



## Executive Summary for Quarter 4, Calendar Year 2023

### Data as of April 02, 2024

This report is generated by MDHHS to track blood lead level test results in Flint, Michigan.

#### Background

- Blood lead level testing is an important part of efforts to identify people who have been harmed by lead in drinking water and other sources of lead exposure in the home. MDHHS recognizes that the full community of Flint must be the focus of the public health response.
- The CDC announced a change in the blood lead reference value (BLRV) from 5 µg/dL (micrograms lead per deciliter of blood) to 3.5 µg/dL in October 2021. MDHHS adopted the new reference value on May 1, 2022 (for more information see <https://www.michigan.gov/mdhhs/inside-mdhhs/newsroom/2022/04/29/mdhhs-updating-definition-of-elevated-blood-lead-levels>).
- This report includes counts of BLLs above the BLRV of 3.5 µg/dL.

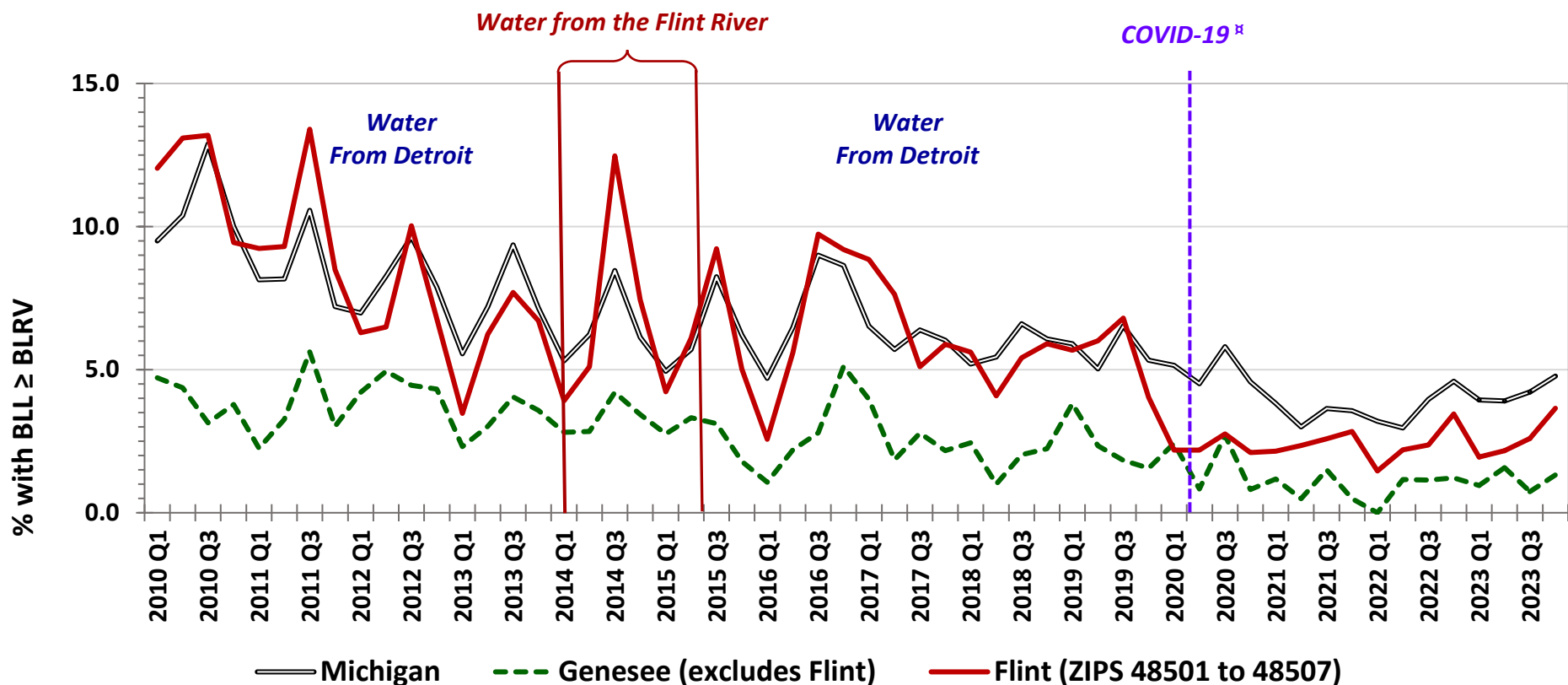
#### Data Presentation

- Each person is included only once per time period in this table.
  - If a person had multiple tests in the time period, the highest blood lead level from a venous test was counted.
  - If no venous test was performed, the highest blood lead level from a capillary test was counted.

#### Summary of Findings

- Between 10/1/2015 and 12/31/2023, 49,300 people had a blood lead test in the City of Flint in zip codes 48501-48507.
- Since 10/1/2015, 907 children under age 18 in Flint in zip codes 48501-48507 had BLLs greater than or equal to 3.5 µg/dL.
- Of the 15,991 children under age 6 tested for lead in Flint since 10/1/2015, 4.9% had BLLs greater than or equal to the BLRV of 3.5 µg/dL.

**Figure 1. Percentage of Children < 6 Years of Age<sup>A</sup> with Blood Lead Levels Greater Than or Equal to the Blood Lead Reference Value (3.5 µg/dL) by Quarter<sup>B</sup>, Michigan, 2010 - 2023**



\* Data source: MDHHS Data Warehouse, Data current as of April 02, 2024

<sup>A</sup> Counts on this chart include both capillary and venous blood tests.

<sup>B</sup> People who have had multiple tests are counted only once per year; if they are tested in more than one year, they will be counted once in each year they were tested.

⌘ Beginning of COVID-19 lockdowns and movement restrictions in Michigan

**Table 1. Percentage of blood lead levels  $\geq 3.5 \mu\text{g/dL}$  among Michigan residents in the time periods before and after exposure to Flint River Water, 2014 – 2023\***

			Michigan	Genesee County	Flint in ZIPs 48501-48507	
Children Less Than Six Years of Age	During Flint River Use	4/1/2014 to 9/30/2015	Total # of children tested for lead	197,491	9,252	4,156
			Children with test results $\geq 3.5 \mu\text{g/dL}$	13,409	495	317
			<b>% of children with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>6.8</b>	<b>5.4</b>	<b>7.6</b>
	After Flint River Use	10/01/2015 to 12/31/2023	Total # of children tested for lead	746,727	34,871	15,991
			Children with test results $\geq 3.5 \mu\text{g/dL}$	42,250	1,187	790
			<b>% of children with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>5.7</b>	<b>3.4</b>	<b>4.9</b>
Children Ages 6 to 17	During Flint River Use	4/1/2014 to 9/30/2015	Total # of children tested for lead	14,879	1,179	580
			Children with test results $\geq 3.5 \mu\text{g/dL}$	611	14	10
			<b>% of children with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>4.1</b>	<b>1.2</b>	<b>1.7</b>
	After Flint River Use	10/01/2015 to 12/31/2023	Total # of children tested for lead	81,078	15,423	10,522
			Children with test results $\geq 3.5 \mu\text{g/dL}$	2,419	155	117
			<b>% of children with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>3.0</b>	<b>1.0</b>	<b>1.1</b>
Adults 18 Years and Older	During Flint River Use	4/1/2014 to 9/30/2015	Total # of adults tested for lead	15,652	671	201
			Adults with test results $\geq 3.5 \mu\text{g/dL}$	1,976	66	19
			<b>% of adults with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>12.6</b>	<b>9.8</b>	<b>9.5</b>
	After Flint River Use	10/01/2015 to 12/31/2023	Total # of adults tested for lead	124,659	34,004	22,787
			Adults with test results $\geq 3.5 \mu\text{g/dL}$	6,961	822	564
			<b>% of adults with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>5.6</b>	<b>2.4</b>	<b>2.5</b>
Residents of All Ages	During Flint River Use	4/1/2014 to 9/30/2015	Total # of people tested for lead	228,022	11,102	4,937
			People with test results $\geq 3.5 \mu\text{g/dL}$	15,996	575	346
			<b>% of people with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>7.0</b>	<b>5.2</b>	<b>7.0</b>
	After Flint River Use	10/01/2015 to 12/31/2023	Total # of people tested for lead	952,464	84,298	49,300
			People with test results $\geq 3.5 \mu\text{g/dL}$	51,630	2,164	1,471
			<b>% of people with results <math>\geq 3.5 \mu\text{g/dL}</math></b>	<b>5.4</b>	<b>2.6</b>	<b>3.0</b>

\* Data source: MDHHS Data Warehouse, Data current as of April 02, 2024

**Table 2. Percentage of Blood Lead Levels (BLL)  $\geq$  3.5  $\mu\text{g}/\text{dL}^1$  Among Tested Children Less Than 6 Years of Age, 2014 – 2023\***

Year	Michigan			Genesee County			Flint in ZIPs 48501-48507		
	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$
2014	143,888	9,592	6.7	6,812	362	5.3	3,096	237	7.7
2015	141,550	9,040	6.4	6,984	305	4.4	3,388	206	6.1
2016	157,648	11,437	7.3	11,661	458	3.9	6,584	334	5.1
2017	150,259	9,269	6.2	6,722	308	4.6	3,108	210	6.8
2018	142,185	8,337	5.9	6,359	220	3.5	2,979	156	5.2
2019	143,281	8,203	5.7	6,078	237	3.9	2,784	159	5.7
2020	97,206	4,943	5.1	3,857	80	2.1	1,635	38	2.3
2021	98,126	3,439	3.5	3,940	62	1.6	1,645	40	2.4
2022	108,319	4,022	3.7	4,373	67	1.5	1,819	43	2.4
2023	126,556	5,333	4.2	4,254	73	1.7	1,722	44	2.6

**Table 3. Percentage of Blood Lead Levels (BLL)  $\geq$  3.5  $\mu\text{g}/\text{dL}^1$  Among Tested Children 6 to 17 Years of Age, 2014 – 2023\***

Year	Michigan			Genesee County			Flint in ZIPs 48501-48507		
	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$
2014	10,554	460	4.4	786	9	1.1	371	6	1.6
2015	10,432	466	4.5	1,575	21	1.3	1,085	18	1.7
2016	24,317	808	3.3	9,680	118	1.2	7,319	90	1.2
2017	13,676	482	3.5	2,494	27	1.1	1,672	21	1.3
2018	12,069	436	3.6	1,807	20	1.1	1,140	16	1.4
2019	11,601	395	3.4	1,352	16	1.2	862	10	1.2
2020	7,382	242	3.3	778	10	1.3	463	4	0.9
2021	9,013	271	3.0	839	7	0.8	524	4	0.8
2022	9,472	345	3.6	691	10	1.4	405	8	2.0
2023	10,473	447	4.3	685	10	1.5	359	8	2.2

\* Data source: MDHHS Data Warehouse, Data current as of April 02, 2024

<sup>1</sup> Percent calculated as the number with BLL divided by the number tested

**Table 4. Percentage of Blood Lead Levels (BLL)  $\geq$  3.5  $\mu\text{g}/\text{dL}^1$  Among Adults at Least 18 Years of Age, 2014 – 2023\***

Year	Michigan			Genesee County			Flint in ZIPs 48501-48507		
	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$
2014	10,759	1,522	14.1	434	48	11.1	111	14	12.6
2015	11,820	1,435	12.1	1,250	65	5.2	810	30	3.7
2016	34,547	2,001	5.8	20,223	550	2.7	15,831	434	2.7
2017	18,322	1,454	7.9	5,373	144	2.7	3,232	96	3.0
2018	18,597	1,294	7.0	4,671	93	2.0	2,537	43	1.7
2019	17,466	1,357	7.8	3,677	87	2.4	1,955	32	1.6
2020	13,756	1,126	8.2	1,951	35	1.8	1,052	12	1.1
2021	15,245	1,139	7.5	1,612	42	2.6	881	19	2.2
2022	14,545	1,117	7.7	1,116	38	3.4	556	13	2.3
2023	15,090	1,136	7.5	910	41	4.5	422	12	2.8

**Table 5. Percentage of Blood Lead Levels (BLL)  $\geq$  3.5  $\mu\text{g}/\text{dL}^1$  Among Tested Residents of All Ages, 2014 – 2023\***

Year	Michigan			Genesee County			Flint in ZIPs 48501-48507		
	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	# Tested for lead	# with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$	% with BLL $\geq$ 3.5 $\mu\text{g}/\text{dL}^1$
2014	165,201	11,574	7.0	8,032	419	5.2	3,578	257	7.2
2015	163,802	10,941	6.7	9,809	391	4.0	5,283	254	4.8
2016	216,512	14,246	6.6	41,564	1,126	2.7	29,734	858	2.9
2017	182,257	11,205	6.1	14,589	479	3.3	8,012	327	4.1
2018	172,851	10,067	5.8	12,837	333	2.6	6,656	215	3.2
2019	172,348	9,955	5.8	11,107	340	3.1	5,601	201	3.6
2020	118,344	6,311	5.3	6,586	125	1.9	3,150	54	1.7
2021	122,384	4,849	4.0	6,391	111	1.7	3,050	63	2.1
2022	132,336	5,484	4.1	6,180	115	1.9	2,780	64	2.3
2023	152,119	6,916	4.5	5,849	124	2.1	2,503	64	2.6

\* Data source: MDHHS Data Warehouse, Data current as of April 02, 2024

<sup>1</sup> Percent calculated as the number with BLL divided by the number tested