Impact of Lead Poisoning on Minority and Low-Income Communities in Toledo, Ohio

Advocates for Basic Legal Equality, Inc.

Robert Cole, Esq.  |  Vanshika Vij
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I. CITY OF TOLEDO PROPOSED CERTIFICATE OF REGISTRATION OF LEAD SAFE RESIDENTIAL RENTAL PROPERTY

The city of Toledo has the opportunity to enact an ordinance, that if adopted would require that residential rental property be lead safe before a family with young children moves in. The goal of this proposed ordinance is to address the dangers of lead for families who are residential rental property tenants. Minorities and low-income residents are at a much greater risk for lead poisoning than other demographics. The minority and low income populations of city of Toledo are concentrated in the high risk zip codes for lead poisoning. The dangers posed by lead poisoning of children falls disproportionately on Toledo’s on low-income and African American populations.

The Ordinance would require that every owner of residential rental property constructed prior to 1978 must have the property inspected for lead hazards and maintain such property free from Lead Hazards. If an inspection of the residential rental property shows the existence of lead hazards, the owner must have the lead hazard corrected, before the property can be rented.

The Ordinance would further require that every owner of residential rental property constructed prior to 1978 within the City of Toledo, obtain a Certificate of Registration of Lead Safe Residential Rental Property from the Toledo Lucas County Health Department before letting or otherwise permitting the occupancy of such residential rental property.
II. BACKGROUND ON LEAD POISONING

Lead poisoning is defined as a confirmed blood lead level of 5 micrograms per deciliter (μg/dL) or greater. The CDC adopted this standard in May 2012, changing the level of concern from 10μg/dL to address the lasting effects that even a small amount of lead exposure can have on small children. Once the blood-lead level reaches 45μg/dL, medical attention is necessary in the form of chelatin therapy.

Lead poisoning can cause permanent damage to the brain and many other organs and causes reduced intelligence and behavioral problems. These problems can start in vitro if a woman is exposed to lead paint or dust while pregnant, and can also result in fetal abnormalities.

A. Historical Use of Lead Paint and its Health Effects

Lead in its pure form or added to paint has been used to paint houses for over half of the twentieth century in the United States. As early as 1907, lead was not added to paint, instead, homeowners painted with lead itself. Linseed oil was added to pure lead and sold in kegs so it could be applied to the walls. Later, the wooden kegs were replaced by 25 and 50 pound metal buckets of lead for house-painting – literally hundreds of pounds of lead were painted on houses from the walls to the gutters. Between 1900 and 1950, many houses in the U.S. were painted with lead. Lead was also added to paint, and individuals were encouraged to use to paint their homes as well as their children’s cribs and toys.

Lead paint use began to decline significantly in the early 1970s, but it was not until 1978 that the Consumer Product Safety Commission banned using lead in paint. However, this law did nothing to address the thousands of housing structures that were still painted with lead, and as this paint deteriorates, many houses pose a significant health hazard to children and families living in them. In 2008, the U.S. Department of Housing and Urban Development (HUD) reported that there are an estimated 38 million homes that contain lead paint; accounting for approximately forty percent of all housing in the United States. Furthermore, children who suffer lead poisoning are most often poisoned in their homes through ingesting lead-contaminated dust or lead paint. The CDC reported that over 4 million homes in the U.S. have exposed children to high levels of lead. Many families are not aware that their homes could contain lead hazards and thousands of children are at risk to suffer lead poisoning.

Young children are particularly vulnerable to lead poisoning, the effects of which can last throughout their lives. Lead poisoning often occurs with no obvious symptoms, but its effects are serious and can affect nearly every system in the body, even when ingested in small amounts. Children who ingest lead can suffer damage to their nervous system, behavior and learning problems, and delayed physical growth and

2 Ibid.
3 Ibid.
8 Ibid.
9 Ibid.
development (including damage to their hearing), and experience other health problems.\textsuperscript{10} The CDC estimates that half a million children in the U.S. have blood lead levels higher than 5 \(\mu g/dL\).\textsuperscript{11} Lead poisoning is largely preventable if the contamination is identified early, but it often goes untreated and many children continue to suffer its negative effects.

<table>
<thead>
<tr>
<th>Children Blood lead concentrations ((\mu g/dL))</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death (\rightarrow)</td>
<td>150</td>
</tr>
<tr>
<td>Encephalopathy (\rightarrow)</td>
<td>100</td>
</tr>
<tr>
<td>Nephropathy (\rightarrow)</td>
<td>(\leftarrow) Decreased longevity</td>
</tr>
<tr>
<td>Frank Anemia (\rightarrow)</td>
<td></td>
</tr>
<tr>
<td>Colic (\rightarrow)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemoglobin synthesis (\uparrow) (\rightarrow)</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Vit D metabolism (\uparrow) (\rightarrow)</td>
<td>30</td>
</tr>
<tr>
<td>Nerve conduction velocity (\downarrow) (\rightarrow)</td>
<td>20</td>
</tr>
<tr>
<td>Erythrocyte protoporphyrine (\downarrow) (\rightarrow)</td>
<td>10</td>
</tr>
<tr>
<td>Developmental toxicity (\rightarrow)</td>
<td></td>
</tr>
<tr>
<td>IQ (\downarrow) (\rightarrow)</td>
<td></td>
</tr>
<tr>
<td>Hearing (\downarrow) (\rightarrow)</td>
<td></td>
</tr>
<tr>
<td>Growth (\downarrow) (\rightarrow)</td>
<td></td>
</tr>
<tr>
<td>Transplacental transfer (\rightarrow)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Edinburg Texas Property\textsuperscript{12}

**B. Lead Poisoning in Ohio**

All of the data available about lead poisoning from the Ohio Department of Health is from 2012 or earlier, so it does not take into account the new CDC guidelines for elevated blood levels. Since the threshold blood-level went from 10\(\mu g/dL\) to 5\(\mu g/dL\), the number of lead poisoning cases going forward is expected to be higher.

\textsuperscript{11} “Lead,” Center for Disease Control.
\textsuperscript{12} \url{http://edinburgtexasproperty.com/images/2010/lead-poisoning-effects-in-adults-6310.gif}
Many children in Ohio are at risk to suffer from lead poisoning. More than half of the housing units in Ohio were built prior to 1970, the time period for which housing is most likely to contain lead paint hazards. Additionally, 42% of the housing in Ohio was constructed before 1950. As reported by the Ohio Health Department, the state has up to 3.7 million housing units that contain some lead-based paint on the interior and/or exterior surfaces. Across Ohio, about 150,000 children from birth to 6 years of age are screened for lead poisoning and approximately 2 percent are found to have elevated blood lead levels.

In recent years, Ohio has seen a slight decline in confirmed child lead poisoning cases, but Lucas County remains higher than the state average. The Ohio Department of Health estimates that approximately 19,000 children in Ohio have lead poisoning. In 2012, only 1% of Ohio children tested positive for elevated blood-lead levels. Lucas County was higher than the state-wide average, with 1.79% of children testing positive. The city of Toledo was even higher, with 2.06% of tested children testing positive for lead poisoning.

<table>
<thead>
<tr>
<th>Result Category</th>
<th>Total Children Screened</th>
<th>&lt; 5 μg/dL</th>
<th>5 - 9 μg/dL</th>
<th>10 - 14 μg/dL</th>
<th>15 - 19 μg/dL</th>
<th>20 - 24 μg/dL</th>
<th>≥25 μg/dL</th>
<th>TotalConfirmed EBLs</th>
<th>% EBLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucas County</td>
<td>5658</td>
<td>5160</td>
<td>368</td>
<td>52</td>
<td>22</td>
<td>13</td>
<td>14</td>
<td>101</td>
<td>1.79</td>
</tr>
<tr>
<td>State Total</td>
<td>154,440</td>
<td>145,074</td>
<td>7,482</td>
<td>900</td>
<td>327</td>
<td>165</td>
<td>165</td>
<td>1,557</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Source: Ohio Dept. of Health

Adults do not only pick up lead from their homes, but also from their work environments. Ohio tested 15,000 adults in 2010 for lead poisoning, and approximately 20% of these adults had elevated blood levels. In 2011, the average blood lead level for adults in Ohio was 5.08 μg/dL. While this level was not considered lead poisoning at the time, under the current CDC standards, this level is a cause for concern.

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15 “Data and Statistics on Lead Poisoning – Children.”
16 Ibid.
18 “Data and Statistics on Lead Poisoning – Children.”
19 Ibid.
20 Ibid.
23 Ibid.
Lead poisoning is not just dangerous, it is costly. Researchers did a study in Mahoning County, Ohio to find out how much money lead poisoning was costing their county each year. In 2002, 279 children in Mahoning County were diagnosed with lead poisoning. Between treatment costs, special education services, and juvenile justice systems costs, the study found that childhood lead poisoning cost the county half a million dollars in 2002, not even including the indirect costs of having an intellectually stunted workforce. That study estimated that lead poisoning costs the U.S. nearly $43.4 billion per year. As a result of the Mahoning County study, the city appointed a special landlord tenant prosecutor and reduced the number of lead hazard properties by 14%.

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24 “Data and Statistics on Lead Poisoning – Children.”
26 Ibid., 311.
27 Ibid., 312.
28 Ibid., 315.
Average Blood Lead Level By County, 2009

The map depicts the average blood lead level of children ages 0-72 months for each county. Data from 147,977 Ohio children that were reported to the Systematic Tracking of Elevated Lead Levels And Remediation (STELLAR) database in 2009 were used to create this map. Cuyahoga (3.59 ug/dl), Lucas (3.44 ug/dl), Stark 3.41 ug/dl), Wyandot (3.35 ug/dl), and Crawford (3.16 ug/dl) counties had the highest average blood lead levels.

*Note: Only the highest blood lead level for each child was used.

Source: Ohio Department of Health, Data and Statistics on Lead Poisoning Prevention

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29 “Average Blood Lead Levels, by County.” Ohio Department of Health – no longer available on ODH website, but was used in ABLE’s initial blood lead levels report.
III. EXISTING LAWS AND REGULATIONS

Lead poisoning is addressed in laws and regulations from the Ohio Administrative Code, the EPA, OSHA, HUD, and the Consumer Product Safety Consumer Act.

A. Lead Paint Poisoning

In Ohio, state law mandates blood lead screening for all “high risk” children below 72 months of age. A “high risk” child is defined as any child enrolled in Medicaid, any sibling of a child with an elevated blood lead level, or any child residing in one of the following zip codes in the Lucas County area:30

43402 43606 43612  
43460 43607 43613  
43551 43608 43614  
43602 43609 43615  
43604 43610 43620  
43605 43611 43624

The numbers of children who are considered to be “high risk” are as follows:

<table>
<thead>
<tr>
<th>Age</th>
<th># of Children in Lucas County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1</td>
<td>5,804</td>
</tr>
<tr>
<td>1 year</td>
<td>5,944</td>
</tr>
<tr>
<td>2 years</td>
<td>6,073</td>
</tr>
<tr>
<td>3 years</td>
<td>5,966</td>
</tr>
<tr>
<td>4 years</td>
<td>5,945</td>
</tr>
<tr>
<td>5 years</td>
<td>5,691</td>
</tr>
<tr>
<td>Total Under 6</td>
<td>35,423</td>
</tr>
</tbody>
</table>

Source: Ohio Dept. of Health31

When a child is found to have a confirmed blood lead level of 5 μg/dL, this triggers several state and local level actions. According to the Ohio Administrative Code, when an individual under six years of age has lead poisoning a public health lead investigation is ordered to determine the source of lead poisoning. When an individual between six years and sixteen years of age has lead poisoning, a public health lead investigation to determine the source of the lead poisoning may be conducted. For children with a blood lead level of ten micrograms per deciliter or greater but less than fifteen micrograms per deciliter the Health Department shall cause the completion of a comprehensive questionnaire, and the completed comprehensive questionnaire shall be reviewed by a public health lead investigator. The public health lead investigator shall be responsible for any follow up actions deemed necessary (e.g., provide educational materials to the family, conduct a public health lead risk assessment). For children with a blood lead level of fifteen micrograms per deciliter or greater the director shall conduct an on-site

30 “Lead Testing Requirements and Medical Management Recommendations for Children Under the Age of Six Years,” Ohio Healthy Homes and Lead Poisoning Prevention Program, last modified August 2010, [http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/cfhs/lead%20poisoning%20-
%20children/Lead%20Testing%20Requirements%20and%20Medical%20Management%20Recommendations.ashx](http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/cfhs/lead%20poisoning%20-
31 “Childhood Lead Poisoning Fact Sheet for the Toledo-Lucas County Health Department.”
investigation of a residential unit, child care facility or school. The investigation shall be performed by a public health lead investigator.\footnote{32\textsuperscript{33}}

In Ohio, these guidelines require that children ages 6 months to 36 months of age, living in designated high-risk zip code areas, should be tested for blood lead content twice, with at least 12 months between tests. Those who test at confirmed elevated levels should receive case management services. Additionally, their residence should receive a public health lead investigation.\footnote{34}

**B. Housing Structure Abatement**

In 1992, Congress passed the Residential Lead-Based Paint Hazard Reduction Act, also known as Title X, to protect families from exposure to lead from paint, dust, and soil. Section 1018 of this law directed HUD and EPA to require the disclosure of known information on lead-based paint and lead-based paint hazards before the sale or lease of most housing built before 1978.\footnote{35}

According to national law, before ratification of a contract for housing sale or lease, sellers and landlords must:

- Disclose any known information concerning lead-based paint or lead-based paint hazards. The seller or landlord must also disclose information such as the location of the lead-based paint and/or lead-based paint hazards, and the condition of the painted surfaces.

- Provide any records and reports on lead-based paint and/or lead-based paint hazards which are available to the seller or landlord (for multi-unit buildings, this requirement includes records and reports concerning common areas and other units, when such information was obtained as a result of a building-wide evaluation).

- Include an attachment to the contract or lease (or language inserted in the lease itself) which includes a Lead Warning Statement and confirms that the seller or landlord has complied with all notification requirements. This attachment is to be provided in the same language used in the rest of the contract. Sellers or landlords, and agents, as well as homebuyers or tenants, must sign and date the attachment.

- Sellers must provide homebuyers a 10-day period to conduct a paint inspection or risk assessment for lead-based paint or lead-based paint hazards. Parties may mutually agree, in writing, to lengthen or shorten the time period for inspection. Homebuyers may waive this inspection opportunity.\footnote{36}


\footnote{36 Ibid.}
However, there are no regulations in the Northwest Ohio area that require a housing structure to be tested for lead. Disclosure of lead hazards only applies if the owner or seller knows there is a lead hazard in the structure. Furthermore, a public health lead investigation does not necessarily trigger abatement – the family may be advised to use a HEPA Vac or do wet dusting as a means of preventing more damage to the child. Ohio received a grant that allows families to borrow HEPA vacuums for lead clean up at no charge. If abatement is desired, an abatement grant can be applied for through the City of Toledo or Lucas County offices, but those grants are not always awarded.

In August 2013, HUD awarded a $2.3 million grant to the Ohio Healthy Homes and Lead Poisoning Prevention Program to eradicate lead hazards in houses where small children live. This grant only applied to 16 counties, and did not include Lucas County.

According to Chapter 12 of HUD’s guidelines, abatement can take place in three different ways. The person can remove the building component, remove the paint, or enclose the paint for 20 years or more. HUD outlines these specific methods of abatement to follow to ensure that the abatement is completely safely and legally. The Ohio Administrative Code extensively describes the appropriate parties and methods to neutralize lead hazards.

The EPA has a Renovation, Repair, and Painting Rule (RRP Rule) that requires firms who undertake lead abatement in homes and childcare facilities to get a special certification from the EPA. This certification involves special training for the contractors in safely working with lead.

40 Ibid.
44 Ibid.
IV. IMPACT ON MINORITY AND LOW-INCOME COMMUNITIES

Nationally, lead poisoning cases have declined dramatically over the past thirty years, however, lead poisoning disproportionately affects low-income and minority communities, often in urban centers.

Children not only absorb lead more readily, but also are more likely to ingest lead dust or paint chips. Children from low-income communities tend to suffer more often from lead poisoning because the housing they live in is less likely to undergo renovations.

Nationally, African Americans are affected by lead poisoning at a much higher rate than Caucasian children. According to the CDC, minorities are more likely to test positive for lead, particular non-Hispanic African Americans. On average, 3% of African American children test positive for lead, as opposed to only 1.3% of white children. Toledo’s African American population is 27.2% of the total population, which is twice the state average.

The majority of the land contained within the boundaries of the city of Toledo is considered high risk areas for lead poisoning. The homes in these high risk zip codes are older and possess a high risk for the presence of lead paint.

The homes in Lucas County’s high risk zip codes are more likely to be inhabited by minorities and low income residents. A large number of the older, pre-1950s housing stock is located within the central area of the city of Toledo, while the newer, but not necessarily lead-free, housing is more common closer to the boundaries of the city.

There are no regulations in Toledo compelling the inspection of all at-risk homes for lead paint, unless a child has been lead poisoned in that home. The number of houses built before lead paint was banned in 1978 far outweighs the number of public health lead investigations performed each year.

Lucas County has a relatively low compliance with state mandated requirements to test children living in high risk zip codes for elevated blood lead levels. In 2010, only 28% of children living in Lucas County under the age of 5 were tested.

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46 Ibid.
48 Ibid.
A. Environment Justice and Lead Poisoning in Toledo

Environmental Justice Population and High Blood Lead Level Test Results (Three Years)

Potential environmental justice population as defined by percent minority population (all minority groups) per census tract compared to the county total population. Federal Highway Administration (FHWA) guidance sets a threshold of 10 percentage points above the minority population percentage in the county, in accordance with NEPA “meaningfully greater” guidance. The areas in red are census tracts that exceed 39.0% total minority population (Lucas County minority population = 29.0%). Sources: Lucas County Department of Health; US Census Bureau; US Department of Transportation FHWA Guidance; Council on Environmental Quality Guidance under the National Environmental Policy Act.

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50 Potential environmental justice population as defined by percent minority population (all minority groups) per census tract compared to the county total population. Federal Highway Administration (FHWA) guidance sets a threshold of 10 percentage points above the minority population percentage in the county, in accordance with NEPA “meaningfully greater” guidance. The areas in red are census tracts that exceed 39.0% total minority population (Lucas County minority population = 29.0%). Sources: Lucas County Department of Health; US Census Bureau; US Department of Transportation FHWA Guidance; Council on Environmental Quality Guidance under the National Environmental Policy Act.
Environmental Justices, as defined by federal law, requires an agency receiving federal funds to ensure that no one be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance based on race, color, or national origin.\textsuperscript{51}

The National Environmental Policy Act of 1969 (NEPA)\textsuperscript{52} stressed the importance of providing for "all Americans safe, healthful, productive, and esthetically pleasing surroundings", and provided a requirement for taking a "systematic, interdisciplinary approach" to aid in considering environmental and community factors in decision making.

The enactment of the proposed Lead Ordinance is a matter of environmental and racial justice. The conclusions that can be drawn, from the data regarding which children continue to be exposed to lead hazards, be lead poisoned and where they live, is clear. Minorities and low-income residents are at a much greater risk for lead poisoning than other demographics. The minority and low income populations of city of Toledo are concentrated in the high risk zip codes for lead poisoning. The dangers posed by lead poisoning of children falls disproportionately on Toledo’s on low-income and African American populations.

### B. Age of Housing in Toledo

It is clear that lead paint exposure and poisoning is a risk in housing built prior to 1970 that does not undergo safe renovations.

#### Housing Units By Year Built

![Housing Units By Year Built](chart)

Source: Ohio Dept. of Health\textsuperscript{53}

\textsuperscript{51} Title VI of the Civil Rights Act of 1964
\textsuperscript{52} The National Environmental Policy Act of 1969, as amended 42 USC § 4321
\textsuperscript{53} “Childhood Lead Poisoning Fact Sheet for the Toledo-Lucas County Health Department.”
C. Demographics of Lucas County

The 2010 Census estimates that the population of Lucas County in 2013 was approximately 436,393 people. However, for the purposes of this report, we will use the Lucas County 2010 population of 441,815 people since many data items are collected only during the decennial census.

In Lucas County, Caucasians are the majority racial group and African Americans make up the largest minority group. Other minority groups, including those individuals who identify as Hispanic make up approximately 6.4 percent of the Lucas County population.

### Racial Breakdown of Lucas County, Ohio

<table>
<thead>
<tr>
<th>Race</th>
<th>Percent of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>75.7%</td>
</tr>
<tr>
<td>Black or African-American</td>
<td>19.5%</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>0.4%</td>
</tr>
<tr>
<td>Asian</td>
<td>1.6%</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>2.7%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>6.4%</td>
</tr>
<tr>
<td>White alone, not Hispanic or Latino</td>
<td>70.5%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau

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56 Ibid.
57 Ibid.
In Lucas County, 6.4% of the total population is younger than 5 years old.\textsuperscript{58} When discussing the demographics of children in Lucas County, it is important to note that while lead testing occurs for children up to six years of age, Census data is reported for children under age five. This means that our determination of at-risk populations actually underestimates the number of at-risk children. Despite this underestimation, it is highly likely that the trends for children up to age five also apply to the children who undergo testing, but for whom we are not able to specify demographic data.

\textbf{D. High Risk Zip Codes}

Across Ohio’s 88 counties, 513 zip codes have been designated as “high risk” by the Ohio Health Department.\textsuperscript{59} High risk zip codes are designated as such based on previous lead testing results, characteristics of the housing, population demographics, and the proportion of individuals receiving public assistance. Eighteen zip codes that overlap or are contained within Lucas County have been determined to be “high risk.”\textsuperscript{60} Residents of these zip codes are at a significantly higher risk for lead poisoning.

\begin{center}
\includegraphics[width=\textwidth]{high-risk-zip-codes.jpg}
\end{center}

Source: Lucas County Department of Health\textsuperscript{61}

Within Lucas County, Toledo residents are at a higher risk for lead poisoning than those who live in other cities in the county. Of the eighteen high-risk zip codes in Lucas County, fifteen of those zip codes are contained within or overlap the boundaries of Toledo.\textsuperscript{62} These fifteen zip codes encompass the majority of the geographical area of the city.

\textsuperscript{58} Ibid. \\
\textsuperscript{60} Ibid. \\
\textsuperscript{61} “Lead Prevention.” \\
High Risk Zip Codes in Lucas County

<table>
<thead>
<tr>
<th>Zip Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>43402</td>
</tr>
<tr>
<td>43460</td>
</tr>
<tr>
<td>43551</td>
</tr>
<tr>
<td>43602</td>
</tr>
<tr>
<td>43604</td>
</tr>
<tr>
<td>43605</td>
</tr>
<tr>
<td>43406</td>
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<td>43407</td>
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<td>43412</td>
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<td>43607</td>
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<td>43608</td>
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<tr>
<td>43609</td>
</tr>
<tr>
<td>43610</td>
</tr>
<tr>
<td>43611</td>
</tr>
</tbody>
</table>

Source: Ohio Healthy Homes and Lead Poisoning Prevention Program

Some of Toledo’s population and a majority of Lucas County residents are at risk for lead exposure.

The city of Toledo has one of the highest rates of childhood lead poisoning in Ohio. Toledo ranks second highest in Ohio for the percentage of children with confirmed elevated blood lead levels in 2012. Further, based on the individual blood lead levels Toledo has some of the highest blood lead levels in the state. Within the past 3 years, children in Toledo have tested as high as 65 micrograms per deciliter.

64 Ibid.
In 2012, only 1% of Ohio children were diagnosed with lead poisoning. That same year, 2.06% of children in Toledo were diagnosed with lead poisoning – over twice the state average. Further, this number would conservatively double if 100% of all children under the age of 5 were being tested in Toledo, rather than only the 28% who actually are being tested.

<table>
<thead>
<tr>
<th>Childhood Lead Poisoning in Major Ohio Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>Cleveland</td>
</tr>
<tr>
<td>Cincinnati</td>
</tr>
<tr>
<td>Toledo</td>
</tr>
<tr>
<td>Columbus</td>
</tr>
<tr>
<td>Dayton</td>
</tr>
<tr>
<td>Akron</td>
</tr>
</tbody>
</table>

Source: Ohio Health Department

African Americans are at a much higher risk of lead poisoning than Caucasians in Lucas County. Lucas County’s total African American population is 83,926. Over 80,000 of these African American residents live within high risk zip codes. This means that over 96% of Lucas County’s African American population is at a significant risk for lead poisoning. Lucas County’s total white population is 326,868. Approximately 256,000 of these residents live in high risk zip codes. Thus, only 78% of the white population in Lucas County lives within high risk zip codes.

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66 “Data and Statistics on Lead Poisoning – Children.”
67 Ibid.
68 Ibid.
69 Data from the 2010 Census American Factfinder using ODH list of high-risk zip codes.
70 Ibid.
71 “American FactFinder.”
72 Data from the 2010 Census American Factfinder using ODH list of high-risk zip codes.
73 Ibid.
E. Lead Poisoning in Lucas County 2000-2009

The number of children being tested for lead poisoning has declined in recent years, according to the Ohio Department of Health. While at least 26,760 children under the age of five lived in high risk zip codes in 2010, less than 8,000 kids were tested, or roughly 28% of the children mandated by state law.74

Note: Chart refers to the total number of children age 0-72 months who had a blood lead level test.

Data provided by the Ohio Department of Health.75

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74 “American FactFinder.”
75 “Data and Statistics on Lead Poisoning – Children.”
The number of confirmed cases of lead poisoning reported to the state and local health departments has been declining over the past decade.

Note: Chart refers to the total number of children age 0-72 months who had a reported BLL greater than 10 ug/dL; if multiple tests occurred for one child, only the highest BLL was used in reporting. Data provided by the Ohio Department of Health.

76 “Data and Statistics on Lead Poisoning – Children.”
Over the past decade, approximately 97 percent of all confirmed cases of lead poisoning consistently occur in high risk zip codes.\textsuperscript{77} For every reported case of childhood lead poisoning, a public health lead investigation is required to take place. It is worth noting that the number of investigations for a given year does not equal the number of lead poisoning cases for that year. This could be the result of multiple children per household testing positive for elevated blood lead levels or the result of an investigation not occurring when it should have. It is not possible to determine the exact cause of the difference.

![Medicaid Enrolled Children Receiving Lead Tests, Lucas County 2007](chart)

Note: Chart refers to the total number of children age 0-36 months who live in high risk zip codes and received the state-mandated blood lead testing. Data provided by Ohio Department of Medicaid\textsuperscript{78}

While most Medicaid enrolled one and two year olds live in high risk zip codes for lead poisoning, few actually receive a blood lead test. These populations are mandated by state law to receive blood lead level tests at the ages of one year and two years.

\textsuperscript{77} Data from Ohio Department of Health, calculated using list of Lucas County high-risk zip codes.

\textsuperscript{78} “Medicaid Eligible and Recipient Information for Calendar Year 2007,” Ohio Department of Medicaid, accessed June 27, 2014, \url{http://medicaid.test.ohio.gov/Portals/0/For%20Ohioans/Programs/Lead/CntyTestRates2007.pdf}. 

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ADVOCATES FOR BASIC LEGAL EQUALITY, INC. | JULY 2014
The city of Toledo, in cooperation with the Department of Neighborhoods, recently launched a Lead Remediation Program funded by HUD. The Department of Neighborhoods is providing interim control lead abatement and clearance of 165 housing units through June 2015. The money is awarded in the form of a grant, with priority given to households that have children under the age of six or at least one pregnant female. By June of 2013, the Department of Neighborhoods had processed 56 intakes; Only 17 of those intakes had completed the enrollment eligibility at the time of the Evaluation Report. In 2013, the city remediated lead from 9 homes.

Lead abatement grants are available through local government agencies to defray the costs of abating housing structures; however, grants are not always awarded.

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80 Ibid.
81 Ibid.
82 Ibid.
Note: In 2008, there were 2 housing structures processed for intake, but for which a completed application was not received. In 2009, there were 47 intake housing structures with no application and there are 8 active applications. These structures, for which there was no completed application or the application is still active, are not included in the totals above.

Data provided by the City of Toledo Department of Neighborhoods.

The number of housing structures that are being abated has been increasing in recent years, however, a larger percentage of the total applications are being turned down. In fact, from 2003-2006, the number of cancelled applications was almost double the number of structures that were abated. In 2007-2009, while more structures are being abated than having applications cancelled, a significant number of applications are being denied or cancelled.

It is evident that the number of structures abated is not coming close to reaching the number of structures where there is public health investigation, or even where there is an abatement application.
Furthermore, when comparing the number of housing structures that are being investigated and abated to the number of housing structures that is potentially affect by lead paint, it is clear that there are a large number of unabated housing structures, primarily in African American neighborhoods, in which children are still being exposed to lead.
Data on housing from the 2000 Census for the City of Toledo, for a detailed breakdown of housing age in Toledo, see Appendix B. Data for public health investigations from the Ohio Department of Health, data for abatement from the City of Toledo Department of Neighborhoods.

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84 "American FactFinder."
F. Geographical Analysis

Minorities and low-income residents are at a much greater risk for lead poisoning than other demographics. The minority and low income populations of city of Toledo are concentrated in the high risk zip codes for lead poisoning. The dangers posed by lead poisoning of children falls disproportionately on Toledo’s on low-income and African American populations.

In Lucas County and Toledo, the areas which have older housing stock (built prior to the 1970s or 1950s), are the same areas where non-white populations are concentrated and have a higher incidence of public health lead investigations.

![Map of Toledo-Lucas County Health Department](https://example.com/map.png)

Source: Ohio Dept. of Health

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85 “Childhood Lead Poisoning Fact Sheet for the Toledo-Lucas County Health Department.”
In one small census tract, the Ohio Department of Health predicts that 38.77% of the residents have lead poisoning. In this tract, 92.5% of the population identifies as African American.
Looking at a map of the City of Toledo, it is clear that a large number of census tracts in the center of the city contain a high proportion of housing that was built prior to 1970 and is thus likely to contain lead paint.

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87 Data from the U.S. Census Bureau
The following map show the concentration of non-white populations within Lucas County, as determined by Census 2000 data. Additional maps show locations for public health investigations and lead abatements.\(^8^9\)

\[\text{Concentration of non-white populations, Lucas County}\]

\[\begin{array}{|c|}
\hline
\text{% Non-White by Tract} \\
\hline
93.11 to 97.97 \\
84.54 to 92.76 \\
68.05 to 83.72 \\
35.61 to 64.11 \\
0 to 21.42 \\
\hline
\end{array}\]

\*Note: In this section, all maps were created using GoogleEarth software from 2000 Census data and data provided by the Ohio Department of Health and the City of Toledo Department of Neighborhoods.
Within the center of Toledo, some of the census tracts are over 90 percent non-white. These are the same areas where a high proportion of public health lead investigations occur. The following map shows the locations of public health lead investigations within Lucas County:
When zoomed in on the map to focus on the Toledo area, it is clear that the vast majority of lead investigations are in areas that have a high proportion of non-white residents.
Although there have been many public health lead investigations over the past decade, it seems that much of this housing does not go through the abatement process.

To look at the most recent data available to ABLE, when comparing the locations of public health investigations from 2009 to the locations of abated structures in 2009, it is likely that many housing structures still contain lead hazards.

**Public Health Lead Investigations and Housing Structure Abatement, 2009, Toledo**

Data from the Ohio Department of Health and the City of Toledo Department of Neighborhoods.

Note: White dots represent the locations of public health lead investigations and green dots represent locations of abatement.
V. IMPLICATIONS AND POLICY RECOMMENDATIONS

Lead poisoning is a serious problem in the city of Toledo and the problem is clearly concentrated in the low-income and African American communities, where most, if not all of the housing stock was built prior to 1950.

While lead exposure has many adverse health effects, the most common risk of harm to children is subtle impairment of neurodevelopment, with small but measurable effects on cognitive and behavioral outcomes. Impaired cognitive development can have major impacts on their likelihood of finishing high school, going on to higher education, and for their success in the job market. The cognitive and behavioral effects of lead poisoning, permanently limits our children to fully benefiting from educational and economic opportunities.

Additionally, society has an economic interest in reducing lead poisoning. Children with lead poisoning suffer impaired cognitive abilities, which affect school performance, educational attainment, and success in the labor market and is thus positively associated with earnings. Improvements in cognitive ability benefit society by raising economic productivity and by avoiding placing the burden of care of lead poisoned children on the public or government agencies. While it is difficult to measure the economic effects of health outcomes, in a 2002 study by the Centers for Disease Control and Prevention, researchers found that the economic benefit from the reduction in childhood lead exposure between 1976 and 1999 ranged from $110 billion to $319 billion.

The goal of this proposed ordinance is to address the dangers of lead for families who are residential rental property tenants. Minorities and low-income residents are at a much greater risk for lead poisoning than other demographics. The minority and low income populations of city of Toledo are concentrated in the high risk zip codes for lead poisoning. The dangers posed by lead poisoning of children falls disproportionately on Toledo’s on low-income and African American populations.

Eliminating childhood lead exposure and abating housing structures should not begin when it is discovered that a child has lead poisoning. Enacting and fully implementing an ordinance that requires residential rental property owners to fully inspect for and correct lead hazards, before the property is rented to a family with children, will prevent lead poisoning from occurring in the first place.

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91 Grosse et. al., “Economic Gains Resulting from the Reduction in Children’s Exposure to Lead.”
Statistics and data regarding Lucas County and the City of Toledo specifically were calculated using the following sources:

Number of children under the age of 72 months who were tested for elevated blood lead levels, and the number who had a confirmed elevated blood lead level; data by zip code provided by Ohio Health Department via email.

Addresses of housing where there had been a public health lead investigation 2000-2009, data provided by the Ohio Health Department via email.

Addresses of housing which went through an abatement process and addresses of housing that was denied an abatement grant; data provided by the City of Toledo Department of Neighborhoods, Division of Housing via email.

2010 Census Data

Demographics and data for when housing structures were built, total population, population under age 5, and population by race by zip code; data retrieved online from the Census Factfinder, 2010 data.

Data and Methodology

The data used in this report has been primarily collected from the 2010 Census, the U.S. Department of Housing and Urban Development (HUD), the U.S. Environmental Protection Agency (EPA), the Ohio Department of Health, Ohio Healthy Homes and Lead Poisoning Prevention Program, the Ohio Administrative Code, the Center for Disease Control, the Lucas County Health Department, and the City of Toledo Department of Neighborhoods. The 2010 Census was used to gather demographic data regarding population, race, and age of housing by zip code as well as at the city and county level. Percentages and analysis of race were calculated using this data.

Data for the number of confirmed cases of lead poisoning and testing of children under the age of 72 months by zip code in Lucas County was sent directly to ABLE by the Ohio Health Department in 2010. The list of addresses where a public health lead investigation had occurred was also sent directly to ABLE by the Ohio Health Department. Since then, new data on this subject has not been available to ABLE. It is worth noting that there is a discrepancy between the number of confirmed cases of lead poisoning and the number of public health lead investigations. This could be due to several factors, including multiple affected children per household or cases where an investigation should have taken place, but did not occur. However, for privacy reasons, it is not possible to obtain the addresses of children who reported testing positive for a blood lead level of 10 μg/dL or higher, that data can only be reported in aggregate, so it is not possible to determine the cause of the difference.

The list of addresses that notes where housing structures went through lead abatement, received an abatement grant, or were denied an abatement grant was provided directly to ABLE by the City of Toledo Department of Neighborhoods. This data is only for the city of Toledo and does not include any abatement that the Lucas County Health Department might have processed. This information was received in 2010, and new data has not been available since that time.
A scholarly journal called Public Health Reports provided the history of lead paint and the Mahoning County study.

As stated before, it is important to remember that the CDC’s new reference value for what constitutes a confirmed case of lead poisoning changed in 2012. Since Ohio has officially adopted the new reference value of 5 μg/dL, the number of people testing positive for lead will likely increase. Therefore, the number of confirmed lead poisoning cases is much lower in this report.

Maps used in this report that were not generated using GoogleEarth software are from the Center for Disease Control, Ohio Department of Health, Lucas County Health Department, and City of Toledo.

**Other information and graphs gathered from the following sources:**


