a best practice framework that organizes evaluation activities developmentally into five developmental

stages. It outlines how program evaluations evolve through five different stages as it (1) pilots the interventions, (2) builds capacity, (3) refines its implementation, (4) achieves outcomes over time, and (5) leads toward the desired impact. For the specific evaluation of CFK, our approach began with a readiness phase to determine grantees' data collection capacity and procedures, moved into assessment of process and implementation, and measurement of outcomes once programs were well implemented. In keeping with this approach, the primary questions that guided this evaluation were:

- What services are offered, by whom, and who and how many are being served? *(Tier 2: Monitoring and Accountability)*
- Are services well implemented and do they match the model? Which factors enable or constrain implementation? *(Tier 3: Quality Review)*
- What changes have occurred, and how do they vary by characteristics of grantees, children, and parents? *(Tier 4: Achieving Outcomes)*
- What do evaluation findings suggest about how to improve services? *(Tiers 2, 3 and 4: Program Improvement)*

## Methodology

The Cavity Free Kids evaluation used a mixed-methods approach, incorporating both quantitative and qualitative data to provide a fuller picture of the successes and challenges experienced. Data collection included: (1) interviews with grantees (i.e., hubs),[2] (2) structured observations of the trainings conducted by hub grantees, (3) surveys with teachers trained in the CFK curriculum, (4) surveys with parents whose children were exposed to the CFK curriculum, (5) a review of the quality improvement logs submitted by teachers, and (6) a review of CFK program documents.

**Grantee Interviews.** All six hubs participated in the baseline and follow-up interviews. Baseline interviews occurred in July 2011, while follow-up interviews occurred in July 2012.

**Structured Observations of Trainings.** With the assistance of a local contractor, the evaluation team conducted structured observations of one training for each of the six hubs between June and September 2011. The observations yielded data on how trainings were adapted to the context and needs of local teachers and providers. The evaluation team shared best practices and lessons learned from these observations during a webinar conducted in October 2011.

**Teacher and Parent Surveys.** Survey data were collected on a rolling basis, according to when teachers were trained and when implementation was expected to take place. The baseline *teacher survey* was conducted immediately after each training that took place from April to October 2011. The follow-up teacher survey was conducted in April 2012, when teachers had at least three months of CFK experience in their classrooms. The baseline *parent survey* was conducted at the start of CFK implementation, between August 2011 and February 2012. The evaluation then followed up with parents after their children had been exposed to CFK for at least three months (April through September 2012).

[2] CFK grantees were selected to become local hubs for the Cavity Free Kids curriculum. "Grantee" and "hub" will be used interchangeably for the purpose of this report.

Participation tended to be lower in the follow-up surveys despite numerous attempts to contact participants.[3] Exhibit 3 outlines the number of participants in each of the surveys. It reveals that the distribution across hubs for the parent survey is consistent between baseline and follow-up, which allowed for stronger statistical comparisons to be made. However, for the teacher survey, the distribution across hubs is different between baseline and follow-up. In particular, teachers trained by Orleans Community Health are underrepresented in the follow-up teacher survey, making it more difficult to compare changes over time.

**Exhibit 3. Survey Respondent Representation by Hub**

| | Teacher Survey | | Parent Survey | |
|---|---|---|---|---|
| | Baseline | Follow-up | Baseline | Follow-up |
| ACCORD Corporation | 34 (9%) | 25 (14%) | 23 (9%) | 16 (10%) |
| Cattaraugus & Wyoming Counties Project Head Start | 59 (15%) | 40 (23%) | 37 (14%) | 27 (18%) |
| Holy Cross Head Start | 54 (14%) | 21 (12%) | 55 (21%) | 26 (17%) |
| Mohawk Valley Perinatal Network | 80 (20%) | 33 (19%) | 45 (17%) | 24 (16%) |
| Orleans Community Health | 43 (11%) | 8 (5%) | 40 (15%) | 29 (19%) |
| P.E.A.C.E., Inc. | 130 (33%) | 47 (27%) | 60 (23%) | 32 (21%) |
| **TOTAL** | **400** | **174** | **260** | **154** |

**Quality Improvement Logs.** Teachers and home visitors submitted quality improvement logs (QI logs) to track their compliance with CFK recommendations. The tool, which was developed by Washington Dental Services Foundation, tracks compliance along five activities: (1) whether any CFK activities occurred in the classroom, (2) whether all children brushed their teeth, (3) whether a CFK message was sent to families, (4) whether children only ate during designated snack times, and (5) whether juice was served. QI logs were collected for the first three months of implementation, between April 2011 and March 2012.

**Program Documents.** To gain a deeper understanding of the CFK curriculum and program, the evaluation team reviewed curriculum materials, grantee applications and implementation plans, and grantee final reports submitted to the HFWCNY. The team also reviewed the quality improvement logs kept by classrooms that were implementing the Cavity Free Kids curriculum.

As with any evaluation, certain study limitations must be considered:

- **Social desirability may introduce positive bias.** Many of the evaluation methods rely upon self-reported data, which can be susceptible to a tendency among respondents to answer how they think they are expected to, rather than disclosing their true opinions.
- **Low response to follow-up parent survey.** Despite various attempts to increase response, the rate of follow-up was lower than expected among parents of children who participated in CFK. This size of the follow-up sample constrained the ability to detect statistical significance for certain subgroups (i.e., population, geography, setting type), as originally intended.
- **Daycare providers are under-represented in the follow-up teacher survey.** As discussed above, teachers and providers trained by Orleans Community Health were under-represented in the follow-up teacher survey. Since Orleans Community Health was the primary hub that focused on training

[3] Further notes on the parent survey methodology are available in Appendix B.

daycare providers, the under-representation of daycare affects the kinds of comparisons that can be made in the analysis.

- **The parent surveys are not representative of the overall population of families served.** Families were randomly selected for participation, but the sampling design oversampled from some hubs in the interest of capturing enough data to address the variety of populations and early childhood education settings reached by this initiative. As a result, findings from the parent survey are not generalizable to the overall population of western and central New York. The section that is most affected by this design is the discussion about child and family demographic characteristics.

Despite these limitations, the evaluation team believes that the evaluation provides important insights, findings, and lessons learned regarding the success of CFK.

## Organization of Report

This report is organized as follows:

- **Reach: Cavity Free Kids Participants.** Findings on the reach of CFK and the providers trained, as well as key characteristics of the families participating in the evaluation.
- **Implementation: Quality of Training and Application of CFK.** Data that speak to the quality of implementation—teachers satisfaction with the trainings, knowledge attainment, and confidence moving forward. This section also discusses how teachers have applied CFK.
- **Outcomes: Family Oral Health Knowledge, Practices, and Experiences.** Results achieved by CFK, including parent oral health knowledge, child oral health practices, and experiences in accessing dental care.
- **Lessons Learned.** Lessons learned regarding how to bring CFK to children and train teachers on CFK, as well as the sustainability of CFK. This section incorporates CFK grantees' thoughts regarding their collaboration with Portable Dental Care, and feedback on the assistance they have received through HFWCNY.
- **Concluding Thoughts.** Final thoughts on the success of the CFK Initiative.
- **Appendices.**

# II. Reach: Cavity Free Kids Participants

A key goal of this evaluation was to determine who and how many people were served in the CFK program. This chapter presents data on the overall reach of the CFK program, as well as the characteristics of program participants as represented by survey participants.

## CFK Program Reach

From April to October 2011, the six hub grantees trained 622 teachers that represent 397 classrooms across western and central New York (Exhibit 4). Overall, the hubs exceeded their anticipated reach. At the start of the grant, hubs estimated their total reach would be 5,189 children. The final reach exceeded initial estimates by 44 percent for a total count of 7,465 children.

**Exhibit 4. Reach of CFK Trainings, April 2011 through October 2011**

| | Teachers Trained | Classrooms Reached | Children Reached | Children Ages 0-5 in Poverty* |
|---|---|---|---|---|
| ACCORD Corporation | 59 | 34 | 420 | 617 |
| Cattaraugus & Wyoming Counties Project Head Start | 59 | 24 | 514 | 1,344 |
| Holy Cross Head Start | 225 | 170 | 3,400 | 8,937 |
| Mohawk Valley Perinatal Network | 87 | 64 | 1,530 | 2,263 |
| Orleans Community Health | 62 | 48 | 501 | 399 |
| P.E.A.C.E., Inc. | 130 | 57 | 1,100 | 3,931 |
| **TOTAL** | **622** | **397** | **7,465** | **17,491** |

* Estimates for children ages 0-5 in poverty from 2008. Data above reflect HFWCNY calculations from the 2008 Annual Population Estimates of the U.S. Census Bureau and the poverty guidelines from the Economic Research Service of the USDA.
** Data in this table has been cross-checked with teacher survey data and verified with hubs.

## Teachers and Providers Trained

The teacher survey captured key characteristics of those who were trained between the months of April and October 2011. Therefore, findings of the teacher survey primarily reflect the perspective of teachers and providers trained in the CFK curriculum *in the first seven months of implementation*. For simplicity, this section only presents data from the baseline survey, as it reflects a larger sample of teachers trained. The baseline teacher survey data yielded a few key themes:

**Most teachers (89 percent) only speak English in their classrooms.** A small share (11 percent) speaks English and another language, and only a small handful spoke mostly another language (0.3 percent). Other languages spoken in the classroom include Russian, Spanish, and American Sign Language.

**Training participants were mostly Head Start and Early Head Start teachers.** Only a small share of training participants was made up of home visitors and daycare providers. CFK trainings were also attended by family advocates, nurses and health workers, program administrators, preschool teachers outside of Head Start, and other program staff. See Exhibit 5 for details.

**Most hubs primarily trained Head Start and Early Head Start teachers.** One hub (Orleans) primarily trained daycare providers. In Exhibit 5, the category of "daycare provider" includes providers from both daycare centers and family daycare settings. Daycare settings are deemed separate from Head Start, Early Head Start, and other preschools because they tend to have a less standardized curriculum and they tend to serve a range of ages—from a few months old up to preschool age.

**Exhibit 5. Providers Trained as of October 2011, Baseline Teacher Survey**

| | Total (n=390) | ACCORD (n=34) | C&W (n=59) | Holy Cross (n=54) | MVPN (n=78) | Orleans (n=40) | P.E.A.C.E. (n=125) |
|---|---|---|---|---|---|---|---|
| **Head Start Teacher** | **55%** | 26% | **71%** | **83%** | **63%** | 13% | **50%** |
| **Early Head Start Teacher** | **13%** | **56%** | 14% | 4% | 0% | 5% | 17% |
| Family Advocate | 10% | 0% | 8% | 2% | 31% | 13% | 3% |
| Home Visitor | 7% | 15% | 2% | 0% | 1% | 8% | 14% |
| **Daycare Provider*** | **5%** | 3% | 0% | 4% | 0% | **38%** | 0% |
| Nurse/Health Worker | 3% | 0% | 0% | 0% | 1% | 3% | 8% |
| Administrator | 3% | 0% | 2% | 2% | 5% | 5% | 3% |
| Other Preschool Teacher | 2% | 0% | 0% | 7% | 0% | 10% | 1% |
| Other** | 3% | 0% | 3% | 0% | 0% | 8% | 6% |

* "Daycare Provider" includes providers from both daycare center and family daycare settings.
** Most respondents did not specify a job title for "Other." Those who did specify a job title identified themselves as case managers, classroom specialists, educational coordinators, program assistants, secretaries, service coordinator, and social workers.
*** Percentages do not add up to 100% because respondents were asked to select all that applied.

## Families Served

The parent survey captured a number of the key characteristics regarding the children and families reached by CFK. Although it was not possible to survey all of the children and families served, the sample provides insights regarding the composition of families in the program.[4] While demographic data was collected at both baseline and follow-up, this section only presents data from the baseline parent survey because it reflects a larger sample of families.[5] A demographic summary of the children served by CFK is presented in Exhibit 6. The following are a number of key themes from the data:

**Most hubs primarily reached children ages three and four.** Teachers trained by most hubs primarily worked with children age 4, with the exception of ACCORD (split among ages 2-4) and Mohawk Valley Perinatal Network (split between ages 3-4).

[4] There are two design elements of note regarding the sample: (1) there was an intentional oversample of parents served by certain hubs (whose estimated reach ranged between 332 and 1,766 children) and certain early education and child care settings, and (2) within each hub, classrooms were randomly selected for participation in the survey. While the sample is representative of the population served within each hub, it may not be representative of the overall population served.

[5] As assessment of the baseline and follow-up parent surveys revealed that the demographic breakdown of the two surveys are quite similar.

**Across all hubs, most of the children served were ethnically white, followed by multiracial and African American.** Hubs that reached a larger share of non-white children included Cattaraugus & Wyoming, Holy Cross, Mohawk Valley Perinatal Network, and P.E.A.C.E.

**Most parents only speak English to their children at home.** Only a small share speaks English and another language at home, and a few spoke mostly another language at home.

**Exhibit 6. Child Demographics, Baseline Parent Survey**

| | Total (n=258-260) | ACCORD (n=23) | C&W (n=37) | Holy Cross (n=54-55) | MVPN (n=45) | Orleans (n=40) | P.E.A.C.E. (n=58-60) |
|---|---|---|---|---|---|---|---|
| **Age** | | | | | | | |
| 1 year old | 4% | 0% | 0% | 0% | 9% | 0% | 10% |
| 2 years old | 10% | **39%** | 0% | 2% | 17% | 3% | 13% |
| 3 years old | 23% | **26%** | 22% | 20% | **42%** | 20% | 12% |
| 4 years old | **59%** | **30%** | **78%** | **76%** | **33%** | **70%** | **57%** |
| 5 years old | 4% | 4% | 3% | 2% | 0% | 8% | 8% |
| **Gender** | | | | | | | |
| Male | **56%** | **56%** | **65%** | **56%** | **51%** | **58%** | **53%** |
| Female | 44% | 44% | 35% | 44% | 49% | 43% | 47% |
| **Ethnicity** | | | | | | | |
| White | **66%** | **87%** | **62%** | **56%** | **60%** | **85%** | **62%** |
| Multiracial | 18% | 9% | 24% | 16% | 31% | 8% | 16% |
| Black/African American | 8% | 0% | 8% | 11% | 7% | 0% | 16% |
| Latino | 5% | 4% | 3% | 11% | 2% | 8% | 2% |
| Asian | 2% | 0% | 3% | 6% | 0% | 0% | 2% |
| Middle Eastern | 0.4% | 0% | 0% | 0% | 0% | 0% | 2% |
| Alaska Native/American Indian | 0.4% | 0% | 0% | 0% | 0% | 0% | 2% |
| **Language Spoken at Home** | | | | | | | |
| English Only | **87%** | **96%** | **95%** | **78%** | **89%** | **93%** | **83%** |
| English & Another Language* | 10% | 4% | 5% | 17% | 4% | 8% | 15% |
| Mostly Another Language** | 3% | 0% | 0% | 6% | 7% | 0% | 2% |

* "English & Another Language" includes: Arabic, Bengal, Bulgarian, Chinese, Romanian, Sign Language, Spanish, Vietnamese, Filipino (Bisaya Dialect), and Romanian.
** "Mostly Another Language" includes: Kizigua, Korean, Russian, Spanish, and Chinese.

The survey also captured key characteristics of the parent respondents. The data show that the respondents represent low-income families who were born in the United States and attained a high school degree or GED.

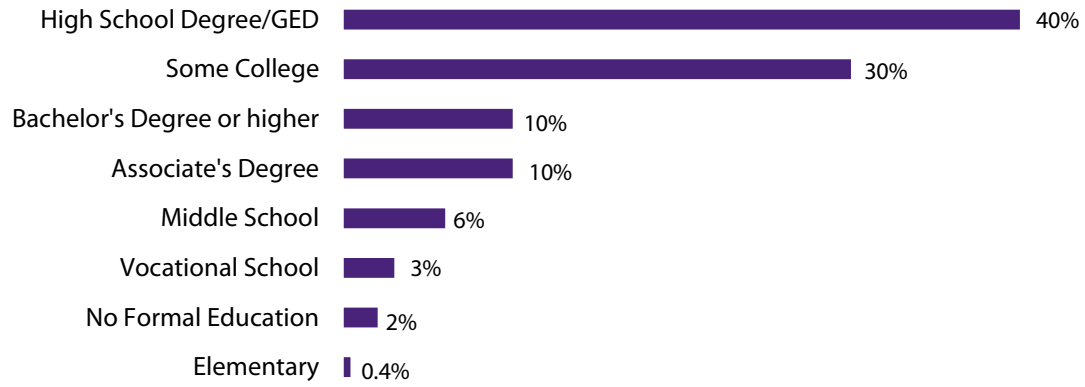
**The vast majority of survey respondents (94 percent) were either the mothers or fathers of the children.** Other respondents included grandparents, other relatives, legal guardians, and foster parents.

**Nearly all respondents (99 percent) completed the survey in English.** Only a few respondents opted to complete the parent survey in Spanish.

**Most respondents (93 percent) were born in the United States.** Five percent have resided in the United States for eleven or more years, two percent have resided in the United States for six to ten years, and only a small share (two percent) noted that they have resided in the United States for five years or less.

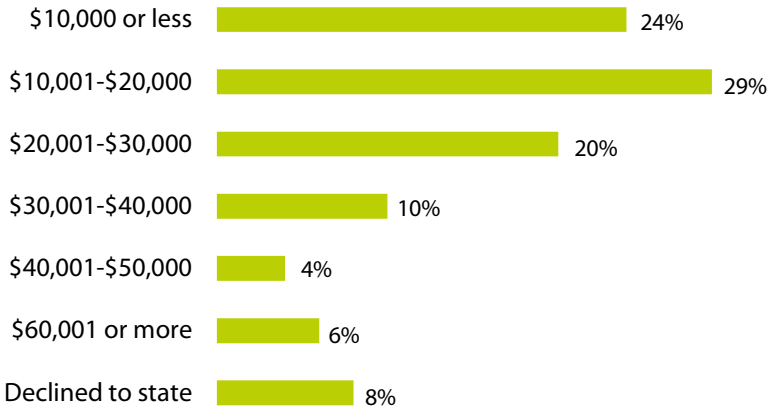
**Most of the respondents (90 percent) have attained a high school degree/GED or higher.** As shown in Exhibit 7, four in ten respondents hold only high school degrees/GEDs, and many have had some level of post-secondary education: some college (30 percent), Associate's Degree (ten percent), or Bachelor's Degree or higher (ten percent).

### Exhibit 7. Highest Educational Attainment of Respondent, Baseline Parent Survey (n=256)




**Overall, the families served by CFK were mostly low income households.** Exhibit 8 outlines the annual household income of the families participating in the parent survey. About half of respondents reported annual household incomes of $20,000 or less, and one-fifth of respondents reported annual household incomes of $20,001-$30,000. Only a relatively small share reported annual household incomes greater than $30,000.

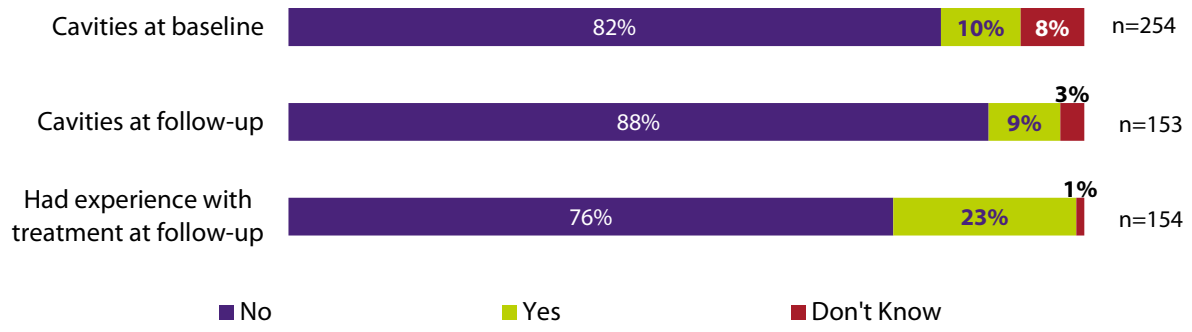
### Exhibit 8. Family Household Income, Baseline Parent Survey (n=254)




Respondents were asked to identify whether their children had cavities at both baseline and follow-up, as well as whether their children had received treatment for cavities in the past (follow-up only). Results in Exhibit 9

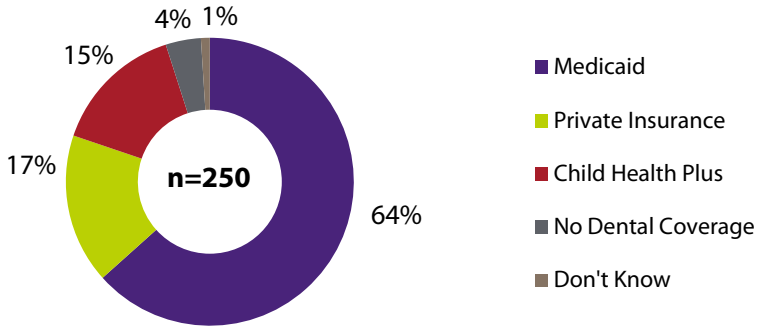
show that only a small share of children had cavities, and nearly one-quarter of the children had received treatment for their cavities. Follow-up data on treatment are available for 18 of the children who had cavities at baseline. Over half (n=10) of those children received treatment and no longer had cavities at the time of the follow-up survey.

**Exhibit 9. Prevalence of Cavities and Experience with Treatment**




As shown in Exhibit 10, most children had some form of dental insurance coverage at the time of the survey, which was found to be true across all hubs. Most children receive dental coverage through Medicaid (64 percent), while a smaller share received dental coverage through private insurance (17 percent) or Child Health Plus (15 percent). Only four percent of parents reported that their children have no dental coverage at all.

**Exhibit 10. Child Dental Insurance Coverage, Baseline Parent Survey**




Overall, the parent survey data reveals that CFK was reaching the families intended in the program design: preschool-age children from low-income households. Most children did not currently have any cavities, and many of the children had dental insurance coverage. For these families, CFK oral health education around best practices and preventive care was quite timely—the children and families could be reached before dental decay and disease were severe.

# III. Implementation: Quality of Training and Application of CFK

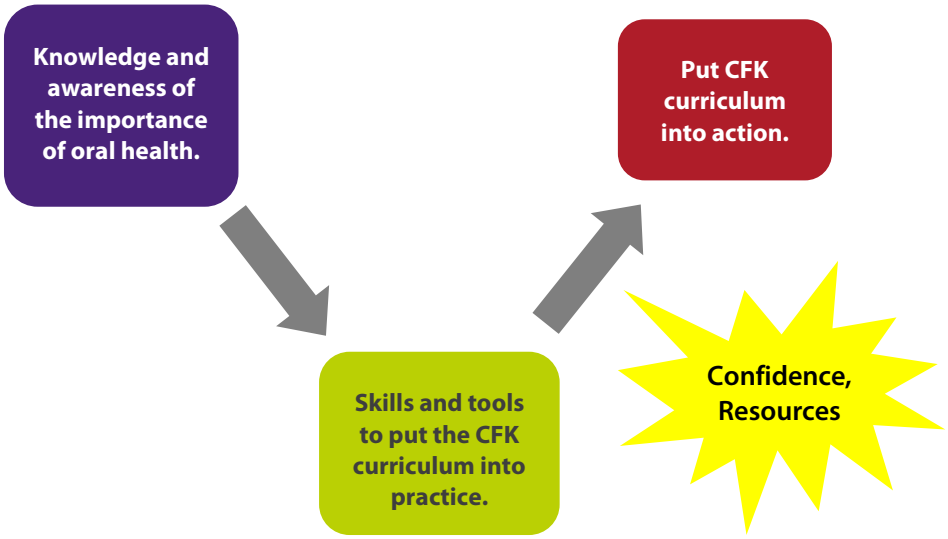
Before assessing the outcomes of CFK, it is important to first assess the extent to which the program was well implemented and matched the CFK model. One of the strengths of CFK is that it is an extremely flexible model that can be used in a variety of ways by teachers. Hubs were able to adapt the training approach to fit their local context. This chapter of the report assesses the quality of implementation of both the *trainings* provided by hubs and the *application of CFK* in early care and education settings.

As detailed below, findings suggest that CFK was well implemented overall. Teachers were satisfied with the trainings, gained the knowledge necessary to apply CFK in their classrooms, and felt confident in moving forward with CFK. The majority of those trained were able to apply the curriculum in their classrooms, with most using it one or more days per week. Despite these successes, teachers felt less prepared when it came to working with parents, and home visitors as a subgroup experienced special challenges implementing CFK.

## A Model for Assessing Training Quality

To understand how quality training is defined, it is useful to examine a typical framework for evaluating capacity-building initiatives such as CFK (Exhibit 11). In order for the CFK trainings to be effective, teachers need to *develop knowledge and awareness* of oral health best practices and *gain the skills and tools* to put CFK into practice. Furthermore, teachers should leave trainings with the *confidence to move forward* as well as the belief that they will have the *support and resources* necessary to successfully implement CFK. The teacher surveys were designed to track success in each of these milestones. This chapter presents data with regard to the format of CFK trainings, teachers' satisfaction with the trainings, as well as the grantee success at each of these milestones.

**Exhibit 11. Capacity-Building Framework**



## Format of CFK Trainings

To understand how hubs have adopted the CFK curriculum in their communities, the evaluation team conducted structured observations of the trainings. The evaluators observed one training for each hub June through September 2011. Therefore, the observations captured hubs' early efforts with the CFK trainings.

Exhibit 12 displays a number of key characteristics of the CFK trainings—duration, number of trainers, and number of participants. Some hubs fit the CFK curriculum in a single session, while others divided the training into two sessions. In the latter, hubs would cover part of the curriculum one day, and then meet again with teachers a number of weeks later to cover the remainder. Training sessions lasted from one and a half to six hours, and varied in size. On the smaller end, training sessions were held by 3-4 trainers for 6-8 participants. On the larger end, trainings were held by 5-6 trainers for 38-70 participants. Overall, there was significant variation in training format and duration across hub organizations.

**Exhibit 12. Format of CFK Trainings Observed**

| | Number of Sessions* | Duration** (hours) | Number of Trainers | Number of Participants |
|---|---|---|---|---|
| ACCORD Corporation | 1 | 2.5 | 3 | 8 |
| Cattaraugus & Wyoming Counties Project Head Start | 2 | 3.5 | 4 | 6 |
| Holy Cross Head Start | 1 | 1.5 | 6 | 38 |
| Mohawk Valley Perinatal Network | 2 | 6 | 5 | 70 |
| Orleans Community Health | 1 | 2.5 | 2 | 17 |
| P.E.A.C.E., Inc. | 1 | 6 | 5 | 12 |

* For trainings that spanned two sessions, the observer attended the second day. The dual-session trainings did not occur on two consecutive days, but in two parts separated by weeks or months.

** Duration only includes the hours associated with the session observed. It does not reflect the total hours of a multi-day training.

## Satisfaction with CFK Trainings

While satisfaction is only one dimension of a successful training, it is a useful data point for understanding the greater picture. In interviews conducted, hubs noted that CFK was consistent with the goals and format of Head Start classrooms. The feedback they received from teachers was overwhelmingly positive. As one hub explained, "It's very easy to fit [CFK] into a normal classroom curriculum, as it's already broken up into [early childhood education] domains. The teachers have had nothing but positive feedback about it." Another hub noted that CFK was a valuable tool and resource to teachers: "The teachers were really responsive. Oral health has been [a priority] in Head Start and part of the philosophy. The tool gave teachers age-appropriate activities and more consistency to the plan."

Findings from the teacher survey were consistent with reports from the grantee interviews. Overall, teachers were highly satisfied with the training they received. Most teachers rated the trainings as "excellent" overall (71 percent). They felt that the trainings incorporated excellent materials and handouts (74 percent), content (71 percent), and training activities (67 percent). Looking at a hub-level analysis, results show that some hubs received higher ratings than others (Exhibit 13). The hub that was rated the most highly in terms of satisfaction was Cattaraugus & Wyoming, followed by ACCORD and Orleans, and then Holy Cross. Hubs that received weaker scores include P.E.A.C.E. and Mohawk Valley Perinatal Network.

**Exhibit 13. Satisfaction with Training by Hub, Baseline Teacher Survey**

| | Total (n=393-395) | ACCORD (n=34) | C&W (n=58-59) | Holy Cross (n=54) | MVPN (n=78-79) | Orleans (n=40) | P.E.A.C.E. (n=129) |
|---|---|---|---|---|---|---|---|
| Overall satisfaction | ● | ● | ● | ● | ○ | ● | ○ |
| Training materials and handouts | ● | ● | ● | ● | ○ | ● | ○ |
| Content | ● | ● | ● | ○ | ○ | ● | ○ |
| Training activities | ○ | ○ | ● | ● | ○ | ○ | ○ |

* Dark purple denotes 70 percent or more of their trainees rated them as "Excellent", medium purple denotes 60-69 percent of their trainees rated them as "Excellent", and light purple denotes less than 60 percent of their trainees rated them as "Excellent."

The survey also inquired about the *quality of the training* in four key dimensions, and nearly all teachers expressed satisfaction with the quality of the trainings:

The training had *adequate time for discussion and questions*. (99 percent agreed)

The training was *clear*. (99 percent agreed)

The training *met my expectations*. (99 percent agreed)

The training was *a good use of my time*. (98 percent agreed)

In a hub-level analysis, respondents across all hubs offered high marks on the quality of the training they received.

## Knowledge Attainment

In the capacity-building framework, the first step to a successful training is the attainment of accurate knowledge on oral health. Teachers were tested on oral health facts immediately after the training in the baseline survey and again in the follow-up survey. In particular, they were asked to complete true-false test questions on oral health practices and beliefs. These questions reflect the key takeaways of the CFK curriculum as identified by CFK master trainers from the Washington Dental Services Foundation.

In the baseline survey, teachers and providers demonstrated accurate knowledge on oral health science and best practices. As shown in Exhibit 14, a vast majority of participants answered the questions correctly. There were only a few items that proved to be more challenging: (i) when a child should see the dentist for the first time (by first tooth or first birthday), (ii) whether young children should drink fluoridated water, and (iii) whether cavities in childhood could increase the chance of cavities in adulthood. Interestingly, these were the same areas where Early Head Start teachers demonstrated stronger knowledge attainment than their peers. There were also two areas that seemed challenging for daycare providers. They struggled a bit more in connecting oral health to overall health, having young children drink fluoridated water, and connecting childhood cavities with cavities in adulthood.

**Exhibit 14. True-False Knowledge Test by ECE Setting, Baseline Teacher Survey**

| | % Answering Correctly at Baseline | | | | |
|---|---|---|---|---|---|
| | All Teachers and Providers (n=390) | Head Start Teachers (n=213) | Early Head Start Teachers (n=52) | Daycare Providers (n=18) | Home Visitors (n=27) |
| Dental disease among children can be prevented. (TRUE) | 99% | 99% | 100% | 100% | 100% |
| Children only need to see the dentist when they feel pain in their mouths. (FALSE) | 99% | 99% | 98% | 100% | 100% |
| The health of a child's mouth is connected to overall health. (TRUE) | 99% | 99% | 100% | **88%** | 96% |
| Parents do not need to worry about their child's oral hygiene until the first tooth appears. (FALSE) | 98% | 98% | 100% | 94% | 100% |
| It is okay for children to have juice right before bed. (FALSE) | 96% | 99% | 100% | 100% | 100% |
| Carbs and sugars create acid, which is good for teeth. (FALSE) | 96% | 95% | 100% | 94% | 96% |
| Snacking throughout the day can increase the chance of cavities. (TRUE) | 94% | 94% | 98% | 94% | 93% |
| Children should visit the dentist when they get their first tooth or by their first birthday. (TRUE) | 87% | 84% | **96%** | 88% | 89% |
| Young children should drink fluoridated water. (TRUE) | 86% | 87% | **90%** | **65%** | 89% |
| If baby teeth have cavities, they are more likely to have cavities as adults. (TRUE) | 69% | 70% | **90%** | **59%** | 82% |

A comparison of the baseline and follow-up responses show that teachers maintained their knowledge on oral health best practices. In the follow-up teacher survey, the vast majority of respondents answered the true-false questions correctly. There were only a few areas where there were any notable changes (Exhibit 15). In the follow-up survey, fewer teachers correctly identified that snacking throughout the day can increase the chance of cavities (six percent fewer), and felt that children should visit a dentist by first tooth or first birthday (seven percent fewer). However, more teachers identified that cavities in childhood could increase the chance of cavities in adulthood (nine percent more).

**Exhibit 15. Results on True/False Knowledge Test, Changes Over Time**

| | Baseline (n=390) | Follow-up (n=172) | Change |
|---|---|---|---|
| Snacking throughout the day can increase the chance of cavities. (TRUE) | 94% | 88% | -6% |
| Children should visit the dentist when they get their first tooth or by their first birthday. (TRUE) | 87% | 80% | -7% |
| If baby teeth have cavities, they are more likely to have cavities as adults. (TRUE) | 69% | 78% | +9% |

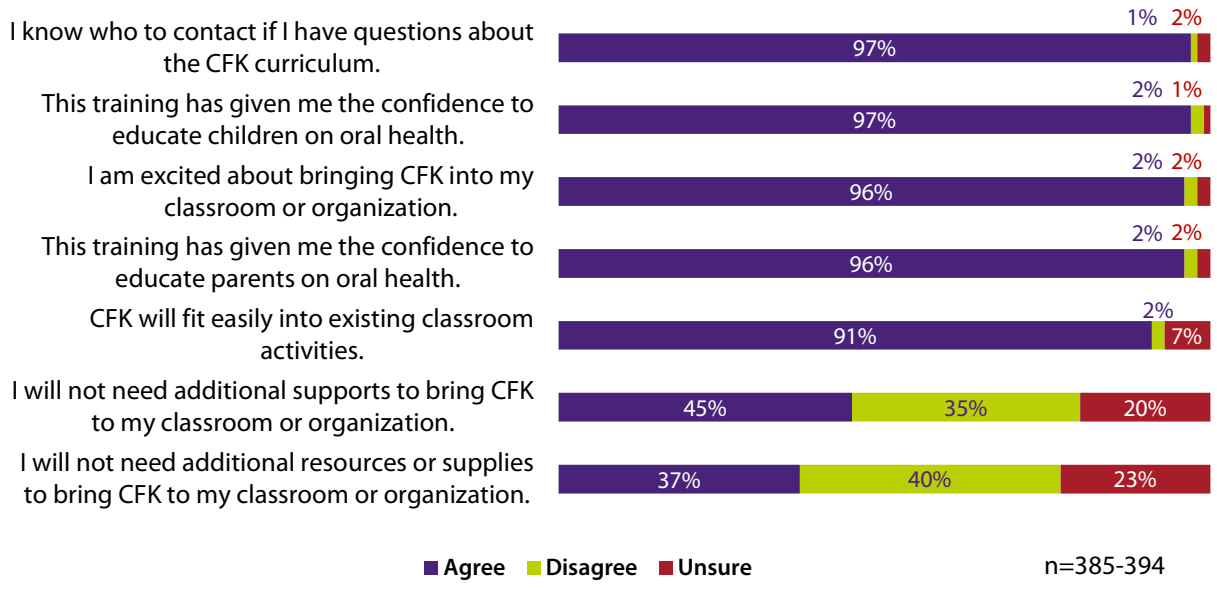
Lastly, the survey tested teachers on their knowledge of the CFK philosophy—how they should go about reaching out to families about CFK. The philosophy asserts that teachers should (1) focus on what parents can do to improve their child's oral health, (2) be respectful of different cultures and beliefs, (3) use language that is accessible to all, (4) provide concrete ideas on what parents can do, and (5) repeat the messages in multiple ways. The proportion of teachers responding correctly increased between baseline (86 percent, n=356) and follow-up (92 percent, n=169). These conclusions were true across Head Start teachers, Early Head Start teachers, daycare providers, and home visitors.

## Confidence Moving Forward

The results so far have shown that teachers are satisfied with the training they received and they have also attained the oral health knowledge necessary to move forward. However, are they confident that they will be able to implement the CFK curriculum in their classrooms?

Results from the baseline teacher survey show that teachers were indeed confident about implementing CFK in their classrooms (Exhibit 16). Nearly all teachers reported feeling confident about educating children and parents on oral health, and were also excited about bringing CFK into their classrooms or organizations. They felt that CFK would fit easily into existing classroom activities, and knew who to contact with questions about the curriculum. However, there were two areas where results were mixed—some teachers felt that they would need additional supports (45 percent) or resources (37 percent) for this work, while others did not feel additional supports and resources were necessary and some were unsure of what they would need.

**Exhibit 16. Confidence Moving Forward, Baseline Teacher Survey**




Looking more closely by provider type, home visitors were the most likely to report that they anticipate having adequate supports (59 percent) and resources (60 percent) to implement CFK. The other three groups—Head Start teachers, Early Head Start teachers, and daycare providers—had only 30 to 45 percent reporting that they anticipate having enough supports and resources for implementation.

Although home visitors expressed a greater likelihood that they had enough supports and resources, data from the follow-up teacher survey and grantee interviews reveal that home visitors found it challenging to implement CFK. The nature of these challenges will be discussed further in Chapter 5, Lessons Learned.

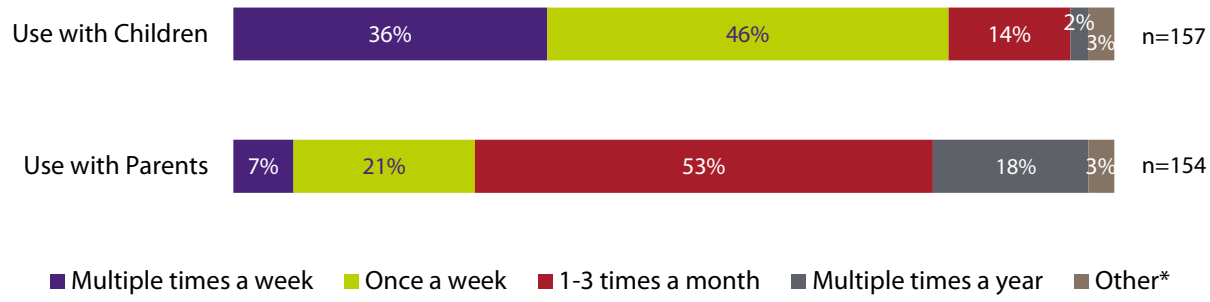
## Application of the CFK Curriculum

Results have shown that teachers were satisfied with the trainings, gained the knowledge necessary to apply CFK in their classrooms, and felt confident in moving forward with CFK. This last section presents data on how CFK was applied by teachers, as well as the extent to which the trainings prepared teachers for the work.

The CFK curriculum is designed as a resource for teachers. It provides a wide variety of classroom activities and parent engagement strategies, and teachers have the flexibility to decide what is right for their classroom. They may use CFK every day, once a week, or once a month. Furthermore, they may use all of the suggested activities, or they may choose only a subset. According to hubs, the CFK curriculum was very easy to integrate into existing curricula and lesson plans. They found that teachers were able to start applying parts of the curriculum right away—such as no longer providing juice in the classroom, tooth brushing in the classroom, and talking to children about oral health. For the most part, teachers were able to integrate CFK activities into their classrooms within two weeks.

In the follow-up teacher survey, the majority of respondents (88 percent) had used the CFK curriculum for three months or more. Only a small share of teachers had less than three months' experience with CFK (four percent) or had not started using it yet (one percent).[6] When asked how often they use the CFK curriculum with children, the most common response was once a week (46 percent), followed by multiple times a week (36 percent) (Exhibit 17). However, teachers did not use CFK as often with parents. About half of teachers reported that they used CFK with parents one to three times per month.

**Exhibit 17. Frequency of CFK Curriculum Use, Follow-up Teacher Survey**




* *"Other" includes:* as needed on an individual basis, not involved with implementation, and offered irregularly during home visits.

Through quality improvement logs (QI logs), teachers and home visitors tracked their use of CFK activities and alignment with CFK recommendations. The tool was developed by Washington Dental Services Foundation, and was structured such that each log sheet represented one month for one classroom and teachers selected the items that they have completed on a daily basis. Exhibit 18 presents some key findings

[6] The remaining seven percent noted that the question did not apply. This group consists of administrators, managers, and other staff that do not directly implement CFK with children and families.

from the QI logs. It is important to note that the QI logs were quite challenging to clean and analyze. While the results provide a data point to be triangulated with other findings, it is important to refrain from drawing strict conclusions from this piece of data alone.[7]

In the *classroom setting*, most teachers recorded that children only ate during designated snack times and brushed their teeth nearly every day (4-5 days per week). More than half of teachers reported that they no longer serve juice, and those who serve juice do so infrequently. Most teachers incorporated CFK activities at least once a week, but quite a number of teachers (42 percent) did not send CFK messages home to families.

The results for *home visits* are quite different from that of classroom settings. About half of home visitors report that the child is brushing nearly every day (4-5 days per week), and there is much variation in whether children are eating only at designated snack times or are served any juice. Results from home visits may be quite different because of the format of engagement. Home visitors are not typically with the children every day, and oral health may be just one of the many topics that home visitors need to cover with families that day. Although many home visitors have incorporated CFK activities (60 percent), there is also a substantial number (27 percent) who reported that they have not incorporated any CFK activities at all. However, home visitors were more likely to communicate CFK messages to families than were teachers in a classroom setting.

**Exhibit 18. Use of CFK Activities and Alignment with CFK Recommendations, QI Logs**

| | 4-5 days per week | 2-3 days per week | Weekly | 2-3 days per month | Monthly | Not at all |
|---|---|---|---|---|---|---|
| **Classroom Setting (n=378)*** | | | | | | |
| Children only eat at designated snack times | **88%** | 3% | 3% | 0% | 1% | 6% |
| Children brush their teeth | **83%** | 6% | 4% | 1% | 1% | 4% |
| No juice is served | **59%** | 24% | 5% | 3% | 2% | 8% |
| CFK activity occurred | 10% | 7% | **52%** | 11% | 6% | 14% |
| CFK message sent to families | 2% | 2% | 21% | 9% | 24% | **42%** |
| **Home visits (n=15)**** | | | | | | |
| Overall habits | | | | | | |
| Children brush their teeth | **53%** | 0% | 27% | 13% | 0% | 7% |
| Children only eat at designated snack times | 27% | 13% | 20% | 7% | 0% | **33%** |
| No juice is served | 20% | 13% | 27% | 7% | 0% | **33%** |
| Activities during visit | | | | | | |
| CFK activity occurred | 0% | 0% | **60%** | 13% | 0% | 27% |
| CFK message sent to families | 0% | 0% | **33%** | 20% | 13% | **33%** |

* Classrooms are identified by classroom number and head teacher names. Some classrooms may not be uniquely identified due to inconsistencies in how the QI logs were completed. For example, if a teacher is identified by first name in one log but by last time in another log, the two logs may be counted as identifying to different classrooms. Furthermore, this count does not distinguish between morning and afternoon sessions. Classrooms with two sessions a day are counted only once.

** Home visitors are identified by name. Home visitors who submitted multiple logs (often times, one log per child) were only counted once.

[7] It was challenging to identify unique classrooms, and the data was often inconsistently entered. If a box was not checked, the evaluation team assumed that the activity did not occur. For a more detailed description of the analytical assumptions used in the QI log analysis, please see Appendix C.

### Types of CFK Activities Incorporated

Most teachers reported incorporating CFK activities into the classroom on a weekly basis, but how were teachers accomplishing this? Were some activities more commonly used than others? This section speaks to the ways in which children gained exposure to an oral health education.

**Exhibit 19. Modes of Oral Health Education, Follow-up Teacher Survey**

| (n=156) | Count | Percent |
|---|---|---|
| Modeling good oral health | 137 | 88% |
| Group activities | 136 | 87% |
| Sending materials home (handouts, toothbrushes, etc.) | 132 | 85% |
| Books or story time | 128 | 82% |
| Songs | 116 | 74% |
| Brushing teeth or wiping the gums (infants) | 102 | 65% |
| Free play activities | 98 | 63% |
| Parent newsletters | 98 | 63% |
| During one-on-one meetings or home visits | 74 | 47% |
| During parent orientations or group meetings | 67 | 43% |
| Other* | 2 | 1% |

* *"Other" includes:* using school-to-home activities and finding teachable moments.
** Respondents who have used the CFK curriculum were asked to select all that apply.

Teacher responses regarding how they have incorporated oral health into the classroom is summarized Exhibit 19. The top five activities reported by teachers were (i) modeling good oral health, (ii) structured group activities with the children, (iii) sending oral health materials home, (iv) oral health books or story time, and (v) oral health songs. The least common activities were related to parent education activities: one-on-one parent meetings or home visits, and also parent orientations and group meetings. A more detailed analysis reveals that the top five activities are consistently popular for teachers across all hubs for whom data is available (Exhibit 20).[8] Among the parent engagement activities, teachers were more likely to engage parents about oral health in newsletters rather than parent meetings.

**Exhibit 20. CFK Activities by Hub, Follow-up Teacher Survey**

| | Aggregate (n=156) | ACCORD (n=25) | C&W (n=35) | Holy Cross (n=19) | MVPN (n=31) | P.E.A.C.E. (n=41) |
|---|---|---|---|---|---|---|
| Modeling good oral health | ● | ● | ● | ● | ● | ● |
| Group activities | ● | ● | ● | ● | ● | ● |
| Sending materials home (handouts, toothbrushes, etc.) | ● | ● | ● | ● | ● | ● |
| Books or story time | ● | ● | ● | ● | ● | ● |
| Songs | ● | ● | ○ | ● | ● | ○ |

[8] Individual results for Orleans are not reported in due to small sample size. The results would not be representative of the full population of teachers they trained.

| | Aggregate (n=156) | ACCORD (n=25) | C&W (n=35) | Holy Cross (n=19) | MVPN (n=31) | P.E.A.C.E. (n=41) |
|---|---|---|---|---|---|---|
| Brushing teeth or wiping the gums (infants) | ◐ | ◐ | ◐ | ◐ | ◐ | ● |
| Free play activities | ◐ | ◐ | ◐ | ◐ | ● | ◐ |
| Parent newsletters | ◐ | ● | ● | ◐ | ◐ | ○ |
| During one-on-one meetings or home visits | ○ | ◐ | ○ | ○ | ○ | ◐ |
| During parent orientations or group meetings | ○ | ◐ | ○ | ◐ | ◐ | ○ |

* Dark purple denotes this method is used by 70 percent of teachers or more, medium purple denotes this method is used by 50-69 percent of teachers, and light purple denotes this method is used by 50 percent of teachers or less.

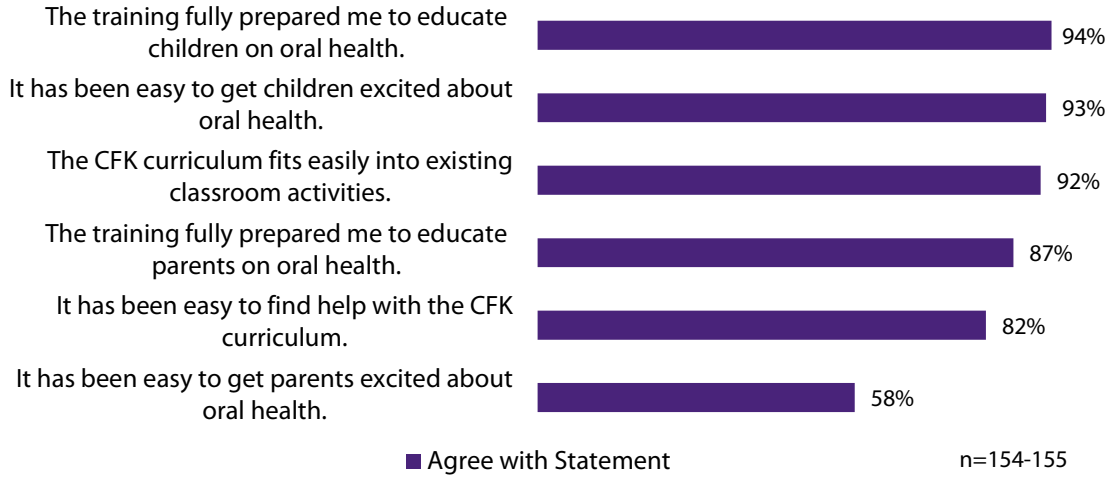
** Individual results for Orleans were excluded due to small sample size.

### Preparation and Support for CFK

Lastly, teachers were asked to reflect on the level of support that they've experienced from their schools and agencies on CFK and also comment on how well the trainings have prepared them. Overall, teachers were satisfied with the support they've experienced from their schools and agencies.

Of the 155 respondents in the follow-up teacher survey, the vast majority felt that oral health is seen as a priority in their schools (97 percent) and that their school is highly supportive of the CFK curriculum (95 percent). When asked how well the CFK trainings prepared them, teachers rated CFK quite positively. As shown in Exhibit 21, a vast majority reported that the training fully prepared them to educate children on oral health. They found it has been easy to get children excited about oral health and fit CFK into existing classroom activities. However, results were weaker with regard to educating parents on oral health. While most teachers (87 percent) felt the training has fully prepared them to educate parents on oral health, only about half of teachers (58 percent) reported that it has been easy to get parents excited about it. These successes and challenges were consistent across all hubs.

**Exhibit 21. Quality of CFK Training and Preparation, Follow-up Teacher Survey**



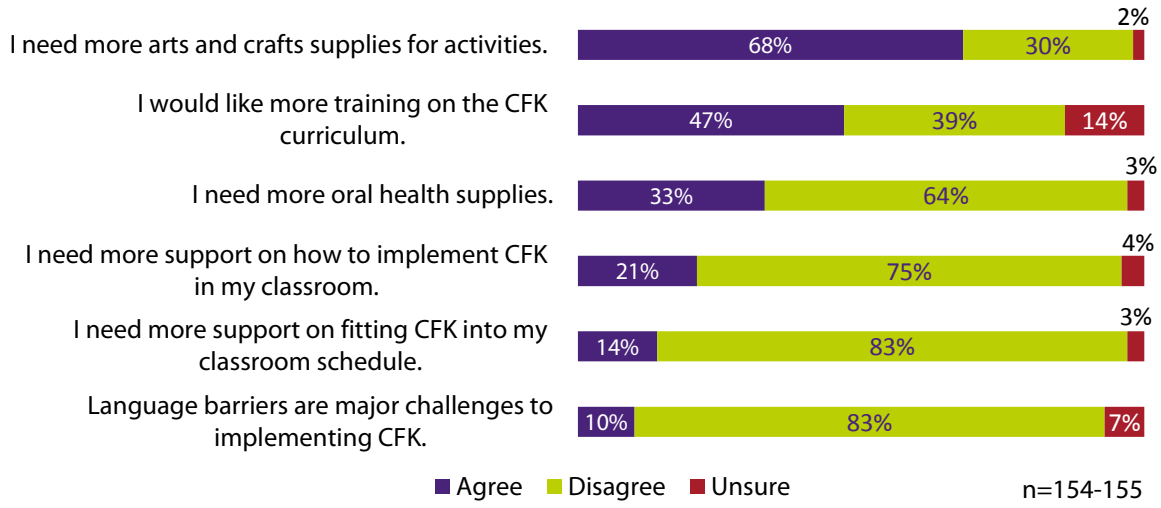
The survey also asked teachers about the resources and supports they would like to see as they continue to implement CFK. As shown in Exhibit 22, many would like more support with acquiring arts and crafts supplies for CFK activities (68 percent), and some would like to have more training on the CFK curriculum (47 percent) and more oral health supplies (33 percent). In a hub-level analysis, the trends are consistent across all hubs for the most part, with the exception of a few areas:

Teachers trained by Mohawk Valley Perinatal Network (87 percent vs. 68 percent overall) and Orleans (80 percent vs. 68 percent overall) were interested in receiving more assistance with acquiring arts and crafts supplies for activities.

Teachers trained by ACCORD (76 percent vs. 47 percent overall) were interested in receiving more training on the CFK curriculum.

Teachers trained by Mohawk Valley Perinatal Network (61 percent vs. 33 percent overall) were interested in receiving more assistance with acquiring oral health supplies.

**Exhibit 22. Resources and Support Needed for Cavity Free Kids, Follow-up Teacher Survey**




In the teacher survey, some respondents noted a number of supports and resources that they would like to see. In particular, they'd like more activities, more supplies, and more training:

- **More activities.** Teachers would like to see more activities tailored to certain groups (such as infants and parents) as well as more take-home activities. One person suggested that updates could be posted on the Cavity Free Kids website to provide teachers with fresh activities.
- **Support with supplies and handouts.** Teachers reported a need for more teaching supplies. In particular, they'd like to have large models of teeth, books, DVDs, color pictures, and handouts for their classrooms.
- **Supplies for home visitors.** Teachers would like to see more supplies that are practical for home visits. Examples of what some home visitors have used include laminated flip charts with pictures and information for parents, or electronic photo frames to display presentation slides when discussing CFK with parents.
- **Comprehensive CFK trainings for parent engagement.** Teachers would like to have comprehensive trainings to help them engage parents and get them excited about oral health.

# IV. Outcomes: Family Oral Health Knowledge, Practices, and Experiences

CFK aimed to build the oral health knowledge of children and parents in hopes that they would develop positive oral health practices. This chapter of the report presents family-level outcomes of the CFK program with respect to three domains: parent oral health knowledge, child oral health practices, and child access to care and support.

**Exhibit 23. CFK Outcome Domains**


## Parent Oral Health Knowledge

Parents and primary caretakers have a critical role in children's health routines and practices at home. The parent survey assessed parents' understanding of oral health best practices. At baseline, a majority of parents agreed with most of the oral health best practices supported by CFK. Parents displayed weaker alignment with oral health best practices in only a few areas, with less than 60 percent indicating an understanding of the influence of frequent snacking on cavities, the need to see the dentists at first tooth or first birthday, and the connection between childhood cavities and cavities in adulthood (Exhibit 24).

Notably, these same three areas showed improvement over time. Two rose to the top as areas with statistically significant improvements: snacking throughout the day can increase the chance of cavities (improved by eleven percentage points), and children should visit the dentist when they get their first tooth or by their first birthday (improved by ten percentage points). Other areas that saw improvement, though not statistically significant, were with regard to the harm of carbohydrates and sugars on teeth and the connection between childhood cavities and the cavities in adulthood.

**Exhibit 24. Parent Oral Health Knowledge, Matched Baseline and Follow-up Responses[9]**

| | Best Practice Response | Baseline (n=151-153) | Follow-up (n=151-152) | Overall Conclusion |
|---|---|---|---|---|
| Snacking throughout the day can increase the chance of cavities. | Agree | 57% | 68% | **Improved*** |
| Children should visit the dentist when they get their first tooth or by their first birthday. | Agree | 56% | 66% | **Improved**** |
| Carbs and sugars create acids, which is good for the teeth. | Disagree | 90% | 95% | Improved |
| If children have cavities, they are more likely to have cavities as adults. | Agree | 57% | 64% | Improved |
| It is okay for children to have juice right before bed. | Disagree | 91% | 92% | *No change* |
| Children don't need to see the dentist unless they feel pain. | Disagree | 98% | 97% | *No change* |
| Cavities among children can be prevented. | Agree | 92% | 94% | *No change* |
| The most important time for a child to brush his/her teeth is before bed. | Agree | 85% | 87% | *No change* |
| I do not need to worry about my child's oral health until the first tooth appears. | Disagree | 86% | 85% | *No change* |
| The health of a child's mouth is connected to his/her overall health. | Agree | 86% | 88% | *No change* |
| Oral health and proper dental care is a priority for my family. | Agree | *Not asked at baseline* | 97% | *N/A* |

* Denotes statistical significance at the 95% significance level using a paired sample t-test.
** Denotes statistical significance at the 90% significance level using a paired sample t-test.
*** Differences of less than *five percentage points* are considered "No change."

A potential consideration in this analysis is whether a child's age might influence parents' knowledge and knowledge with regard to oral health best practices. Exhibit 25 presents a deeper analysis into the four areas experiencing improvement with separate analyses for children ages 0-3 and 4-5. Improvements were experienced by both age groups in all areas but one. With regard to when a child should see a dentist, a statistically significant improvement occurred for the parents of children ages 4-5. But no substantive change was observed for parents of children ages 0-3: Only 41 percent of parents of children ages 0-3 agreed that children need to see a dentist by first tooth or first birthday at baseline. At follow-up, 44 percent of those parents agreed—a small improvement that was not statistically significant.

[9] Baseline and follow-up responses were matched on the individual level. This type of analysis allows a statistical comparison between parents' responses in the two surveys.

**Exhibit 25. Parent Oral Health Knowledge by Age Group, Matched Baseline and Follow-up Responses[10]**

| | Best Practice Response | Ages 0-3 (n=56-57) Degree of Change | Ages 0-3 (n=56-57) Overall Conclusion | Ages 4-5 (n=94-95) Degree of Change | Ages 4-5 (n=94-95) Overall Conclusion |
|---|---|---|---|---|---|
| Snacking throughout the day can increase the chance of cavities. | Agree | +14% | **Improved*** | +10% | **Improved**** |
| Children should visit the dentist when they get their first tooth or by their first birthday. | Agree | +3% | *No change* | +14% | **Improved*** |
| If children have cavities, they are more likely to have cavities as adults. | Agree | +5% | Improved | +8% | Improved |
| Carbohydrates and sugars create acids, which is good for the teeth. | Disagree | +4% | Improved | +6% | Improved |

* Denotes statistical significance at the 95% significance level using a paired sample t-test.
** Denotes statistical significance at the 90% significance level using a paired sample t-test.
*** Differences of less than *five percentage points* are considered "No change."

## Child Oral Health Practices

The CFK curriculum aims to teach children a set of routines and habits that will help them to maintain good oral health throughout their lives. The parent survey inquired about children's oral health practices at the start of CFK (baseline), and then followed up with parents after children and parents had greater exposure to CFK.

At baseline, survey results indicated that most children were already following oral health best practices in four of the nine items on the survey (Exhibit 26). Most parents reported that their children ate fruits and vegetables, used fluoride toothpaste, brushed their teeth at home, and brushed their teeth at school. However, parents reported weaker results in the other five areas. Approximately half of parents reported that their children drank water with fluoride, flossed their teeth, avoided drinking or eating right before bed, avoided drinking juice or soda pop, and avoided crackers or sweets.

Comparing the baseline and follow-up data, three areas showed statistically significant improvement. Children were significantly more likely to be eating fruits and vegetables, using fluoride toothpaste, and drinking water with fluoride. Improvements also occurred in the share of children who were flossing their teeth, though the difference was not statistically significant.

The other items listed in Exhibit 26 as "No change" reveal some interesting trends as well. Even after participation in CFK, children were continuing to eat and drink right before bed, drink juice and soda pop regularly, and eat crackers and sweets regularly. The results suggest that these habits will be particularly difficult to change. Even if juice, crackers, and sweets are minimized in a school setting, many children are still consuming them at home.

[10] Baseline and follow-up responses were matched on the individual level. This type of analysis allows a statistical comparison between parents' responses in the two surveys.

**Exhibit 26. Child Oral Health Practices, Matched Baseline and Follow-up Responses[11]**

| How often does your child… | Baseline (n=107-150) Response | Share of Respondents | Follow-up (n=135-152) Response | Share of Respondents | Overall Conclusion |
|---|---|---|---|---|---|
| Eat fruits and vegetables. | Once a day or more | 87% | Once a day or more | 96% | **Improved*** |
| Use fluoride toothpaste. | Once a day or more | 75% | Once a day or more | 90% | **Improved*** |
| Drink water with fluoride (e.g. fluoridated tap water). | Once a day or more | 57% | Once a day or more | 67% | **Improved*** |
| Floss his/her teeth. | Not at all | 53% | Not at all | 46% | Improved |
| Brush his/her teeth at home. | Once a day or more | 92% | Once a day or more | 93% | *No change* |
| Eat/drink right before bed. | Not at all | 40% | Not at all | 44% | *No change* |
| Drink juice or soda pop. | Once a day or more | 51% | Once a day or more | 54% | *No change* |
| Eat crackers or sweets. | Less than once a day | 52% | Less than once a day | 53% | *No change* |

* Denotes statistical significance at the 95% significance level using a paired sample t-test.
** Many respondents did not know if their children brushed their teeth at school. As a result, the baseline estimate has an upward bias since "don't know" responses were excluded from the analysis as an invalid response for the purpose of statistical testing.
*** Differences of less than five percentage points are considered "No change."

In general, children's oral health practices and habits are expected to vary by age—some practices may be seen as greater priority or might be easier to change at certain ages.[12] In a more detailed analysis of the evaluation data by age group,[13] parents of children ages 0-3 and children ages 4-5 reported frequent consumption of fruits and vegetables, as well as use of fluoride toothpaste and fluoridated water. These improvements were statistically significant for children ages 4-5, but not for children ages 0-3.[14] As for the flossing of teeth, children ages 0-3 showed statistically significant improvement while children ages 4-5 showed no change.

The more detailed analysis also reveals some interesting trends that were not detectable in the aggregate analysis. Children ages 0-3 improved with respect to eating and drinking right before bed, but they also became less likely to brush their teeth at home. At follow-up, children ages 4-5 were less likely to avoid juice and soda pop and also less likely brush their teeth at school compared to baseline.

[11] Baseline and follow-up responses were matched on the individual level. This type of analysis allows a statistical comparison between parents' responses in the two surveys.

[12] A hub-level analysis was attempted, but the evaluation team found that it could not yield meaningful results due to the small sample that represented each hub.

[13] See Appendix C, Exhibit C3 for a full table of results from this analysis.

[14] The increased use of fluoridated toothpaste among children ages 0-3 is particularly interesting. While using a "smear" of fluoride toothpaste is recommended by the American Academy of Pediatrics for children under age two with moderate to high-risk of dental decay, it is typically not recommended for young children until age two. (http://www2.aap.org/oralhealth/pact/ch5_sect1b.cfm, site accessed December 8, 2012)

## Access to Care and Support

The last dimension of family outcomes captures children's access to oral health care and parent confidence in supporting their children's oral health. This section first discusses child experiences with visiting the dentist, and follows with a brief presentation of data on parents' confidence moving forward.

### Child Experience with Dental Visits

CFK aims to not only influence parent knowledge and child practices with regard to oral health, but also encourage families to find a dental home for their children early in life. As noted in Exhibit 10, the vast majority of parents reported that their child had dental insurance coverage, many of whom were covered under Medicaid.

**Exhibit 27. Child Experience with Dental Visits**

| | Baseline (n=257) | Follow-up (n=154) | Degree of Change |
|---|---|---|---|
| **Yes, my child has been to a dentist** | **75%** | **86%** | **+11%** |
| *Children ages 0-3* | *52%* | *70%* | *+18%* |
| *Children ages 4-5* | *89%* | *97%* | *+8%* |

Of the parents responding to the survey, most have brought their child to see the dentist in the past—75 percent at baseline and 86 percent at follow-up (see Exhibit 27). Looking at the baseline results by age group, children ages 4-5 were more likely than children ages 0-3 to have seen the dentist. However, children ages 0-3 experienced the most improvement: the share that had been to the dentist increased from 52 percent at baseline to 70 percent at follow-up.

For those who have been to the dentist before, the parent survey asked additional questions on the frequency of these visits, their reasons for going, and also the types of dental providers they used (Exhibits 28 and 29) The following key themes arose from those questions:

- **Most children have visited the dentist two or more times per year.** Only a small percentage of children see the dentist less than once a year.
- **Vast majority of children have gone to the dentist for a general check-up.** Some children (14-15 percent) have sought treatment for cavities, and only a few percent have sought care due to pain.
- **Many children receive care through a private dentist in their community.** The next most common providers were community dental clinics and hospitals. No one has sought care through a hospital emergency room.

### Exhibit 28. Characteristics of Child Dental Visits

| | Baseline (n=194) | Follow-up (n=133) |
|---|---|---|
| **Frequency of Dental Visits** | | |
| Two or more times a year | 71% | 77% |
| Once a year | 21% | 20% |
| Less than once a year | 6% | 2% |
| Don't know | 2% | 1% |
| **Reasons for Dental Visits*** | | |
| General check-up | 94% | 95% |
| Cavities or dark spots | 15% | 14% |
| Child was in pain | 3% | 2% |
| Don't know | 1% | 0% |

* Percentages do not add up to 100%. Respondents were asked to select all that applied.

### Exhibit 29. Types of Providers Visited

| | Baseline (n=194) | Follow-up (n=133) |
|---|---|---|
| Private Dentist | 68% | 63% |
| Community Dental Clinic | 19% | 21% |
| Hospital Dental Care | 14% | 11% |
| Hospital Emergency Room | 0% | 0% |
| Don't know | 1% | 4% |
| Other* | 2% | 2% |

* *"Other" types of providers specified:* pediatric dentists, local dental offices, UB Smiles, and other small private practices.

Many factors influence a child's access to oral health care. Exhibit 30 provides an overview of the reasons why some children had not visited the dentist before. About one-quarter of parents cited the reason that their children did not have dental problems. Parents also noted barriers to access, such as trouble finding a dentist that sees children (17 percent each) and lack of transportation (15 percent). Other reasons that parent listed include distance to the dental office, wait time for appointments, and belief that their child was too young to see the dentist.

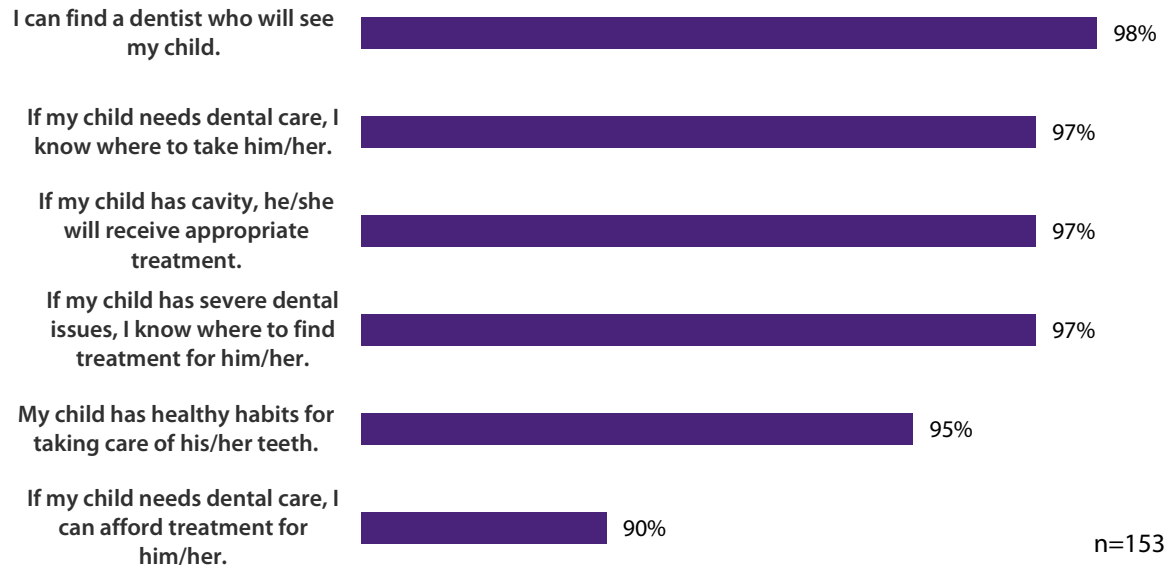
### Exhibit 30. Reasons for Not Visiting the Dentist, Baseline Parent Survey

| Of those who have not been to the dentist… | Baseline (n=59-63) |
|---|---|
| **Parent Oral Health Education and Literacy** | |
| My child does not have any dental problems. | 24% |
| My child is too young to see the dentist. | 6% |
| **Barriers to Access** | |
| I do not know a dentist that sees children. | 17% |
| I do not have transportation to the dentist office. | 15% |
| Dentist offices are far away. | 9% |
| I have to wait a long time for an appointment. | 9% |
| My child does not want to go or is afraid to go to the dentist. | 3% |
| Dentist offices are not open when I could get there. | 3% |
| My child has no dental insurance. | 2% |
| Seeing a dentist is expensive. | 0% |

## Parent Confidence in Supporting Child's Oral Health

Moving forward, CFK aims to help families develop the skills and know-how to support their child's oral health. Among other things, CFK posits that parents should be able to locate care for their children and also support healthy habits. Exhibit 31 presents some key data points on how parents could support good oral health for their children.

### Exhibit 31. Parents Reporting High Confidence in Supporting Child's Oral Health




Overall, parents reported high confidence in supporting the oral health of their children. Nearly all parents reported high confidence in their ability to find a dentist who will see their children, as well as locate care and treatment for their children. They felt confident that their children have healthy habits for taking care of their teeth, and that they will be able to afford dental care for their children when it is needed. However, results also showed that behavior can be difficult to change. While children have improved some oral health practices at home, many still continue to eat or drink right before bed and consume juice, soda pop, crackers, and sweets.

# V. Lessons Learned

In addition to grantee progress and participant outcomes, this evaluation sought to capture lessons learned from CFK. Interviews with hubs focused on the success of CFK in their communities, their individual experiences with the CFK program including best practices they developed, and their plans for the future. Where applicable, hubs also offered their preliminary thoughts on the synergies between the Cavity Free Kids and Portable Dental Care programs, as well as feedback for the HFWCNY.

## Bringing CFK to Children

Once teachers were trained, they were tasked with applying what they have learned and integrating CFK into their classroom. Teacher survey results revealed that teachers were highly satisfied with the trainings, that CFK was relatively easy to implement, and that most teachers were using the curriculum at least once a week. Hubs noted a number of successes associated with CFK: children are now excited about brushing their teeth, and teachers are able to recognize dental disease and refer families to resources as necessary. However, as with any program, there are areas where implementation proved to be more challenging. This section outlines these challenge areas as well as lessons learned from grantees' experiences.

> The kids were eager to brush their teeth every day, and went home telling their parents all about what they learned!
>
> ~ CFK-trained teacher

**Incorporating CFK into home visits.** Home visitors are highly mobile, and have a range of responsibilities including social service, health, and early education. Even with oral health kits and supplies tailored to home visits, it was challenging for home visitors to incorporate CFK into their visits. While there are elements of CFK that can be incorporated into home visits, hub interviews and QI log data suggest that CFK is more difficult to incorporate into a home setting. Home visitors reported talking to parents about oral health best practices as issues arise, and some have reviewed the CFK presentation with parents. However, demonstrations and hands-on activities proved to be more logistically challenging. As some of the hubs shared,

- "The activities were hard to do at home. The home may not be a suitable environment for some of the activities, such as the acid attack and sugar demonstrations. Looking back, it is important to build activities suitable to the home environment. Activities can be impactful, but in the home visit, they can be challenging to do."
- "When you look at the classroom, there are three staff members, so there is more support. As a home visitor, there's just you. You are responsible for everything—there's the social service piece, the health screening, and the education screening—so it's more challenging… You can plan, but when you walk into the home, there could be whole other crisis going on. It is more fluid [than a classroom setting]. They have a lot of deadlines and have to finish a number of things on a schedule."
- "We found that it needs to be more portable – it could be that the home visitor sees the child every week rather than every day like in Head Start. We focus on activities where we can give them a kit. We needed each activity to be strong enough as a standalone, yet fit into the bigger picture."

**Ensuring teacher follow-through.** Although hubs have made themselves available to teachers for additional support, they found it challenging to monitor the application of CFK in outside agencies and organizations. In many cases, the frequency and intensity of the curriculum is up to the individual motivation and commitment of the teachers. One grantee shared, "The biggest obstacle is when we train other community partners. They enjoy the information, but there's no follow-up piece… If no one is monitoring, it's [up to the] individual on whether or not they use it."

When hubs have trained Head Starts, Early Head Starts, and daycares affiliated with their own agency, it has been easier for them to ensure follow-through on CFK. In particular, some hubs felt more assured that the teachers followed their recommendations on the types of activities to use and how often to incorporate CFK into classroom activities. Otherwise, it really depends more on their partners' individual motivation and commitment to CFK. One grantee found that CFK was most easily implemented for Head Starts: "The ideal place for CFK is in Head Starts because they really were the ones who see this as something that works well for them. They are excited to incorporate it into program." Another grantee noted that they had to take extra steps to make CFK sound appealing to them: "For much of the training, we were selling the benefits of CFK…For outside agencies, we had to make it appealing to them."

## CFK as a Train-the-Trainer Program

CFK was a train-the-trainer program in which HFWCNY provided training for the hub grantees who then go on to train teachers in their own communities. It is an approach that seeds widespread dissemination of the CFK curriculum and also takes advantage of the local expertise and connections of the hub grantees. This section presents a number of lessons learned from hubs' experiences to date.

**Ease of implementation.** Hubs unanimously felt that the CFK trainings were user-friendly, well-organized, and easy to implement. They found that the CFK binders contained everything they needed, with the scripts and presentation slides for the trainings. As one grantee shared, "The Washington Dental Services Foundation training was good. At first, I was not sure, but then I realized that the way [the curriculum] is laid out is very easy and everyone was given the slide show presentations [to use in the trainings]."

**Adapting CFK for different early care settings.** The CFK training applied directly to Head Start and Early Head Start settings, but hubs found that some minor changes were needed for other groups. Hubs trained a diversity of providers who work with young children including family advocates, home visitors, daycare providers, nurses and health workers, agency administrators, and other preschool teachers.

Two hubs noted that they divided the CFK training into smaller modules in order to reach certain providers, including daycare providers and nurses. For daycare providers, it was difficult to schedule an extended block of time for the trainings because they did not have substitute care providers and there was no in-service time for trainings. However, the hubs reported that CFK had a positive impact once it was in place. Nurses can similarly be difficult to reach, and hubs found it necessary to provide smaller units of training at a time—either at the nurse station or while children were sleeping.

> About 50% of Head Starts were able to use it as an in-service training day. The regular daycares couldn't leave the children, so it had to be a quicker training.
>
> ~ Hub Grantee

One hub found that school districts can be hard to reach as well. Although this hub experienced strong collaborations with the local school district in the past, they found it challenging to convince them to adopt CFK because oral health is not a requirement. "We've reached who we can in our county and surrounding counties. We've tried to touch base with the school district. But until it's mandatory, it's not something they're interested in doing at this time," she shared.

**Extending the reach of CFK.** As discussed at the start of this report, CFK trainings were primarily attended by Head Start and Early Head Start teachers. In interviews, hubs noted additional groups that they are continuing to train and engage. Exhibit 32 provides a summary of the provider groups trained by each hub, as well as additional provider groups with whom outreach is still ongoing. ACCORD and P.E.A.C.E.[15] noted that they have trained all interested groups in their area, and have not been able to find additional groups that would be interested. Their current work focuses on honing and maintaining the work of those already trained.

**Exhibit 32. Provider Groups Trained and Provider Groups Outreached**

| | ACCORD | C&W | Holy Cross | MVPN | Orleans | P.E.A.C.E. |
|---|---|---|---|---|---|---|
| Head Start Teachers | ○ | ● | ● | ● | | ● |
| Early Head Start Teachers | ● | | | | | |
| Family Advocates | | | | ○ | | |
| Home Visitors | | | | | | |
| Daycare Providers* | | | | ◐ | ● / ◐ | |
| District Preschool Teachers | | ◐ | ◐ | | | ◐ |
| Faith-Based Youth Groups | | | | | ◐ | |
| After School Programs | | | | | ◐ | |

* "Daycare Provider" includes providers from both daycare center and family daycare settings.
** Primary groups trained are denoted in dark purple, additional groups trained are denoted in a lighter purple, and groups for whom outreach is still ongoing are denoted in green.

The five hubs with affiliated Head Start and Early Head Start programs (ACCORD, C&W, Holy Cross, MVPN, and P.E.A.C.E.) tended to focus on teachers in their programs for the first year, and many of them are looking to extend the reach of CFK in the second year. As a community health center, Orleans did not focus as much on training Head Start and Early Head Start teachers. While they did train some Head Start and Early Head Start teachers, they primarily trained daycare providers. Much of their outreach efforts in the second year will extend to groups outside of the classroom setting.

**Lessons learned and suggestions.** Hub interviews and training observations revealed a number of lessons learned as hubs continue to move forward:

- **Hands-on activities and demonstrations engaged training participants and helped hubs gain teacher buy-in for the curriculum.** From the training observations, the evaluation team found that participants were more engaged when there were hands-on activities such as demonstrations, role play, and quizzes to supplement the CFK presentation. Activities reinvigorated the group, and helped participants to absorb the material presented. Many of the hubs spoke of the impact of hands-on activities on the teachers they trained, particularly the acid attack demonstration. As one grantee

[15] While P.E.A.C.E. has received a training request from nurses at the local school district, they anticipate that it will be challenging unless there is interest and commitment from classroom staff.

shared, "They were amazed with the acid attack. They did not realize how much damage can happen to your teeth if you don't brush, and they mentioned that they were now going to ask each member in their families if they brush regularly."

- **Day-long trainings were not appropriate for all groups. Shorter trainings may be desirable for very large groups (fifty or more) and very small groups (eight or less).**
    - ***For very large groups, it can be challenging to keep participants engaged for such a long time.*** Training observations revealed that it was challenging to keep the participants engaged throughout a day-long training for very large groups, even if the training incorporates activities. In the trainings observed, participants were less likely to provide their undivided attention if the group was very large.
    - ***For very small groups, it works well to have a shorter training with follow-up afterward.*** Particularly for smaller groups with only a few in attendance, a full day of training may not be necessary. One grantee has adapted the curriculum to a 2-4 hour training, with a follow-up visit to address any questions or concerns. This format can be particularly useful for groups that face scheduling challenges.
    - ***For shorter trainings, meeting set-up and preparation is particularly important.*** To make the most of the time allotted, trainers could set up packets and materials at each seat, test all the technology needed for the training, and refresh their oral health knowledge to answer questions before participants arrive.
- **Tailored kits and materials can be useful for teachers.** Some hubs tailored their activity kits based on the early care setting, age groups, and the types of activities that they would anticipate doing. For example, teachers working with older children may receive more arts and crafts materials, while teachers working with younger children may receive a small wash cloth. Also, a kit for home visitors might contain extra brochures and portable flip charts to demonstrations and presentations in a home setting. Other useful materials include an oral health FAQ sheet that could serve as a useful reference, as well as information on local dentists who accept pediatric patients.
- **Tips on how to make the material engaging for parents would be appreciated.** The teacher survey revealed that most teachers found it easy to make CFK engaging for children, but found it challenging to engage parents. Some teachers noted that they would like to see more support in educating parents on oral health. When the evaluation team observed the trainings, there was one grantee who developed a segment about how to communicate effectively with parents. Participants were asked to identify distinguishing features of a good presentation and a bad presentation, and also provided with tips on how to engage parents effectively.
- **Deeper knowledge and support on oral health science.** Some hubs reported that they did not have the knowledge to answer the more complex questions that can come up during training. One hub brought an oral health expert to the training to provide support and answer questions. However, other hubs noted that they would appreciate additional training to build up their own knowledge base.

## Sustainability of CFK

Hubs were confident in their plans to continue conducting trainings and supporting teachers in CFK. However, they did note that it would be helpful to have continued support with supplies and materials such as CFK binders and CDs for teachers, toothbrushes and floss for the children, and prizes for teachers and parents. Four of the hubs noted that they will continue to reach out to new groups to train. Two of the hubs (ACCORD and P.E.A.C.E.) indicated that they have exhausted the opportunities in their communities, and they have not been able to find any additional groups that would be interested. The respondent from P.E.A.C.E. noted, "We plan to continue [CFK] internally, and if someone came along and was looking for it, we would train them. Not sure who that would be at this point—we are tapped out in the neighboring and surrounding Head Starts."

## Overlap with Portable Dental Care

Three of the six CFK hubs have partnerships with grantees of the *CHOMPERS!* Portable Dental Care (PDC) initiative: Cattaraugus & Wyoming Counties Project Head Start, Holy Cross Head Start, and P.E.A.C.E. Inc. Through PDC partnerships, CFK grantees would be able to not only educate children and parents on oral health, but also connect them with on-site dental care.

Overall, CFK grantees found PDC partnerships to be highly beneficial. They have found on-site care to be a tremendous resource to the children and families they serve. Not only was on-site care much more convenient for children and families, but also less stressful for them. Through PDC, families found a dental home for their children in that they knew who to call should dental issues arise. For example, one hub shared that one of the children they work with developed an abscess. Though the dentist was not on site that day, they were able to reach him by phone and obtain the necessary prescription and dental advice to treat the abscess.

> We knew that school age children did better with parents [present], but the preschool age children did better without parents. We think the parents bring in their own anxieties about dental care.
>
> ~ Hub grantee

A couple hubs also pointed to challenges that arose due to start-up delays experienced by their PDC partners. For one hub, PDC had not been fully implemented at all their CFK sites yet, so the hub arranged transportation for children to receive care at the PDC site during the school day. While this worked well for basic exams, it did not work well for treatments since the other children would have to wait in the bus. Treatments typically lasted 20-30 minutes per child.

Another hub found that delays in implementation pointed to the importance of clear communication and coordination with the PDC partner. Due to miscommunications, a number of children they served became ineligible for on-site care. In this case, the PDC partner was careful to avoid taking patients away from other practices, and would not provide on-site care to children who they felt already had a dental home (i.e., had seen a dentist within the past 12 months). Coupled with delays in the start-up of PDC, this created some unanticipated challenges: "To meet our requirement [of having children see a dentist within 90 days], we pushed parents to see other dentists [since PDC was not ready]. Our numbers were low when [PDC] came, but [the PDC provider] didn't want to step on any toes. One of my sites has a dental clinic in the building, so they wouldn't come. This is one of my highest-need sites, but parents don't want to go to the clinics upstairs."

## Foundation Support

Hubs unanimously rated HFWCNY highly in terms of support and technical assistance. They noted that the Foundation has been highly supportive of their work and responsive to any questions or requests. The following are key quotes from the hubs:

- "They've been a great support. We received a great number of binders, and they've sent us more when we needed them. When we were able to get more trainings scheduled, we were able to get a no-cost extension for our funding."
- "I respect that they're always there if I have any questions. My contact is great about getting back to me. They were great about the extension—the directions and instructions for the no-cost extension were clear and concise. The approval was done almost immediately."
- "I email Denise all the time, such as when we are interested in doing more activities. I love sending her pictures [of our events and activities]."

# VI. Concluding Thoughts

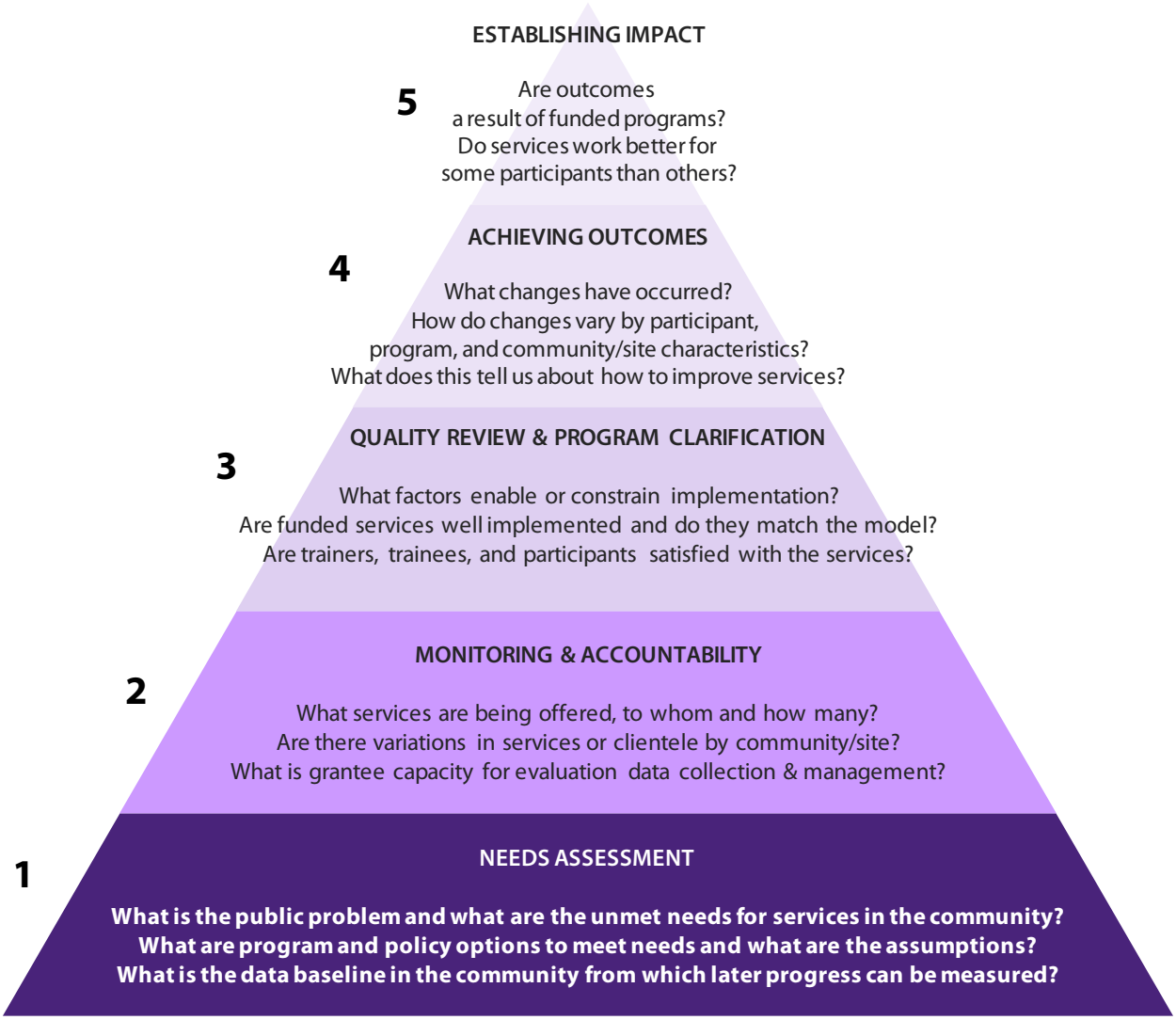
Through the CHOMPERS! initiative, HFWCNY provided oral health education to young children (Cavity Free Kids) and on-site treatment for children in early education settings (Portable Dental Care). During the evaluation period, CFK made significant strides toward improving the oral health of young children living in western and central New York;

- The CFK trainings reached 622 teachers and 7,465 children, exceeding goals set at the start of the program year.
- According to hubs, the CFK curriculum was very easy for teachers to integrate into existing curricula and lesson plans. They found that teachers were able to start applying parts of the curriculum right away—such as no longer serving juice, brushing teeth in the classroom, and educating children about oral health.
- Teachers confirmed that the CFK curriculum is easy to use, and also felt confident about bringing an oral health education to their classrooms. Overall, the train-the-trainer model was well implemented and effective at disseminating the curriculum throughout the region.
- After implementation of CFK, parents exhibited improved knowledge of the influence of snacking throughout the day, when children should start seeing the dentist, and the connection between childhood cavities and cavities as in adulthood.
- The proportion of children eating fruits and vegetables and incorporating fluoridated toothpaste and water into their daily routines increased after implementation of CFK. However, some habits still persisted—children continued to consume juice, soda pop, crackers, and sweets.
- Hubs plan to continue conducting trainings and supporting teachers in CFK. However, they did note that it would be helpful to have continued support with supplies and materials such as CFK binders and CDs for teachers, toothbrushes and floss for the children, and prizes for teachers and parents.

Overall, the findings of this evaluation suggest that CFK is a promising program, with the potential to influence parent knowledge of oral health and children's practices at home. However, the findings point to a need for continued education and support. It will take time to change beliefs, habits, and behaviors around oral health. Nevertheless, CFK has jump-started this work by getting children excited about oral health and starting a conversation with parents on how to best support their children's oral health. Furthermore, most teachers are working with children to brush at school, ensuring that children only eat during designated snack times, and no longer serving juice in the classroom. These are welcome changes in the classroom, and with more outreach to parents, potentially changes that will be seen at home as well.

# Appendices

## Appendix A: Francine Jacob's Five-Tiered Approach




RESEARCH QUESTIONS BY TIER

## Appendix B: Method Notes on the Parent Survey

While teacher survey participation was greater than initially anticipated, the collection of parent survey data proved to be much more challenging. After intense follow-up with parents, the baseline survey came quite close to reaching the goal of 281, with a final count of 260 completed surveys (92 percent of goal). In an effort to maximize response rates, the follow-up survey was conducted over the phone. As with the baseline survey, respondents had the option of responding in either English or Spanish. After intense and repeated follow-up over the course of five months, the final count was 154 completed surveys (63 percent of the goal of 246 surveys).

Discussions with hubs and the Foundation, as well as the evaluation team's own analysis, reveal a number of challenges with reaching the parent population:

- **A number of parents did not recognize that their children were participating in Cavity Free Kids at school.** Despite numerous attempts to reach the parents by phone and mail, 70 families (27 percent of goal) were unreachable or unresponsive. Conversations with parents that the evaluation team did reach indicated that many parents did not recognize Cavity Free Kids or realize that their children were being exposed to an oral health curriculum at school.
- **The target population (low-income families in Western and Central New York) experiences high mobility.** Follow up efforts are highly challenging as a result, with frequent changes of address and phone number. There were 35 families for whom a valid number was not available (13 percent of goal).

The abovementioned challenges suggest a potential for positive bias in the parent survey findings. Those who responded may have greater involvement in their children's classroom, and are therefore more attuned to their children's classroom experience. Furthermore, the parents who responded are likely to experience less mobility, and their children are more likely to have greater exposure to CFK curriculum. Nevertheless, the evaluation team believes this study provides valuable insights and lessons learned for Cavity Free Kids as it moves forward from its first year.

## Appendix C: Supporting Exhibits from the Parent Survey

### Exhibit C1. Oral Health Knowledge, Complete Data

| | Correct Response | Baseline (n=256-259) | Follow up (n=152-153) | Direction of Change |
|---|---|---|---|---|
| Carbs and sugars create acids, which is good for the teeth. | Disagree | 89% | 94% | **Improved** |
| It is okay for children to have juice right before bed. | Disagree | 88% | 92% | **Improved** |
| Children should visit the dentist when they get their first tooth or by their first birthday. | Agree | 58% | 66% | **Improved** |
| If children have cavities, they are more likely to have cavities as adults. | Agree | 56% | 63% | **Improved** |
| Snacking throughout the day can increase the chance of cavities. | Agree | 57% | 69% | **Improved** |
| Children don't need to see the dentist unless they feel pain. | Disagree | 98% | 97% | *No change* |
| Cavities among children can be prevented. | Agree | 92% | 94% | *No change* |
| The most important time for a child to brush his/her teeth is before bed. | Agree | 89% | 87% | *No change* |
| I do not need to worry about my child's oral health until the first tooth appears. | Disagree | 87% | 85% | *No change* |
| The health of a child's mouth is connected to his/her overall health. | Agree | 86% | 88% | *No change* |
| Oral health and proper dental care is a priority for my family. | Agree | not available | 97% | N/A |

## Exhibit C2. Oral Health Practices, Complete Data

| How often does your child… | Baseline | | Follow-up | | Direction of Change |
|---|---|---|---|---|---|
| | Most Common Response | Share of Respondents (n=236-254) | Most Common Response | Share of Respondents (n=154) | |
| Eat fruits and vegetables. | Once a day or more | 87% | Once a day or more | 94% | **Improved** |
| Use fluoride toothpaste. | Once a day or more | 74% | Once a day or more | 84% | **Improved** |
| Brush his/her teeth at school. | Once a day or more | 62% | Once a day or more | 71% | **Improved** |
| Drink water with fluoride (e.g. fluoridated tap water). | Once a day or more | 54% | Once a day or more | 60% | **Improved** |
| Floss his/her teeth. | Not at all | 52% | Not at all | 44% | **Improved** |
| Eat/drink right before bed. | Less than once a day | 39% | Not at all | 43% | **Improved** |
| Brush his/her teeth at home. | Once a day or more | 93% | Once a day or more | 94% | *No change* |
| Eat crackers or sweets. | Less than once a day | 53% | Less than once a day | 52% | *No change* |
| Drink juice or soda pop. | Once a day or more | 51% | Once a day or more | 53% | *No change* |

## Exhibit C3. Child Oral Health Practices by Age Group, Matched Baseline and Follow-up Responses[16]

| How often does your child… | Children ages 0-3 (n=42-56) | | | Children ages 4-5 (n=65-94) | | |
|---|---|---|---|---|---|---|
| | Response | Degree of Change | Overall Conclusion | Response | Degree of Change | Overall Conclusion |
| Eat fruits and vegetables. | Once a day or more | +7% | Improved | Once a day or more | +10% | **Improved*** |
| Use fluoride toothpaste. | Once a day or more | +9% | Improved | Once a day or more | +7% | **Improved*** |
| Drink water with fluoride (e.g. fluoridated tap water). | Once a day or more | +5% | Improved | Once a day or more | +14% | **Improved*** |
| Floss his/her teeth. | Not at all | -21% | **Improved*** | Not at all | +1% | *No change* |
| Eat/drink right before bed. | Not at all | +14% | Improved | Not at all | -1% | *No change* |
| Drink juice or soda pop. | Once a day or more | -2% | *No change* | Once a day or more | +6% | Declined |
| Brush his/her teeth at home. | Once a day or more | -7% | Declined | Once a day or more | +3% | *No change* |
| Eat crackers or sweets. | Once a day or more | -4% | *No change* | Once a day or more | +3% | *No change* |

* Denotes statistical significance at the 95% significance level using a paired sample t-test.
** Many respondents did not know if their children brushed their teeth at school. As a result, the baseline estimate has an upward bias since "don't know" responses were excluded from the analysis as an invalid response for the purpose of statistical testing.
*** In this table, differences of less than *five percentage points* are considered "No change."

[16] Baseline and follow-up responses were matched on the individual level. This type of analysis allows a statistical comparison between parents' responses in the two surveys.

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