

Introduction

Childhood Lead Poisoning Prevention (CLPP) Program. The CLPP Program was established in 1986 to prevent environmental exposures to lead and identify and care for children with elevated blood lead levels (EBLLs). The CLPP Program, consisting of the California Department of Public Health's (CDPH) CLPP Branch (CLPPB) in partnership with 48 contracted local health jurisdictions (LHJs), carries out primary and secondary prevention activities including outreach and education to reduce or prevent environmental exposure to lead; promotes lead screening for children at risk for lead exposure; provides case management and follow-up for children with EBLLs; and manages surveillance.

In September 2022, the Legislative Analyst's Office released the [Supplemental Report of the 2022-23 Budget Act](#), which contains requests for studies adopted by the Legislature during deliberations on the 2022-23 budget package. One of the requests was for a report from CDPH on the CLPP Program, to help the Legislature ascertain whether funding levels for the program are adequate to fully meet the program's statutory responsibilities with respect to protecting children from lead exposure and whether state and local programs have adequate workforce and technical capacity to effectively implement the program's requirements.

Information Requested

How CDPH assesses state-funded program costs for the CDPH's CLPP Branch and local contracted CLPP programs that collectively administer the CLPP Program. This description shall include, but is not limited to, information about:

How CDPH determines the scope of the CLPP Program and which specific state and local costs are included in the assessment of the total program cost.

Health and Safety Code (HSC) Article 7, Sections 124125 – 124165, known as the Childhood Lead Poisoning Prevention Act of 1986 and 1989, declared childhood lead exposure the most significant childhood environmental health problem in the state (HSC Section 124125) and established the CLPP Program. The scope of the CLPP Program is defined by statute, and its purpose is to:

- 1) "Compile information concerning the prevalence, causes, and geographic occurrence of high childhood blood lead levels.

- 2) Identify and target areas of the state where childhood lead exposures are especially significant.
- 3) Analyze information collected pursuant to this article and, where indicated, design and implement a program of medical follow-up and environmental abatement and follow-up that aims to reduce the incidence of excessive childhood lead exposures in California.
- 4) Work, as necessary, with the State Department of Health Care Services to advance lead testing of children enrolled in Medi-Cal."

The CLPP Act further mandated the Program to continue to take steps necessary to reduce the incidence of childhood lead exposure in California: "After January 1, 1993, the department, through the Childhood Lead Poisoning Prevention Program, shall continue to take steps that it determines are necessary to reduce the incidence of excessive childhood lead exposure in California" (HSC Section 124165).

Additionally, HSC Chapter 5, Sections 105275 – 105310, known as the Childhood Lead Poisoning Prevention Act of 1991, broadened the mandate of the CLPP Program and charged CDPH with collecting and analyzing information on lead testing; developing protocols for screening for lead; identifying children with elevated BLLs, facilitating the receipt of appropriate case management services for children with elevated BLLs; and reducing exposure to lead and the consequences of that exposure. To meet the mandates of the CLPP Program referenced above, CLPPB developed a strategic plan that sets six specific goals and captures all CLPP Program activities. The current CLPP Program strategic plan was developed in partnership with LHJs during the 2020-21 fiscal year and aligns CLPPB's mission and vision to its legislative mandates. These six goals emerged as part of the strategic planning process:

Goal 1: Establish and support a successfully administered and equity-centered childhood lead poisoning prevention program in every local health jurisdiction (in accordance with the CLPP Act of 1986 and 1989).

Goal 2: Develop and engage in multi-level transdisciplinary partnerships to leverage strategies for lead poisoning prevention (aligns with HSC Sections 105280, 105290, 105300, 124125, 124160, and 124165).

Goal 3: Create lead-safe environments by identifying and reducing lead hazards where children live, play, learn, and spend time (aligns with HSC Sections 124125, 124160, 124165, and 105300).

Goal 4: Advance public health best practices, policies, and interventions through data-driven research (aligns with HSC Sections 124125, 124160, and 124165).

Goal 5: Timely detection of all children who are lead poisoned through universal evaluation and risk-appropriate blood lead testing (aligns with HSC Sections 124125, 124160, 124165, and 105285).

Goal 6: Provide equitable and child-centered care for families who are lead poisoned through integrated case management and environmental services (aligns with HSC Sections 105280, 105290, and 10530).

CLPP Program costs are driven by the number of children with EBLLs and the severity of each case. The assessment of the CLPP Program costs also includes health education, outreach, nursing, case management, surveillance, and environmental investigations. All activities defined in the scope of the CLPP Program are included in the assessment of total program cost. At the local level, costs are primarily driven by staffing which includes public health nurses, environmental professionals, and community workers. The CDPH CLPPB costs are primarily driven by staffing which includes public health medical officers, public health nurses, epidemiologists, education consultants, and administrative staff who are providing direct services and oversight to LHJs. Contracted LHJs provide the same services CLPPB provides in non-contracted jurisdictions. CDPH does not fund blood lead testing because HSC Section 105310 prohibits the CLPP Fee from funding blood lead tests, which are covered by health insurance.

[How CDPH uses this assessment to determine CLPP Fee levels.](#)

CDPH sets CLPP Fee levels based on annual program cost assessments. CLPPB assesses both state and local resource needs to determine the total cost of meeting the statutory mandate. Program costs fluctuate based on the number of cases, federal blood lead level standards, and programmatic changes not directly tied to the number of cases, such as the development of surveillance databases or evolving public health science around effective interventions for vulnerable populations. CLPPB has the authority to adjust the CLPP Fee annually based on the increase in the consumer price index (CPI) and the increase or decrease of the number of children receiving services in accordance

with HSC Section 105310 (c). CLPPB adjusts the CLPP Fee to make sure revenues cover the cost of the program and limits fee collection in accordance with HSC Section 105310 (f).

How CDPH factors in costs to serve all children eligible for either basic case management or full case management.

All children identified with EBLLs are eligible to receive graded services determined by public health guidance and best practices. In contracted LHJs, the LHJ receives a funding allocation to provide all required services, that include, but are not limited to, outreach to families to reduce EBLLs and referrals to health care providers for additional testing. In LHJs without a contract, CLPPB provides these services directly. Depending on the severity of a case, services may also include home visits, environmental investigations, and other case management services (for more information, see Appendix A). Children are categorized as “basic” or “full” cases depending on their blood lead level (BLL) test results.

1. Basic Case Management: Children with BLLs ≥ 4.5 micrograms of lead per deciliter of blood (mcg/dL) receive, at a minimum, BLL monitoring, outreach and education about lead sources and how to address them, and actions to encourage appropriate venous retesting (such as provider reminder letters). Services may also include visits by community workers, modified home inspections and, if local resources allow public health nursing home visits and full environmental investigations.
2. Full Case Management: Children identified as full cases are eligible for full case management services. Full case since July 1, 2016, means a child from birth up to age 21 years of age with one venous BLL ≥ 14.5 $\mu\text{g}/\text{dL}$; or two BLLs ≥ 9.5 $\mu\text{g}/\text{dL}$, at least the second of which is venous, drawn at least 30 calendar days apart. There may be lower BLLs during the same period; these BLLs do not have to be consecutive specimens. Public Health Nurse (PHN) services are central to full case management protocols. The PHN performs a home visit to collect information to assess and manage the case; identifies other at-risk children and family members; assesses the risk of take-home lead exposure (for example, from an adult tracking lead home from work on clothing); conducts a nutritional assessment and provides nutritional information; educates the family; and gives educational materials for future reference.

To make sure that the distribution of resources for treating children with lead poisoning is equitable, CDPH regularly updates its methodology for allocating funds to local prevention programs. The updated methodology includes accounting for the most recent annual count of children with lead poisoning in each jurisdiction and additional prevention activities in the scope of work before each contract cycle.

[How the scope and cost of prevention, outreach, and education activities are determined and factored into total program cost.](#)

The scope of prevention, outreach, and education activities are determined by workplans aligned with the CLPP Program Strategic Plan and informed by the estimated caseload of children eligible to receive services. The workplans describe the services to be performed by the CLPP Program in order to meet Program goals and objectives as articulated in the CLPP Program Strategic Plan and are developed by LHJs using a guiding template developed by CLPPB. CLPPB provides these activities directly in counties without a contracted LHJ. Historically, program costs were based on an estimate of staffing levels needed to execute workplans. This often meant that staff hired to perform case management (such as public health nurses) would simultaneously provide outreach and educational activities. The degree to which staff time was spent on either case management or outreach/education varied widely across LHJs thus it has been difficult to distinguish the cost of outreach/education independent from the cost of case management. Going forward, with the revised scope of work for the 2023-26 contract period, activities are further delineated to better assess costs for prevention, outreach, and education.

[How CDPH determines the scope of environmental services \(including environmental investigation and assistance with lead remediation\) provided by the state-run program and by local contracted programs, how it determines which homes/sites will receive environmental services, how it assesses the costs of these services, and which specific costs are included.](#)

The goal of environmental services is to create a lead safe environment by identifying and reducing lead hazards where children live, play, learn, and spend time. The process of determining whether a home will receive environmental services provided by the state-run program and by contracted LHJs begins when a child is found to have been lead poisoned. Children identified with EBLLs receive graded responses to reduce lead exposure, up to and including home visit, environmental investigation (EI), or full management as provided to full cases (see Appendix A for the PHN protocols to

determine extent of services). The determination on where to perform an EI, or whether to conduct a secondary investigation at a different location, is made by the PHN after an extensive interview with the child's guardians. This interview includes questions regarding possible sources of exposure and residential information. The EI is either performed by the environmental professional from the contracted LHJ or, if none is available or if there is no contracted LHJ, by the state-run program.

The findings of an EI determine the scope of lead remediation services. If a non-housing source (e.g., medicine, spices, toys, ceramicware) is identified as the cause of lead exposure, it is removed from the home. If a housing source (e.g., paint, dust, soil) is identified as the cause of lead exposure, remediation is required to either remove or safely contain the source of exposure.

The cost of environmental investigations services includes salary of the environmental professionals, equipment, and laboratory costs. An EI is a primary service provided by the CLPP Program. All EI costs are funded by the CLPP Program as dictated by HSC Section 105291. CLPPB provides EI services directly in non-contracted LHJs. CLPPB does not dictate salary rates for EI professionals in contracted LHJs; salary rates vary by LHJ. CLPPB provides and maintains X-ray fluorescence instruments used for testing during investigations, covers the contract cost for laboratory analysis of collected housing and non-housing samples, and the contract cost for external water sample analysis.

The cost of lead remediation is typically covered by the property owner. However, there are several avenues of funding assistance available to homeowners based on their property's location, including, for example, federal grant programs and settlement funded programs.

In addition to providing case-specific environmental services, the CLPP Program's outreach and case management activities are focused on strengthening proactive inspection and remediation oversight, improving safety education for tenants during lead hazard evaluation, and strengthening code enforcement strategy.

How CDPH determines the total amount of funding it will provide to local contracted CLPP programs, including how CDPH collects, assesses, and incorporates information from local contracted CLPP programs about their costs and which specific local costs are covered and not covered by local contracts with CDPH.

CLPPB utilizes an allocation formula incorporating data from each LHJ. This data encompasses the population of Medi-Cal eligible children, the age of housing in which children reside, and the distribution of EBLs, including BLLs that meet full case criteria. Funding provided to LHJs is determined by this formula and covers all mandated activities. Funding allocations are determined at the beginning of each contract cycle.

The funding formula is as follows:

Total allocation for LHJ = \$Total amount of funds for all of California x Overall Fraction for LHJ

Overall fraction for LHJ =

$1/4(\text{Total \# Medi-Cal eligible children} < 6 \text{ years in LHJ})/\text{CA total}$

$+1/4 [(2/3(\text{\# children} < 6 \text{ in pre-1960 housing in LHJ})/\text{CA total} + 1/3(\text{\# children living in 1960-1979 housing in LHJ})/\text{CA total}]$

$+1/2 [0.6(\text{\# new full cases) in 2019 in LHJ} / \text{CA total} + 0.3(\text{\# children who are not new full cases but who have BLLs 9.5 and greater in 2019 in LHJ} / \text{CA total}) + 0.1(\text{\# children w/ BLLs 4.5-9.4 in 2019 in LHJ})/\text{CA total}]$

Based on their total allocations, LHJs are assigned a funding level—level 1, 2 or 3—which corresponds to their allocation amount (level 1: less than \$100,000; level 2: \$100,000-\$500,000; and level 3: more than \$500,000). The template scope of work given to LHJs lays out expectations regarding the extent of activities expected for those at level 1, level 2, or level 3 funding during the next three-year local assistance contract - with those designated funding level 1 having less required activities within a goal than those in level 2 or 3. For example, LHJs in funding level 1 are asked to complete at least one proactive inspection per reporting period while LHJs in funding level 3 are expected to complete at least five proactive inspections; proactive inspections fall under the broad goal of creating “lead-safe environments by identifying and reducing lead hazards where children live, play, learn, and spend time.” These funding levels were created in response to feedback from LHJs for a more equitable workload distribution based on funding and resources, where LHJs with the smallest allocations/funding level (funding level 1) have fewer activities to execute within a goal than those with the largest allocations/highest funding level (funding level 3).

Although the number and extent of activities are based on funding level, all funding levels work toward accomplishing the broad six strategic goals and performing all core services in alignment with statutory requirements. The CLPP Program workplan provides flexibility for LHJs in how the activities are achieved. In addition, CLPPB sets a minimum base amount to enable LHJs with no cases to still be able to meet basic programmatic requirements related to the administration of a local lead program, including outreach, education, and lead hazard reduction activities, set forth in the scope of work. For the 2023-26 contract cycle, the base amount for each LHJ is \$67,000 per year. Cost savings are reallocated if needed and remain in fund reserve to be repurposed in the following year.

[How CDPH factors in information technology \(IT\) costs and what effect, if any, this has on other programmatic funding.](#)

IT costs do not affect other programmatic funding. Costs for IT are allocated in the CLPP program's State Operations budget and costs for local programs are allocated in Local Assistance, two separate and distinct budget line items. The projected expenditures related to the development of an electronic surveillance database were a factor in the 2021 CLPP Fee adjustment so that resources for providing services to children with EBLLs could be maintained at existing levels. To the extent that additional IT resources are needed in the future, CLPPB would submit a request through the annual budget process and would propose fee increases to recover these costs.

[Whether the CLLP Branch or local contracted CLPP programs have any workforce shortages, and if so, to what degree and in which positions.](#)

CLPPB and contracted LHJs rely on environmental professionals, nurses, and outreach workers to achieve program goals and objectives. Staffing shortages of any degree for these position types has an impact on progress toward realizing goals and objectives. Contracted LHJs inform CLPPB when any of the three position types are vacant, and CLPPB provides expertise and support as needed until vacant positions are filled. While CLPPB and contracted LHJs have the appropriate position authority, the challenge has been keeping positions filled. The COVID-19 pandemic has impacted staffing levels across the state. Nurse positions, in particular, have been affected both at the state and local level.

Redirections of personnel to support COVID-19 response have also impacted staffing. CLPPB will continue to provide direct services wherever needed due to the turnover of

clinical staff since the beginning of the pandemic in LHJs. Environmental professionals are also particularly difficult to recruit, especially for small and more rural LHJs. Some LHJs have reported that although they are able to fulfill existing workload requirements when they are fully staffed, they do not have additional capacity to work on upstream, more proactive measures to prevent lead poisoning. In the future as the program incorporates increased primary prevention efforts to address the latest public health science and recommendations from the California State Auditor's report on childhood lead levels, it will also determine whether a request for additional resources may be needed to meet workload demands.

Information from non-contracted local health jurisdictions to understand why they opt to have the state CLPP Branch run programs in their areas.

LHJs have provided CDPH several reasons of their decisions not to contract with CDPH to provide direct childhood lead poisoning prevention services. These reasons are examples, not exhaustive, and include the belief that lead poisoning is not enough of a problem in their jurisdictions to warrant a program, general staffing issues, or that the funding allocation is not enough to justify establishing a contracted program.

Information about the scope of environmental remediation services going forward, including prospects for continuing to receive federal grant funding for this purpose and data on the proportion of homes/sites that state and local CLPP programs typically serve out of the total number of homes/sites that need remediation.

Going forward, CDPH will continue to explore opportunities to identify additional non-state resources for environmental remediation services. CDPH is building capacity for securing future federal funding by administering a U.S. Department of Housing and Urban Development (HUD) Lead Hazard Reduction Grant¹ and providing technical assistance to LHJs to support them seeking federal funding for residential remediation. The \$3.4 million Lead Hazard Reduction Grant supports a residential remediation program in Orange County² and Ventura County³. This funding is primarily for lead hazard reduction services in low-income homes, with priority given to homes where a child with EBLLs has been identified. Several LHJs have also independently sought federal grant dollars. Additionally,

¹ [HUD](https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo/fundingopps/fy22lhr): https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo/fundingopps/fy22lhr

² [Azure Development Co](https://azuredevelopmentco.com/exposed-feedback.html): <https://azuredevelopmentco.com/exposed-feedback.html>

³ [Healthy Homes Ventura County](https://www.vchca.org/hhvc): <https://www.vchca.org/hhvc>

ten California counties and cities are implementing environmental remediation using the \$300 million in residential remediation funds from the 2019 California multi-county settlement with the lead paint manufacturers industry⁴. CLPPB is engaged in the local activities and providing supports as needed. Taken together, these activities may remove lead hazards from up to 20,000 residential properties in California over the next few years. This will be a sharp increase from the hundreds of lead abatement jobs notices the CLPPB received each year before 2020 – an increase that CDPH anticipates affected jurisdictions will be able to handle.

Less than one percent of California homes have been subject to lead inspection and remediation/abatement activities since the state-run program started tracking these activities in 1998. Yet, half of California housing was built before the residential ban on lead-based paint in 1978 and could contain such paint. Thus, the available funding for remediation has not aligned with the need for remediation. Lead persists in the environment for an indefinite period of time, and the cost of removing lead from the environment is extremely high. Lead is an issue that spans housing, transportation, clean water, health equity, consumer protections, and other domains. It is crucial that CDPH continues providing lead poisoning prevention services to Californian children, especially because of the income disparities of populations impacted by lead exposure.

Whether the program has sufficient funding to support all eligible children and how CDPH addresses funding shortfalls when they are identified.

The CLPP Program currently has sufficient funding to provide mandated case management services to children in California with a BLL of 4.5 mcg/dL and above who seek services. However, CLPPB is aware that not all children who are required by law to get tested receive testing and not all those who have elevated BLL seek services. For example, the 2019 CSA Report found that less than 27% of Medi-Cal children received all required blood lead level tests from Fiscal Years 2009-10 through 2017-18. If all children who were eligible sought services, then current funding levels are unlikely to be sufficient given funding allocations are based on historical caseload of children served rather than eligible children. Part of CLPP Program's outreach goals is to increase the number of eligible at-risk children who seek and then receive case management services.

⁴ [People of the State of California v. ConAgra Grocery Products Company \(2019\):
https://counsel.sccgov.org/high-profile-matters/lead-paint-litigation](https://counsel.sccgov.org/high-profile-matters/lead-paint-litigation)

In 2021, the US Centers for Disease Control and Prevention (CDC) updated the blood lead reference value that health care providers should use to consider a child's BLL elevated from 5 mcg/dL to 3.5 mcg/dL. It is anticipated that this will increase the number of children requiring basic case management services. When funding shortfalls are identified, for example, when new program mandates expand the program's workload, CDPH examines the program's financials and implements adjustments to the CLPP Fee as needed. Case management services are provided on a graded response scale based on the level of poisoning, with options to go beyond mandated services on a case-by-case basis and as funding allows. The specific services required by the case management protocol can be found in Appendix A.

An assessment of whether the CLPP Fee is a sustainable source of funding going forward and how relying exclusively on this funding source specifically affects the scope of the program.

The CLPP Fee is a unique fee imposed on entities that have in the past contributed, or currently contribute, to environmental lead contamination. It was established by the CLPP Act of 1991, which mandated that the program implemented under HSC Sections 105275 – 105310 be implemented only to the extent fee revenues pursuant to Section 105310 are available for expenditure. Existing statutes provide broad authority to assess funding and increase fees. The CLPP Program continues to analyze the Fee payer pool. As other industries contributing to lead contamination are identified, additional regulations may be required to protect public health. While the CLPP Fee has been legally contested in the past, the California Supreme Court has upheld the CLPP Fee as a reasonable use of police power.

CLPPB has updated the scope of work for contracted LHJs in the next contract cycle beginning in FY 2023. Should the number of cases continue to increase as a result of additional mandates or further case definition changes, or should the Fee payment compliance rate decrease, or should future fee increases not be approved, the program may not be able to align CLPP Fee revenues to expenditures, which would restrict program scope and ability to maintain a positive fund balance.

Information about appropriations and expenditures to date for the Surveillance, Health, Intervention, and Environmental Lead Database (SHIELD) IT project, a narrative explanation about what drives the project’s costs and why other states’ similar systems are much less costly, and a description of CDPH’s plan to finish the project, including, if available, any rough estimates of total cost and timing.

Planning for the Surveillance, Health, Intervention, and Environmental Lead Database (SHIELD) began in fiscal year 2016-2017. CDPH has been engaged in the state Project Approval Lifecycle for Information Technology projects as required by the California Department of Technology (CDT). CDPH completed Stage 1 Business Analysis, Stage 2 Alternatives Analysis, Stage 3 Solution Development and was in process to complete Stage 4 Project Readiness and Approval to begin project development when the project was paused pending re-evaluation of the proposed solution for a more cost-effective alternative. Prior to project pause, the project appropriations and expenditures are as shown in the table below, which include costs for project oversight functions from CDT. The SHIELD Project’s 2021-22 appropriation was re-appropriated in the 2022 Budget Act (2022-23).

Table 1: SHIELD Appropriations and Expenditures

Fiscal Year	Appropriations	Expenditures
FY 16/17	\$7,472	\$7,472
FY 17/18	\$480,000	\$321,631
FY 18/19	\$848,000	\$735,020
FY 19/20	\$8,000,000	\$995,709
FY 20/21	\$9,300,000	\$1,472,376
FY 21/22	\$5,900,000	\$1,241,381
FY 22/23	\$9,300,000	\$0

CDPH conducted a survey of other states' lead data systems. From this survey, CDPH found 19 states use the CDC web-based blood lead data management platform, Healthy Homes and Lead Poisoning Surveillance System (HHL PSS) or its legacy system. Others have developed in-house systems or are using open-source epidemiologic and disease surveillance software systems or modifiable off-the-shelf systems. Cost comparisons of the various data systems deployed are difficult to ascertain due to the age of the systems when launched, differing volume of blood lead reports received,

varying case management needs across states, and the system capability requirements across states.

The SHIELD IT project pause will allow for re-evaluation of business needs, priorities, and alternative solutions. The outcome of this reassessment will help determine project costs. CDPH's Information Technology Services Department has been conducting the following assessments as part of the SHIELD Architecture Definition Document in support of project development: Business Architecture (process models); Data Architecture (SHIELD data models); and Application Architecture (technical components). Assessments should be completed early in 2023 with project application cost estimates available soon after. Project planning completion timeline is estimated by the middle of fiscal year 2023-2024 with project development estimated to begin December 2023.

For each of the three previous fiscal years, statistics on children served, which should include, but not be limited to:

Number of the children provided full case management and their blood lead levels:

- 1) *Statewide.*
- 2) *By local health jurisdiction.*
- 3) *By demographic group.*

Full case management for these tables is defined as an eligible child that has received a home visit and an EI. During the COVID-19 pandemic, remote and in-person home visits as well as in-person environmental assessments occurred. However, there were more refusals of the assessment by homeowner/child's guardian than in prior years due to safety concerns. In total, between fiscal year (FY) 19/20 and FY 21/22, 882 children were eligible for and sought full case management services. All of these cases received case management services which include monitoring, referrals, outreach, and education. Of those, 737 received home visits and environmental investigations.

Table 2: Number of the children provided full case management¹ in California and by local health jurisdiction for fiscal years 2019 – 2022

Local Health Jurisdictions	FY 19/20	FY 20/21	FY 21/22	FY Total
Alameda	32	30	22	84
Alpine	0	0	0	0
Amador	0	0	0	0

Local Health Jurisdictions	FY 19/20	FY 20/21	FY 21/22	FY Total
Berkeley	0	0	0	0
Butte	1	0	0	1
Colusa	0	0	0	0
Contra Costa	6	9	10	25
Del Norte	0	0	0	0
El Dorado	0	0	0	0
Fresno	9	7	4	20
Humboldt	1	1	0	2
Imperial	1	1	0	2
Inyo	0	0	0	0
Kern	7	5	6	18
Kings	0	1	1	2
Lake	0	0	0	0
Lassen	0	0	0	0
Long Beach	1	4	6	11
Los Angeles	40	70	44	154
Madera	1	3	1	5
Marin	0	0	0	0
Mariposa	0	0	0	0
Mendocino	0	0	0	0
Merced	1	2	0	3
Modoc	0	0	0	0
Mono	0	0	0	0
Monterey	8	8	5	21
Napa	0	0	2	2
Orange	8	11	13	32
Pasadena	1	1	0	2
Placer	0	0	1	1
Plumas	0	0	0	0
Riverside	12	2	8	22
Sacramento	36	16	24	76
San Benito	0	0	0	0

Local Health Jurisdictions	FY 19/20	FY 20/21	FY 21/22	FY Total
San Bernardino	6	5	10	21
San Diego	17	7	23	47
San Francisco	6	5	6	17
San Joaquin	10	13	3	26
San Luis Obispo	0	1	1	2
San Mateo	2	4	2	8
Santa Barbara	1	2	4	7
Santa Clara	20	19	30	69
Santa Cruz	0	1	2	3
Shasta	0	0	0	0
Sierra	0	0	0	0
Solano	2	3	0	5
Sonoma	3	0	3	6
Stanislaus	5	2	3	10
Sutter	0	1	0	1
Tehama	0	0	0	0
Tulare	5	3	2	10
Tuolumne	0	0	0	0
Ventura	4	0	2	6
Yolo	1	3	5	9
Suppressed Jurisdictions ²	1	5	1	7
CA total	248	245	244	737

¹ Full case management for these tables is defined as a home visit and an environmental investigation. Due to the COVID-19 pandemic, remote home visits and in-person environmental assessments occurred, however, there were more refusals than in prior years. The total number of children eligible for full case management services for FY 2019 to 2022 was 882.

² Data are suppressed for local health jurisdictions that did not have enough blood lead tests in at least one of the fiscal years to meet the California Health and Human Services Agency's Data De-Identification Guidelines for public release. These include: Calaveras, Glenn, Nevada, Siskiyou, Trinity, and Yuba.

Table 3: Number of the children provided for full case management by demographics for fiscal years 2019 – 2022 for California

Age	FY 19/20 (n=248) N (%)	FY 20/21 (n=245) N (%)	FY 21/22 (n=244) N (%)
Less than 6 years	204 (82.3)	208 (84.9)	201 (82.4)
Between 6 and up to 21 years	44 (17.7)	37 (15.1)	43 (17.6)

Sex	FY 19/20 (n=248) N (%)	FY 20/21 (n=245) N (%)	FY 21/22 (n=244) N (%)
Female	119 (48)	124 (50.6)	117 (47.9)
Male	129 (52)	121 (49.4)	127 (52.1)

Race/Ethnicity	FY 19/20 (n=248) N (%)	FY 20/21 (n=245) N (%)	FY 21/22 (n=244) N (%)
Non-Hispanic Asian	48 (19.4)	50 (20.4)	43 (17.6)
Asian Indian	31 (12.5)	31 (12.7)	28 (11.5)
Cambodian	1 (0.4)	2 (0.8)	1 (0.4)
Chinese	3 (1.2)	3 (1.2)	3 (1.2)
Filipino	0 (0.0)	1* (0.4)	1 (0.4)
Hmong	0 (0.0)	1 (0.4)	3 (1.2)
Indonesian	1 (0.4)	0 (0.0)	0 (0.0)
Karen	1 (0.4)	0 (0.0)	0 (0.0)
Korean	0 (0.0)	0 (0.0)	0 (0.0)
Laotian	2 (0.8)	0 (0.0)	0 (0.0)
Nepali	0 (0.0)	1 (0.4)	2 (0.8)
Pakistani	5 (2.0)	8 (3.3)	2 (0.8)
Vietnamese	1 (0.4)	0 (0.0)	1 (0.4)
Other Asian/Unspecified	3 (1.2)	3 (1.2)	2 (0.8)
Non-Hispanic Black	9 (3.6)	6 (2.4)	0 (0.0)

Race/Ethnicity	FY 19/20 (n=248) N (%)	FY 20/21 (n=245) N (%)	FY 21/22 (n=244) N (%)
Non-Hispanic Hawaiian/Pacific Islander	1 (0.4)	0 (0.0)	0 (0.0)
Samoaan, Tongan	1 (0.4)	0 (0.0)	0 (0.0)
Hispanic (Single race)	111 (44.8)	123 (50.2)	92 (37.7)
Multi race (any Hispanic status)	9 (3.6)	7 (2.9)	10 (4.1)
Non-Hispanic Native American/Alaskan	1 (0.4)	1 (0.4)	0 (0.0)
Non-Hispanic Other Race (unspecified)	2 (0.8)	2 (0.8)	1 (0.4)
Non-Hispanic White (n)	65 (26.2)	35 (14.3)	54 (22.1)
Afghan	47 (19.0)	19 (7.8)	38 (15.6)
Non-Afghan	18 (7.3)	16 (6.5)	16 (6.6)
Declined or Unknown	2 (0.8)	21 (8.6)	44 (18.0)

*One case was identified as 'Filipino/Japanese'.

Number of the children provided basic case management and their blood lead levels:

- 1) *Statewide.*
- 2) *By local health jurisdiction.*
- 3) *By demographic group.*

Between FY 2019-20 and FY 2021-22, 12,327 children in California received basic case management services for lead poisoning. Basic case management includes at a minimum, monitoring, outreach and education, and actions to encourage appropriate venous retesting (such as provider reminder letters).

Table 4: Number of the children provided for basic case management in California and by local health jurisdiction for fiscal years FY 2019 – 2022

Local Health Jurisdiction	FY 19/20	FY 20/21	FY 21/22	FY Total
Alameda	197	178	185	560
Alpine	0	0	0	0
Berkeley	11	5	0	16
Butte	24	17	11	52
Contra Costa	152	25	67	244
Del Norte	0	0	0	0
El Dorado	24	4	3	31
Fresno	207	51	35	293
Humboldt	115	46	9	170
Imperial	161	20	16	197
Kern	215	172	55	442
Kings	30	21	7	58
Long Beach	46	18	23	87
Los Angeles	896	728	523	2147
Madera	31	50	12	93
Marin	17	10	10	37
Mendocino	29	26	6	61
Merced	23	79	9	111
Monterey	233	59	14	306
Napa	10	12	6	28
Orange	722	214	182	1,118
Pasadena	8	12	5	25
Placer	20	15	9	44
Riverside	147	190	116	453
Sacramento	723	243	457	1,423
San Bernardino	205	32	16	253
San Diego	425	310	304	1,039
San Francisco	33	70	40	143
San Joaquin	114	77	67	258
San Luis Obispo	14	12	2	28
San Mateo	69	65	20	154

Local Health Jurisdiction	FY 19/20	FY 20/21	FY 21/22	FY Total
Santa Barbara	49	55	43	147
Santa Clara	323	121	127	571
Santa Cruz	103	31	23	157
Shasta	12	2	10	24
Solano	77	74	13	164
Sonoma	13	29	24	66
Stanislaus	94	39	65	198
Sutter	60	12	13	85
Tehama	11	0	1	12
Tulare	433	68	23	524
Ventura	100	29	25	154
Yolo	43	37	34	114
Suppressed Jurisdictions ¹	113	87	40	240
CA Total	6,332	3,345	2,650	12,327

¹ Data are suppressed for local health jurisdictions that did not have enough blood lead tests in at least one of the fiscal years to meet the California Health and Human Services Agency's Data De-Identification Guidelines for public release. These include: Amador, Calaveras, Colusa, Glenn, Inyo, Lake, Lassen, Mariposa, Modoc, Mono, Nevada, Plumas, San Benito, Sierra, Siskiyou, Trinity, Tuolumne, and Yuba.

Table 5: Number of the children provided for basic case management by demographics for fiscal years 2020 – 2022 for California

Age	FY 20/21 (n = 3345) N (%)	FY 21/22 (n = 2650) N (%)
Less than 6 years	3007 (89.9)	2135 (80.6)
Between 6 and up to 21 years	338 (10.1)	515 (19.4)

Sex	FY 20/21 (n = 3345) N (%)	FY 21/22 (n = 2650) N (%)
Female	1,597 (47.7)	1,117 (42.1)

Sex	FY 20/21	FY 21/22
Male	1,681 (50.2)	1,444 (54.5)
Unknown	67 (2.0)	89 (3.4)

CLPP Program progress trackers did not collect information about individual children's age and sex in FY 2019-20.

[Number of children with blood lead levels below 10 micrograms per deciliter \(mcg/dL\) who receive full case management, noting in which local health jurisdictions the children live.](#)

Full case management is defined as tele/in-person home visits (HVs) and remote EIs/in-person EIs. LHJs provide children with blood lead levels below 10 mcg/dL with full case management services as resources allow to prevent any further lead poisoning. However, that data is not available to be reported at this time. Contracted LHJs do not report the number of children with blood lead levels below 10 mcg/dL, however, they do report qualitative data about services provided (please see next section).

[Which local health jurisdictions provide full case management to children with blood lead levels below 10 mcg/dL and how many of the affected children are receiving the services.](#)

Full case management is defined as having tele/in-person HV and remote EIs/in-person (EI). Data are from the January to June 2022 progress report trackers. Six contracted LHJs provide both HV and EI services to children with BLLs below 10 mcg/dL on a case-by-case basis. Six additional LHJs provide only HVs, and three LHJs provide only EIs, to some children with BLLs below 10 mcg/dL.

Table 6: Local health jurisdictions who provide full case management to children with blood lead levels below 10 mcg/dL

Local Health Jurisdiction	Both HV and EI	HV	EI	Neither
Alameda	X	X	X	
Amador				X
Berkeley				X
Butte				X
Calaveras				X
Colusa				X
Contra Costa	X	X	X	
Del Norte				X
El Dorado				X
Fresno		X		
Glenn				X
Humboldt				X
Imperial				X
Kern				X
Lake				X
Lassen				X
Long Beach		X		
Los Angeles				X
Madera				X
Marin				X
Mariposa				X
Modoc				X
Monterey			X	
Nevada				X
Orange	X	X	X	
Pasadena			X	
Placer				X
Plumas				X
Riverside				X

Local Health Jurisdiction	Both HV and EI	HV	EI	Neither
Sacramento				X
San Bernardino		X		
San Diego				X
San Francisco	X	X	X	
San Joaquin				X
San Luis Obispo		X		
San Mateo	X	X	X	
Santa Clara			X	
Santa Cruz				X
Shasta				X
Siskiyou				X
Solano				X
Sonoma				X
Stanislaus	X	X	X	
Sutter				X
Tehama				X
Tulare		X		
Tuolumne		X		
Ventura				X
Yuba				X

Data was not available for all LHJs. Number of children receiving each type of service is unavailable. Contracted LHJs are not required to provide tracking data on services provided to basic cases that are beyond what is required by in their contract. CLPPB does ask LHJs in general what services they provide (Table 6) but we do not have them track for each basic case whether a HV or EI occurs.

Number of children with elevated blood lead levels (above 3.5 mcg/dL) who are not receiving any services:

- 1) Statewide.
- 2) By local health jurisdiction.
- 3) By demographic group.

Between FY 19/20 and FY 21/22, 12,050 children who were tested, had BLLs above 3.5 mcg/dL and below 4.4 mcg/dL, and did not seek or receive any services. Current regulations define basic cases as children with BLLs at or above 4.5 mcg/dL.

Table 7: Number of children with EBLLs - (3.5 to 4.4 mcg/dL) who are not receiving any services statewide and by local health jurisdiction for fiscal year 2019 to 2022

Local Health Jurisdiction	FY 19/20	FY 20/21	FY 21/22	Total
Alameda	181	146	144	471
Alpine	0	0	0	0
Berkeley	8	10	8	26
Butte	20	32	12	64
Contra Costa	77	31	50	158
El Dorado	13	3	8	24
Fresno	246	246	98	590
Humboldt	177	53	25	255
Imperial	87	22	17	126
Kern	186	154	46	386
Kings	54	23	6	83
Long Beach	32	17	13	62
Los Angeles	1,481	1164	611	3,256
Madera	67	40	9	116
Marin	13	25	15	53
Mendocino	26	9	3	38
Merced	35	86	8	129
Monterey	101	69	47	217
Napa	3	24	3	30
Orange	297	191	145	633
Pasadena	22	15	3	40
Placer	22	7	11	40
Riverside	248	177	131	556
Sacramento	375	199	300	874
San Bernardino	208	184	98	490
San Diego	503	304	307	1,114

Local Health	FY 19/20	FY 20/21	FY 21/22	Total
San Francisco	107	71	53	231
San Joaquin	78	48	60	186
San Luis Obispo	29	22	2	53
San Mateo	35	42	20	97
Santa Barbara	60	52	21	133
Santa Clara	120	77	99	296
Santa Cruz	40	13	12	65
Shasta	5	4	8	17
Sierra	0	0	0	0
Solano	85	111	17	213
Sonoma	12	18	21	51
Stanislaus	56	45	71	172
Sutter	12	10	7	29
Tehama	9	5	1	15
Tulare	95	60	33	188
Ventura	52	39	35	126
Yolo	26	20	21	67
Suppressed Jurisdictions ¹	106	99	35	240
Not assigned to a jurisdiction ²	24	8	8	40
California Total	5,433	3,975	2,642	12,050

¹ Data are suppressed for local health jurisdictions that did not have enough blood lead tests in at least one of the fiscal years to meet the California Health and Human Services Agency's Data De-Identification Guidelines for public release. These include: Amador, Calaveras, Colusa, Del Norte, Glenn, Inyo, Lake, Lassen, Mariposa, Modoc, Mono, Nevada, Plumas, San Benito, Siskiyou, Trinity, Tuolumne, and Yuba.

² Occasionally, the CLPPB database cannot assign a child to a jurisdiction due to incomplete data. Given that services are not currently provided to children with BLLs of 3.5 mcg/dL to 4.4 mcg/dL, these children will continue to have no assigned jurisdiction until their BLL is equal to or greater than 4.5 mcg/dL. Once that occurs, a human will intervene and look at the available data to determine which jurisdiction that child should be given to receive care management services.

Table 8: Number of children with ELLs (3.5 to 4.4) who are not receiving any services statewide and by local health jurisdiction for fiscal year 2019 to 2022 by age and sex

Age	FY 19/20 (n = 5,433) N (%)	FY 20/21 (n = 3,975) N (%)	FY 21/22 (n = 2,642) N (%)
Less than 6 years	4,805 (88.4)	3,673 (92.4)	2,088 (79.0)
Between 6 and up to 21 years	628 (11.6)	302 (7.6)	554 (21.0)

Sex	FY 19/20 (n = 5,433) N (%)	FY 20/21 (n = 3,975) N (%)	FY 21/22 (n = 2,642) N (%)
Female	2,453 (45.2)	1,755 (44.2)	1,173 (44.4)
Male	2,798 (51.5)	2,139 (53.8)	1,384 (52.4)
Unknown	182 (3.3)	81 (2.0)	85 (3.2)

Appendix A: Public Health Nurse Protocol

This protocol covers primary duties and deadlines for nurse case management of a lead-exposed child. This is not a guide for the primary care provider (PCP), who should refer to the Provider Health Assessment Guidelines on “Blood Lead Test and Anticipatory Guidance”.¹

Blood lead levels are indicated as micrograms per deciliter (mcg/dL). Abbreviations used are blood lead level (BLL), capillary BLL (CBLL) and venous BLL (VBLL).

BLL ²	NURSE CASE MANAGEMENT ACTIVITIES
<p>< 4.5 capillary or venous³</p>	<p>Below CDC Reference Level⁴ – no specific nurse case-management response required</p> <ul style="list-style-type: none"> ▪ Routine reassessment, screening, and anticipatory guidance by PCP. ▪ If contacted, any knowledgeable staff may provide information or send materials on childhood lead exposure and community resources (including websites) and positive steps, such as good nutrition, developmental stimulation, and avoiding lead hazards. ▪ May provide other services as resources allow. May contact PCP.
<p>4.5–9.4 capillary or venous³</p>	<p>CDC Reference Level and above, not meeting state case criteria – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Remind PCP that <u>all subsequent BLLs must be venous</u>. ▪ Remind PCP to obtain VBLL within 1-3 months, then retest in 3 months and then retest based on trend in BLLs. Monitor until at least 2 venous follow-up tests have been done to be sure VBLL is trending downward and most recent VBLL is < 4.5 mcg/dL. ▪ Within 2 months of notification of initial BLL, begin outreach and education. ▪ As resources allow and depending on the BLL trend, provide additional, graded responses to reduce lead exposure, up to and including home visit (HV), environmental investigation (EI), or full management as provided to state cases.
<p>9.5–14.4 initial capillary or venous³</p>	<p>Potential State Case (based on persistence) – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Remind PCP to retest with VBLL within 1-3 months, then retest in 3 months and then retest based on result. ▪ To qualify for full case management, there must be a confirming VBLL ≥ 9.5 at least 30 calendar- days after initial BLL, even if BLL has been repeated in the interim. ▪ Monitor until at least 2 venous follow-up tests have been done to be sure VBLL is trending downward and most recent VBLL is < 4.5 mcg/dL.

BLL	NURSE CASE MANAGEMENT ACTIVITIES
confirmed venous ³	<p>Confirmed State Case (based on persistence) – manage as above plus full case management:</p> <ul style="list-style-type: none"> ▪ Remind PCP to monitor with VBLLs initially every 3 months; thereafter retest based on result. ▪ Initial HV, reassessment, overall case management must be by Public Health Nurse (PHN).⁵ ▪ Set up case file, including progress notes. Ensure access to RASSCLE. ▪ Contact PCP to discuss case and case management services. ▪ Within 2 calendar-days of notice of case-making BLL, notify Environmental Professional (EP). ▪ Make HV, ideally at same time as EP, within 4 weeks of notice of case-making BLL. ▪ Obtain written consent and comply with privacy requirements of CLPPB.⁶ ▪ Gather data for Lead Poisoning Follow-Up Form (LPFF). ▪ Explain BLL significance to family and facilitate further testing of child and household. ▪ Educate family (lead sources, nutrition, child development, hygiene, house cleaning, etc.) ▪ Evaluate or refer for evaluation of nutrition and developmental status. ▪ With EP, identify personal (non-housing) lead hazards. Notify CLPPB of new or unusual ones. ▪ FAX or mail HV and EI report (Provider Summary) to PCP. <u>Do not email confidential info.</u> ▪ Send copy of initial LPFF, appendices, 8552 form, consent, and Provider Summary to CLPPB within 60 calendar-days of HV. Send interim LPFFs within 30 calendar-days of significant changes other than BLLs. See <i>Protocol on Submitting Documents to CLPPB</i>. ▪ Create and regularly update an individual case management plan. <p>Ensure child has a medical home. Make referrals, such as to Medi-Cal, WIC, and Head Start.</p>

BLL	NURSE CASE MANAGEMENT ACTIVITIES
<p>9.5–14.4 confirmed venous³ (cont.)</p>	<ul style="list-style-type: none"> ▪ Notify Occupational Lead Poisoning Prevention Program (OLPPP) if occupational or take-home exposure is suspected. If job-related in a 16-21 year-old, manage as any state case but coordinate with OLPPP. <u>Do not contact employer or company doctor; OLPPP will contact.</u> ▪ Maintain contact with PCP, including updates on progress of case, reminders of needed follow-up, collaboration on current and future plans, and notification when case is closed. ▪ Maintain contact with family through letters, telephone, or visits. Make additional HVs if source is unclear or BLLs are not declining as expected. Notify family when case is closed. ▪ Send copy of closing LPFF to CLPPB within 30 calendar-days of case closure. ▪ Keep open at least until meets standard clinical case closure criteria or, <u>despite documented, good faith efforts</u>, child could not be found, is lost to follow-up, or family persistently refuses services. Do not close if active case management is continuing or on BLLs alone.
<p>14.5–19.4 capillary</p>	<p>Potential State Case (needs a confirming VBLL) – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Remind PCP to obtain VBLL within 1-4 weeks, with further testing as appropriate for BLL result. ▪ If repeat VBLL ≥ 14.5, BLL is confirmed and becomes a case without a 30 calendar-day wait. ▪ If repeat VBLL ≥ 9.5–14.4, BLL is not confirmed and becomes a case only if persistent as above.
<p>14.5–19.4 venous³</p>	<p>Confirmed State case (based on a VBLL) – manage as above, for confirmed state case, plus:</p> <ul style="list-style-type: none"> ▪ Remind PCP to obtain VBLL within 1-4 weeks and then every 1-3 months. ▪ Make HV within 2 weeks of notice of case-making BLL.
<p>19.5–44.4 capillary</p>	<p>Potential State Case (needs a confirming VBLL) – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Remind PCP to obtain VBLL within 1-4 weeks (the higher the BLL, the sooner the retest). ▪ If repeat VBLL ≥ 14.5, BLL is confirmed and becomes a case without a 30 calendar-day wait. ▪ If repeat VBLL ≥ 9.5–14.4, BLL is not confirmed and becomes a case only if persistent as above.

BLL	NURSE CASE MANAGEMENT ACTIVITIES
<p>19.5–44.4 venous³</p>	<p>Confirmed State case (based on a VBLL) – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Remind PCP to obtain VBLL within 1-4 weeks and then initially every 2-4 weeks until trend is downward or stable and then less often as trend indicates. ▪ Make HV within 1 week of notice of case-making BLL. ▪ Eligible for referral to California Children's Services.⁷
<p>44.5–69.4 capillary or venous³</p>	<p>URGENT SITUATION (based on a single CBLL or VBLL) – Potential hospitalization and chelation – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Prepare in advance. Have blank case file, HV materials, clinician contacts, HAGs, and protocol for urgent or emergency BLL confirmation on weekends and holidays.⁸ ▪ Immediately contact PCP and other involved medical provider, such as specialist or hospital MD. ▪ Both CBLL and VBLL require a venous retest, which must occur within 48 hours if initial BLL ≥ 44.5 to 59.4, and within 24 hours if initial BLL ≥ 59.5 to 69.4. Confirming VBLL and other medically appropriate actions must occur <u>before any chelation</u>. ▪ Treat as state case unless and until retest shows otherwise. ▪ Immediately contact family. Urge that child get the confirmatory VBLL if not yet done. ▪ Immediately contact EP. Arrange for HV and EI to be done if BLL is confirmed. ▪ Make HV within 48 hours of notice of case-making VBLL. If necessary, do preliminary interview at hospital or by telephone to identify likely sources and then do HV as soon as possible. ▪ Ensure household members, especially children and pregnant or lactating women, are tested. ▪ Confirm environmental and nonenvironmental lead hazards have been removed or contained before child returns home. If not, ensure family can temporarily relocate. ▪ Maintain close, ongoing contact with family, PCP, EP, and CLPPB clinicians.

BLL	NURSE CASE MANAGEMENT ACTIVITIES
<p>≥ 69.5 capillary or venous³</p>	<p>EMERGENCY (based on a single CBLL or VBLL) – manage as above plus:</p> <ul style="list-style-type: none"> ▪ Remind medical provider to obtain a VBLL immediately. ▪ Make HV within 24 hours of notice of case-making VBLL.

¹ [Department of Health Care Services, Child Health and Disability Prevention Program \(CHDP\) and California Department of Public Health, CLPPB,](https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/Lead_HAGs.pdf)

https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/CLPPB/CDPH%20Document%20Library/Lead_HAGs.pdf ; <http://www.dhcs.ca.gov/services/chdp/Documents/HAG/Chapter6.pdf>

² CLPPB rounds decimal numbers up to the nearest whole number, so that a value of 4.5 mcg/dl is equivalent to 5 mcg/dL, 9.5 mcg/dL is equivalent to 10 mcg/dL, and 14.5 mcg/dL is equivalent to 15, etc. Arterial or cord blood is acceptable in place of venous.

³ LeadCare® analyzers should not be used for VBLLs.

⁴ Current Centers for Disease Control and Prevention (CDC) reference level is 5 mcg/dL.

⁵ In some circumstances, and with CLPPB approval, may be an RN under the supervision of a PHN.

⁶ Or local jurisdiction, if more protective.

⁷ 22 California Code of Regulations section 41518.9.

⁸ CLPPB Program Letter 2014-02: "Confirmation of Childhood BLLs Constituting a Medical Emergency"