



Blood Lead Level Test Results for Selected Flint Zip Codes, Genesee County, and the State of Michigan

Executive Summary for Quarter 1, Calendar Year 2021

Data as of August 30, 2021

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 drinking water that contained lead and from 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>). Reports beginning in Quarter 2 of 2022 will include counts of blood lead levels (BLL) above the BLRV using both 3.5 µg/dL and 5 µg/dL as the blood lead reference values.

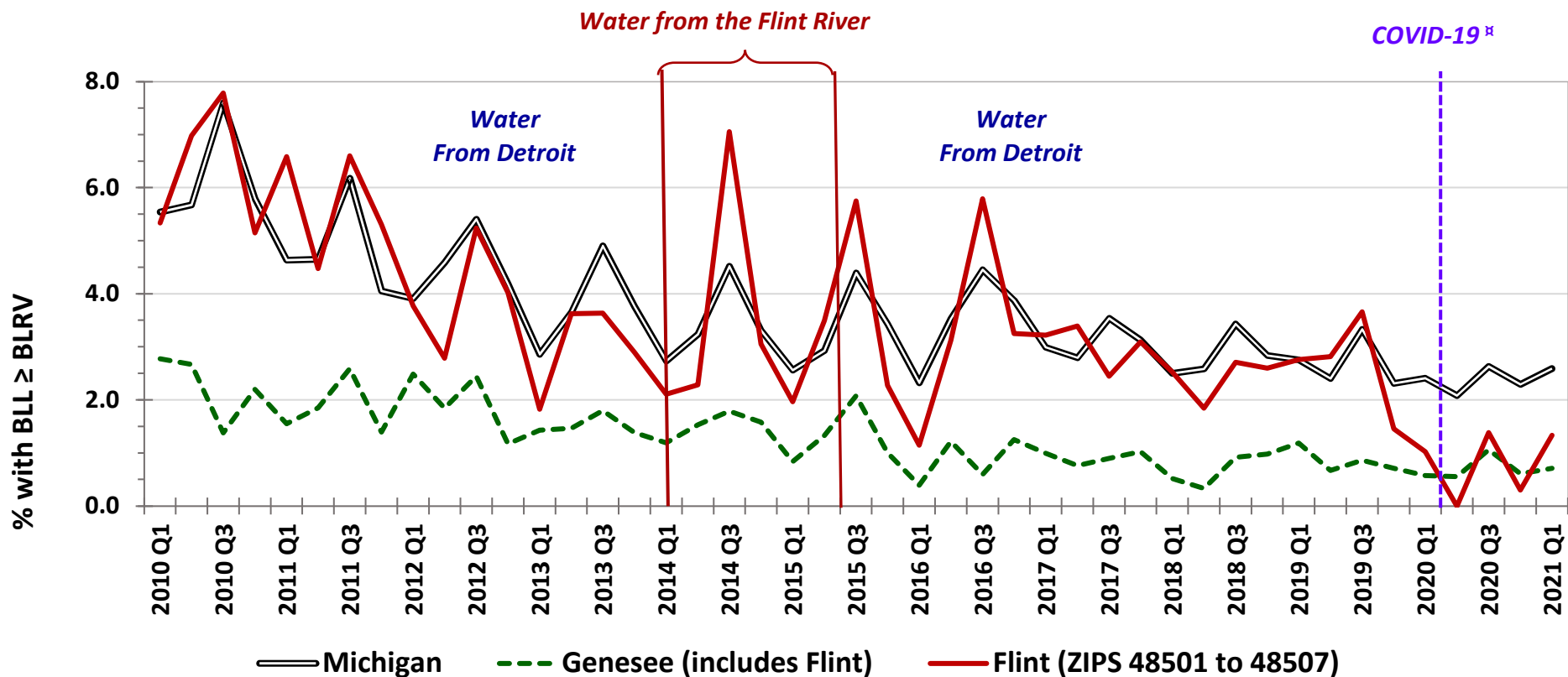
Data Presentation

- 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.
 - If the type of test was unknown, the highest blood lead level obtained from an unknown sample type was counted.

Summary of Findings

- Between 10/1/2015 and 03/31/2021, 45,217 people had a blood lead test in the City of Flint in zip codes 48501-48507.
- Since 10/1/2015, 388 children under age 18 in Flint in zip codes 48501-48507 had blood lead levels > BLRV: blood lead levels greater than or equal to 5 µg/dL (micrograms lead per deciliter of blood).
- Of the 13,218 children younger than 6 years old tested since 10/1/2015, 2.6% had blood lead levels greater than or equal to 5 µg/dL.

Percentage of Children < 6 Years of Age with Blood[†] Lead Levels Greater Than or Equal to the Blood Lead Reference Value (5 µg/dL) by Quarter[‡], Michigan, 2010 - 2021*



* Data source: MDHHS Data Warehouse, Data current as of August 30, 2021

† Counts on this chart include both capillary and venous blood tests.

‡ 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 $\geq 5 \mu\text{g/dL}$ among Michigan Residents in the time periods before and after exposure to Flint River Water, 2014 – 2021*

| | | | 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 | 197,445 | 9,246 | 4,151 |
| | | | Children with test results $\geq 5 \mu\text{g/dL}$ | 6,964 | 251 | 167 |
| | | | % of children with results $\geq 5 \mu\text{g/dL}$ | 3.5 | 2.7 | 4.0 |
| | After Flint River Use | 10/01/2015 to 03/31/2021 | Total # of children tested for lead | 544,164 | 27,700 | 13,218 |
| | | | Children with test results $\geq 5 \mu\text{g/dL}$ | 16,216 | 458 | 339 |
| | | | % of children with results $\geq 5 \mu\text{g/dL}$ | 3.0 | 1.7 | 2.6 |
| Children Ages 6 to 17 | During Flint River Use | 4/1/2014 to 9/30/2015 | Total # of children tested for lead | 14,880 | 1,179 | 579 |
| | | | Children with test results $\geq 5 \mu\text{g/dL}$ | 351 | 9 | 7 |
| | | | % of children with results $\geq 5 \mu\text{g/dL}$ | 2.4 | 0.8 | 1.2 |
| | After Flint River Use | 10/01/2015 to 03/31/2021 | Total # of children tested for lead | 62,728 | 14,321 | 10,024 |
| | | | Children with test results $\geq 5 \mu\text{g/dL}$ | 981 | 67 | 49 |
| | | | % of children with results $\geq 5 \mu\text{g/dL}$ | 1.6 | 0.5 | 0.5 |
| Adults 18 Years and Older | During Flint River Use | 4/1/2014 to 9/30/2015 | Total # of adults tested for lead | 15,654 | 674 | 201 |
| | | | Adults with test results $\geq 5 \mu\text{g/dL}$ | 1,540 | 56 | 14 |
| | | | % of adults with results $\geq 5 \mu\text{g/dL}$ | 9.8 | 8.3 | 7.0 |
| | After Flint River Use | 10/01/2015 to 03/31/2021 | Total # of adults tested for lead | 93,261 | 32,096 | 21,975 |
| | | | Adults with test results $\geq 5 \mu\text{g/dL}$ | 3,952 | 445 | 317 |
| | | | % of adults with results $\geq 5 \mu\text{g/dL}$ | 4.2 | 1.4 | 1.4 |
| Residents of All Ages | During Flint River Use | 4/1/2014 to 9/30/2015 | Total # of people tested for lead | 227,979 | 11,099 | 4,931 |
| | | | People with test results $\geq 5 \mu\text{g/dL}$ | 8,855 | 316 | 188 |
| | | | % of people with results $\geq 5 \mu\text{g/dL}$ | 3.9 | 2.8 | 3.8 |
| | After Flint River Use | 10/01/2015 to 03/31/2021 | Total # of people tested for lead | 700,153 | 74,117 | 45,217 |
| | | | People with test results $\geq 5 \mu\text{g/dL}$ | 21,149 | 970 | 705 |
| | | | % of people with results $\geq 5 \mu\text{g/dL}$ | 3.0 | 1.3 | 1.6 |

* Data source: MDHHS Data Warehouse, Data current as of August 30, 2021

Table 2. Percentage of Blood Lead Levels (BLL) $\geq 5 \mu\text{g}/\text{dL}^1$ Among Tested Children Less Than 6 Years of Age, 2014 – 2021*

| Year | Michigan | | | Genesee County | | | Flint in ZIPs 48501-48507 | | |
|-------|----------------------------|---|---|----------------------------|---|---|----------------------------|---|---|
| | # Children tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # Children tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # Children tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ |
| 2014 | 143,855 | 5,067 | 3.5 | 6,808 | 178 | 2.6 | 3,091 | 121 | 3.9 |
| 2015 | 141,507 | 4,796 | 3.4 | 6,980 | 159 | 2.3 | 3,382 | 111 | 3.3 |
| 2016 | 157,610 | 5,643 | 3.6 | 11,654 | 206 | 1.8 | 6,578 | 166 | 2.5 |
| 2017 | 150,214 | 4,701 | 3.1 | 6,720 | 126 | 1.9 | 3,105 | 93 | 3.0 |
| 2018 | 142,154 | 4,073 | 2.9 | 6,357 | 95 | 1.5 | 2,977 | 72 | 2.4 |
| 2019 | 143,259 | 3,907 | 2.7 | 6,075 | 104 | 1.7 | 2,782 | 76 | 2.7 |
| 2020 | 96,790 | 2,311 | 2.4 | 3,853 | 30 | 0.8 | 1,633 | 14 | 0.9 |
| 2021* | 27,731 | 718 | 2.6 | 1,232 | 12 | 1.0 | 525 | 7 | 1.3 |

Table 3. Percentage of Blood Lead Levels (BLL) $\geq 5 \mu\text{g}/\text{dL}^1$ Among Tested Children 6 to 17 Years of Age, 2014 – 2021*

| Year | Michigan | | | Genesee County | | | Flint in ZIPs 48501-48507 | | |
|-------|-----------------------------------|---|---|----------------------------|---|---|----------------------------|---|---|
| | # Children tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # Children tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # Children tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ |
| 2014 | 10,554 | 286 | 2.7 | 786 | 6 | 0.8 | 370 | 5 | 1.4 |
| 2015 | 10,433 | 258 | 2.5 | 1,574 | 10 | 0.6 | 1,083 | 8 | 0.7 |
| 2016 | al to $5 \mu\text{g}/\text{dL}$. | 423 | 1.7 | 9,666 | 55 | 0.6 | 7,305 | 39 | 0.5 |
| 2017 | 13,665 | 279 | 2.0 | 2,493 | 16 | 0.6 | 1,671 | 13 | 0.8 |
| 2018 | 12,066 | 245 | 2.0 | 1,806 | 9 | 0.5 | 1,139 | 7 | 0.6 |
| 2019 | 11,597 | 235 | 2.0 | 1,351 | 11 | 0.8 | 862 | 6 | 0.7 |
| 2020 | 7,372 | 141 | 1.9 | 778 | 7 | 0.9 | 463 | 3 | 0.6 |
| 2021* | 2,101 | 61 | 2.9 | 264 | 2 | 0.8 | 177 | 2 | 1.1 |

* Data source: MDHHS Data Warehouse, Data current as of August 30, 2021. Data for 2021 are incomplete and considered provisional

¹ Blood lead level after rounding to the nearest whole number (levels $\geq 4.5 \mu\text{g}/\text{dL}$)

Table 4. Percentage of Blood Lead Levels (BLL) $\geq 5 \mu\text{g}/\text{dL}^1$ Among Adults at least 18 Years of Age, 2014 – 2021*

| Year | Michigan | | | Genesee County | | | Flint in ZIPs 48501-48507 | | |
|-------|--------------------------|---|---|--------------------------|---|---|---------------------------|---|---|
| | # Adults tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # Adults tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # Adults tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ |
| 2014 | 10,761 | 1,182 | 11.0 | 437 | 44 | 10.1 | 111 | 12 | 10.8 |
| 2015 | 11,808 | 1,137 | 9.6 | 1,250 | 48 | 3.8 | 810 | 20 | 2.5 |
| 2016 | 34,527 | 1,371 | 4.0 | 20,220 | 305 | 1.5 | 15,828 | 245 | 1.5 |
| 2017 | 18,212 | 1,122 | 6.2 | 5,363 | 90 | 1.7 | 3,227 | 58 | 1.8 |
| 2018 | 18,586 | 980 | 5.3 | 4,669 | 54 | 1.2 | 2,536 | 23 | 0.9 |
| 2019 | 17,460 | 1,060 | 6.1 | 3,675 | 55 | 1.5 | 1,954 | 17 | 0.9 |
| 2020 | 13,755 | 897 | 6.5 | 1,952 | 28 | 1.4 | 1,050 | 12 | 1.1 |
| 2021* | 3,910 | 281 | 7.2 | 597 | 10 | 1.7 | 350 | 5 | 1.4 |

Table 5. Percentage of Blood Lead Levels (BLL) $\geq 5 \mu\text{g}/\text{dL}^1$ Among Tested Residents of All Ages, 2014 – 2021*

| Year | Michigan | | | Genesee County | | | Flint in ZIPs 48501-48507 | | |
|-------|--------------------------|---|---|--------------------------|---|---|---------------------------|---|---|
| | # People tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # People tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | # People tested for lead | # with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ | % with BLL $\geq 5 \mu\text{g}/\text{dL}^1$ |
| 2014 | 165,170 | 6,535 | 4.0 | 8,031 | 228 | 2.8 | 3,572 | 138 | 3.9 |
| 2015 | 163,748 | 6,191 | 3.8 | 9,804 | 217 | 2.2 | 5,275 | 139 | 2.6 |
| 2016 | 216,439 | 7,437 | 3.4 | 41,540 | 566 | 1.4 | 29,711 | 450 | 1.5 |
| 2017 | 182,091 | 6,102 | 3.4 | 14,576 | 232 | 1.6 | 8,003 | 164 | 2.0 |
| 2018 | 172,806 | 5,298 | 3.1 | 12,832 | 158 | 1.2 | 6,652 | 102 | 1.5 |
| 2019 | 172,316 | 5,202 | 3.0 | 11,101 | 170 | 1.5 | 5,598 | 99 | 1.8 |
| 2020 | 117,917 | 3,349 | 2.8 | 6,583 | 65 | 1.0 | 3,146 | 29 | 0.9 |
| 2021* | 33,742 | 1,060 | 3.1 | 2,093 | 24 | 1.1 | 1,052 | 14 | 1.3 |

* Data source: MDHHS Data Warehouse, Data current as of August 30, 2021. Data for 2021 are incomplete and considered provisional

¹ Blood lead level after rounding to the nearest whole number (levels $\geq 4.5 \mu\text{g}/\text{dL}$)