Teaching Oral Optimism Throughout Humboldt (TOOTH) Program

EVALUATION FINDINGS AND RECOMMENDATIONS

2016-2017





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Introduction

Dental caries (tooth decay) is the single most chronic childhood disease. Poor oral health among children has been associated with children being 3 times more likely to miss school as a result of dental pain. Children who receive little or no oral health care are more likely to develop long-term oral health problems and experience conditions that require emergency treatment. Over 500,000 California children missed one or more school days as a result of oral health problems (not routine check-ups) in 2007. In Humboldt County, the average percentage of incoming kindergarten students with untreated decay was 27.2% over a five-year period (2009-2014).

Local community-based agencies have collaborated on a multi-year effort to address the county's dental health problem. A focus of the effort is prevention of dental disease through oral health education and prevention activities in schools, child care, and other community-based agencies.

The TOOTH (Teaching Oral Optimism throughout Humboldt) AmeriCorps Preschool (0-5) Program began in 2002. The program provided comprehensive age-appropriate education for children in preschools. The TOOTH AmeriCorps Preschool Program was funded through First 5 Humboldt and Prevent Child Abuse California (PCA-CA). The California Conservation Corps (CCC) was the lead agency for the program between 2003 and 2009. During that time, the program also served kindergarten through sixth grade students through a grant from the California Children's Dental Disease Program (CCDDP), Department of Health Services, and Office of Oral Health. The CCDDP grant was eliminated in 2009, ending the TOOTH AmeriCorps K-6 Program. The California Conservation Corps' grant to implement the preschool program ended and the Redwood Community Action Agency (RCAA) became the lead agency through funding from First 5 Humboldt. At that time, the TOOTH AmeriCorps Preschool Program became the TOOTH Program. AmeriCorps staff still implemented the program throughout Year 8 (2009-2010). In Year 9 (2010-2011), RCAA staff took responsibility of program implementation and AmeriCorps was no longer affiliated with the program.

In 2014, the TOOTH Program received additional funding through a three-year grant from the United States Department of Health and Human Services (HRSA). The grant focuses on enhancing oral health education and dental services to families and children ages 0-6 by including the following: a comprehensive countywide media campaign, services to pregnant mothers as well as children in daycare and kindergarten, oral health assessments by a Registered Dental Assistant for children in Head Start, and ongoing dental health case management services. This work dovetails with the Humboldt County Dental Advisory Group and Pediatric Oral Health Initiative Leadership Team Strategic Plan of 2012.

The purpose of this report is to analyze the evaluation data collected by TOOTH Program staff during Year 15 (2016-17). The report will present an analysis of program activities and progress towards meeting the program's goals and mission by comparing yearly data from 2003-2017. The TOOTH program evaluation was conducted by the Center for Applied Social Analysis & Education from 2003-2005, by evaluation consultant Maria Vanderhorst from 2005-2015 and by the California Center for Rural Policy at Humboldt State University for the 2016-17 program year.

Program Description

Program Goals

The goals of the TOOTH Program include:

- 1. Provide preventative oral health services
- 2. Provide oral health education services
- 3. Stimulate the development of community resources for preventative oral health services
- 4. Encourage broad community participation in the advocacy for preventative oral health and related services

The program's mission is "to assure, promote, and protect the oral health of Humboldt County's children by increasing their oral health awareness, knowledge, and self-responsibility by developing positive, life-long oral health behaviors."

School-Based Activities: In-Class Brushing Instruction and Oral Health Education Lessons

TOOTH Program staff served 54 classrooms throughout Humboldt County in Year 15. They focused on providing services to students affiliated with Head Start (HS), State-subsidized, and privately operated preschools. Staff provided in-class brushing instruction to students and supported daily in-class brushing exercises throughout the school year by distributing oral health supplies.

Community Outreach Activities

In order to increase awareness of children's dental health topics and encourage community participation in advocating for preventative oral health, TOOTH Program staff partnered with various organizations to provide free dental supplies and oral health awareness activities at 13 community events. Examples of these community events include the following:

Changing Tides Family Services Provider Trainings
Food for People's Produce Giveaways
Free Farmer's Markets: Garberville, Redway, Fortuna, Eureka
Eureka Police Department Block Party
Early Head Start
Manila First 5 Humboldt Playgroup
St. Joseph's Health Fair
K'ima:w Health Fair
Fortuna Open Door Health Fair
Festejando Nuestra Salud Health Fair
Rio Dell First 5 Humboldt Playgroup
Head Start Home Visitors

Parent/Caregiver Education Activities

To increase support for better oral health practices amongst families in the community, the TOOTH Program provided education to parents and caregivers during the following community activities in Year 15:

RCAA Living Facility- Safe Haven
RCAA Living Facility- Bridge Haven
Head Start Policy Council
Early Head Start/Head Start Home Visitor Training
Road to Kinder- Eureka
Fortuna EHS Parent Meeting
Road to Kinder- Fortuna
Road to Kinder- Arcata
Rio Dell First 5 Humboldt Playgroup
Changing Tides Family Services
Fortuna Parent Meeting
Eureka Parent Meeting
Manila First 5 Humboldt Playgroup

These events reached approximately 232 parents and 54 children. Supplies were provided to sponsoring organizations and reached 142 adults, 249 children, and 232 infants.

Evaluation Activities

Data collection related to evaluating the TOOTH program also occurred during the preschool and parent/caregiver education activities. This report summarizes the evaluation results for Year 15 of the TOOTH program.

Evaluation Methods

Data Collection

In order to evaluate the impact of the oral health program activities in Year 15, TOOTH Program staff measured students' plaque using a standardized index, implemented a Teacher Evaluation Survey, and conducted a Parent/Caregiver Survey. In addition, the Program Evaluator conducted key informant interviews with TOOTH Program Community Partners in order to further assess the effectiveness of the program.

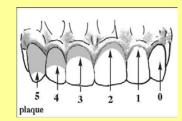
Student Plaque Disclosure Measurement

To measure physical changes in oral health, TOOTH Program staff used standardized methods to determine each child's score on the Quigley Hein Plaque Index before and after the oral health program activities. To obtain the data to calculate the index score, TOOTH Program staff used a plaque tinting swab which turns teeth purple to indicate plaque presence. The amount of plaque for each child was recorded using a scale of 0 to 5 in which a higher score indicated more plaque

presence. Figure 1 indicates the criteria used for recording plaque observations and calculating the Quigley Hein Index score.

Figure 1. The Quigley Hein Plaque Index Criteria for Recording Plaque Observations

- 0- No plaque present
- 1 Separate flecks of plaque at the cervical margin
- **2 -** A thin continuous band of plaque (up to 1 mm) at the cervical margin
- **3** A band of plaque > 1 mm but covering $< \frac{1}{3}$ of the crown.
- **4** Plaque covering at least $\frac{1}{3}$ but < $\frac{2}{3}$ of the crown.
- 5 Plaque covering $> \frac{2}{3}$ of the crown.



Formula is used to calculate a Quigley Hein Plaque Index Score: sum/# of surfaces examined

Student Knowledge Assessment

In Years 1-14, TOOTH Program staff administered a 5-question assessment to students in classrooms before and after implementing the 11-lesson oral health program.

The knowledge assessment measured student's understanding of the oral health concepts presented in the in-class brushing exercises and the oral health education lessons.

After the submission of the evaluation report for Year 14, Redwood Community Action Agency received feedback from First 5 Humboldt that the knowledge assessment was not a valid measure for program success. Based on this feedback the knowledge assessment was not administered during Year 15.

Teacher Evaluation

In Year 15, TOOTH Program staff administered one evaluation to the teachers at the end of the 11-lesson oral health education component. The evaluations measured the teachers' levels of agreement with each statement below.

- 1. The students felt comfortable with the TOOTH educator(s).
- 2. Overall, lesson content was age appropriate.
- 3. The activities were engaging for the students.
- 4. The students gained important information from the lessons.
- 5. The teaching methods were effective.
- 6. The educator consistently arrived early or on time to deliver lessons.

Appendix A includes the Teacher Evaluation for 2016-17. Teachers rated each statement from zero to 10, indicating a range from strongly disagree (0) to strongly agree (10).

Parent/Caregiver Knowledge Assessment

Parents and caregivers who attended community events were provided the opportunity to complete a Parent/Caregiver Knowledge Assessment after receiving one-on-one education from a TOOTH Program staff member. The multiple-choice assessment questions can be found in Appendix B.

Community Partners' Assessment of TOOTH Program

The Program Evaluator interviewed Community Partners who worked with the TOOTH Program on community educational activities or preschool oral health program activities. Partners completed a phone interview and provided responses to the following open-ended questions:

- 1. Please describe your organization's work with the TOOTH Program.
- 2. Has the TOOTH Program benefited your work with children? If yes, please describe the benefits.
- 3. Have there been any challenges implementing activities with the TOOTH Program at your organization? If yes, please describe the challenges.
- 4. Do you have any recommendations for the TOOTH Program? If yes, please explain your recommendations.

Data Analysis

TOOTH Program staff members entered collected data into formatted Excel spreadsheets. Excel data files were then sent to the Program Evaluator via electronic mail. Excel data files were then imported into SPSS. The Program Evaluator used SPSS to complete descriptive analyses on data collected from the Plaque Disclosure Measurement, Teacher Evaluation Survey and Parent/Caregiver Surveys plus inferential statistics on the data collected from the Plaque Disclosure Measurement. A 95% level of significance (α = .05) was selected for all inferential statistical tests. This means that a result is "statistically significant" when the probability (p) of the result not being true is 5% or less, or the probability (p) of the result being true is 95% or more. A content analysis to identify main themes was completed on data collected from the Community Partner Assessment.

Evaluation Results

The TOOTH Program served 514 preschool students, and all completed at least one assessment in Year 15. Every student served did not complete all the data collection assessments or activities due to the following:

- Student did not have parent/caregiver consent to participate in the Plaque Disclosing (n=9).
- Student was absent on the day of the Plaque Disclosing (n=88).
- Student was no longer enrolled in the preschool during the Plaque Disclosing post-assessment (n=21).

Plaque Disclosure Measurement

TOOTH Program staff members completed both pre and post program plaque disclosure measurements on 396 students in 54 classrooms. The average student plaque index before the program was 1.54. After the program, the average student plaque index was 1.40. This decrease was statistically significant, t (392) = 7.31, p < .0001. Eighty-two percent of classrooms showed an average decrease in plaque index measurements after participation in the oral health program (Figure 2).

Figure 2. Pre and Post Program Plaque Indices by Classroom, 2016-17

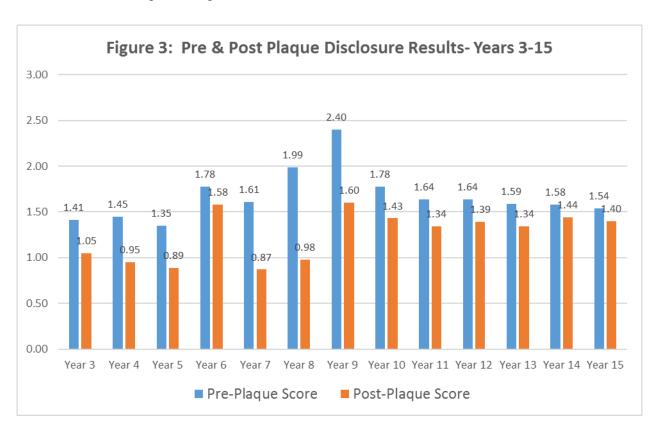
Preschool	Statistics	Pre-Plaque Index	Post-Plaque Index	Difference	
Alica Dimery Hand Chart	Mean	1.57	1.19	0.20	
Alice Birney Head Start	N	14	8	-0.38	
Arcata Elementary	Mean	1.48	1.38	0.10	
Preschool	N	14	11	-0.10	
Arcata Head Start	Mean	1.80	1.61	0.10	
Arcata Head Start	N	8	4	-0.19	
Blue Lake Head Start	Mean	1.49	1.62	0.13	
Diue Lake Head Start	N	14	10	0.13	
Drivaland Daginnings	Mean	1.41	1.40	-0.01	
Briceland Beginnings	N	6	4	-0.01	
Duideaville Head Ctant	Mean	1.41	1.41	0.00	
Bridgeville Head Start	N	4	3	0.00	
Children's Cottage	Mean	1.41	1.18	0.22	
Children's Cottage	N	12	7	-0.23	
CR Deer Room	Mean	1.77	1.26	-0.51	
CK Deel Koolii	N	7	5	-0.51	
CD Eross Doom	Mean	1.78	1.35	-0.43	
CR Frogs Room	N	5	3	-0.43	
CR Hummingbirds Room	Mean	2.08	1.48	-0.60	
CK Hullillingulus Koolii	N	5	1	-0.00	
Cuddeback Preschool	Mean	1.51	1.56	0.05	
Cuddeback Fleschool	N	9	8	0.05	
Dow's Prairie Children's	Mean	1.40	1.20	-0.20	
Center	N	9	6	-0.∠∪	
Fortuna Head Start 1	Mean	1.47	1.57	0.10	
Portuna ficau Start I	N	7	4	1 0.10	
Fortuna Head Start 2	Mean	1.81	1.68	-0.13	
Portulia Picau Start 2	N	8	7	-0.13	

Preschool	Statistics	Pre-Plaque Index	Post-Plaque Index	Difference	
Hoopa Child	Mean	1.70	1.43	0.27	
Development	N	6	5	-0.27	
Hoome Head Chart 10-2	Mean	1.41	1.36	0.05	
Hoopa Head Start 1&2	N	26	21	-0.05	
Hooma Haad Chart AM	Mean	1.38	1.34	0.04	
Hoopa Head Start AM	N	7	6	-0.04	
II II 10. DM	Mean	1.56	1.50	0.06	
Hoopa Head Start PM	N	5	1	-0.06	
Hall all 1 2 a	Mean	1.46	1.43	0.02	
HSU Children's Center	N	6	5	-0.03	
HOLL TO 1 C	Mean	1.63	1.70	0.0=	
HSU- Tenth Street	N	7	6	0.07	
Humboldt Educare	Mean	1.40	1.40	0.00	
Preschool	N	14	13	0.00	
	Mean	1.60	1.82		
Jefferson Head Start	N	10	6	0.22	
	Mean	1.52	1.40	0.15	
Kepel Head Start	N	8	6	-0.12	
	Mean	1.78	1.16	0.50	
Lafayette Head Start	N	6	6	-0.62	
	Mean	1.44	1.34	0.10	
Little Learner's- Giuntoli	N	11	11	-0.10	
That I have a	Mean	1.41	1.30	0.44	
Little Learner's- M Street	N	12	11	-0.11	
	Mean	1.50	1.32	0.40	
Little Learners- Eureka	N	14	10	-0.18	
	Mean	1.51	1.45	0.04	
Little Redwoods	N	11	9	-0.06	
	Mean	1.70	1.52	0.10	
Loleta Head Start	N	10	10	-0.18	
McKinleyville Head Start	Mean	1.50	1.39		
1&2	N	16	13	-0.11	
	Mean	1.38	1.28	0.10	
Morris Head Start	N	15	13	-0.10	
	Mean	1.50	1.34	0.1.1	
Orleans Head Start	N	8	6	-0.16	
Rainbow Junction	Mean	1.53	1.24	0.00	
Preschool	N	3	2	-0.29	

Preschool	Statistics	Pre-Plaque Index	Post-Plaque Index	Difference	
Dadway Hand Ctart	Mean	1.65	1.27	0.20	
Redway Head Start	N	7	6	-0.38	
Die Dell Heed Ctent	Mean	1.75	1.79	0.04	
Rio Dell Head Start	N	10	7	0.04	
Calmanhamy	Mean	1.58	1.46	0.12	
Salmonberry	N	11	8	-0.12	
Company AM Hand Chart	Mean	1.79	1.44	0.25	
Sonoma AM Head Start	N	8	7	-0.35	
Sonoma PM Head Start	Mean	1.69	1.49	0.20	
Sonoma PM Head Start	N	8	6	-0.20	
Camouting Cabalana	Mean	1.45	1.23	0.22	
Sprouting Scholars	N	14	12	-0.22	
C4 D 12 - D 1 1	Mean	1.42	1.41	0.01	
St. Bernard's Preschool	N	11	9	-0.01	
Stepping Stones	Mean	1.36	1.27	0.00	
Preschool	N	6	5	-0.09	
C	Mean	1.39	1.44	0.0.	
Sweet Peas Preschool	N	15	13	0.05	
T12- D-4 D11	Mean	1.25	1.23	0.02	
Teacher's Pet Preschool	N	19	16	-0.02	
Toddy Thomas Head	Mean	1.76	1.45	0.21	
Start	N	13	11	-0.31	
W:11 C1- II 1 C	Mean	1.51	1.39	0.12	
Willow Creek Head Start	N	9	6	-0.12	
Winzler Children's	Mean	1.66	1.45	0.21	
Center	N	24	18	-0.21	
Worthington Hood Ctort 1	Mean	1.67	1.25	0.42	
Worthington Head Start 1	N	7	6	-0.42	
Worthington Hood Chart 2	Mean	1.60	1.44	0.16	
Worthington Head Start 2	N	12	11	-0.16	
Vuralz Child Cara	Mean	1.72	1.17	0.55	
Yurok Child Care	N	7	4	-0.55	
Vymola Domlar Has d Ctarr	Mean	1.73	1.12	Λ (1	
Yurok Early Head Start	N	3	2	-0.61	
Vymals Hand Ctart	Mean	1.71	1.41	0.20	
Yurok Head Start	N	12	6	-0.30	

Comprehensive Comparison

Based on the present student plaque index measurements and the findings from previous reports, the average post plaque indices decreased after participating in the oral health program activities across Years 3 through 15 (Figure 3).



Student Knowledge Assessment

After the submission of the evaluation report for Year 14, Redwood Community Action Agency received feedback from First 5 Humboldt that the knowledge assessment was not a valid measure for program success. Based on this feedback the knowledge assessment was not administered during Year 15.

Comprehensive Comparison of Knowledge Assessment Results

Figure 4 presents a summary of Student Knowledge Assessment Results for 13 program years. For each program year, the average post Student Knowledge Assessment score showed a statistically significant increase.

Figure 4. Summary of Student Knowledge Assessment Results (Years 2 – 14)

Year	Sites Surveyed	Classrooms	Pre-Test	Pre-Test Average Score	Post-Test	Post- Test Average Score	p-value
2 (2003-2004) ⁴	33	33	374	53.4	332	60.9	p=.002*
3 (2004-2005) ⁴	44	44	401	64.7	331	81.7	p<.001*
4 (2005-2006) ⁵	25	25	221	72.88	196	87.63	p<.001*
5 (2006-2007) ⁵	19	19	129	68.00	129	85.05	p<.001*
6 (2007-2008) ⁶	24	31	407	49.38	280	61.10	p<.0001*
7 (2008-2009) ⁷	13	16	106	55.06	106	73.33	p<.0001*
8 (2009-2010)8	25	31	240	66.91	222	78.75	p<.0001*
9 (2010-2011)9	27	36	346	48.42	266	83.02	p<.0001*
10 (2011-2012) ¹⁰	28	30	475	45.52	333	83.27	p<.0001*
11 (2012-2013) 11	27	34	444	55.75	339	85.01	p<.0001*
12 (2013-2014) ¹²	29	32	531	57.47	356	83.88	p<.0001*
13 (2014-2015) ¹³	33	43	573	55.43	455	79.38	p<.0001*
14 (2015-2016)	41	50	742	61.40	602	84.12	p<.0001*

^{*}Statistically significant based on significant level of .05

Teacher Evaluations

In Year 15, 40 teachers completed evaluations of the oral health education lessons. Teacher Evaluation average ratings of positive statements regarding the oral health education lessons were between 9.73 and 9.85, with 0 indicating strong disagreement and 10 indicating strong agreement. Figure 5 presents average ratings for each evaluation statement.

Figure 5. Teacher Evaluation Results for Year 15

Evaluation Statement	Average Teacher Rating
The students felt comfortable with the TOOTH educator(s).	9.85
Overall, lesson content was age appropriate.	9.78
The activities were engaging for the students.	9.73
The students gained important information from the lessons.	9.83
The teaching methods were effective.	9.80
The educator arrived consistently early or on time to deliver	9.85
lessons.	

In addition to ratings, teachers provided comments about the program. Common themes found in the comments included:

- The TOOTH educators worked well with children/made connections with children/engaged children (13 teachers)
- Students had fun/enjoyed the program (18 teachers)
- Students looked forward to TOOTH visits or talked about TOOTH visits afterwards (11 teachers)
- TOOTH educators were prepared/helpful/flexible. (10 teachers)

The below listed quotes are directly from teachers who had TOOTH educators in their classroom during the 2016-17 school year:

"Overall a great program loved by the kids, enjoyed by the teachers and appreciated by our families."

"We have received feedback from many parents who are so happy with how independent their children have become in oral hygiene and how enthusiastic they are."

"We love the TOOTH program! All the teachers we get are consistently awesome with the kids and present the materials in an engaging way. The kids look forward to it each time!"

Comprehensive Comparison

Figure 6 presents the continuous positive average teacher evaluation ratings across program Years 3 through 15.

Figure 6. Average Teacher Evaluation Ratings Years 3-15

Program Year	Overall Average Teacher Evaluation	
	Rating	
3	9.05-9.58	
4	N/A	
5	9.21-9.81	
6	8.80-9.98	
7	7.95-10.00	
8	9.21-9.72	
9	8.98-9.44	
10	9.55-9.70	
11	9.50-9.61	
12	9.17-9.50	

13	9.55-9.75
14	9.71-9.86
15	9.73-9.85

Parent/Caregiver Knowledge Assessment

In Year 15, TOOTH Program staff provided one-on-one oral health education and group presentations to parents and caregivers at community events. A total of 303 parents or caregivers completed the Parent/Caregiver Knowledge Assessment. The following figures illustrate the summarized responses to the assessment.

Figure 7. 2016-17 Summary Responses to Parent Knowledge Assessment (Q1)



Figure 8. 2016-17 Summary Responses to Parent Knowledge Assessment (Q2)

Question 2. Can the germs that cause cavities be passed from adult to child?				
N=301				
Response	Response Number of Respondents Percentage of Respondent			
Yes	259	86%		
No	42	14%		



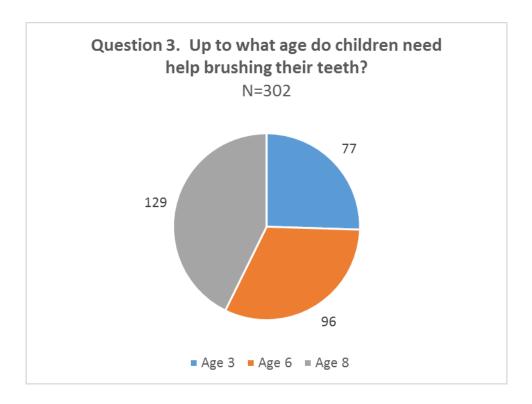


Figure 10. 2016-16 Summary Responses to Parent Knowledge Assessment (Q4)

Question 4. Which drink is sugar free and does not cause cavities? $N=303$				
Response	Response Number of Respondents Percentage of Respondents			
Water	295	97%		
Diet soda	2			
100% juice	3	3%		
Milk	3			

The instrument also collected oral health information about parents. Two hundred and eight-nine (95%) survey participants stated that they had been to the dentist. Of these survey participants, 196 (68%) went for a regular check-up. Fourteen percent (n=42) went to treat a problem and 3 percent (n=9) went because they were in pain. Fifteen percent (n=43) went to the dentist for more than one of the above reasons.

The instrument also collected oral health information about parents' children. Two hundred and eighty parents shared information about their children. Two hundred and fifty survey participants (82%) indicated that they had taken their child to the dentist. Of the 244 parents that

said they took their child to the dentist, 199 (82%) took their child to the dentist for a regular check-up. Seven percent (n=17) went to treat a problem and no one went because their child was in pain. Eleven percent (n=28) brought their child to the dentist for more than one of the above reasons.

Parents were also asked if their child had a fluoride varnish or sealant treatment. Two hundred and forty-five survey participants responded to this question. Fifty-eight (24%) respondents were not sure. The breakdown of responses for those who indicated that their child had received a fluoride varnish and/or sealant treatment (n=190) can be found in the below table.

Figure 11. Frequency of Treatments from Providers

Treatment Received by Children of Survey Participants	Frequency	Percent
Fluoride Varnish	111	58%
Sealant Treatment	21	11%
Fluoride Varnish and Sealant Treatment	58	31%

Community Partner Assessment of TOOTH program

The Program Evaluator attempted to schedule key informant interviews with five community partners. Three community partners completed phone interviews, all of which were from preschools in the local area. The interviewees included one lead teacher, one director, and one owner. The phone interviews consisted of four simple questions regarding to the satisfaction and success of the program at each school site. Below is a summary of the interviews.

When asked to describe their organizations' work with the TOOTH Program, all three school sites described it as a great program where educators would come out to the school sites and host weekly discussions on oral health. They offered various lesson plans and activities geared towards preschool aged children (2 ½-5 years).

All three community partners thought that the TOOTH Program was very beneficial to the work they do with children. They all stated that the program helped reinforce ideas and language on oral health not only in the classroom, but also at home with the parents. Some of the other benefits described include the following:

- The children recall presentations the rest of the day and even throughout the rest of the week.
- It provided both teachers and children with the correct language and understanding of oral health.
- It gave the kids a better understanding of what's good and what isn't good to eat.

The three community partners all agreed that there were no challenges implementing activities with the TOOTH Program in their organizations. One community partner did state that due to school enrollment not being consistent every day, not all children got to participate in the lessons since the program was only one day a week. However, the children that didn't get to participate

in the lessons still received informational flyers and free toothbrushes so it was still beneficial to them.

The only recommendation for the program was that it be offered in public elementary schools and charter schools in additional to public preschools. All three community partners said they liked the program and one stated that they would like for the program to continue next year.

Conclusions and Recommendations

Conclusions

In Year 15, the TOOTH Program continued to uphold its mission and work positively towards achieving all the program's goals. The TOOTH Program continues to be a community resource by providing direct preventative oral health services and education to a large number children in multiple county preschools. The TOOTH Program also improved its outreach to parents and caregivers in Year 15.

Results show that oral health, measured by average plaque disclosure measurements, improved for students in the program during Year 15. These positive results build on the program's successes in Years 2 through 14. In addition, the TOOTH Program continued to encourage broad community participation in the advocacy for preventative oral health and related services by providing dental supplies and education to attendees of numerous county events.

These conclusions are based on the following key findings:

- Based on the data collected using accurate plaque measurement protocols, The Quigley Hein Index measurement of plaque post program decreased from the pre-program measurement throughout Years 3 through 15.
- From Years 2 through 14, average post Student Knowledge Assessment scores showed a statistically significant increase each program year.
- In Year 15, average teacher evaluation ratings showed that teachers strongly agreed that the oral health lessons were age appropriate, engaging and provided the students with important information. They also strongly agreed that students were comfortable with the TOOTH Program staff members. In addition, teachers strongly agreed that the TOOTH Program staff members' teaching methods were effective and they consistently arrived early or on time to deliver lessons. These positive ratings were present in the teacher evaluation results throughout Years 3 through 14.
- TOOTH Program staff provided education to 303 parents and caregivers participating in community activities.
- TOOTH Program staff partnered with various organizations to provide free dental supplies and oral health awareness activities to 142 adults, 249 children, and 232 infants.

• Three community partners interviewed thought working with the TOOTH Program benefited their work with children.

Recommendations

- Consider conducting additional key informant interviews with students, parents/caregivers, and TOOTH Program staff as part of the evaluation process.
 Comprehensive qualitative data collected could be used to identify barriers, develop solutions and explain certain quantitative results.
- Continue to explore ways to evaluate the impact of TOOTH activities on parents and caregivers. For example, a focus group could be conducted with a group of parents whose children have received TOOTH curriculum.
- Limit changes to evaluation tools so that results can continue to be comparable over time.
- Work with the Program Evaluator to conduct database checks on a regular basis.

Appendix A

2016-17 Teacher Evaluation

In Year 15, the Teacher Evaluation measured the teachers' levels of agreement with each of the six statements below. The rating scale was from 0-10, with 0 indicating strong disagreement and 10 indicating strong agreement.

- 1. The students felt comfortable with the TOOTH educator(s).
- 2. Overall, lesson content was age appropriate.
- 3. The activities were engaging for the students.
- 4. The students gained important information from the lessons.
- 5. The teaching methods were effective.
- 6. The educator consistently arrived early or on time to deliver lessons

Appendix B



TOOTH Parent/Caregiver Knowledge Assessment

Zip code:
I. When should you start cleaning your child's gums and teeth to prevent tooth and gum disease?
 at birth when the first tooth appears when they start preschool when they start kindergarten
2. Can the germs that cause cavities be passed from adult to child?① Yes② No
3. Up to what age do children need help brushing their teeth? ① 3 yrs. old ② 6 yrs. old ③ 8 yrs. old
4. Which drink is sugar-free and does not cause cavities? ① water ② diet soda ③ I 00% Juice ④ milk
5. Have you been to the ① Yes ② No dentist? If yes, for what reason:
① regular check up ② treat a problem ③ in pain
6. Have you taken your child to the ① Yes ② No dentist? If yes, for what reason: ① regular check up ② treat a problem ③ in pain
7. Has your child had a: ① fluoride varnish ② sealant treatment ③ not sure If so, where:
① dentist② dental van③ pediatrician④ school⑤ WIC

Thank you. Please return to TOOTH table for free dental supplies