



Dental Public Health Project/Activity Descriptive Report Form

Please provide a detailed description of your **successful dental public health project/activity** by fully completing this form. Expand the submission form as needed but within any limitations noted. Please return completed form to: lcofano@astdd.org

NOTE: Please use Arial 10 pt. font.

CONTACT PERSON PREPARING THE SUBMISSION AND TO ANSWER QUESTIONS

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PROVIDE CONTACT INFORMATION FOR ONE ADDITIONAL PERSON WHO COULD ANSWER QUESTIONS REGARDING THIS PROGRAM

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SECTION I: ACTIVITY OVERVIEW

Title of the dental public health activity:

2018-2019 Third Grade California Smile Survey

Public Health Functions* and the 10 Essential Public Health Services to Promote Oral Health:
Check one or more categories related to the activity.

“X”	Assessment
x	1. Assess oral health status and implement an oral health surveillance system.
x	2. Analyze determinants of oral health and respond to health hazards in the community
	3. Assess public perceptions about oral health issues and educate/empower them to achieve and maintain optimal oral health
	Policy Development
	4. Mobilize community partners to leverage resources and advocate for/act on oral health issues
	5. Develop and implement policies and systematic plans that support state and community oral health efforts
	Assurance
	6. Review, educate about and enforce laws and regulations that promote oral health and ensure safe oral health practices
	7. Reduce barriers to care and assure utilization of personal and population-based oral health services
	8. Assure an adequate and competent public and private oral health workforce
	9. Evaluate effectiveness, accessibility and quality of personal and population-based oral health promotion activities and oral health services
x	10. Conduct and review research for new insights and innovative solutions to oral health problems

*[ASTDD Guidelines for State and Territorial Oral Health Programs that includes 10 Essential Public Health Services to Promote Oral Health](#)

Healthy People 2030 Objectives: Please list HP 2030 objectives related to the activity described in this submission. If there are any state-level objectives the activity addresses, please include those as well.

OH-01: Reduce the proportion of children and adolescents with lifetime tooth decay

OH-02: Reduce the proportion of children and adolescents with active and untreated tooth decay

OH-10: Increase the proportion of children and adolescents who have dental sealants on one or more molars

Provide 3-5 Key Words (e.g. fluoride, sealants, access to care, coalitions, policy, Medicaid, etc.) These will assist those looking for information on this topic:

Acquiring oral health data, Use of oral health data, Basic Screening Survey, caries experience, untreated decay, dental sealants, early childhood tooth decay prevention

Executive Summary: Complete after Section II: Detailed Activity Description. Please limit to 300 words in one or two paragraphs.

Provide a brief description of the dental public health activity. Include information on: (1) what is being done; (2) who is doing it and why; (3) associated costs; (4) outcomes achieved (5) lessons learned, both positive and negative.

The 2018-2019 *California Smile Survey* (CSS) is a statewide oral health assessment of third grade children in California. CSS results will inform oral health indicators of the [California Oral Health Plan 2018-2028](#) and serve as baseline measures for monitoring progress in preventing early childhood tooth decay in California. The California Department of Public Health (CDPH) Office of Oral Health (OOH) in partnership with the California Department of Education (CDE) and Los Angeles Department of Public Health conducted CSS during the 2018-2019 and 2019-2020 school years. Registered dental hygienists screened a representative sample of 12,652 third graders per the [Association of State and Territorial Dental Directors' Basic Screening Survey \(BSS\)](#) protocol. The total survey costs of \$831,578 included administrative personnel, dental professionals, dental consultant, materials, and supplies. Despite modest improvements in oral health status since the last assessment of California children in 2004-2005, tooth decay remains a significant public health concern. The 2018-2019 CSS results found that among third grade children, three in five (61%) have experienced tooth decay and one in five (22%) suffer from untreated dental decay while nearly two in five (37%) have dental sealants. These findings demonstrate the continued need to improve oral health care and preventive measures in children throughout California. The results were published in the [California Dental Association Journal](#), a journal that reaches 25,000 dental offices and their staff. The results were also disseminated to 59 local oral health programs representing a vast majority of California's population. In addition, implications of the findings were presented at the project directors' meeting and programs and policies to address the disparities in oral health were discussed.

OOH intends to repeat the survey of third graders every five years as part of the *California Oral Health Surveillance System*. For this effort, planning early is key. Lessons learned from the 2018-2019 CSS suggest contacting schools in advance of the school year for timely screenings. The collaboration with CDE ensured school engagement. By linking BSS and CDE individual child information profound disparities were identified with high oral disease burden among African American and Latinx children and economically disadvantaged children.

SECTION II: DETAILED ACTIVITY DESCRIPTION

Provide detailed narrative about the dental public health activity using the headings provided and answering the questions. Include specifics to help readers understand what you are doing and how it's being done. References and links to information may be included.

****Complete using Arial 10 pt.**

Rationale and History of the Activity:

1. What were the key issues that led to the initiation of this activity?

Tooth decay is the most common chronic disease in children. Poor oral health in children can lead to attention problems, nutrition issues, missed school days, and increased dental care costs. In addition to severe pain, untreated tooth decay can lead to infection that may require emergency room visits, antibiotic and opioid prescriptions, and costly care under general anesthesia. California has ranked low compared to other states in children's oral health for years.¹ [The California Oral Health Plan 2018-2028](#) details oral health indicators, objectives, and targets for reducing prevalence of tooth decay experience and untreated decay in kindergarten and third grade children.² The 2018-2019 CSS results serve as baseline measures for monitoring process in preventing childhood tooth decay as part of *California Oral Health Surveillance System*.³ The last statewide oral health assessment of children was done in 2004-2005.⁴

OOH's mission is to improve the oral health of all Californians through prevention, education, and organized community efforts. OOH funds 59 Local Health Jurisdictions in the development or expansion of Local Oral Health Programs (LOHPs) as part of a statewide program with a focus on preventing tooth decay in children. OOH works to address the burden of oral disease, increase access to oral health services for high-risk populations, and improve the oral health status of all Californians. Ongoing assessment will inform and evaluate state and local prevention efforts and strategic plans.

2. What rationale/evidence (may be anecdotal) did you use to support the implementation of this activity?

Oral health assessment of tooth decay experience, untreated tooth decay, and dental sealant for CSS was conducted in accordance with BSS protocol developed by the Association for State and Territorial Dental Directors (ASTDD). BSS is an oral health surveillance tool for state and local health jurisdictions agencies to monitor oral diseases at a level consistent with *Healthy People* objectives.⁵ Dissemination of 2018-2019 CSS results will be useful to CDPH, California Department of Health Care Services, LOHPs, other state departments (e.g. Education, Health Care Services), professional associations (e.g. California Primary Care Association, California Dental Association, California Dental Hygienists Association), CPEHN, and additional Advisory Committee members across the state to monitor progress of *California Oral Health Plan 2018-2028* objectives, obtain funding, and evaluate early childhood prevention programs. The data were reported in two ways for different audiences: 1) a publication in the [California Dental Association Journal](#) with the intended audience of dental professionals and other oral public health professionals; and 2) a report on the CDPH website with the intended audience of lay people and other public health personnel.

3. What month and year did the activity begin and what milestones have occurred along the way? (May include a timeline.)

- In April of 2018, OOH began the planning process for CSS.
- During the summer of 2018 (June through August), OOH contracted with Sacramento State University’s Public Health Survey Research Program to hire the dental hygienists and perform data collection.
- In September of 2018, invitation letters signed by the State Dental Director and State Superintendent were sent to the Superintendents of the selected schools.
- In October and November of 2018, registered dental hygienists were trained to perform the screenings and data collection per ASTDD’ BSS protocol.
- In November of 2018, screening and data collection began.
- In December of 2019, screening and data collection were finished.
- In May of 2020, data linkage was performed of BSS data and CDE information on students’ race/ethnicity and other family socioeconomic indicators.
- In May of 2021, results were published in the May issue of the [Journal of the California Dental Association](#).

The sections below follow a logic model format. For more information on logic models go to: [W.K. Kellogg Foundation: Logic Model Development Guide](#)

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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1. What resources were needed to carry out the activity? (e.g., staffing, volunteers, funding, partnerships, collaborations with various organizations, etc.)

A successful partnership and collaboration among OOH, Los Angeles County Department of Public Health, and CDE was instrumental in the state-wide oral health assessment. While the screening and data collection were done separately for Los Angeles County and the rest of California, data were combined for state-wide estimates. The same dental consultant was used to ensure standardized dental screening and data collection in accordance with ASTDD BSS protocol. The Los Angeles County Department of Public Health and the University of California, Los Angeles gathered BSS data for children in Los Angeles County in collaboration with OOH. Sacramento State University’s Public Health Survey Research Program coordinated the screening and data collection for the rest of California. OOH partnered with CDE to ensure school engagement and best practices for approaching and collaborating with schools. The linkage of BSS data and CDE information was instrumental for making possible analyses of disparities by child race/ethnicity and family socioeconomic indicators.

The total 2018-2019 CSS associated costs were \$831,578. The project required seven administrative personnel and 20 dental hygienists. The total personnel cost (including travel) was \$521,376. The

materials included gloves, antiseptic wipes, dental mirrors, and various other supplies totaled \$125,793. These costs did not include the costs for Los Angeles County.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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2. Please provide a detailed description the key aspects of the activity, including the following aspects: administration, operations, and services.

The sampling design was a stratified random sample of public schools with 25 or more third grade students. The sample was selected to represent California’s third grade public school population, utilizing implicit stratification by eight geographic regions across the state and a representative distribution of schools based on the percentage of children eligible for free or reduced-price meals within each region.

Once the district provided approval for the screening, an email invitation was sent to the school principals. Approximately two weeks were provided to allow the school to respond to the initial invitation. If a school accepted participation, the hygienist coordinated with school personnel to set a date for the screening. If no response was given within that time frame, follow up communication was made primarily via email and phone call, and on some occasions in-person meetings.

Consent forms were available to schools in two forms: passive or active consent. Schools were encouraged to use passive consent as this would provide the greatest level of student participation. If a school chose to use passive consent forms, only students whose parents did not want their child to participate in the screenings needed to return the form. To ensure that all parents/guardians of the students fully understood the purpose of the project and how their child was to be assessed, consent forms and parent questionnaires were translated to twelve different languages other than English (Arabic, Burmese, Cambodian, Cantonese, Hmong, Punjabi, Russian, Somali, Spanish, Tagalog, Ukrainian, and Vietnamese).

Once all data was collected, hygienists mailed the data to the project coordinator. All packages were sent secure with a tracking number and required a signature upon delivery. All data from the screening forms and parent questionnaires were transferred to the survey platform Qualtrics.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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3. What outputs or direct products resulted from program activities? (e.g., number of clients served, number of services units delivered, products developed, accomplishments, etc.)

Out of 223 schools selected for the sample, 194 participated in the 2018-2019 CSS. A total of 12,562 children were screened representing a 71.3% participation rate among children at selected schools.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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4. What outcomes did the program achieve? (e.g., health statuses, knowledge, behavior, care delivery system, impact on target population, etc.) Please include the following aspects:
- How outcomes are measured
 - How often they are/were measured
 - Data sources used
 - Whether intended to be short-term (attainable within 1-3 years), intermediate (achievable within 4-6 years), or long-term (impact achieved in 7-10 years)

The prevalence of tooth decay, untreated tooth decay, and dental sealants was 61%, 22% and 37%, respectively. Overall achievements among third graders included a noticeable reduction in tooth decay experience (61% down from 71%) and untreated decay (22% down from 29%) and an increase in dental sealant prevalence (37% up from 28%) than previously reported in 2004-2005. Initial dissemination efforts include peer-reviewed publications⁶⁻⁸ and a report published on the OOH website.

CDPH is working with state and local partners to implement the strategies described in the *California Oral Health Plan 2018-2028* to improve the oral health in Californian children.² To support local infrastructure, CDPH supports 59 LOHPs with a total of \$18 million to implement community-based interventions and support statewide initiatives. Key projects to improve the oral health of children include community water fluoridation, school dental programs, Kindergarten Oral Health Assessment (a registry of the annual Kindergarten BSS data for all of children in Kindergarten in the state as opposed to a representative sample), improving access to dental care and the promotion of oral health literacy. CSS results support funding of evidence-based public health strategies for early childhood tooth decay prevention.

OOH intends to repeat the survey of third graders every five years as part of the *California Oral Health Surveillance System*.³ OOH expects to see measurable change in the prevalence of tooth decay within five years. While the modest 2025 targets according to the *California Oral Health Plan 2018-2028* for untreated decay prevalence and dental sealant prevalence have been met, more improvements are needed to address the substantial burden of tooth decay experienced among Californian children. The prevalence of dental decay was higher in California children when compared to the national median (61% vs. 53%), and dental sealant applications were lower (34% vs. 51%). Further oral health improvement requires concerted, prevention-focused efforts starting from a very young age.

The results were published in the May 2021 issue of the [California Dental Association Journal](#). This journal article reaches 25,000 dental offices and their staff. The results were also distributed to 59 local health departments. In addition, OOH discussed the implications of the findings at the project directors' meeting and programs and policies to address the disparities in oral health.

It is too early to see what action will stem from this, however, OOH collaborated with the Smile, California Campaign and launched a Back Tooth School campaign to increase sealant use and reduce untreated disease. <https://smilecalifornia.org/wp-content/uploads/2021/06/Back-Tooth-School-Webinar.pdf>. There are specific references to the survey findings. More resources to connect children to a source of dental care are posted here <https://smilecalifornia.org/>.

OOH provides grant funding to 59 LHJs to implement school-based/linked programs. This initiative aims to implement a school-based/linked programs with a robust electronic referral management system in 4,626 targeted schools over the next five years.

Budgetary Information:

NOTE: Charts and tables may be used to provide clarity.

1. What is the annual budget for this activity?

\$831,578 every five years for an average of \$166,316 per year.

2. What are the costs associated with the activity? (Including staffing, materials, equipment, etc.)

Administrative personnel, dental professionals, travel, dental consultant, materials, and supplies.

3. How is the activity funded?

Funding provided through the California Healthcare, Research and Prevention Tobacco Tax Act of 2016 (Proposition 56).

4. What is the plan for sustainability?

California Healthcare, Research and Prevention Tobacco Tax Act of 2016 (Proposition 56).

Lessons Learned and/or Plans for Addressing Challenges:

1. What important lessons were learned that would be useful for others looking to implement a similar activity? Was there anything you would do differently?

Linkage of BSS and CDE data had several advantages. Information on child race/ethnicity and family socioeconomic were obtain for this survey without relying on parent questionnaires. While using passive consent for dental screenings, the CCS was able to obtain information for important social determinants of children's oral health. Information obtained from CDE included child's race/ethnicity, socioeconomic disadvantage, and the parent's primary language, among others. This approach greatly enhanced the surveillance of race/ethnic and socioeconomic disparities in oral health of children in California. With these results, specific targets can be established for reductions in disparities and facilitate data-driven decisions for accountability and advancing health equity. Additionally, CDE data maximized the external validity of the 2018-2019 CCS by allowing for more complex weighting scheme to ensure generalizability of results and account for nonparticipation bias.

Advanced planning will significantly improve the likelihood in completing timely school screenings. Lessons learned from the 2018-2019 CSS suggest contacting schools in advance of the school year as despite initial contact in the spring for the forthcoming fall school year the first school was not screened until November resulting in the survey being completed in Fall of 2019.

2. What challenges did the activity encounter and how were those addressed?

Dental hygienists expressed that follow-up training was needed since they only had one training session before data collection began. OOH added an additional training at the beginning of the new school year so hygienists could be reminded of the procedures they needed to follow for the screening.

School recruitment was challenging when schools were not invited until after the school year began. Some schools found it challenging to schedule a time for the screening. For the next BSS, OOH will ensure the invite goes out before the beginning of the school year.

If hygienists assessed any student that needed urgent care, notice was also given to the school nurse for them to connect with parents and ensure that students received care. Hygienists reconnected with school nurses 2-3 weeks after the screening to follow up on the cases. While this follow up tended to be simple, there was often difficulty reconnecting with school personnel to check on the status of the urgent cases. An additional challenge when conducting follow up was the difficulty experienced by the school staff in connecting with student parents or guardians. School staff expressed that this was an ongoing issue they also contend with. By and large, most parents had the opportunity to see or at the least make appointment to see a dentist within those 2-3 weeks to obtain care for their child.

Available Information Resources:

Share any models, tools, and/or guidelines developed by the program specifically for this activity that may be useful to others seeking additional information. Hyperlink resources if possible.

Please see references for links to the *California Oral Health Plan 2018-2028 and Oral Health Surveillance Plan 2019-2023*.^{2,3}

References:

- (1) *State Oral Health Survey and Indian Health Service Oral Health Survey*. Disease Control and Prevention, Division of Oral Health, Oral Health Data. Available at: <https://www.cdc.gov/oralhealthdata/>
- (2) Kumar, J. & Jackson, R. *California Oral Health Plan 2018-2028*. Sacramento, CA: California Department of Public Health, January 2018. Available at: <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/CDPH%20Document%20Library/Oral%20Health%20Program/FINAL%20REDESIGNED%20COHP-Oral-Health-Plan-ADA.pdf>

- (3) Brenes, E.L. and Darsie, B. *Oral Health Surveillance Plan 2019-2023*. Sacramento, CA: Office of Oral Health, California Department of Public Health, September 2019. Available at: <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/CDPH%20Document%20Library/Oral%20Health%20Program/OH%20Surveillance%20Plan%20-%20ADA%209.25.2019.pdf>
- (4) 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, CA: Dental Health Foundation, 2006. Available at: <https://www.centerfororalhealth.org/wp-content/uploads/2018/11/Mommy-It-Hurts-To-Chew.compressed.pdf>
- (5) Association of State and Territorial Dental Directors. *Best Practice Approach State-Based Oral Health Surveillance System*, July 2017. Available at: <https://www.astdd.org/docs/BPASurveillanceSystem.pdf>
- (6) Darsie, B., Conroy S., Kumar, J. Oral Health Status of Children: Results of the 2018–2019 California Third Grade Smile Survey. *J Calif Dent Assoc* 2021 May; 49(5):331-36.
- (7) Kumar J, Fine J. Oral Health of California's Children: A Commentary on the Status and Future Directions. *J Calif Dent Assoc* 2021 May;49(5):327–330.
- (8) Kumar J. Hope for a Cavity-Free Generation. *J Calif Dent Assoc* 2021 May;49(5):283-284.

TO BE COMPLETED BY ASTDD	
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