

# More Than a Toothache:

Untreated Dental Disease in Our School Children



The Alameda County Oral Health  
Needs Assessment of  
Kindergarten and  
3rd Grade Children



February 2006

Comments, questions, and requests for information can be directed to:

Office of Dental Health  
Alameda County Public Health Department  
1000 Broadway, Suite 500  
Oakland, CA 94607  
(510)208-5910  
<http://www.acphd.org>

Jared I. Fine  
*Dental Health Administrator*

Arnold Perkins  
*Director, Alameda County Public Health Department*

Tony Iton  
*Health Officer*

David Kears  
*Director, Health Care Services Agency*

# More Than a Toothache:

## Untreated Dental Disease in Our School Children

### *The Alameda County Oral Health Needs Assessment of Kindergarten and 3rd Grade Children*

*Children get used to feeling constant pain. They go to sleep with it. They go to school with it. . . .Children live for months with pain that grown ups would find unendurable. The gradual attrition of accepted pain erodes their energy and aspiration.*

*Jonathan Kozol, **Savage Inequalities:** Children in America's  
Schools*



# Message from Arnold Perkins

Director, Alameda County Public Health Department

The intent of this report, *More than a Toothache: Untreated, Dental Disease in Our School Children: The Alameda County Oral Health Needs Assessment of Kindergarten and 3<sup>rd</sup> Grade Children* is a call to action to respond to the epidemic of dental disease among children in our community. This first-ever representative assessment was conducted over two school years at 22 public elementary schools and includes 3269 students. Without the community support of parents, school faculty and administrators, dentist and dental hygienist volunteers, and our Department staff, this countywide assessment would not have been possible.

We have found that dental disease is a significant problem for our school children who suffer a high level of untreated dental decay and low utilization of protective dental sealants. We also found, as with other health conditions, there are obvious disparities in dental health. Our low-income children have more dental disease and fewer dental sealants than higher income students. Beyond the statistics describing the dental problems, our children are suffering with pain, sleep deprivation, distractions in school, missed school days, poor nutrition and slower social development.

Our Department is committed to interrupting and transforming the impact of disparities in children's dental health. We are committed to assuring the continuation and expansion of our existing innovative early childhood and school based dental disease prevention programs. In response to the findings in the assessment, the Alameda County Oral Health Advisory Committee developed the recommendations in this report. We want to build on this community wide effort by broadening and continuing the work of the Advisory Committee to promote access to care, policies and programs that will turn this epidemic around.

The magnitude of dental disease in our children is more than just a toothache. It has far reaching implications for our children's health, their education and the overall health of our communities. In partnership with health professionals, advocates, schools, community organizations, community clinics, and parents we can effect the changes we need to improve the oral health of all our children.

## More Than a Toothache:

### Untreated Dental Disease in Our School Children

#### Executive Summary

Alameda County Public Health Department, Office of Dental Health, conducted an oral health assessment of Alameda County school children in kindergarten and third grades during the 2002-03 and 2003-04 school years. The 3,269 children screened came from a representative sample of 22 public schools.

#### Key Findings

##### 1. Tooth decay is a significant public health problem for our school children.

- Data: By third grade, 69% of our school children have had tooth decay.
- Recommendation: Prevent cavities *before* children reach school age through the expansion of innovative programs e.g. Healthy Kids, Healthy Teeth; launch a dental disease prevention campaign that engages parents, professionals and the public.

##### 2. Our school children suffer a high level of untreated dental disease.

- Data: Nearly one third (32%) of 3<sup>rd</sup> graders have untreated tooth decay; 8% of kindergarteners and 9% of third graders are sitting in class with a toothache or dental infection.
- Recommendation: Advocate for County policy enabling all children to get a dental exam and treatment in kindergarten with case management assistance; expand network of providers to screen and treat children under 5 years of age and expand school-based screening, sealants and referrals.

##### 3. Low-income children have poorer oral health than other children.

- Data: 23% of kindergarteners and 18% of 3<sup>rd</sup> graders in higher-income schools had untreated decay in contrast to 46% of kindergarteners and 44% of 3<sup>rd</sup> graders in low-income schools.
- Recommendation: Increase access to dental care for under-served children through expansion of a system of service including community health clinics, dental and medical providers, school-based dental programs and mobile dental vans. Establish a county-wide referral system.

##### 4. Most children don't have access to dental sealants.

- Data: 32% of all 3<sup>rd</sup> graders and only 21% from low-income schools had protective dental sealants. The national goal is to reach 50%.
- Recommendation: Expand funding for school-based dental sealant programs e.g. California Children's Dental Disease Prevention Program, and promote public awareness of the value of dental sealants to prevent tooth decay.

## **More Than a Toothache:**

### **Untreated Dental Disease in Our School Children**

#### **Introduction**

Meet Michael, a kindergartener in a public elementary school in Alameda County; he is five years old but small for his age. His teacher requested a dental screening for him because she suspected that his teeth were decayed. Michael was a problem for his teacher because on many days he disrupted class by lying on the floor in a fetal position, holding his cheeks, crying and moaning. Michael said his mouth hurt. When a dental program staff member looked at Michael's mouth, she saw three abscesses and twelve large cavities. No wonder his mouth hurt!

Michael's mom needed the help of a dental outreach worker, a translator, and a public health nurse to navigate the complicated system of dental care for people with Medi-Cal insurance. When he finally reached the dentist's office his parents were told that he would need to be sedated for dental work, a procedure not covered by Medi-Cal. Michael's parents could not afford the additional cost.

Although Michael's story has a happy ending - the public health nurse found a private donor to pay the sedation fee - nearly one out of ten children in Alameda County schools go to school with toothaches.

While Michael's condition is more severe than most, every element of it is typical of a problem that is hurting Alameda County's children.

#### **The #1 Health Problem for Children**

Dental disease – not obesity, asthma, or childhood diabetes – is by far the number one health problem for our children, affecting more than two-thirds of the County's elementary school children by the time they reach 3<sup>rd</sup> grade.

Michael's story demonstrates how undetected dental disease can cause severe health and social problems. His dental problems became so severe that there were few accessible resources to address them. Accessing resources for the non-English speaking family clearly presents yet another barrier.

Michael's story also shows that even when a child is covered by Medi-Cal or other insurance, families and those who work with families require education about the importance of health-promoting practices, as well as help gaining access to early preventive care.

## Assessment

During the 2002-03 and 2003-04 school years, Alameda County Public Health Department conducted a countywide oral health assessment of kindergarten and third grade children enrolled in public elementary schools. The 3,269 children screened came from a representative sample of 22 public schools. We found that by third grade 69% of the children have a history of tooth decay; at any given moment one third of the children have untreated tooth decay; and some 8% of kindergarten and 9% of third grade students are sitting in a classroom with a toothache or dental infection.

The problem is worse for children who come from low-income families. Barriers to dental care, including parent's income, or lack of dental insurance can have a profound impact on children's dental health.

For example 44% of third grade students from low-income families had untreated dental caries while 18% of students from higher income families had untreated dental caries.

- **By third grade 69% of the children have a history of tooth decay.**
- **At any given moment one-third of the children have untreated tooth decay.**
- **Roughly 8% of kindergarten and 9% of third graders are sitting in a classroom with a toothache or dental infection.**

**The problem is worse for children who come from low-income families**

## The Impact

Failing to address the oral health of our children creates a cascade of problems. They include:

- **Pain:** Tooth decay can hurt a lot, and hurt constantly. Dental pain can be a dull ache or sharp and shooting. It can be slow and throbbing or only occur when eating something hot or cold.
- **Infection:** Oral infections can affect the overall health of the child. Bacteria from decay or abscesses put a child at risk for local infections that can invade the blood stream and spread to other parts of the body.
- **Nutrition problems:** Chronically painful and infected teeth make chewing and swallowing uncomfortable and difficult. Children with dental disease may not get the nutrition they need to grow.
- **Tooth loss:** Baby teeth are important; they hold space for permanent teeth. If the teeth are lost early due to decay, the permanent teeth can come in crooked, making them more susceptible to cavities and gum disease throughout life. A child who grows to adulthood without healthy teeth, according to recent research, can experience problems obtaining employment.<sup>1</sup> What starts out as a medical/dental problem becomes a social, educational, and economic problem.
- **Sleep deprivation:** Children with chronically painful teeth may have trouble sleeping at night. A child in a classroom who seems tired or inattentive may have a toothache.

<sup>1</sup> Hyde S., Satariano W.A., and Weintraub J.A. (2006). Welfare dental intervention improves employment and quality of life. *Journal of Dental Research* 85(1):79-84.

**Attention deficit:** Children with infected and painful teeth have a hard time sitting still, paying attention and understanding their lessons. Chronic pain can have a negative effect on the ability of a young child to learn basic skills in elementary school, which in turn can impact their entire educational future. Imagine how difficult it can be to learn in a kindergarten classroom where one-third of the children have untreated tooth decay.

- **Slower social development:** Visibly decayed teeth can greatly affect the developing self-esteem of a child. Front teeth decayed to the gum line, an all too common condition, can cause embarrassment, difficulty speaking, and even reluctance to smile openly.
- **Missed school days:** Children with infected and painful teeth miss more school days than other children, disrupting their educational and social development and costing school districts money. National data estimate that school children ages 5 to 17 miss nearly 2 million school days in a single year due to dental health problems.

### **Cost to the taxpayer**

The magnitude of the dental disease epidemic is costly to taxpayers. The **cost of treating dental disease** rather than preventing it drives up the cost of all dental insurance coverage. The growing cost of dental treatment is also reflected in expenses to publicly supported programs such as Medi-Cal and Healthy Families. When a young child with rampant decay finally gets to the dental chair, their age or severity of condition can dictate the need for sedation or general anesthesia in a hospital. Hospitalization and the need for an anesthesiologist or other specialist can drive the costs even higher.

Another cost to the taxpayer is reflected in missed school days that decrease local school districts state reimbursement funds, making it harder for them to support their full educational programs. For the cost of treating a few children with serious dental disease, a prevention and education program covering an entire school could be funded. Over the long haul, taxpayer dollars for more costly treatment could be saved, by preventing dental problems in the first place.

### **Cost to the economy**

A workforce that is healthy and well educated is essential to the health of the economy. Assuring health should start with young children, in the pre-school and school years. Dental disease is not a mere cosmetic problem, nor a problem that will disappear with the baby teeth. Oral Health is an integral part of a healthy mind and body.

### **A preventable epidemic**

Dental disease is infectious, progressive and transmissible – and it is largely (and cost-effectively) preventable. No child needs to suffer from dental disease if there is access to health-promoting practices and preventive care. Once children are in school and parents detect tooth decay, it's too late. Good oral health habits must start from the day children are born. By the time children are in kindergarten more than 50% already have tooth decay.

### **Taking dental disease seriously**

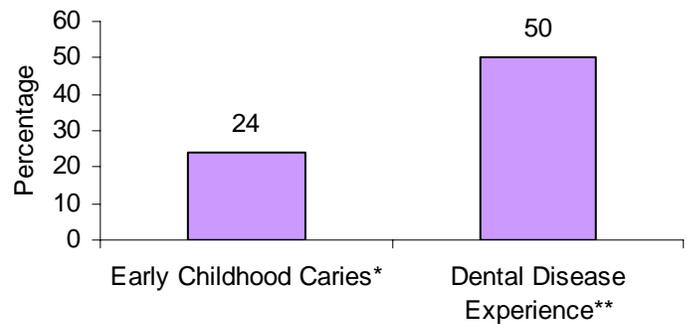
Dental disease is an epidemic among Alameda County children, and needs to be treated as an epidemic. Monitoring children's oral health, taking steps to prevent disease, treating problems early, raising public awareness, and devoting sufficient resources are keys to a healthier tomorrow.

# Key Findings and Recommendations

## 1. Tooth decay is a significant public health problem for school children.

Overall, 24% of kindergarten children have had early childhood caries (ECC). ECC can begin as soon as a child's teeth come in between 6 and 10 months of age. By the time Alameda County children reach kindergarten, 50% have already suffered the effects of tooth decay.

**Chart 1: Oral Health of Kindergarten Students, Alameda County, 2002-2004**

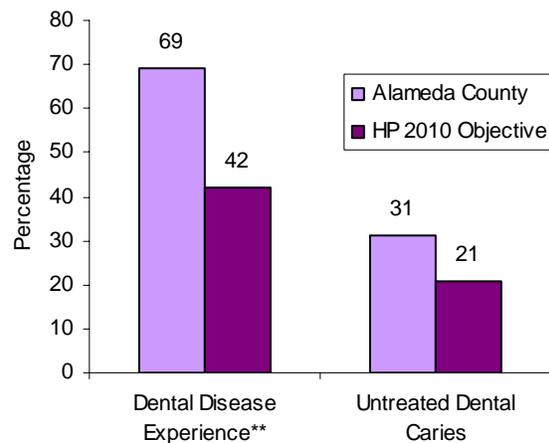


\* Kindergarteners were assessed for ECC, defined as any decay experience on one or more of the six top, front teeth.

\*\* Any treated or untreated decay

Overall, 69% of Alameda County third graders have already had some experience with tooth decay, either treated or untreated. This figure is 64% higher than the established national Healthy People (HP) 2010 Objective of 42% or lower.<sup>2</sup>

**Chart 2: Oral Health of Third Graders and the HP2010 National Objectives, Alameda County, 2002-2004**



<sup>2</sup> *Healthy People* is managed by the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services. Additional information on *Healthy People 2010* can be obtained at the Healthy People website, [www.healthypeople.gov](http://www.healthypeople.gov).

## **Recommendations:**

### *Prevent Early Childhood Caries*

- A.** Promote and fund innovative community-based early childhood caries prevention programs, such as Healthy Kids, Healthy Teeth that include an emphasis on early access to preventive care, including education of parents and caregivers.
- B.** Develop an ECC mass media, community awareness campaign.

### *Engage Professionals and Consumers to Create a Culture of Prevention*

- A.** Promote dental disease prevention messages – such as the proven value of fluorides and dental sealants – to medical and dental professionals, social services staff, parents and caregivers, school personnel, and media.
- B.** Educate healthcare professionals to assure cross-referral between dental and medical providers for prevention and treatment.
- C.** Support use of fluoridated water, fluoride toothpaste, fluoride varnish, and prescription of fluoride by pediatricians and dentists in fluoride deficient communities.
- D.** Expand the scope of practice of nurses, dental hygienists and other professionally trained caregivers to increase capacity to provide preventive services.
- E.** Engage parents as leaders in educating their communities about dental disease prevention and in advocating for children’s oral health.

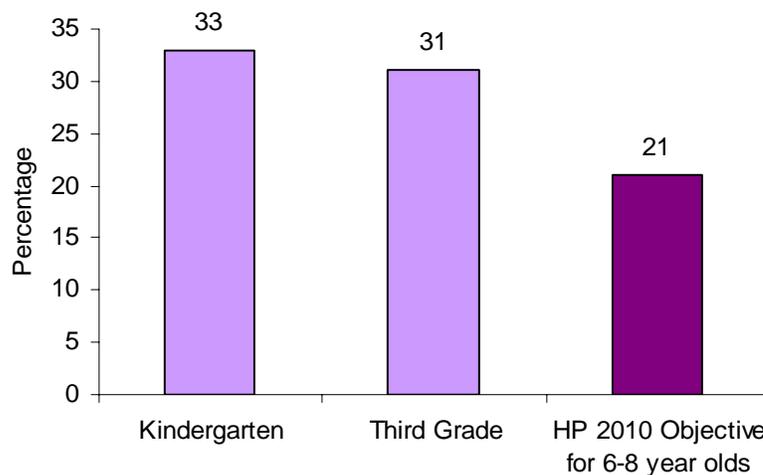
### *Assess and Advocate for Resources*

- A.** Conduct periodic oral health surveillance and evaluation of existing resources to identify gaps in programs and services.
- B.** Advocate for expansion of state and federal resources for dental programs.
- C.** Advocate at the state and federal level for reimbursement for oral health education as a component of public and private health and dental insurance plans.

## 2. Our school children suffer a high level of untreated dental disease.

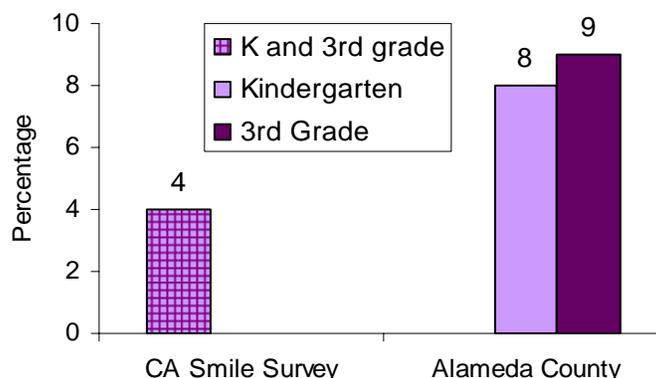
Nearly one-third of third graders (32%) had untreated decay, a conservative figure since x-rays were not taken as part of the assessment. The Healthy People 2010 Objective is to reduce untreated decay among 6-8 year-olds to 21%.

**Chart 3: Percentage of School Children with Untreated Decay and the HP 2010 Objective, Alameda County, 2002-2004**



The February 2006 California Smile Survey, using the same methodology, showed that 4% of both kindergarten and third grade students had urgent dental treatment needs.<sup>3</sup> In Alameda County, 8% of kindergarten students and 9% of third grade students required urgent dental treatment - twice the percentage of children statewide.

**Chart 4: Percentage of School Children with Urgent Dental Treatment Needs in Alameda County 2002-2004 compared to California Smile Survey, 2005**



### Recommendations:

#### Increase Access to Care

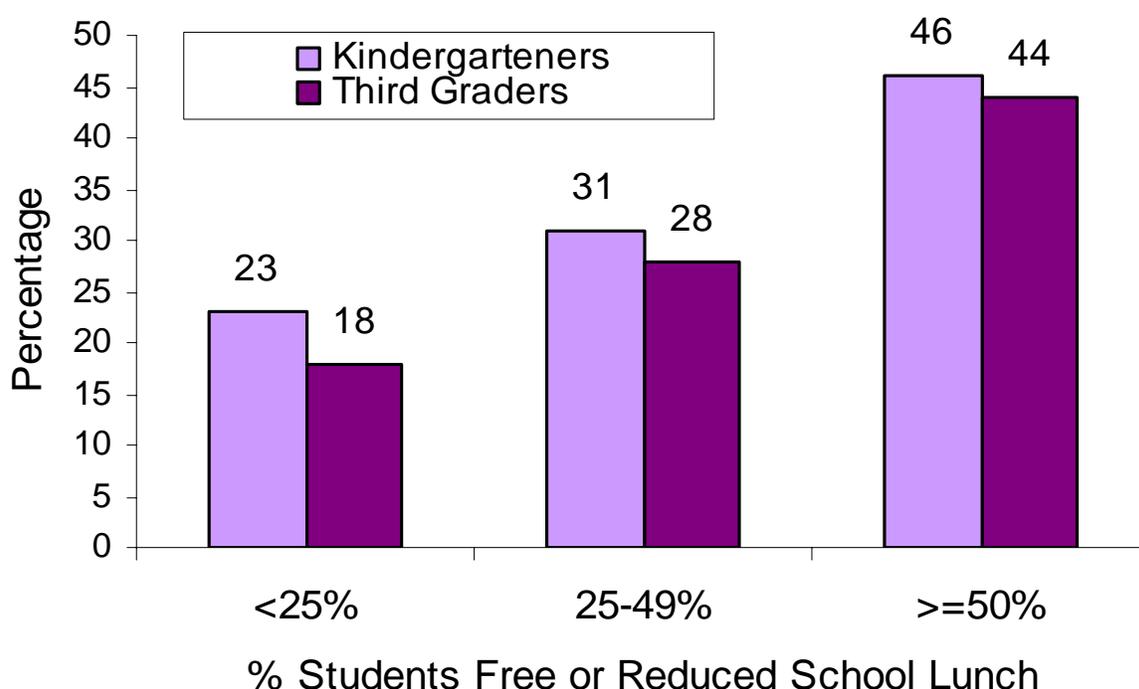
- A. Establish a County policy that every child complete a dental exam and necessary treatment in kindergarten and implement a program of case management assistance.
- B. Expand the network of providers who can meet the dental needs of children by training more dentists to see young children under five.

<sup>3</sup> Dental Health Foundation. *Mommy, it Hurts to Chew, the California Smile Survey; an Oral Health Assessment of California's Kindergarten and 3rd Grade Children.* Oakland, February 2006.

### 3. Low-Income children have poorer oral health.

As school poverty level goes up so does the proportion of children with untreated tooth decay. Almost one quarter (23%) of kindergarteners and 18% of third graders in higher income schools had untreated decay. The numbers double to 46% of kindergarteners and 44% of third graders when school poverty level reaches 50% or more of children in the free and reduced school lunch program.

**Chart 5: Percentage of School Children with Untreated Decay by School Poverty Status, Alameda County, 2002-2004**



#### Recommendations:

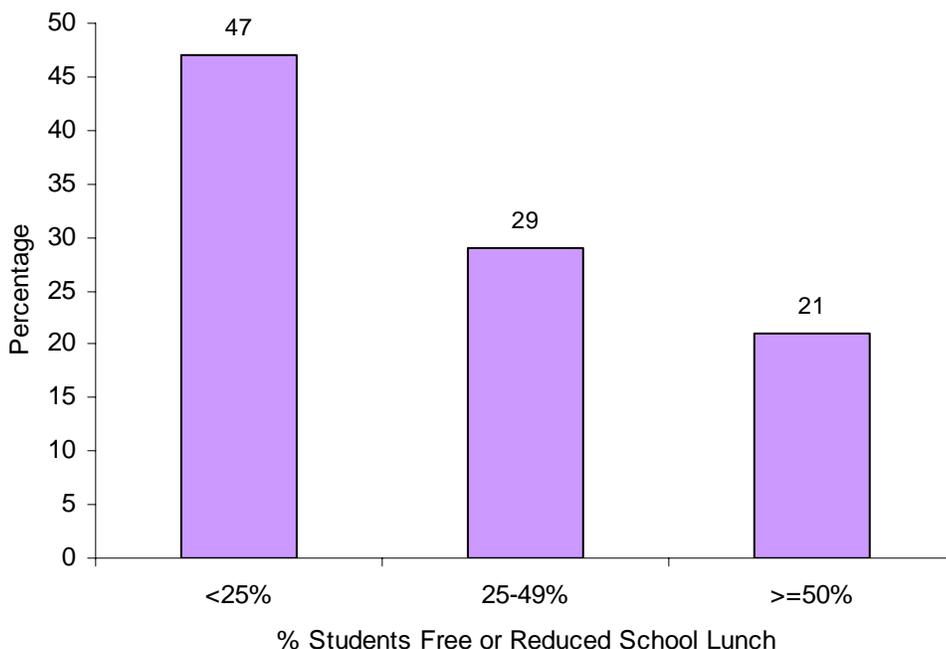
- A. Establish a referral system between community clinics, safety-net providers and school-based dental programs to increase access to dental care.
- B. Increase the number of Denti-Cal providers, especially those willing to see young children.
- C. Advocate for expansion of community-based dental care delivery systems for underserved children such as school-based clinics and mobile health vans.
- D. Advocate to increase the scope of covered services to young children enrolled in all dental insurance plans to include sedation or general anesthesia when necessary.
- E. Advocate for increased utilization of allied dental and medical providers in oral screenings, oral health education programs and application of fluoride varnish.

## 4. Most children don't have access to dental sealants.

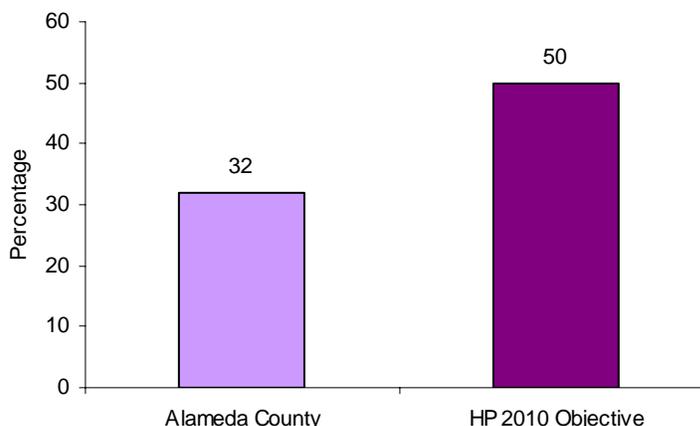
Overall 32% of Alameda County third graders have had the protective benefit of dental sealants in contrast to the Healthy People 2010 objective of 50%. The proportion of Alameda County third graders with protective dental sealants decreased as school poverty level increased.

In schools where 50% or more of students are in the free and reduced lunch program, only 21% of third graders had sealants. In schools where fewer than 25% of students are in the free and reduced lunch program, 47% of third graders had sealants. This relationship suggests that access to preventive dental treatment is related to family income.

**Chart 6: Percentage of Third Graders with Dental Sealants by School Poverty Status, Alameda County, 2002-2004**



**Chart 7: Percentage of Third Graders with Dental Sealants, Alameda County, 2002-2004, Compared to HP 2010 Sealant Objective**



### Recommendations:

- A.** Fund expansion of school- and community-based preventive dental programs.
- B.** Expand funding of school-based dental sealant programs - California Children's Dental Disease Prevention Program for uninsured, low-income children.
- C.** Promote the widespread application of dental sealants, particularly for children at risk for dental caries, by reducing professional and personal barriers.



Office of Dental Health  
Alameda County Public Health Department  
1000 Broadway, Suite 500  
Oakland, CA 94607  
(510) 208-5910  
<http://www.acphd.org>