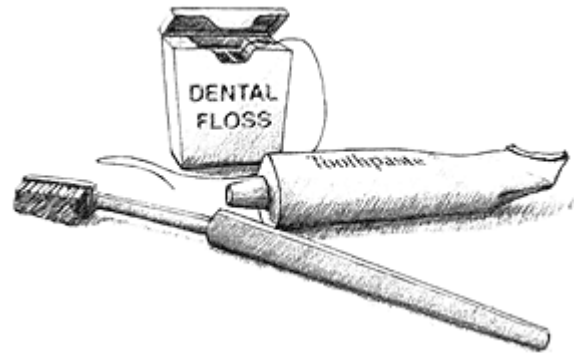


Healthy Teeth for Life: Assessing Children's Oral Health

HUMBOLDT COUNTY

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ABSTRACT

In May of 2014 the Humboldt County Department of Health & Human Services Maternal Child & Adolescent Health (MCAH) Division received special project funding focused on county-level oral health work from the California Department of Public Health. The Humboldt County MCAH staff worked with the California Center for Rural Policy (CCRP) to develop a collaborative project to gather and analyze population-based and service data on children's oral health in Humboldt County.

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- Schools participating in survey: Hoopa Elementary, South Fortuna Elementary, Jacoby Creek, Redway Elementary, Redwood Preparatory Charter School, Scotia Union, Washington Elementary
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Key Recommendations

For purposes of this report, five years of aggregated data on the status of children's oral health in Humboldt County was analyzed. The report includes Kindergarten Oral Health Assessment data from 2009-2014 and children's hospital-based dentistry data from 2008-2013.

The goal of the report is to share the results of this analysis with the Dental Advisory Group, the Pediatric Oral Health Leadership Team, and other stakeholders working to improve children's oral health to inform their collaborative efforts and target future initiatives. Stakeholders can utilize the data and recommendations to guide and prioritize prevention, early intervention, and treatment for vulnerable populations and specific geographic regions with significant oral health disparities.

Overall Recommendations

Target specific geographic regions for prevention, early intervention, and treatment.

Eastern Humboldt emerged as a geographic region with high rates of decay among kindergarten students and high rates of referrals to children's hospital-based dentistry. Refer to Table 8 on page 23 for additional details.

Increase focus on 0-5/pre-K oral health to reduce the decay rate among kindergarten students and reduce referrals to hospital-based dentistry services for the 0-5 population.

Focus on filling data gaps related to children's oral health.

Continue to explore innovations in cross-sector collaboration amongst providers and organizations working on children's oral health with a focus on improving the continuum of care for low-income children on MediCal.

Key Findings

Kindergarten Oral Health Assessment

- Between 2009-10 and 2013-14, 6,427 kindergarten students were eligible for the oral health assessment. Assessments were returned for 3,877, a 60.3% response rate. The mandate was made optional in 2009 but Humboldt County schools have continued to participate at a high level.
- The average percentage of kindergarten students with untreated decay across all 32 school districts was 27.2%. At least 1 in 4 students assessed had untreated decay.

- Seven school districts had more than 30% of students with untreated decay between 2009 and 2014: Klamath-Trinity Joint Unified (56.3%), Scotia Union Elementary (55.5%), Rio Dell Elementary (39.7%), Eureka City Unified (36.9%), Arcata School District (35.8%), Fortuna Union Elementary (35.7%) and Loleta Union Elementary (30.6%).
- Two school districts had both a high percentage of students with untreated decay and a low response rate for the oral health assessment: Klamath-Trinity Joint Unified and Eureka City Unified.
- Southern Humboldt Joint Unified had the lowest response rate at 36%.
- Of schools completing surveys (n=7), most provided the oral health assessment to parents during the kindergarten registration process.
- Schools completing surveys reported that they do track parent responses and remind parents to submit the oral health assessment; the most common method of reminder was via mail. Schools had creative approaches to remind parents to complete the assessment.
- The data does not measure any school-based or district-based efforts to address students' oral health; rather, it reflects a child's oral health status when they first enter the school system.

Hospital-Based Dentistry

- Between 2008 and 2013, at least 675 Humboldt County children received hospital-based dentistry services.
- 95% of children who received hospital-based dentistry services were covered by MediCal.
- Almost 75% (74.6%) Humboldt County children who received hospital-based dentistry were ages 0-5.
- 81.8% of referrals to the Pediatric Dental Initiative (PDI) were from the Open Door Burre Dental Center (54.4%) and K'ima:w Health Center (27.4%).
- Eastern Humboldt comprises 4.2% of Humboldt County's population, yet the area accounted for 29% of PDI referrals in a five-year period.

Background

Importance of Oral Health

Oral health is linked to a person's overall health. Poor oral health is associated with a variety of health-related problems. According to the Surgeon General, tooth decay is the single most common chronic childhood disease- 5 times more common than asthma¹. In addition to being painful, untreated tooth decay introduces infection into the body, which can result in a child being more vulnerable to ear infections, sinus infections, and infections from bumps and scrapes.

Oral health can influence a child's success in school. Oral health problems can lead to poor concentration, low self-esteem, reduced school performance, and missed days of school². 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. The Surgeon General estimated that 51 million school hours were lost each year due to poor oral health. Over 500,000 California children missed one or more school days as a result of oral health problems (not routine checkups) in 2007.

"Caries in primary teeth can affect children's growth, result in significant pain and potentially life-threatening infections, and diminish overall quality of life."

-American Academy of Pediatric Dentistry

Dental disease is more prevalent in low-income families and other vulnerable populations. According to CCRP's Rural Health Information Survey (RHIS) and Research Brief No. 5: Oral Health Care Disparities in the Redwood Coast Region (2010), respondents living in poverty were the least likely to have their teeth professionally cleaned in the past year. Respondents who were uninsured or with MediCal were significantly less likely to have their teeth cleaned in the past year. This population was also more likely to have never received or to have gone 5 or more years without professional teeth cleaning than those with private insurance. Additionally, respondents of color were less likely to have their teeth professionally cleaned than white respondents.

The American Dental Association, American Academy of Pediatric Dentistry, and the American Association of Public Health Dentistry currently recommend all children have their first preventive dental visit by 12 months of age. Children who have their first dental visit before age one have 40 percent lower dental costs in their first five years than children who are not seen by a dentist before age one. Dental cavities (caries) are almost completely preventable if the disease and risk factors are identified early.

¹ U.S. Department of Health & Human Services. Oral Health in America: A Report of the Surgeon General. 2000

² Dental Health Foundation. An Oral Health Assessment of California's Kindergarten and 3rd Grade Children, 2006.

Children's Oral Health in Humboldt County

In 1999 a group of community stakeholders gathered to create the Dental Advisory Group (DAG) in response to the limited availability of dental services for low-income children. In 2001, The California Endowment funded the Circle of Smiles initiative, which included an education program, an Oral Health Coordinator, sealant clinics, and expansion of the dental van and Burre Dental Clinic through the Humboldt County Community Open Door Clinics.

Since Circle of Smiles funding ended in 2005, the DAG continues to network to sustain children's oral health care efforts locally.

A 2010 report, *Specialty Access on the North Coast: Mental, Dental, and Medical Access*, cited 41 adjusted full-time equivalent (FTE) general dentists, but only 5.2 FTE dentists to serve low-income patients. This translates to 4,808 low-income patients per dentist, a ratio that qualifies the county as a Dental Health Professional Shortage Area.

The local Federally Qualified Healthcare Clinics (FQHC) serve most of the Humboldt County children on MediCal. FQHC clinics are reimbursed at a higher rate than private practice dentists to treat children on MediCal. There are only four clinics in the county:

- Open Door Community Health Center- Burre Dental Clinic, Eureka
- United Indian Health Services, Arcata
- K'ima:w Dental Clinic, Hoopa
- Redwoods Rural Health Center, Redway

Additionally, the Open Door Burre Clinic operates a mobile dental van that provides school-based oral health assessments and services to local schools.

In September 2012, First 5 Humboldt and the Mel and Grace McLean Foundation funded the California Center for Rural Policy to complete a Children's Dental Strategic Plan for Humboldt County, which surfaced the need for a comprehensive look at county-level children's oral health data in order to inform future efforts to reduce dental decay.

In January 2014, the Humboldt County Department of Health & Human Services formed the Pediatric Oral Health Leadership Team (POHILT), a working group of agency leaders with a goal to improve children's oral health.

Both the DAG and POHILT are facilitated by the oral health coordinator. County-level oral health data is one of the five current focus areas of DAG and POHILT. Other areas of focus include: Improve access to dental services for those at highest risk of decay, create a culture shift about the importance of preventive care, increase the amount and quality of networking between new and current partners in Humboldt

County and with other organizations at a state and national level, and oversight, coordination, and advocacy.

Methods

Three secondary data sources and one primary data source were analyzed for this project.

- The Kindergarten Oral Health Assessment was required for kindergarten students entering the school system for the first time from 2006 to 2009. In 2009 the requirement became optional, though Humboldt County schools have continued to collect the data. This data is collected and reported annually at the district level. Five years of this data were analyzed beginning with academic year 2009-10 and ending with academic year 2013-14. Districts that reported 50 or fewer eligible kindergarten students in a five year period were excluded from the rankings, though complete results for all districts can be found in Appendix A.
- The Pediatric Dental Initiative (PDI) provided data on Humboldt County children served through their hospital-based dentistry program from 2008-2013.
- The Humboldt County Hospital-Based Dentistry Program (HC-HBDP) also provided data on children served between 2010 and 2013. Due to shifts in funding and reporting, the HC-HBDP was not able to provide a complete data set for children served since the program began.
- CCRP conducted surveys with school site staff familiar with the Kindergarten Oral Health Assessment.

All data was analyzed using SPSS software.

CCRP staff also participated in regular POHILT and DAG meetings in 2014 and will continue to participate in both collaborative groups. POHILT also created a data subcommittee and CCRP is participating as a member of that subcommittee.

Results

Kindergarten Oral Health Assessment 2009-2014

In 2005 the California Dental Association (CDA) sponsored AB 1433 (Gatto), which was signed by the governor. The law required school districts to provide proof of oral health screenings for kindergarten students entering the school system for the first time. Children were required to have a dental checkup by May 31 of their first year in public school. Dental evaluations that happened within the previous 12 months also met the requirement. If a dental checkup could not be obtained, parents could be excused from the requirement by filling out a waiver form.

The law also required districts to aggregate the data received from students and to submit an annual report to the county office of education. The State Budget Act of 2009 made the program optional, but the California Department of Education (CDE) has continued to allocate funding to support implementation of the law and Humboldt County schools have continued to screen students and produce the annual report. The San Joaquin County Office of Education offers free access to the System for California Oral Health Reporting (SCOHR), an online statewide data collection system.

The ultimate goal of AB 1433 is to establish a regular source of dental care for every child, to identify children who needed additional treatment and identify barriers to receiving care.

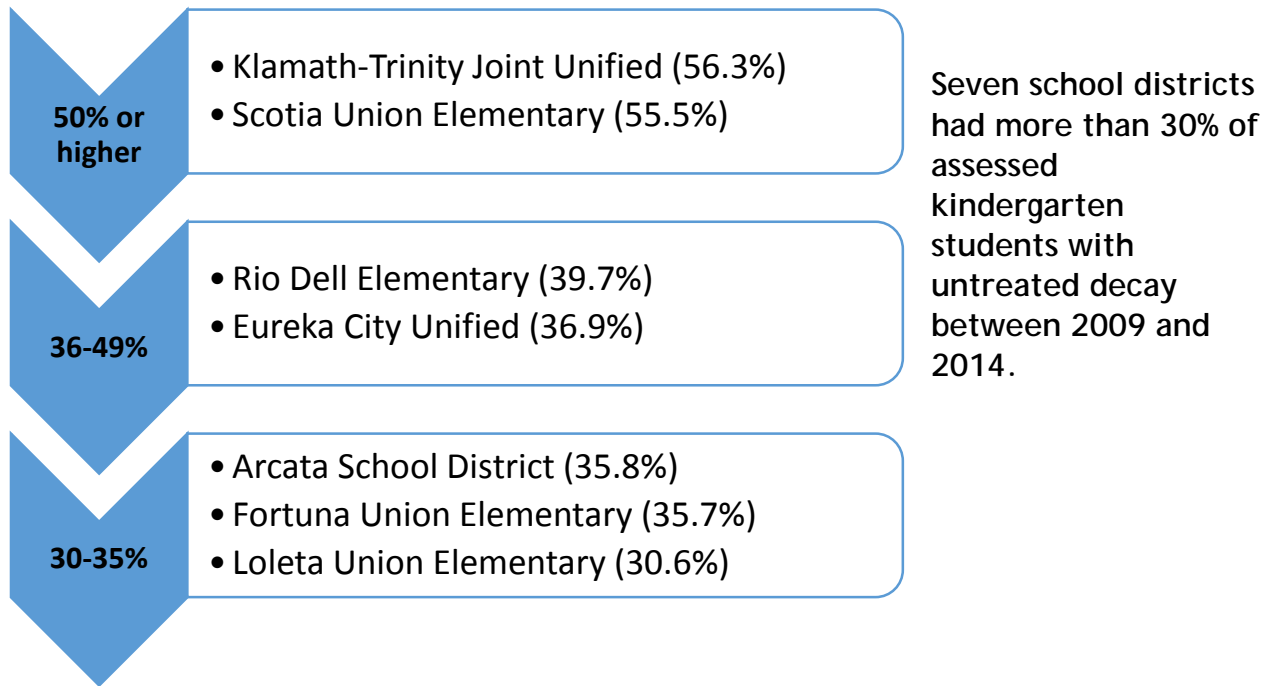
For purposes of analysis in this report the ten districts served 50 or fewer kindergarten students in a five year period were removed from the rankings due to small sample size. Those districts are: Big Lagoon Union Elementary (n=30), Bridgeville Elementary (n=34), Garfield Elementary (n=50), Green Point Elementary (n=11), Humboldt County Office of Education (n=32), Kneeland Elementary (n=22), Maple Creek Elementary (n=9), Mattole Unified (n=44), Orick Elementary (n=7), and Peninsula Union (n=17). These ten districts were still included in the overall number of students assessed and the county-wide response rate to show the county's overall participation in the survey. Appendix A contains the full kindergarten screening results.

Between 2009-10 and 2013-14, 6,427 kindergarten students were eligible for the oral health assessment. Of those, assessments were returned for 3,877. The overall percentage of eligible students to return assessments over the five-year period was 60.3%.

The average percentage of kindergarten students with untreated decay across all 32 districts was 27.2%. For all districts, approximately 1 of every 4 students assessed had untreated decay.

Districts were ranked based on analysis of the Kindergarten Oral Health Assessment data, which measures the number of students with untreated decay when they first enter the school district. **The data does not measure any school-based or district-based efforts to address students' oral health.**

The following graphic illustrates the districts with the highest percentage of kindergarten students with untreated decay.



Between 2009-10 and 2013-14, the Kindergarten Oral Health Assessment in Humboldt County had an overall response rate of 60.3%. Response rates varied between districts. The following two tables illustrate the five districts with the highest response rates and the five districts with the lowest response rates.

Table 1: Highest Response Rate Districts- Kindergarten Oral Health Assessment	
District	Response Rate
McKinleyville Union Elementary	91.8%
Fortuna Union Elementary	91%
Freshwater Elementary	89%
Scotia Union Elementary	83.8%
Pacific Union Elementary	78.5%

Table 2: Low Response Rate Districts- Kindergarten Oral Health Assessment	
District	Response Rate
Southern Humboldt Joint Unified	36.0%
Trinidad Union Elementary	38.1%
Klamath-Trinity Joint Unified	43.1%
Blue Lake Union Elementary	43.6%
Eureka City Unified	47.8%

The following graphic illustrates the two districts that had both a high percentage of students with decay and a low response rate between 2009-10 and 2013-14.

Klamath-Trinity Joint Unified **2009-14**

- 473 students eligible, 204 returned
- Percentage of students with decay: 56.3%
- Response rate: 43.1%

Eureka City Unified **2009-14**

- 1458 students eligible, 698 returned
- Percentage of students with decay: 36.9%
- Response rate: 47.8%

Table 3: School-Level Detail for Klamath-Trinity & Eureka City Unified School Districts		
School	% of Students Eligible for Free & Reduced Meals*	School Population
Klamath-Trinity Joint Unified		
Hoop Valley Elementary	97%	440
River's Edge Community	100%	5
Orleans Elementary	85%	75
Trinity Valley Elementary	98%	234
Eureka City Unified		
Alice Birney Elementary	89%	459
Grant Elementary	77%	363
Lafayette Elementary	77%	434
Washington Elementary	44%	538

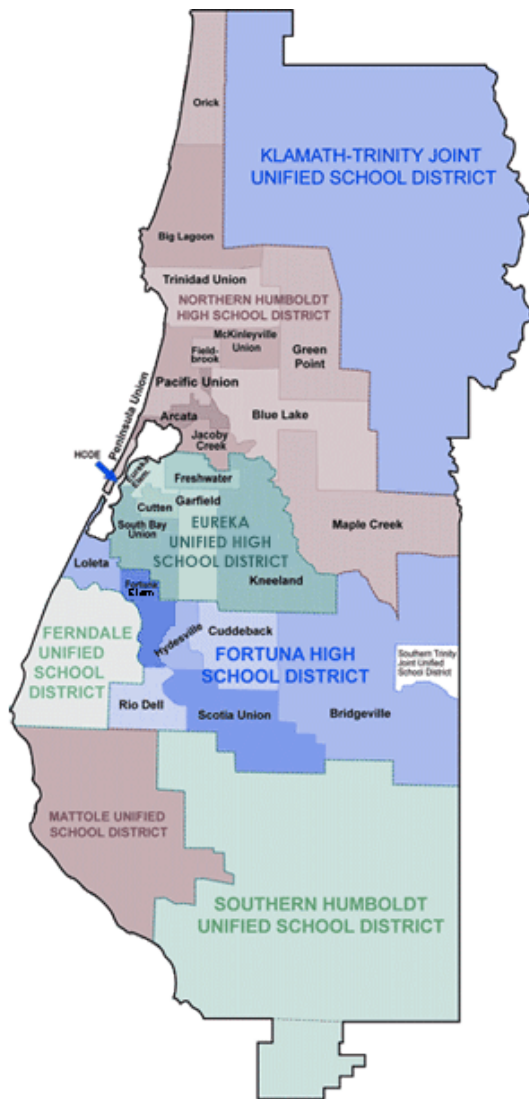
*Note: Data on the number of students eligible for free and reduced lunches is for the 2013-14 school year and was provided by the California Department of Education.

Kindergarten Oral Health Assessment (KOHA) - Results of School Staff Interviews

In addition to analyzing Humboldt County's Kindergarten Oral Health Assessment data from 2009-2014, CCRP contacted 22 schools and school districts with both high and low response rates to the Kindergarten Oral Health Assessment to learn more about how the assessments are distributed and tracked at each school.

Seven schools and school districts responded to the survey: Hoopa Elementary School, South Fortuna Elementary School, Jacoby Creek, Redway Elementary, Redwood Preparatory Charter School, Scotia Union School District, and Washington Elementary School.

Schools were contacted in early June and in mid-September, which coincided with the end of one school year and the beginning of another, and school staff were impacted by time constraints which may have contributed to a low return rate.



Schools that provided input were from the following Humboldt County districts*:

- Klamath-Trinity Joint Unified
- Fortuna Union Elementary
- Jacoby Creek Elementary
- Southern Humboldt Joint Unified
- Scotia Union Elementary

*Map provided by the Humboldt County Office of Education

Tables 4 and 5 summarize the responses to the school-based questionnaires. The school questionnaire can be found in Appendix B.

Table 4: Summary of School Responses to Oral Health Questionnaire					
School	District Response Rate	When do parents receive KOHA?	How do parents receive KOHA?	Does the school track who responds?	Are they returned throughout the year?
Hoopa Elementary	43.1%	Throughout the year	From K'ima:w and school nurse	Yes	Yes
South Fortuna Elementary	91%	Kindergarten registration and first week of school	Handed out during registration	Yes	Returned during summer and first two weeks of school
Jacoby Creek	48.3%	Kindergarten registration	Mailed or handed out during registration	Yes	Yes
Redway Elementary	36%	Kindergarten registration, first week of school, end of April	Registration packet, teacher delivery, mail	Yes	Yes
Redwood Prep. Charter School	91%	Kindergarten registration	Handed out during registration	Yes	Usually within first month
Scotia Union	59%	Kindergarten registration	Handed out during registration, and by mail	Yes	Yes
Washington Elementary	47.8%	Kindergarten registration	Handed out during registration	Yes	Families required to return them within one month of starting school

Table 5: Summary of School-Based Reminder Strategies for Parents Who Don't Return Kindergarten Oral Health Assessment

School	District Response Rate	Mail	Website	E-Mail	Auto-Dialer/ Phone Call	Other
Hoopla Elementary	43.1%	Yes	No	No	No	Outreach consultant makes home visits
South Fortuna Elementary	91%	No	No	No	Yes	Dentist visits school in September to complete assessments
Jacoby Creek	48.3%	Yes	No	Yes	No	None
Redway Elementary	36%	Yes, 3 rd try	Yes, in school newsletter	No	No	Teacher delivery via weekly packet
Redwood Prep. Charter School	91%	Yes	No	Yes	No	None
Scotia Union	59%	Yes	No	No	Yes	Note sent home with student
Washington Elementary	47.8%	Yes	No	No	No	District reminders

Hospital-Based Dentistry 2008-2013

In addition to analyzing data on kindergarten students across the county, CCRP also analyzed hospital-based dentistry data for Humboldt County from 2008-2013 to better understand the population of children receiving hospital-based dentistry services.

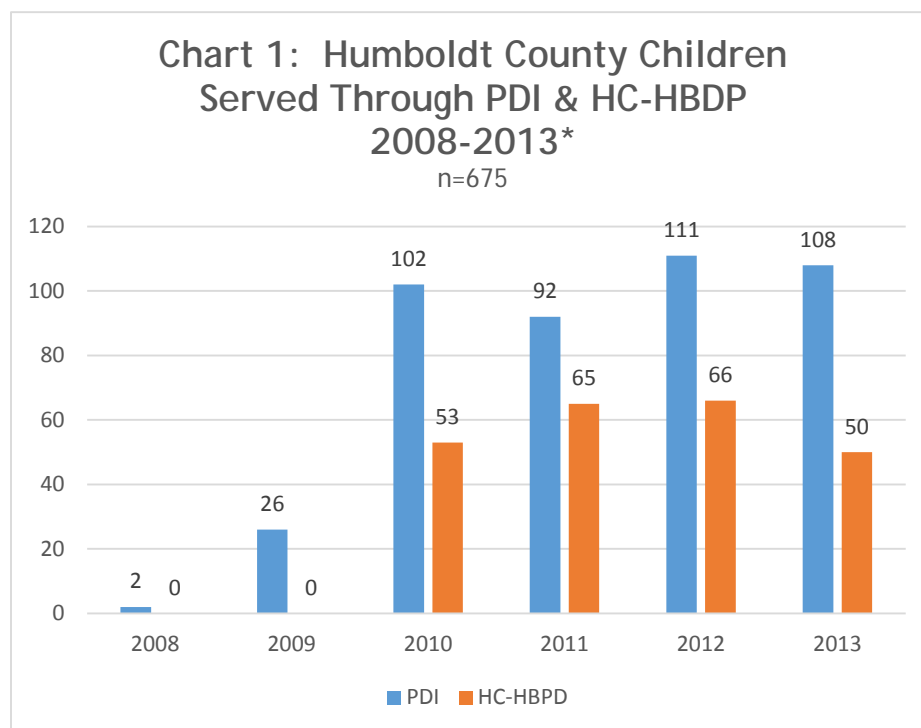
The Pediatric Dental Initiative (PDI) of the North Coast, now PDI Surgery Center, was formed in 2001 by a group of health providers, social services programs, child advocates, and public health programs from the counties of Sonoma, Mendocino, and Lake. According to their website (www.pdisurgerycenter.org), PDI is the only non-profit pediatric dental surgery center in the United States focused on treating children with severe tooth decay under general anesthesia. The group's mission is to "maintain a sustainable dentistry resource that will serve the low income children of Northern California."

In 2008 PDI opened in Windsor, California and serves children and families from 30 counties across Northern California, including Humboldt County. Humboldt County is approximately a three to six hour drive by car to PDI.

In addition to the Humboldt County children whose families travel to Windsor to PDI, a number of children are also served locally through the Humboldt County Hospital-Based Dentistry Program (HC-HBDP). Some hospital-based dentistry for children are also provided through United Indian Health Services (UIHS). Data for UIHS was not included in the report due to a small number of children served; between May 1, 2010 and December 31, 2011 sixteen children received hospital-based dentistry from UIHS. For purposes of this report data is included for the two providers that deliver the majority of hospital-based dentistry services to local children- PDI and HC-HBDP.

Children are often referred to hospital-based dentistry when they require anesthesia due to multiple cavities, being too young or scared to sit still for treatment, or when they have a developmental disability.

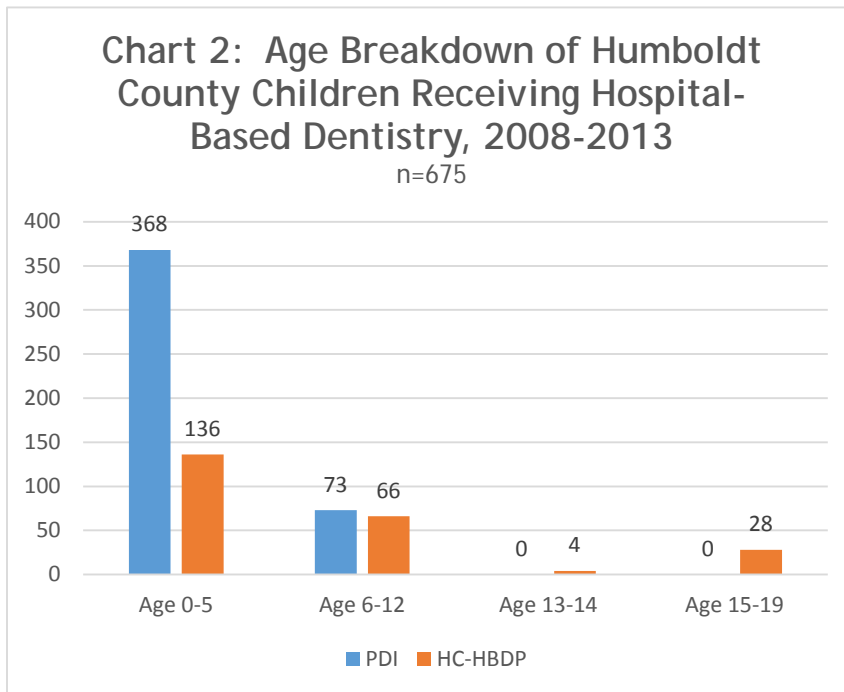
Between 2008 and 2013, at least 675 Humboldt County children received hospital-based dentistry services from either PDI Surgery Center or HC-HBDP. Chart 1 shows the breakdown of children served by year for each program.



441 children were served by PDI between 2008 and 2013; and 234 children were served by the HC-HBDP between 2010 and 2013.

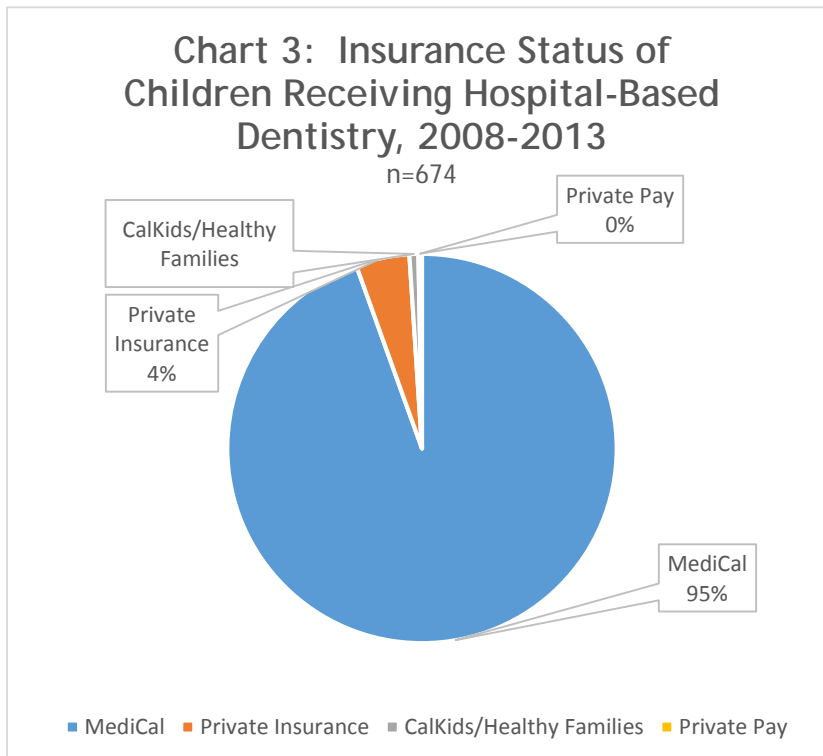
*Note: HC-HBDP did not provide data for 2008 or 2009. For 2010, HC-HBDP provided data for May-December only. For 2013, HC-HBDP provided data for January-September only.

Chart 2 illustrates the breakdown of children served by each program by age.



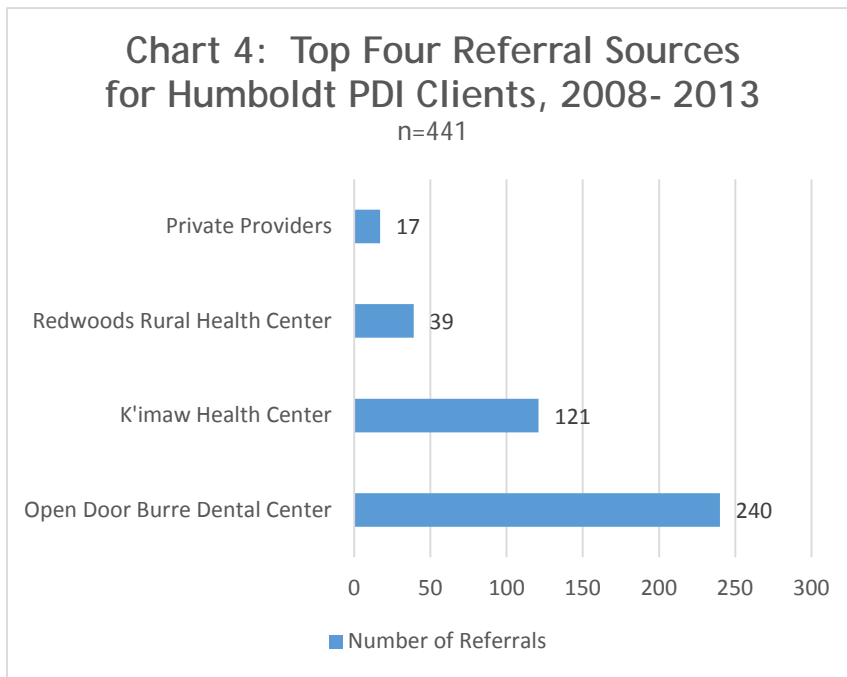
Almost 75% (74.6%) Humboldt County children who received hospital-based dentistry were ages 0-5. Another 20% of children served were ages 6-12. The remaining 5% were children ages 13-19. PDI did not serve children older than age 11.

Chart 3 shows the insurance status of the Humboldt County children who are documented to have received hospital-based dentistry services.



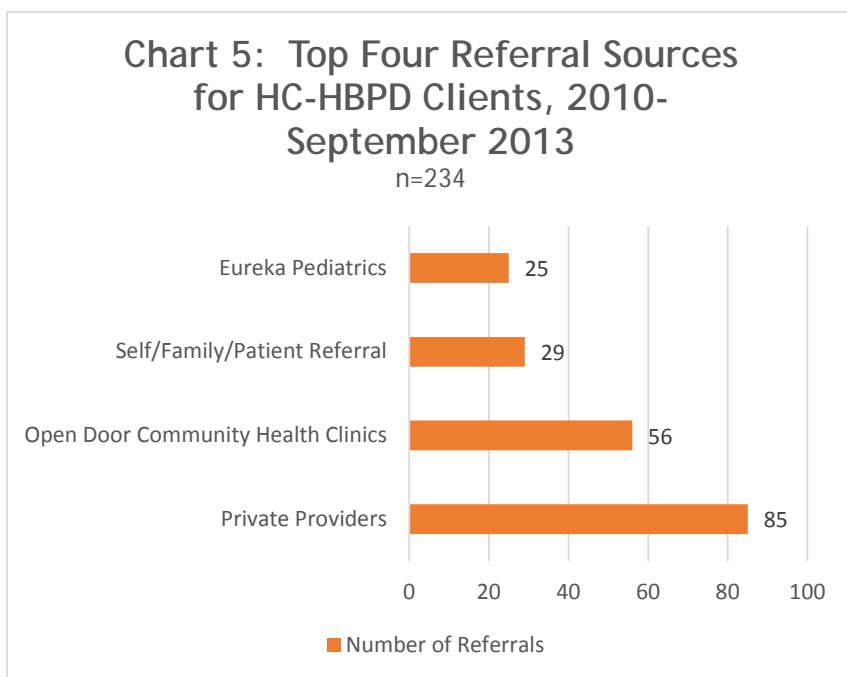
95% of children (n=637) who received hospital-based dentistry were covered by MediCal. The remaining 5% were covered by a combination of CalKids/Healthy Families (n=5), private insurance (n=30), and private pay (n=2).

There are more than 20 local providers (both clinics and private practices) who are referring Humboldt County children for hospital-based dentistry procedures. Charts 4 and 5 list the top four referral sources for PDI and the HC-HBDP program.



Of 441 total referrals, 361 or 81.8% were from the Open Door Burre Dental Center (54.4%) and K'imaw Health Center (27.4%).

Burre, K'imaw, and Redwoods Rural are Federally Qualified Healthcare Clinics (FQHC) and the primary service providers for children of families on MediCal.

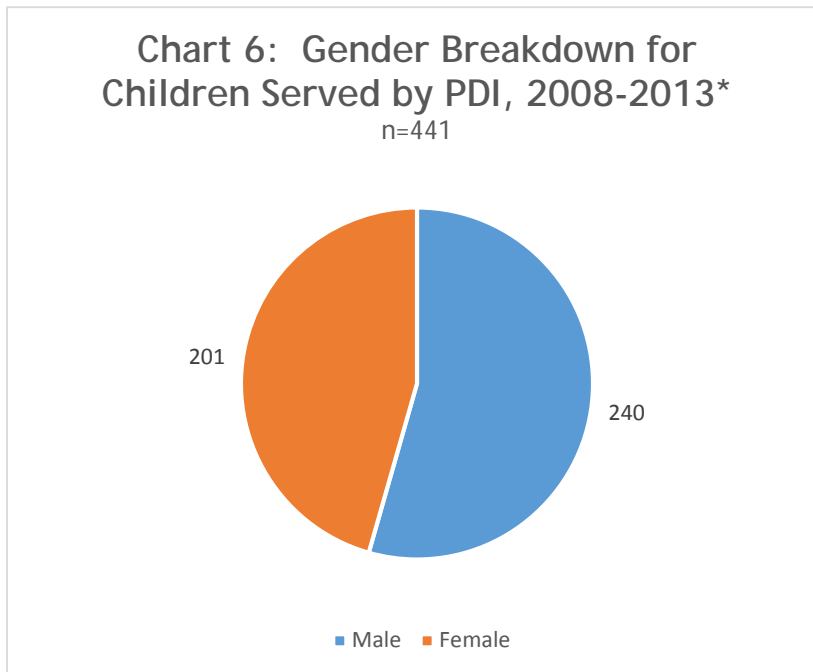


Of 234 total referrals, 141 or 60.2% were from private providers (36.3%) and the Open Door Community Health Clinics (23.9%).

Table 6 illustrates all of the referral sources for PDI and the HC-HBDP based on all data provided for 2008-2013 (see note on pg. 8).

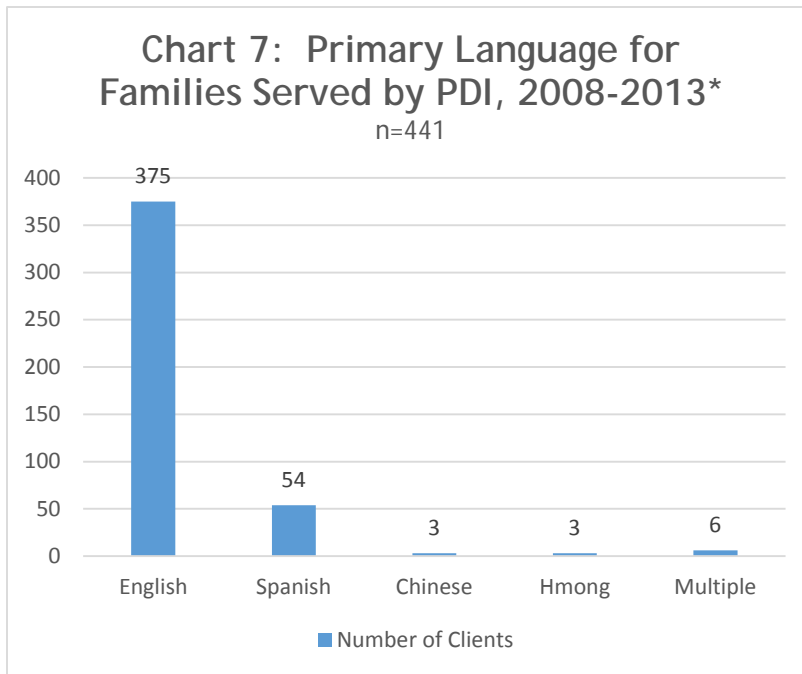
Table 6: Referral Sources for PDI & HC-HBDP Clients, 2008-2013 n=675			
Referring Agency	HC-HBDP	PDI	Overall Referrals
Open Door Burre Dental Center	56	241	297
Community Based Agency/School	4	0	4
Dept. of Health & Human Services	16	0	16
Eureka Pediatrics	25	0	25
Head Start	10	0	10
K'ima:w Health Clinic	2	121	123
Private Provider	85	17	102
Self/Family/Patient Referral	29	1	30
Redwoods Rural Health Center	7	39	46
Mendocino-Based Clinic	0	6	6
Other Clinics	0	16	16

Charts 6 and 7 illustrate the gender and primary language breakdowns for those children served by PDI between 2008 and 2013.



Children served by PDI Surgery Center between 2008 and 2013 were 54.4% male and 45.6% female.

*Note: HC-HBDP did not track gender for clients.



For families served by PDI Surgery Center between 2008 and 2013, 85% reported English as their primary language. The remaining 15% reported their primary language as 12.2% Spanish, 1.4% Multiple, .7% Chinese, and .7% Hmong.

*Note: HC-HBDP did not track primary language for clients.

Table 7 illustrates the PDI referrals by geography and compares the percentage of referrals from specific areas with population demographics.

Table 7: PDI Referrals by Geography, 2008-2013*
n=440

Region	Population (2010 US Census)	Percent of Population	Referrals	Percent of Referrals
Eastern Humboldt	5746	4.2	128	29
Eureka	30299	22.5	129	29
Southern Humboldt	4672	3.4	41	9.3
Eel River Valley	18298	13.5	73	16.5
Arcata/McKinleyville	32910	24.4	57	12.9

*Note: HC-HBDP did not track zip codes for clients.

Eastern Humboldt comprises 4.2% of Humboldt County’s population, yet the area accounts for 29% of HBD referrals in a five-year period. Another area worth noting is Southern Humboldt, which accounts for 3.4% of the population yet accounts for 9.3% of HBD referrals.

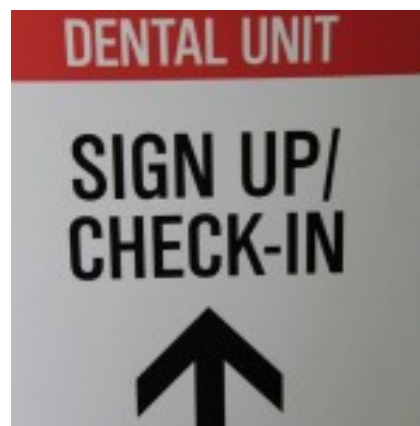
The HC-HBDP provided two client stories that give a personal look into the oral health issues faced by local families.

Story #1

“This child originally came to our program at the age of 18 months with caries. The family met a local dentist through this process and she has been seeing the child for preventive care since 2011. Two of the teeth appeared to have abscessed from trauma and needed to be extracted. He also needed the previous fillings touched up on the outer edges. He is now three years old and is getting regular dental care. The parents are also bringing his baby brother who is one yrs. old to the dentist for care. All three children in this family now have a dental home and care can be expedited when needed.”

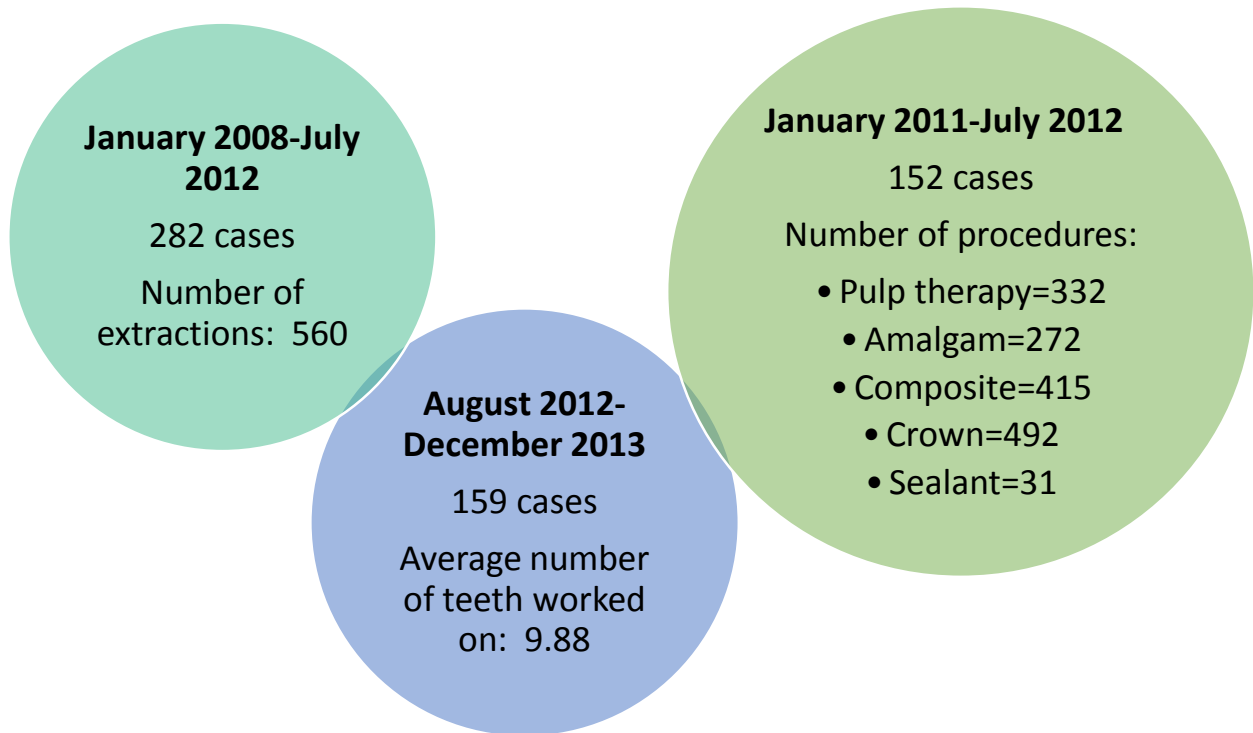
Story #2

“Child was referred to program by the Pediatric Dentist due to the extent of decay. All but three of his 20 teeth had deep decay. All of his upper 6 front teeth were completely black and broken down with decay. The child spoke very softly, would not smile and appeared to be embarrassed about his appearance. The child started Kindergarten this week. The dentist took her time to carefully restore all of his teeth to give him back his smile. We did not extract them. When we were finished the black broken teeth were replaced by clean white new ones. We are hoping he can now interact with the other children at school normally and without embarrassment or teasing from the other children.”



PDI has been collecting data on the number and types of procedures performed. The type of data being collected has become more detailed since 2008. It was not possible to compare data across years because procedure variables have shifted between 2008 and 2013.

The following graphic illustrates available information on procedures performed at PDI between 2008 and 2013.

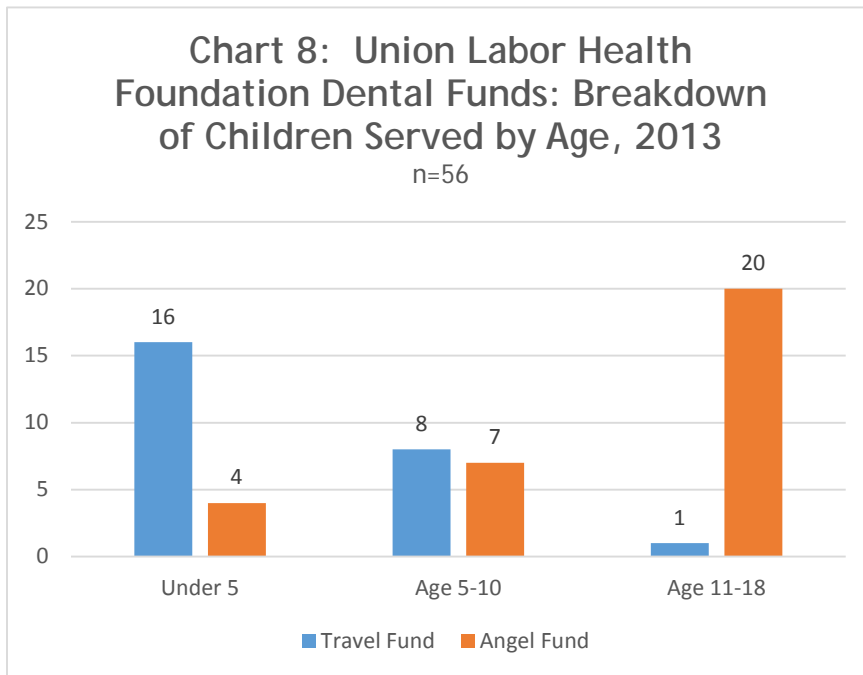


In addition to analyzing available hospital-based dentistry data, CCRP analyzed data provided by the Union Labor Health Foundation which sponsors two funds to assist low-income families who need financial assistance for oral health services-the Angel Fund and the Dental Travel Fund. Applications are accepted at any time for both funds.

The Angel Fund provides small grants to meet immediate medical or health-related needs of individuals who are residents of Humboldt County. ULHF's Dental Angel Fund provided \$39,322 to 31 families to pay local providers to provide oral health care services for children in a thirteen-month period between January 2013 and January 2014.

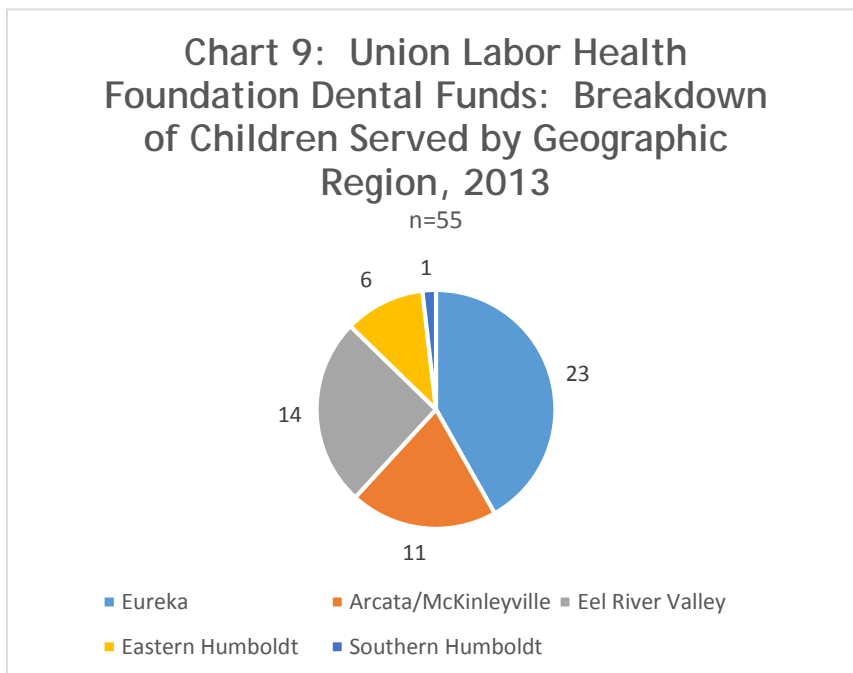
The Dental Travel Fund provides small grants to meet the immediate dental-related needs of children in Humboldt County in situations where emergency funds are required. The ULHF Dental Travel Fund provided twenty-five \$200 grants totaling \$5000 for families to travel to PDI in 2013.

Chart 8 illustrates the breakdown of children served by age for both funding sources.



The average age served for the Dental Travel Fund is age 4, and the average age served for the Dental Angel Fund is age 11.

Chart 9 illustrates the geographic location of families receiving Dental Angel or Dental Travel Funds in 2013.



The largest percentage (41.8%) of funds went to families in Eureka, followed by 25.5% of funds to families in the Eel River Valley, and 20% of funds to families in Arcata/McKinleyville. Families in Eastern Humboldt received 10.9% of funds, and families in Southern Humboldt received approximately 2% of funds.

Recommendations

The following recommendations are offered for future consideration based on data analysis, input gathered at oral health coalition meetings in 2014, and a review of pertinent past oral health-related reports focused on Humboldt County.

Overall Recommendations

Target specific geographic regions for prevention, early intervention, and treatment.

- Eastern Humboldt emerged as a geographic region with high rates of decay among kindergarten students and high rates of referrals to children’s hospital-based dentistry.
- Based on analysis of the Kindergarten Oral Health Assessment data, the PDI data, and other relevant data, the following table was created to help stakeholders target geographic areas for current and future oral health-related outreach, education, research, and service delivery.

Table 8: Targeted Geographic Areas for Additional Oral Health-Related Work							
Region	% of county pop.*	% of PDI Referrals	School Districts	Untreated Decay Rate	Response Rate	% Eligible for FRPM*	Nearest FOHC*
Eastern Humboldt	4%	29%	Klamath-Trinity Joint Unified	56.3%	43.1%	94.1%	K’ima:w Dental Clinic, Hoopa
Eel River Valley	13.5%	16.5%	Scotia Union	55.5%	83.8%	65%	Open Door Burre, Eureka
			Rio Dell	39.7%	59%	72.8%	
			Fortuna Union	35.7%	91%	63.7%	
			Loleta Union	30.6%	60.4%	80%	
Eureka	22.5%	29%	Eureka City Unified	36.9%	47.8%	74.2%	Open Door Burre, Eureka
Arcata/Mc Kinleyville	24.4%	12.9%	Arcata School District	35.8%	50.8%	52.7%	Burre & UIHS, Arcata
Southern Humboldt	3.4%	9.3%	Southern Humboldt Joint Unified**	6.5%	36%	52.2%	Redwoods Rural, Redway

* Pop. =population, FRPM= free or reduced price meals, FQHC=federally qualified healthcare clinic

**Southern Humboldt Joint Unified is included, despite a low percentage of students with decay, because this district has the lowest assessment response rate which is only 36% of the eligible population.

Increase focus on 0-5/pre-K oral health to reduce the rates of decay among kindergarten students and reduce referrals to hospital-based dentistry services for the 0-5 population.

- Research the reasons why parents are or are not bringing children to the dentist before age 5. Consider a focus on Latino and American Indian populations to understand why these groups have the highest rates of late-entry to dental care.
- Based on the results of the study of parents' attitudes regarding child dental visits, develop and conduct a community-wide education campaign on the importance of bringing your child to the dentist starting at age 1.
- Encourage use of standardized risk assessment tool through the dental practitioner community to identify children at high risk of decay at an early age.

Focus on filling data gaps related to children's oral health.

- Gather and analyze all aggregate data on hospital-based dentistry services for local children including UIHS, Mad River Hospital, and Redding-based providers.
- Work with all Hospital Based Dentistry Programs that see Humboldt County patients to standardize the data collected that is needed for evaluation.
- Increase response rate on Kindergarten Oral Health Assessment from 60.3 to 65-70% by 2016-17. Work to increase response rate in schools with high percentages of students who are eligible for free and reduced lunches.
- Work with California Department of Public Health to determine feasibility of updating the Kindergarten Oral Health Assessment to reflect new insurance options and work with Humboldt County Office of Education to obtain additional aggregate demographic and income data on the Kindergarten Oral Health Assessment.
- Pursue funding opportunities for oral health assessments for 3rd grade and 6th grade students, either county-wide or as a pilot project at one school. Oral

health assessment data for the 3rd and 6th grade students could be compared with results from the Kindergarten Oral Health Assessment.

- Work with Open Door Burre Clinic and Mobile Dental Van to identify the percentage of children to complete treatment plans and the percentage of children accessing ongoing preventive services. Burre serves the largest number of children on MediCal in Humboldt County.

DAG & POHILT: Continue to explore innovations in cross-sector collaboration amongst providers and organizations working on children's oral health with a focus on improving continuum of care for low-income children on MediCal.

- Investigate future opportunities for collaboration amongst providers working on oral health for families on MediCal. Identify barriers and opportunities in the current system for improving continuum of care.
- Data shows that a significant number of children with untreated dental disease are treated through hospital-based dentistry, which is both expensive and does not address prevention or ongoing treatment. Explore opportunities to identify, prevent, and intervene early to link children at high risk of dental disease with a permanent dental home.
- Analyze North Coast Children's Services (NCS) oral health assessment data on early head start and head start children; compare data to Kindergarten Oral Health Assessment data. Integrate this data with service data from Open Door and look at continuum of care for low-income children in Humboldt County.

Appendix A: Full List of Humboldt County School Districts Kindergarten Oral Health Assessment Data

Humboldt County Kindergarten Oral Health Assessment Data 2009-2014					
School District	Eligible	Returned	Decay	% with Decay	Response Rate
Arcata School District	236	120	43	35.8	50.8
Big Lagoon Union Elementary	30	14	1	7.1	46.7
Blue Lake Union Elementary	87	38	11	28.9	43.6
Bridgeville Elementary	34	30	1	3.3	88.2
Cuddeback Union Elementary	78	45	3	6.7	57.6
Cutten Elementary	432	237	72	30.3	54.8
Eureka City Unified	1458	698	258	36.9	47.8
Ferndale Unified	185	110	31	28.1	59.4
Fieldbrook Elementary	79	41	4	9.7	51.8
Fortuna Union Elementary	492	448	160	35.7	91
Freshwater Elementary	164	146	23	15.7	89
Garfield Elementary	50	35	2	5.7	70
Green Point Elementary	11	10	6	60	90.9
Humboldt County Office of Education	32	4	2	50	12.5
Hydesville Elementary	94	62	15	24.1	65.9
Jacoby Creek Elementary	238	115	25	21.7	48.3
Klamath-Trinity Joint Unified	473	204	115	56.3	43.1
Kneeland Elementary	22	12	1	8.3	54.5
Loleta Union Elementary	81	49	15	30.6	60.4
Maple Creek Elementary	9	7	0	0	77.8
Mattole Unified	44	26	1	3.8	59
McKinleyville Union Elementary	684	628	115	18.3	91.8
Orick Elementary	7	5	0	0	71.4
Pacific Union Elementary	275	216	0	0	78.5
Peninsula Union	17	5	1	20	29.4
Rio Dell Elementary	186	156	62	39.7	83.8
Scotia Union Elementary	122	72	40	55.5	59
South Bay Union Elementary	369	184	37	20.1	49.8
Southern Humboldt Joint Unified	341	123	8	6.5	36
Trinidad Union Elementary	97	37	4	10.8	38.1
Totals	6427	3877	1056	27.2	60.3

Ten districts served 50 or fewer kindergarten students in a five year period, and those districts were removed from the rankings. Those districts are highlighted in yellow in the above table.

Appendix B: School Questionnaire

Humboldt County Kindergarten Oral Health Assessment- Request for Information

We need your help! The California Center for Rural Policy is working with the Humboldt County Department of Health & Human Services Maternal, Child, and Adolescent Health (MCAH) Division to take a close look at results from the Kindergarten Oral Health Assessment.

For 2010-2013, your school had a __% response rate for the Kindergarten Oral Health Assessment. We'd like to ask a few questions to better understand how your school is gathering this information. Our goal is to increase the overall response rate for the Kindergarten Oral Health Assessment in 2014-15. Please return the completed questionnaire to Dawn.Arledge@humboldt.edu. Call (707) 826-3420 for more information.

Basic Information	
School	
Name of Person Completing Survey	
Position	
E-Mail Contact	

Distribution/Collection of Kindergarten Oral Health Assessments	
When do parents receive them?	
How do they receive them?	
Does the school track who returns them and who doesn't?	
Are they returned throughout the year?	

Your School's Efforts to Collect Kindergarten Oral Health Assessments	
Does your school do anything in particular to encourage parents to complete the assessment? Please check those that apply to your school.	
Reminder mailed to home	
Reminders on school web page	
E-mail reminder sent to parent	
Auto-dialer/phone call reminder	
Other (Please list)	

Increasing the 2014-15 Kindergarten Oral Health Assessment Response Rate	
What ideas do you have about how to increase the response rate for this assessment at your school? What incentive might motivate a higher response rate?	
Does your school get high response rates on other required forms such as immunizations, emergency contact info., etc.?	
In your opinion, would your school benefit from additional resources related to children's oral health?	

Appendix C: Kindergarten Oral Health Assessment

Oral Health Assessment Form
T07-003, English, Arial Font
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Oral Health Assessment Form

California law (*Education Code* Section 49452.8) states your child must have a dental check-up by May 31 of his/her first year in public school. A California licensed dental professional operating within his scope of practice must perform the check-up and fill out Section 2 of this form. If your child had a dental check-up in the 12 months before he/she started school, ask your dentist to fill out Section 2. If you are unable to get a dental check-up for your child, fill out Section 3.

Section 1: Child's Information (Filled out by parent or guardian)

Child's First Name:	Last Name:	Middle Initial:	Child's birth date:
Address:			Apt.:
City:			ZIP code:
School Name:	Teacher:	Grade:	Child's Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female
Parent/Guardian Name:	Child's race/ethnicity: <input type="checkbox"/> White <input type="checkbox"/> Black/African American <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Asian <input type="checkbox"/> Native American <input type="checkbox"/> Multi-racial <input type="checkbox"/> Other _____ <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> Unknown		

Section 2: Oral Health Data Collection (Filled out by a California licensed dental professional)

IMPORTANT NOTE: Consider each box separately. Mark each box.

Assessment Date:	Caries Experience (Visible decay and/or fillings present) <input type="checkbox"/> Yes <input type="checkbox"/> No	Visible Decay Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	Treatment Urgency: <input type="checkbox"/> No obvious problem found <input type="checkbox"/> Early dental care recommended (caries without pain or infection; or child would benefit from sealants or further evaluation) <input type="checkbox"/> Urgent care needed (pain, infection, swelling or soft tissue lesions)
_____		_____	
Licensed Dental Professional Signature		CA License Number	

		Date	

Section 3: Waiver of Oral Health Assessment Requirement

To be filled out by parent or guardian asking to be excused from this requirement

Please excuse my child from the dental check-up because: (Check the box that best describes the reason)

- I am unable to find a dental office that will take my child’s dental insurance plan.

My child’s dental insurance plan is:

- Medi-Cal/Denti-Cal Healthy Families Healthy Kids Other _____ None

- I cannot afford a dental check-up for my child.

- I do not want my child to receive a dental check-up.

Optional: other reasons my child could not get a dental check-up: _____

If asking to be excused from this requirement:

▶ _____

Signature of parent or guardian

Date

The law states schools must keep student health information private. Your child's name will not be part of any report as a result of this law. This information may only be used for purposes related to your child's health. If you have questions, please call your school.

Return this form to the school *no later than May 31* of your child’s first school year.

Original to be kept in child’s school record.