

Introduction

This oral health project was developed through a strong and unique partnership between Lake County Office of Education Healthy Start, Lake County Public Health, Clearlake Family Health Clinic, Lakeside Health Center (Lakeport), and First 5 Lake. Both the Clearlake Family Health Clinic and Lakeside Health Center are federally qualified rural health clinics.

The main goal of the project is to improve children's oral health, targeting low income families in this rural, non-fluoridated county. The project addresses the limited access to oral health care for children in this rural county due to lack of transportation options, pediatric dentists, and dentists accepting MediCal.



In addition, the project addresses the large amount of treatment that children need to resolve their oral health issues when neglected, and the limited understanding that parents have around their child's oral health care and nutritional needs. This innovative partnership has created a continuum of dental care from screening in schools, to nutrition and oral health care education for parents and children, to treatment and follow-up at the dentist, and ultimately, to changing dental habits in the family.

Background

Lake County is a rural county located about 110 miles north of San Francisco and 50 miles east of the Pacific Ocean, with a total population of approximately 65,000 (US Census, American Factfinder 2008). Children under age 18 make up 22% of the total population. The county is ringed by mountains and divided by Clear Lake. Residents live in small towns scattered around the lake, in the mountains, and in two incorporated cities at the northern and southern ends of the lake: Clearlake in the south with 14,200 residents and Lakeport in the north with 5,000 residents. Transportation is a major barrier for receiving services, especially with the cost of gasoline and the dramatic downturn in the economy.

The local economy is dominated by tourism and other services, which are very vulnerable to the current economic crisis. Lake County's poverty rate (including families with related children under age 18) is 28%, with 67% of children enrolled in the free and reduced lunch programs countywide. As reported in the Lake County News in July 2010, the Employment Development Department's (EDD) monthly unemployment report showed that the county's unemployment rate spiked from 13.4% in December 2008 to 19.8% in January 2010. Current unemployment is at 17% (Sept 2010), giving it a rank of 50th among the state's 58 counties.

The County is experiencing rising ethnic diversity. In 1990, the population in the county was about 88% white, 7% Hispanic/Latino, 2% Native American and the balance (3%) a mix of other ethnicities. By 2008, this had changed to 76% white, 15% Hispanic/Latino, 3% Native American, and 6% made up of a mix of other ethnicities.

Around the time this oral health project was originally formulated, the 2003 California Health Interview Survey (CHIS) data for Lake County indicated that 30% of the child population (under age 18) had either never been to the dentist or had not been in more than 12 months. This increased to 48% for children living below the Federal Poverty Level (FPL). For children age 2-5, approximately 27% had seen a dentist in the last 6 months, but 64% had never been to the dentist.

Project Description

Major elements of the oral health project have included:

- Oral health screening and referrals for children on most school sites; grades preschool-12.
- Provision of sealants and/or varnishes.
- Treatment provided on a mobile dental clinic (MDC) and at the local dental clinics.
- Case management for children with complex or severe dental treatment needs.
- Transportation to the local clinic for treatment and to out-of-county sedated surgery centers.
- Education for both children and parents about oral health care and nutritional needs of young children.
- Follow-up with parents on the status of children's oral health to help assess long-term outcomes.



The project was initially designed to provide screening for children in preschool through 8th grade at 7 school sites throughout Lake County. Treatment was provided for children on a mobile dental clinic (MDC) that was leased and parked at the school sites for 3-4 visits a year. Funding for the MDC was provided by First 5 Lake, and private grants and donations.

In addition to screening and treatment, case management was, and continues to be, provided by Lake County Office of Education's Healthy Start program for children with severe oral health care needs, including the need for sedation during treatment.

Transportation was provided to dental surgery centers as far away as Atwater; these services are now provided in Windsor with the opening of Pediatric Dental Initiative (PDI). Throughout the project, education for both preschool children and parents has been provided utilizing a specifically designed curriculum on oral health and nutrition.

As local partnerships developed, Clearlake Family Health Clinic added a local dental clinic to supplement Lakeside Health Center and Tribal Health's dental treatment services. Healthy Start purchased a van to transport children for treatment at the clinics. This van was funded through the local First 5, and Healthy Start hired a driver to relieve staff of this duty.

More children are now being provided with treatment through this approach, along with efficient scheduling by the project staff. The dental clinics are pleased with the reduction in "no-shows", keeping their dental chairs full. A mobile dental clinic from ACCESS Dental provided services for children of migrant families and the dentally uninsured in the county during 2008-09 and 2009-10.

Project Outcomes

Between 2002 and 2010, approximately 16,480 dental screenings have been provided for children age birth-18; over 7,480 dental treatments have been facilitated by the program, either on the MDC or at one of the local dental clinics. Over 2,900 sealants and varnishes were provided during the program's duration to date.

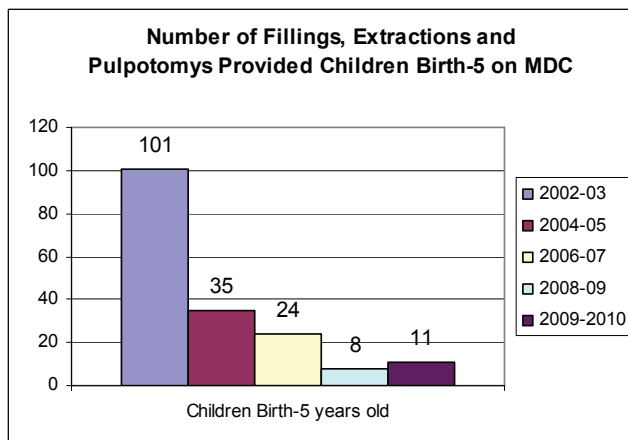
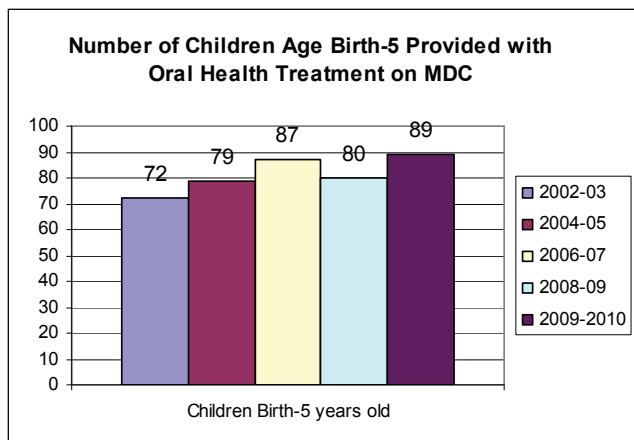
As a result, over time, the project has seen a reduction in the:

- Number and severity of dental treatments required;
- Percent of children screened with baby bottle tooth decay; and
- Percent of children screened with dental caries.



Reduction in the Number and Severity of Dental Treatments

From data collected on the MDC, the number and severity of dental treatments has been reduced based on data between 2002-03 and 2009-10 for children age birth-5. In 2007, the program began to utilize the MDC less, and to transport the majority of children needing treatment to the local dental clinics. Over 700 children have been transported to the local dental clinics for multiple appointments since 2007. No MDC was utilized in 2007-08. The MDC in 2008-2009 and 2009-2010 mainly served children without dental insurance.



Reduction in Dental Caries and Baby Bottle Tooth Decay

A major outcome, achieved through consistent, comprehensive service delivery over 8-years of this program, is reflected in the changes in the percentage of children who are caries free and/or who have baby bottle tooth decay in preschool and/or elementary school children. On average, the percentage of elementary school children who were caries free increased from 14% to 23% across the four schools shown; for preschools, the percent of children screened who were caries free increased from 36% to 46% between 2002-03 to 2009-10.

In addition, on average, the percentage of children with baby bottle tooth decay across 5 preschools decreased from 35% in 2002-03 to 29% in 2009-10.



Dental Screening Results by Preschool/Elementary School		
School	2002-03	2009-10
Children Who are Caries Free		
Minnie Cannon Elementary	8%	14%
Upper Lake Elementary	9%	22%
Pomo Elementary	12%	25%
Lower Lake Elementary	21%	33%
Overall Elementary Average	14%	23%
Preschools		
Lower Lake Preschool	25%	57%
Middletown Preschool	29%	61%
Pomo Preschool	39%	24%
Kelseyville Preschool	46%	45%
Overall Preschool Average	36%	46%

School	2002-03	2009-2010
Baby Bottle Tooth Decay (BTD)		
Lucerne Preschool	57%	48%
Lower Lake Preschool	51%	13%
Middletown Preschool	41%	13%
Pomo Preschool	25%	37%
Kelseyville Preschool	19%	48%
Overall Average	35%	29%

Further Outcomes

Parents have also indicated they are more aware of their child's oral health care needs and are more prepared to attend to these needs. Parents of second graders, whose children had been participating in the program for at least three years and who responded to a survey about their child's oral health care, indicated that:

- 88% have a dental home for their child and 90% of their children have seen a dentist within the last year;
- 83% brush at least twice a day and 74% said their child flosses at least once per day; and
- 75% said their child's oral health was excellent or good.

In addition, the California Health Interview data for Lake County indicates that in 2007 about 10% of the child population (under age 18) had never been to the dentist, compared with 30% in 2003. For children under age 18 living under the FPL, 89% had seen a dentist in the last 6 months, compared with 48% who had not been to the dentist in the last 12 months or had never been to the dentist in 2003. For children age 2-5, approximately 60% had been to the dentist sometime in the last 6 months in 2007, compared with 27% in 2003.

Conclusions

Major elements of the project's success have included the:

- Strong support and involvement by the administration and teachers at each of the school sites;
- Original collaborative approach and community focus by First 5 Lake, Healthy Start, Public Health, and local dental clinics;
- Formation of a local Dental Directors group that meets 3 times per year to support continuation of local collaboration, networking and communication around the oral health care needs in the county;
- Development of 4-year Oral Health Strategic Plan for the county; and
- Early implementation and a long-term approach to evaluation, documenting a range of program accomplishments and outcomes, funded by First 5 Lake.



Lake County Children's Oral Health Project 2002–2010



For more information on this project, please contact:

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