

# Kent County Community Lead Knowledge Survey:

## Analysis of Findings

Funded Through NACCHO Grant

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**HEALTH**  
DEPARTMENT

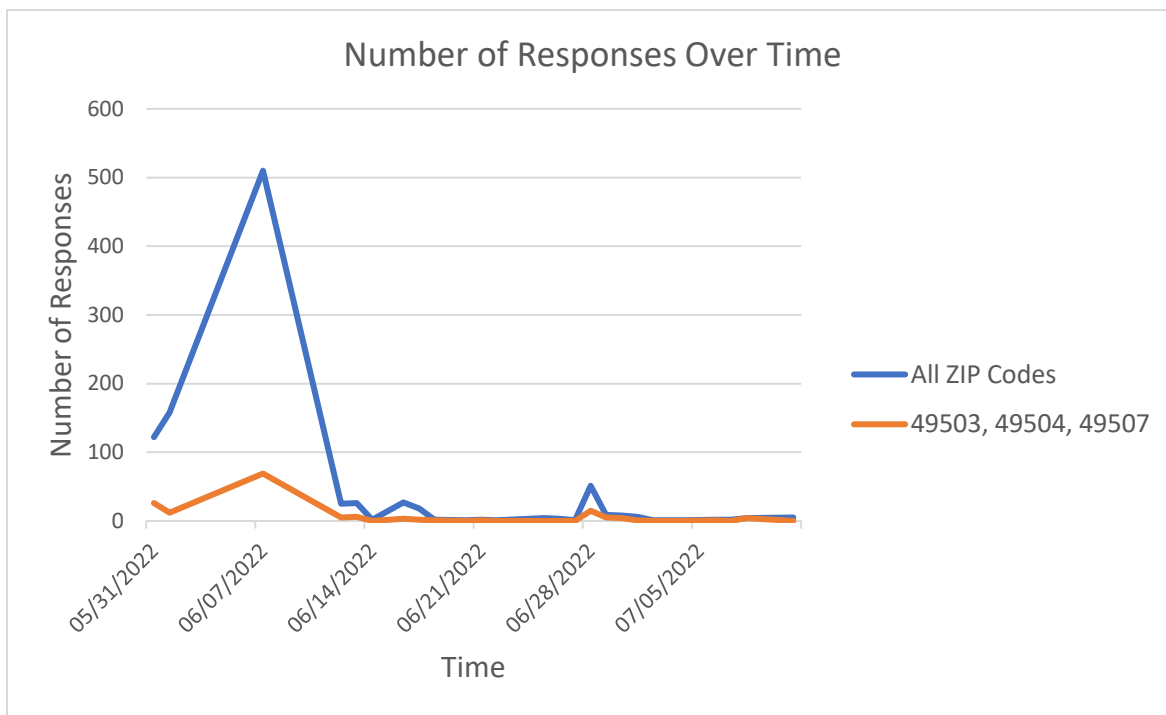
*Caring today for a healthy tomorrow*

## **Section 1: Introduction**

This report reflects responses gathered from the Kent County Community Lead Survey, conducted between May and July of 2022. This survey was a collaboration between the Kent County Lead Action Team and the Kent County Health Department (KCHD) and was supported by a Health in All Policies grant through the National Association of County and City Health Officials. The goal of the Community Lead Knowledge Survey was to gather baseline data of Kent County’s knowledge of the effects of lead exposure, where environmental exposures exist, and awareness of local resources to address lead issues. The results of this survey will guide county initiatives for future programming and educational campaigns.

Responses were collected through Qualtrics and those who were residents of Kent County and 18 years or older were eligible to participate. To ensure that access to the survey was inclusive of the community that we serve, it was translated into nine languages. There were 997 total responses collected with the first 550 responses eligible to receive a \$15 Amazon gift card. The survey was promoted through KCHD’s Facebook page, the Community Connectors with KCHD, the Kent County Lead Action Team, and community events.

In Kent County, the highest number of children (under the age of 6) who are being tested for lead and have elevated blood lead levels (EBLL) reside in the zip codes of 49503, 49504, and 49507. In this report, these zip codes of focus are highlighted in many of the questions to show any potential differences between knowledge and experience between these zip codes and the overall county.



**Figure 1. Number of Responses Over Time by ZIP Code**

Distribution efforts of the survey included using the KCHD’s Facebook page, which started on May 31<sup>st</sup> and ended June 1<sup>st</sup>. While this gave us a large push at the beginning of our survey, it was primarily engaging communities outside our zip codes of focus.

## Section 2: Demographic Survey Responses

**Table 1. Number of Responses within ZIP Codes of Focus**

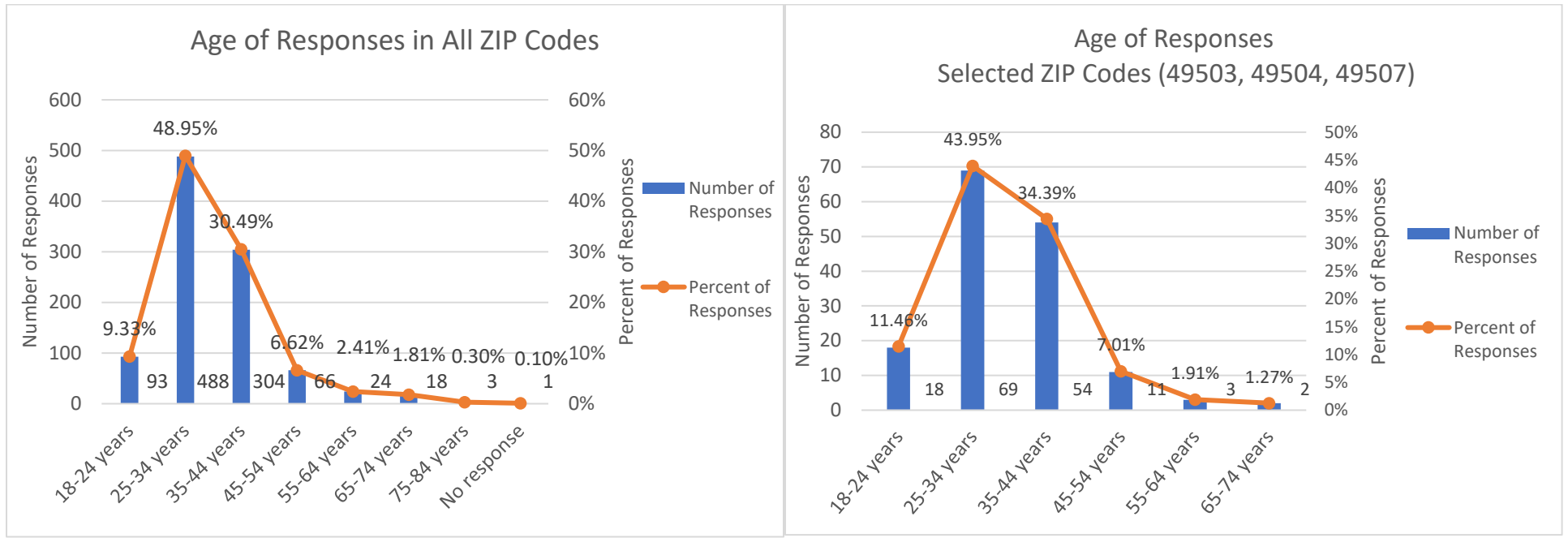
ZIP Code	Number of Responses	Percent of Total Responses in All ZIP codes (n = 997)
49503	54	5.42%
49504	64	6.42%
49507	39	3.91%
<b>Total</b>	<b>157</b>	<b>15.75%</b>

The number of survey responses residing within the zip codes of focus was 157 (15.75% of the total responses from all zip codes).

**Table 2. Number of Responses by Age**

Age Group	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
18-24 years	93	9.33%	18	11.46%
25-34 years	488	48.95%	69	43.95%
35-44 years	304	30.49%	54	34.39%
45-54 years	66	6.62%	11	7.01%
55-64 years	24	2.41%	3	1.91%
65-74 years	18	1.81%	2	1.27%
75-84 years	3	0.30%	0	0.00%
No response	1	0.10%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 2 shows the majority of responses were between the ages of 25-34 and 35-44 years old, representing 48.95% and 30.49% of all responses respectively. This table displays younger adults as the primary population reached by the survey. Since adults within these younger categories are more likely to have younger children than the older categories listed, this would indicate a reason for the higher percentage of responses indicating they have children 5 and younger (71.51%).



**Figure 2 & 3. Percentage of Responses by age for All ZIP Codes Compared to Responses within ZIP Codes of Focus**

The above figures demonstrate the large contrast between younger and older age categories within the responses of the survey.

**Table 3. Number of Responses by Gender**

Gender	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Woman	490	49.15%	89	56.33%
Man	488	48.95%	65	41.14%
Non-binary / third gender	6	0.60%	0	0.00%
Prefer not to say	6	0.60%	1	0.64%
Prefer to self-describe	1	0.10%	1	0.64%
No response	6	0.60%	1	0.64%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 3 shows that from all zip codes, most responses identified as either a woman (49.15) or a man (48.95%). Among zip codes of focus, responses identifying as a woman increased to 56.33%, while those identifying as a man decreased to 41.14%.

**Table 4. Number of Response by Race**

Race/Ethnicity	All ZIP Codes		ZIP Codes 40503, 49504, 49507	
	Number of Responses	Percentage of Responses	Frequency of Responses	Percentage of Responses
American Indian or Alaska Native	18	1.81%	4	2.55%
Asian/Asian American	56	5.62%	9	5.73%
Black or African American	174	17.45%	28	17.83%
Hispanic	54	5.42%	7	4.46%
Latinx	7	0.70%	3	1.91%
Middle Eastern or North African	10	1.00%	0	0.00%
Native Hawaiian or Pacific Islander	4	0.40%	0	0.00%
2 or more races	69	6.92%	7	4.46%
White	602	60.38%	99	63.06%
No response	3	0.30%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 4 shows that both responses within the zip codes of focus and responses from all zip codes had very similar race demographics.

**Table 5. Number of Responses by Their Self-identified Primary Language**

Primary Language	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
English	949	95.19%	152	96.82%
Spanish	35	3.51%	2	1.27%
Vietnamese	5	0.50%	1	0.64%
No response	8	0.80%	2	1.27%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Most responses identified their primary language as English among all zip codes (95.19%) and among zip codes of focus (96.82%).

**Table 6. Number of Responses by Housing Status**

Housing Status	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Own home	619	62.09%	98	62.42%
Rent, including home, apartment, subsidized housing, or college housing (contract or lease)	190	19.06%	37	23.57%
Living with someone (friend, relative, etc.) and not paying rent	152	15.25%	19	12.10%
Homeless	33	3.31%	3	1.91%
Other (please describe)	1	0.10%	0	0.00%
No Response	2	0.20%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Responses across all zip codes and the zip codes of focus indicated similar housing statuses. Although, a slight increase in the percentage of those who are renting is noted among in the responses who live within the zip codes of focus.

**Table 7. Number of Responses with Children 5 Years or Younger in Their Home**

Responses	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Yes	713	71.51%	102	64.97%
No	261	26.18%	49	31.21%
Pregnant, expectant partner, or adoption pending	10	1.00%	3	1.91%
No response	13	1.30%	3	1.91%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 7 shows that most responses had at least one child 5 years or younger in their home among all zip codes (71.51%) and zip codes of focus (64.97%).

### **Section 3: Lead Knowledge Survey Responses**

**Table 8. Awareness That Lead Can Cause Health Problems and Learning Disabilities as Children Get Older**

Response	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Strongly Agree	331	33.20%	55	35.03%
Agree	474	47.54%	73	46.50%
Neutral	128	12.84%	21	13.37%
Disagree	40	4.01%	5	3.18%
Strongly Disagree	15	1.50%	2	1.27%
I Don't Know	5	0.50%	0	0
No response	4	0.40%	1	0.79%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Well over half of responses in all zip codes and in the zip codes of focus selected “Strongly agree” and “Agree” at 80.74% and 81.53% respectively. Only 18.35% of all zip codes and 17.82% of zip codes of focus selected “Neutral”, “Disagree” or “Strongly disagree”. This shows that the majority of responses understand that lead can cause health problems and learning disabilities as children get older.

**Table 9. Level of Awareness That Lead is a Serious Health Risk in Small Amounts**

Response	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Yes	435	43.63%	67	47.77%
Maybe	425	42.63%	75	42.68%
I Don't Know	35	3.51%	5	3.18%
No	94	9.43%	10	6.37%
No Response	8	0.80%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 9 shows that the while most responses indicated that lead is a serious health risk in small amounts (with 43.63% among all zip codes and 47.77% among zip codes of focus), the second most frequent response was “maybe” (with 42.63% among all zip codes and 42.63% among zip codes of focus).

**Table 10. Awareness that Older Homes are More Likely to Expose Children to Lead Over Newer Homes**

Response	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Strongly Agree	241	24.17%	43	27.39%
Agree	388	33.90%	64	40.76%
Neutral	223	22.37%	32	20.38%
Disagree	99	9.93%	14	8.92%
Strongly Disagree	27	2.71%	2	1.27%
I Don't Know	14	1.40%	1	0.64%
No response	5	0.50%	1	0.64%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

A majority of responses in all zip codes and in the zip codes of focus selected either “Strongly agree” or “Agree”, representing 58.07% and 68.66% respectively. There were responses in all zip codes and zip codes of focus as well who selected “Neutral”, “Disagree” or “Strongly disagree” representing 35.01% and 30.57%.



**Table 11. Confidence Level in Identifying Sources of Lead Poisoning in The Home**

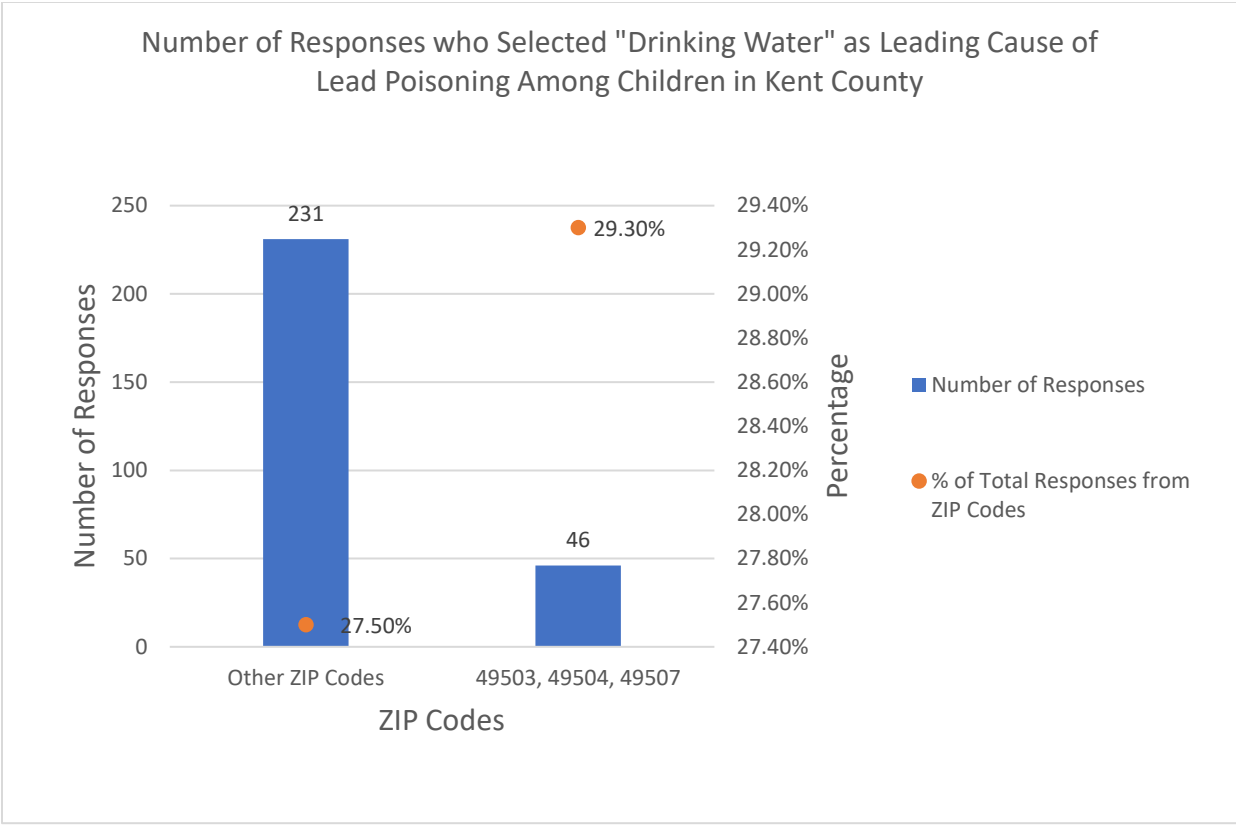
Responses	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Strongly Agree	184	18.45%	31	19.74%
Agree	428	42.93%	75	47.77%
Neutral	232	23.27%	34	21.66%
Disagree	107	10.73%	15	9.55%
Strongly Disagree	28	2.81%	0	0.00%
I Don't Know	13	1.30%	2	1.27%
No response	5	0.50%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Many responses indicated they strongly agreed or agreed that they knew what lead sources can cause lead poisoning in their homes among all zip codes and zip codes of focus, 61.38% and 67.51% respectively. In contrast, responses in all zip codes and those within the zip codes of focus selected either “Neutral”, “Disagree” or “Strongly disagree” representing 36.81% and 31.21% of responses respectfully.

**Table 12. Awareness of the Leading Cause of Lead Poisoning Among Children in Kent County**

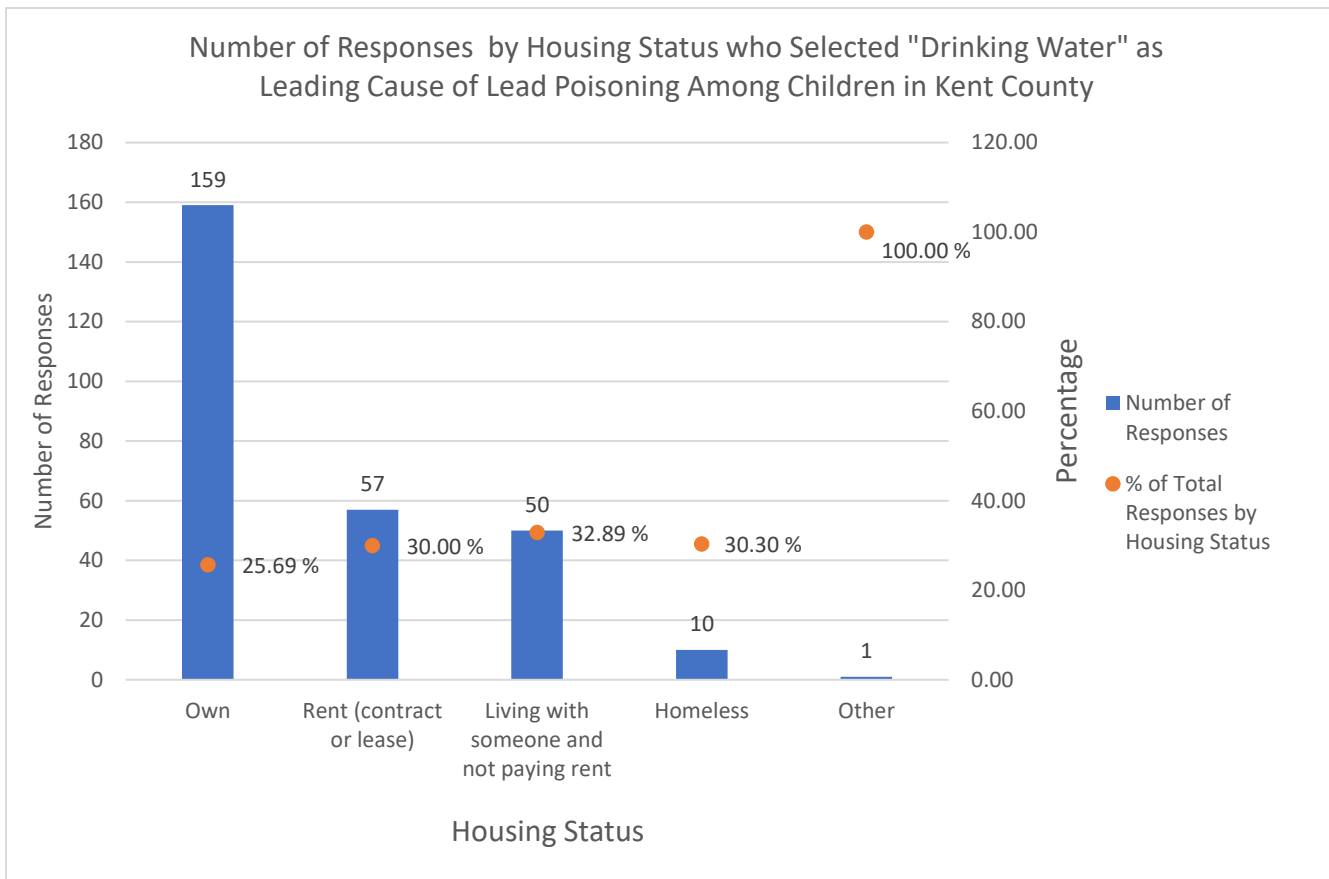
Responses	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Lead-based paint	374	37.51%	64	40.76%
Drinking water	277	27.78%	46	29.30%
Household items (such as toys, makeup, cookware, etc.)	156	15.65%	21	13.38%
Jobs and hobbies (such as construction, automotive, hunting, etc.)	128	12.84%	14	8.92%
Imported goods (such as spices, herbal medicines, etc.)	40	4.01%	4	2.55%
I don't know	17	1.71%	7	4.46%
No response	5	0.50%	1	0.64%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 12 shows the contrast in what the responses thought the leading cause of lead poisoning in children is in Kent County. While the highest selection for all zip codes and the zip codes of focus was lead-based paint, at 37.51% and 40.76% respectfully, drinking water was a close second in both categories at 27.78% and 29.30% respectfully. With lead-based paint being the true leading cause of childhood lead poisoning in Kent County, it is important that we use focused education to target this knowledge gap seen in these data.



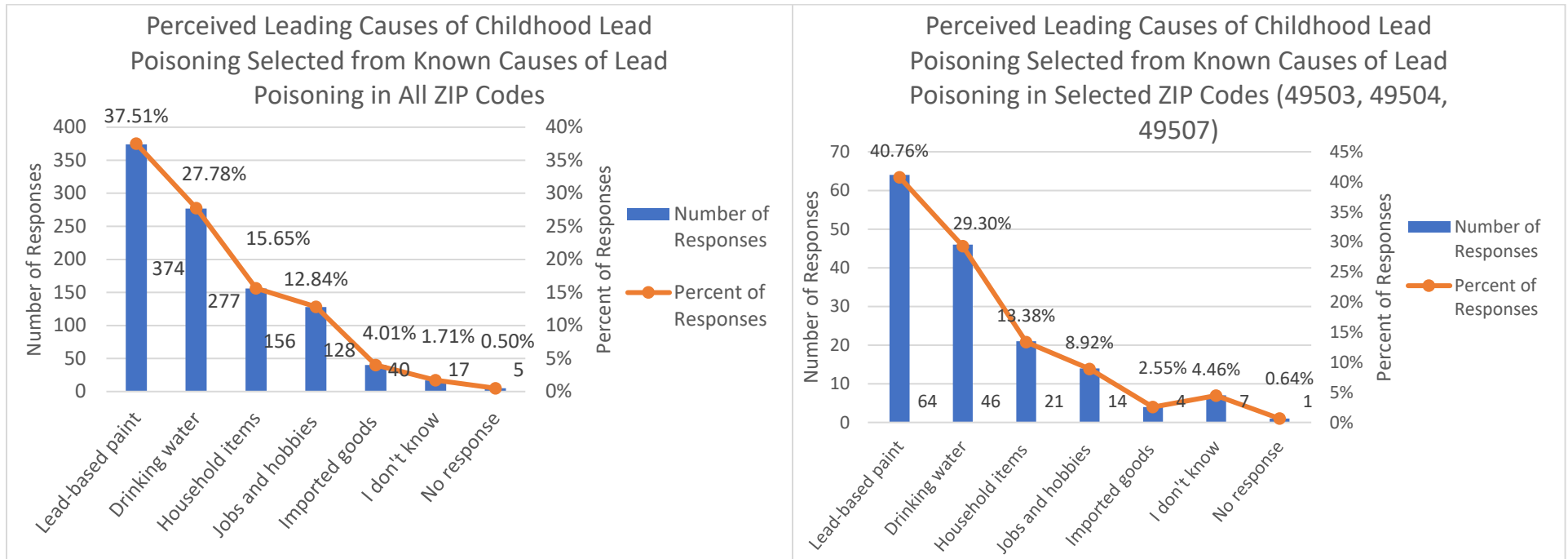
**Figure 4. Number of Responses Who Selected “Drinking Water” in Table 12 by Zip Code**

Both the percentages within the zip codes of focus and other zip codes, meaning all zip codes outside of the zip codes of focus, are similar. With almost a third of our population within all zip codes identifying water as the primary source of lead contamination, this further indicates the need for focused education in all areas of Kent County.



**Figure 5. Number of Responses Who Selected “Drinking Water” in Table 12 by Housing Status**

There is a consistent misperception demonstrated in the survey that the dominant pathway for childhood lead poisoning is drinking water rather than lead paint and dust.



**Figure 6 & 7. Percentage of what Responses Indicated as the Leading Cause of Lead Poisoning Among Children in Kent County in All ZIP Codes Compared to Responses within ZIP Codes of Focus**

Both figure 6 and 7 shows the majority of responses indicating the largest source for lead poisoning children as both lead-based paint and drinking water. With lead-based paint being the true leading cause, it is important to see how many people selected drinking water as the largest source. This shows that more focused education needs to be done around this topic to give people the most accurate knowledge for Kent County.

**Table 13. Awareness of Who to Contact If they or Someone They Knew Was Exposed to Lead**

Response	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Doctor/health care provider	378	37.91%	66	42.04%
Health department	382	38.31%	67	42.68%
Faith based leader	106	10.63%	14	8.92%
Local non-profit	69	6.92%	5	3.18%
Poison control	47	4.71%	2	1.27%
Other (please specify)	1	0.10%	0	0.00%
I don't know	6	0.60%	3	1.91%
No response	8	0.80%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

Table 13 shows that most responses would contact a health care provider or the health department if they or someone they knew was exposed to lead. An important note is that 10.63% of responses in all zip codes selected “Faith based leaders”. Indicating the need to further engage with these groups to help reach populations of focus.

**Table 14. Awareness of Resources and Programs in Kent County to Address Concerns Around Lead in The Home**

Responses	All ZIP Codes		ZIP Codes 49503, 49504,49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Yes	433	43.43%	70	44.59%
No	496	49.75%	68	43.31%
I don't know	65	6.52%	19	12.10%
No response	3	0.30%	0	0.00%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

This table shows that the largest answer selected by responses was “no” by all zip codes, with “Yes” being close behind at 48.75% and 43.43% respectfully. Responses within the zip codes of focus selected “Yes” and “No” at almost the same frequency representing 44.59% and 43.31% respectfully. With almost half of the total responses selecting “no” to this question, these data indicate a high amount of people who are unaware of the services and programs available to those who may be concerned about lead within their home.

**Table 15. Experience of Having Been Told by a Healthcare Provider That They, or A Loved One, Were Poisoned by Lead**

Responses	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
No	700	70.21%	116	73.89%
Yes	270	27.08%	35	22.29%
I don't know	22	2.21%	5	3.18%
No response	5	0.50%	1	0.64%
<b>Total</b>	<b>997</b>	<b>100.00%</b>	<b>157</b>	<b>100.00%</b>

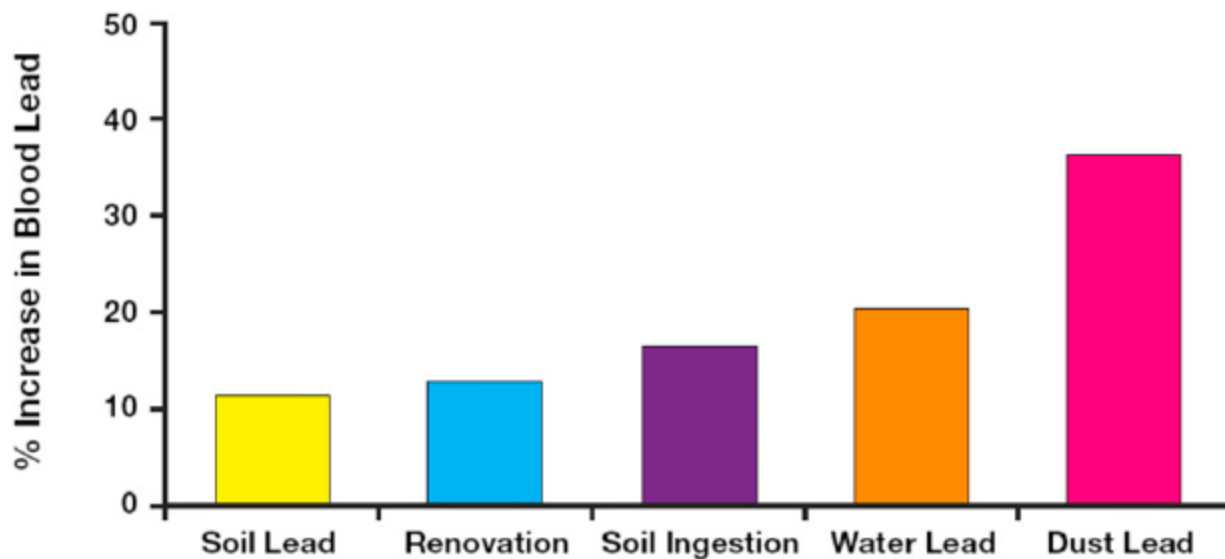
The majority of responses did not report that they had been told by a healthcare provider that they, or a loved one, were poisoned by lead, with 70.21% among all zip codes and 73.89% among zip codes of focus.

**Table 16. Respondents That Felt They Were Given Clear Guidance on How to Navigate Needed Resources\***

Responses	All ZIP Codes		ZIP Codes 49503, 49504, 49507	
	Number of Responses	Percent of Responses	Number of Responses	Percent of Responses
Yes	161	59.63%	21	58.33%
Maybe	92	34.07%	13	36.11%
No	15	5.56%	2	5.56%
I don't know	2	0.74%	0	0.00%
<b>Total</b>	<b>270</b>	<b>100.00%</b>	<b>36</b>	<b>100.00%</b>

\*People taking the survey were routed to Question 16 if they responded “yes” to the previous question regarding whether the participant or their child had been told by a healthcare provider that they had been poisoned by lead (n = 270).

Of those who answered “Yes” to having been told that they, or a loved one, had been poisoned by lead, over half indicated that they had been given clear guidance with 39.63% saying “Maybe” or “No”. Responses from the zip codes of focus had similar results with 58.33% saying “Yes” and 41.67% saying “Maybe” or “No”.



**Figure 8. Contributions of Lead Exposure to Children’s Blood Lead Concentrations. Adapted from Lanphear et al and Spanier et al.**

Source: AAP COUNCIL ON ENVIRONMENTAL HEALTH. Prevention of Childhood Lead Toxicity. *Pediatrics*. 2016;138(1):e20161493

Figure 8 demonstrates the effect each of these areas of potential exposure has on children’s blood lead concentrations. While there have been many news reports in Michigan regarding lead in the water for particular areas, lead dust is the number one contributor to children with an EBLL both nationally and locally according to available data. Raising awareness of this misconception around water being the primary source will allow people to more properly assess their potential hazards around the home and seek professional guidance. Future efforts will be made to lower the number of responses from the community indicating water as the primary source (seen in figures 6 & 7).

**Table 17. Responses Awareness of Resources or Programs**

<b>Resources and Programs</b>	<b>Number of Responses by Programs or Resources</b>
Mitigation tactics in the home to reduce exposure to lead	38
Eat a healthier diet	26
Blood lead test	13
Avoid lead products	12
EPA	10
Kent County Lead Action Team	9
Health Department	9
Be careful where children play	8
Hospital or Doctor	7
Healthy Homes	6
Get the Lead Out	4
Safer home	3
Childhood lead program	3
Grand Rapids	2
<b>Total</b>	<b>150</b>

Table 17 indicates that most responses were aware of mitigation tactics in the home to reduce exposure to lead, including cleaning techniques, filtering water, and washing hands with soap and water. Only a few responses reported being aware of specific local resources and programs that are available to address lead issues in the home.

#### **Section 4: Conclusion**

The data shows that while efforts made by the KCHD, and partners, to educate the community about the hazards of lead paint/dust, there continues to be concerns about drinking water as well as lead paint/dust. Lead found in drinking water is a major topic in Michigan news with systemic failures in the management of drinking water in both Flint and Benton Harbor. This leaves people with the impression that water is the primary source for lead exposure. While water quality can contribute to the lead poisoning of a child, lead paint/dust continues to be primary source for lead exposure in Kent County. Findings from the data show the need to enhance educational efforts to remind the community lead-based paint/dust is the leading cause of childhood lead poisoning in Kent County. An area of improvement identified is further partnerships with faith-based establishments. The findings from the Kent County Community Lead Knowledge Survey will be integrated into programmatic decision making and guide future educational initiatives and campaigns.