

CHILDHOOD LEAD POISONING PREVENTION IN MICHIGAN

FISCAL YEAR 2021 and 2022 REPORT TO THE LEGISLATURE

Prepared by the
Childhood Lead Poisoning Prevention Program
Division of Environmental Health
Michigan Department of Health and Human Services

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INTRODUCTION

For over 40 years, government, environmental advocates, landlords, schools, and parents have worked to reduce and eliminate childhood lead poisoning hazards. These efforts have led to considerable gains, including increased awareness of lead as an environmental hazard, reductions and/or complete elimination of the use of lead in consumer products, and improvements in guidance for the testing and the treatment of lead poisoned children.

Unfortunately, lead poisoning is far from eradicated. Exposure to lead tends to be higher in Michigan's urban areas due to aging housing stock and poor living conditions. Young children, wherever they live, are particularly vulnerable because of their tendency to put contaminated items such as hands and toys into their mouths.

Why does this matter? Lead is a potent neurotoxin. Children's growing bodies absorb more lead than adults do, and their developing brains and nervous systems are more sensitive to the damaging effects of lead. Exposure to high levels of lead can result in brain damage and even death. Low levels of lead in the body have been shown to affect IQ, ability to pay attention, and academic achievement.

The goal of the Michigan Childhood Lead Poisoning Prevention Program (CLPPP) within the Michigan Department of Health and Human Services (MDHHS) is to address lead hazards before children are exposed. While

the state and its local partners have seen some success, including declines in the overall rate of childhood lead poisoning, Michigan continues to be ranked in the top states with the greatest number of lead poisoned children, an indication that there is still much work to be done.

This report has been prepared in accordance with Lead Abatement Act 368 of 1978, Section 333.5474 of the Michigan Compiled Laws. Under MCL 333.5474 the department is required to produce an annual report for the legislature detailing the number of children screened for lead poisoning and expenditures under the lead poisoning prevention program. (See Appendix 1.) This report is for Fiscal Years 2021 and 2022.

NUMBERS OF MICHIGAN CHILDREN TESTED FOR LEAD AND BLOOD LEAD TEST RESULTS

This report describes blood lead test results for children less than 6 years of age for State Fiscal Year 2021 (October 1, 2020 – September 30, 2021) and 2022 (October 1, 2021 – September 30, 2022). Comparison data are provided for the previous nine fiscal years (2012-2020). Each child was counted once each year, even if they had more than one test that year. The counts of children by blood lead level were based on the value representing the highest blood lead level obtained from a venous blood draw (or a capillary blood test if there was no venous test) that fiscal year.

Under MCL 333.5474, the department is required to annually report to the legislature the number of children with blood lead levels equal to or greater than (\geq) 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$) which, when the law was enacted in 1998, was the recommended threshold for defining “elevated blood lead level (EBLL).” Children with EBLLs should receive lead education, nursing case management, environmental investigations, and additional medical monitoring.

In 2012, the Centers for Disease Control and Prevention (CDC) released updated recommendations for addressing childhood lead poisoning and prevention, including adoption of an updated definition of elevated blood lead level from ≥ 10 to ≥ 5 $\mu\text{g}/\text{dL}$ and setting this level based on the Blood Lead Reference Value (BLRV), which is a tool to identify children with higher levels of lead in their blood compared to most children in the United States. In October 2021 the CDC lowered the BLRV from 5 to 3.5 $\mu\text{g}/\text{dL}$, and Michigan adopted CDCs updated BLRV to define EBLL in May 2022.

Given that the change to the MDHHS EBLL definition was not made until May 2022, to be consistent across the data for all of fiscal year (FY) 2022, the data tables and figures that follow include blood lead test results with a level of ≥ 5 $\mu\text{g}/\text{dL}$ for both FY 21 and FY 22, which was used in previous reports, rather than ≥ 3.5 $\mu\text{g}/\text{dL}$. CLPPP can provide updated data that include the ≥ 3.5 $\mu\text{g}/\text{dL}$ tests for FY 22 upon request. Annual blood lead testing data by year (2010-2021) that includes data on children with ≥ 3.5 $\mu\text{g}/\text{dL}$ are available at www.michigan.gov/mitracking.

In FY 21, blood lead tests for 102,968 children under age 6 were reported by laboratories. A total of 2,038 (2.0%) of tested children had blood lead levels ≥ 5 $\mu\text{g}/\text{dL}$ and 500 (0.5%) had blood lead levels ≥ 10 $\mu\text{g}/\text{dL}$. FY 22, blood lead tests for 100,830 children under age 6 were reported by laboratories. A total of 2,090 (2.1%) of tested children had blood lead levels ≥ 5 $\mu\text{g}/\text{dL}$ and 478 (0.5%) had blood lead levels ≥ 10 $\mu\text{g}/\text{dL}$.

The numbers of children tested remained relatively constant from FY 12 - FY 19. In FY 20 the number tested declined markedly, aligning with the start of the COVID-19 pandemic. Numbers tested in FY 21 and FY 22 stayed low compared to pre-pandemic years. The number and percentage of children with EBLLs declined steadily from FY 12 – FY 19. In FY 20, the number of children with EBLLs was markedly lower than that for FY 19, and the numbers of children with EBLLs was slightly lower in FY 21 and FY 22 compared to FY 20. Likewise, the percentage of children with elevated levels declined from FY 12 to FY20 but then remained relatively constant (Table 1, Figure 1, Figure 2).

Table 1: Total Number of Children Under Age 6 Tested for Lead and the Number (#) and Percent (%) of Children with Elevated Blood Lead Levels ($\geq 5 \mu\text{g/dL}$ and $\geq 10 \mu\text{g/dL}$) by Fiscal Year in the State of Michigan: 2012-2022*

Michigan					
Fiscal Year	# Children Tested	# with BLL $\geq 5 \mu\text{g/dL}^1$	% with BLL $\geq 5 \mu\text{g/dL}^1$	# with BLL $\geq 10 \mu\text{g/dL}^2$	% with BLL $\geq 10 \mu\text{g/dL}^2$
2012	148,779	6,878	4.6	1,128	0.8
2013	148,562	5,931	4.0	913	0.6
2014	144,606	5,266	3.6	920	0.6
2015	138,862	4,719	3.4	826	0.6
2016	155,077	5,500	3.5	1,058	0.7
2017	150,345	4,925	3.3	990	0.7
2018	142,319	4,247	3.0	878	0.6
2019	143,204	4,109	2.9	834	0.6
2020	106,547	2,627	2.5	531	0.5
2021	102,968	2,038	2.0	500	0.5
2022	100,830	2,090	2.1	478	0.5
* Data source: Data Warehouse, Data current as of February 27, 2023					
¹ Blood Lead level after rounding to the nearest whole number (levels $\geq 4.5 \mu\text{g/dL}$)					
² Blood Lead level after rounding to the nearest whole number (levels $\geq 9.5 \mu\text{g/dL}$)					

FIGURE 1. NUMBER OF MICHIGAN CHILDREN UNDER AGE 6 WITH ELEVATED BLOOD LEAD LEVELS: FISCAL YEARS 2012-2022

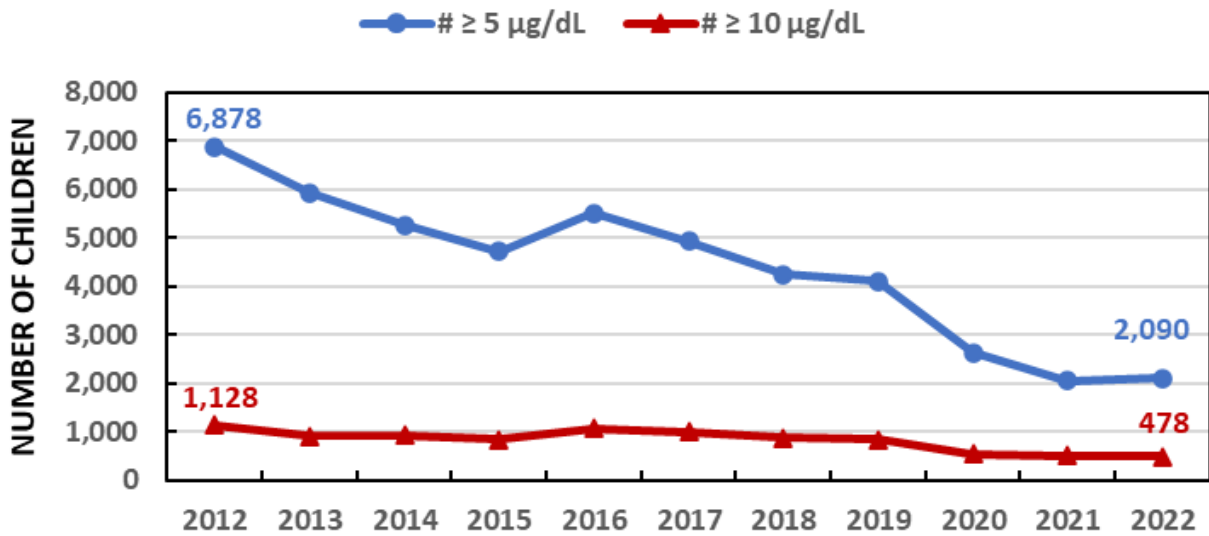
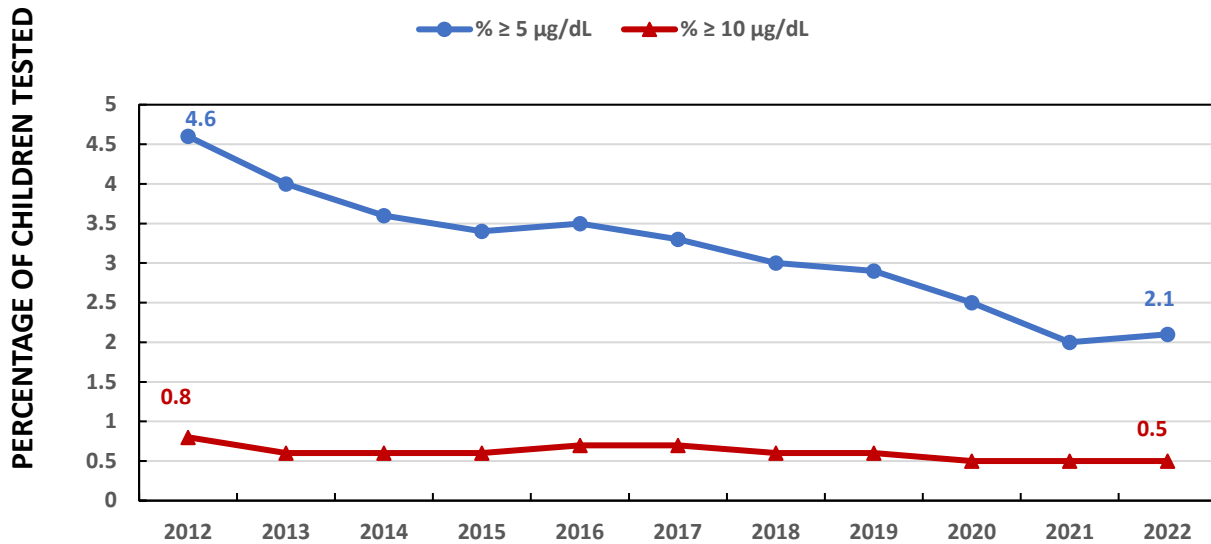


FIGURE 2. PERCENTAGE OF MICHIGAN CHILDREN UNDER AGE 6 WITH ELEVATED BLOOD LEAD LEVELS: FISCAL YEARS 2012-2022



FUNDING

FY 21 and FY 22 funding for the Childhood Lead Poisoning Prevention Program came from four sources:

Fiscal Year	Maternal and Child Health Services Block Grant*	State of Michigan General Fund	State of Michigan Flint Supplemental Funds	Centers for Disease Control and Prevention	Total
2021	\$1,079,800	\$623,000	\$727,700	\$520,879	\$2,951,379
2022	\$1,079,800	\$627,900	\$727,700	\$494,106	\$2,929,506

*Source: Federal Health Resources and Services Administration

Funding was used to maintain three components of the MDHHS Lead Poisoning Prevention Program as required by PA 368 of 1978, Section 333.5474.

1) A surveillance system capable of gathering, storing, and reporting on blood lead results for Michigan children. Many grants, programs and activities are dependent on and benefit directly from surveillance system data, including the MDHHS Lead Safe Home Program, local health departments (LHDs), the Michigan State Housing Development Authority, the Michigan Care Improvement Registry, Medicaid, researchers, and the public. Improvements to the surveillance system in FY 21 and FY 22 included:

- Improving timeliness of blood lead results reporting through HL7 messaging and automated mechanisms. This work reduced the average number of days from receipt to reporting from 15.1 days to 7.5 days. This makes results available to local health departments and other partners sooner, enabling care for children with elevated lead levels.
- Beginning development of a new case management system that will be incorporated into MICLEAR, the data application that includes data on home environmental inspections and home abatement activities. This combined system will enable better coordination of care for families of children with elevated lead levels and ensure that a complete spectrum of services is offered. The system is scheduled to go into production in August 2023.

2) Clinical case management coordination.

- The three CLPPP Nurse Consultants act as expert consultants to clinical health care providers and local public health agencies throughout Michigan to ensure that children with elevated blood lead levels are managed appropriately. More than 2,000 calls/contacts were fielded in each of these two years.
- Funds were provided to 43 LHDs to provide Nurse Case Management (NCM) services to children with elevated blood lead levels. These nursing case management services are provided to all children with elevated blood lead levels regardless of insurance status.
- Funds were provided to LHDs to allow for the use of Community Health Workers to support families with children exposed to lead and assist with addressing Social Determinants of Health.

- Flint supplemental funds were used to support the intensive efforts to provide NCM to all children in Flint with elevated blood lead levels.

In January 2017, CLPPP implemented a project to provide increased reimbursement to LHDs for in-home NCM for Medicaid-enrolled children with elevated blood lead levels, and in FY 22 this reimbursement was extended to include children not enrolled in Medicaid. All participating LHDs document their NCM activities and report to CLPPP. CLPPP reviews the information provided and approves funds for reimbursement. This gives CLPPP better information on how many home visits are provided by the LHDs and how many children are receiving NCM services statewide.

3) Comprehensive educational and community outreach prevention. Funds were allocated to one local health department within each of Michigan's 10 Prosperity Regions to provide lead poisoning prevention education and outreach throughout that Prosperity Region. Activities included:

- Campaigns to educate and inform key audiences about lead hazards;
- Connecting with at-risk families to educate and encourage blood lead testing for children and pregnant persons;
- Providing informational materials to assist parents and caregivers on safe cleaning practices to reduce lead exposure;
- Sending alerts and just-in-time communications on hazardous products; and
- Providing updated training for primary care providers on counseling, testing, and treating lead exposed patients.

CONCLUSION & RECOMMENDATIONS

Childhood lead poisoning remains a public health threat for many Michigan children. The number and percentage of tested children markedly decreased in 2020 and remained at this low level for the next two years. The number of children with blood lead levels of greater than or equal to 5 µg/dL and 10 µg/dL has decreased every year since 2012 and remained at the 2020 level for the next two years. This decline has been attributed to the onset of the COVID-19 pandemic, which resulted in decreased in-person office visits, increased barriers to services and decreased the availability of testing across the state.

The age of Michigan's housing stock, the number of children living in rental homes, and lack of funding for lead remediation keep lead poisoning risk as an environmental public health concern.

Blood lead testing results from 2005 to the present can be found in the CLPPP Annual Reports, available at [Lead Data and Reports \(michigan.gov\)](https://www.leaddataandreports.com/) and from 2010 at [Michigan.gov/mitracking](https://www.michigan.gov/mitracking).

Beginning in late FY 15, a major focus of lead poisoning prevention activities has been on lead exposures in the City of Flint. This focus

will continue. Data summaries and information specific to Flint can be found at [Michigan.gov/Flintwater](https://www.michigan.gov/Flintwater).

Over the next year, CLPPP will also continue efforts to reduce exposures through:

- Launching a statewide media campaign to educate caregivers of children about the importance of talking to their health care provider about blood lead testing;
- Improvements to the systems for managing the surveillance data electronically;
- Analysis and dissemination of data on children with elevated blood lead levels;
- Information and education provided to the general population to prevent childhood lead poisoning;
- Ensuring appropriate public health case management and interventions statewide when a child is identified with an elevated blood lead level;
- Linking prevention services, including assessment and abatement of lead hazards in homes, to families in need; and
- Educating primary care providers about the importance of screening children for blood lead, retesting to confirm elevated test results, and appropriate treatment of lead-exposed patients.

APPENDIX 1

Excerpts from Act 368 of 1978 regarding legislative reporting requirements

MCL 333.5474(2) “The department shall report to the legislature by January 1, 1999, and annually thereafter, the number of children through age 6 who were screened for lead poisoning during the preceding fiscal year and who were confirmed to have had blood lead levels above 10 micrograms per deciliter. The report shall compare these rates with those of previous fiscal years and the department shall recommend methods for improving compliance with guidelines issued by the federal centers for disease control and prevention, including any necessary legislation or appropriations.”

MCL 333.5474(3) “Not more than 1 year after the effective date of this part, and annually thereafter, the department shall prepare a written report regarding the expenditures under the lead poisoning prevention program including the amounts and sources of money from the previous year and a complete accounting of its use. The report shall be given to the appropriate committees of the legislature and be made available to the general public upon request.”