

CHILDHOOD LEAD
POISONING PREVENTION

Stakeholder Survey

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Glossary

BLL	Blood Lead Level
CDC	Centers for Disease Control and Prevention
IDPH	Iowa Department of Public Health
IIPHRP	Iowa Institute of Public Health Research and Policy

Executive Summary

The Iowa Department of Public Health (IDPH) is dedicated to protecting and improving the health of Iowans through numerous governmentally sponsored public health programs that are effective, efficient, well-organized and well-coordinated. One important program that impacts Iowa’s youngest residents is the Childhood Lead Poisoning Prevention Program (CLPPP). The goal of this program is to reduce the prevalence of childhood lead poisoning in Iowa. The CLPPP provides identification and case management for children with elevated blood lead levels, identification and control of lead paint hazards, surveillance of elevated blood lead levels, and provides education and outreach in communities across the state. This program is carried out statewide through a variety of contracts, collaborations and partnerships, as well as direct services that are centrally coordinated by the IDPH.

The Iowa Institute of Public Health Research and Policy (IIPHRP), at the University of Iowa, College of Public Health was contracted by IDPH to develop, conduct, and analyze a survey to determine how IDPH can better meet the needs of the sectors involved in lead poisoning prevention. The purpose of this survey is to understand the knowledge and awareness of lead hazards in Iowa, barriers faced, and how to improve education and outreach from IDPH.

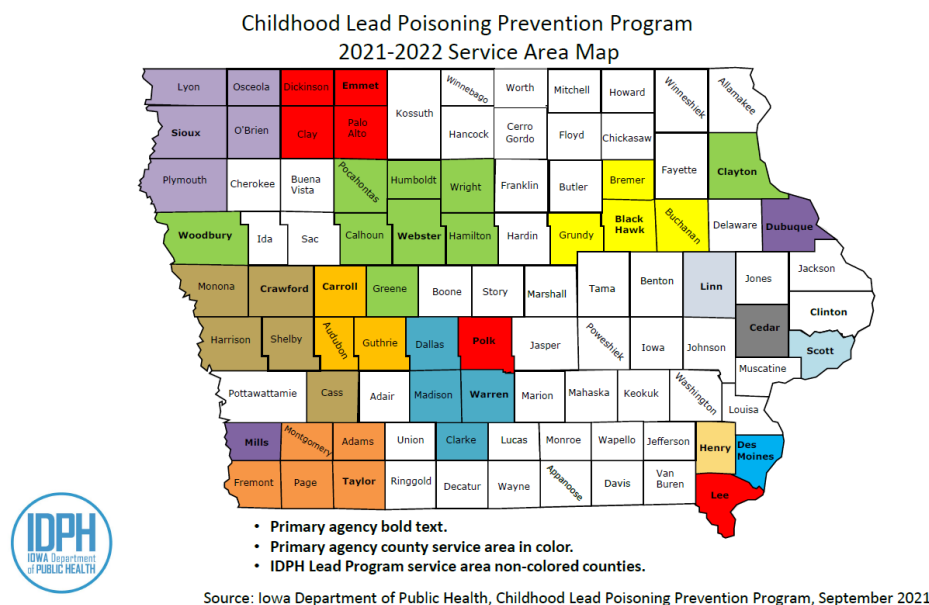
The results of this survey include recommendations that are intended to provide guidance to IDPH as they dedicate resources to education and resource building for all sectors involved in lead poisoning prevention in Iowa. Full recommendations can be found at the end of the report, but an overview of recommendations include the following:

- Increased data sharing for providers, public health, and Title V agencies
- Assist in facilitating collaboration between all sectors
- Development of multicultural education resources for families
- Alignment of state and national testing guidelines and follow-up
- Make certification training more accessible
- Provide regular communication to all sectors
- Create and maintain a central repository for information

Project Overview

The Iowa Childhood Lead Poisoning Prevention Program targets all Iowa children under the age of six years old. The program is administered through the Iowa Department of Public Health, residing in the Bureau of Environmental Health Services.

The CLPPP is administered through Iowa counties via two mechanisms. The map below indicates how the program is delivered. Counties depicted in white are counties that receive support directly from the IDPH. The counties in color indicate a contracted CLPPP (contracts are held by the county board of health who work with a variety of entities including public health, housing and community organizations).



The CLPPP is organized by several clusters mostly configured by the geographic areas that are covered by the aforementioned contractors who provide the following components of the program.

- Identification and case management for children with elevated blood lead levels
- Identification and control of lead-based paint and other lead hazards
- Surveillance of elevated blood lead levels in children to monitor progress
- Education and outreach regarding childhood lead poisoning in communities and promotion of community involvement

The total budget for the Iowa CLPPP in 2020 – 2021 is \$1,483,000. Federal dollars received from the Center for Disease Control and Prevention (CDC) account for approximately 66% (\$979,000) of program funds. CDC funds are only allowed to be used for surveillance, outreach, education, and training activities conducted by the Iowa CLPPP. No CDC funds can be distributed to contracted CLPPPs for intervention services for lead poisoned children.

State appropriated funds account for approximately 34% (\$504,000) of the programs budget, of which \$242,062 were distributed in grant funds to local CLPPP contractors for providing support and intervention services to lead poisoned children. CLPPP contract awards for fiscal year 2021 range in size from \$4,800 to \$42,000 annually. Remaining appropriated funds support IDPH staff and resources (\$220,100), State Hygienic Laboratory (\$24,617), and electronic lab reporting (\$18,017).

Part of the success of the CLPPP in Iowa is dependent on the education and resources that are provided by IDPH to various sectors, partners, and collaborators across the state. A crucial component to advancing lead poisoning prevention in the state of Iowa, is understanding the current strengths, challenges, and needs of all sectors that work with childhood lead poisoning prevention. This will provide key information on how to better target these audiences with education and resources.

Methodology

IIPHRP conducted a survey of all sectors involved in lead poisoning prevention in Iowa property owners using a network distribution approach in July 2021. This survey targeted sector specific stakeholder across the state of Iowa through a web-based questionnaire. The survey was designed to assist in understanding sector specific barriers and success’ as it pertains to childhood lead poisoning prevention and lead remediation in Iowa. The target audience identification and survey process are described below.

Target Audience

Broad participant identification was completed through a series of planning conversations between the IIPHRP team, the IDPH Lead Program team, and through the help of the Childhood Lead Advisory Workgroup (CLAW). Through these conversations, target audience groups were identified. The identified target audiences included public and private property rental, water utilities, contractors, medical providers, Title V, public health, funding authorities, and housing inspectors.

To reach this target audience, the IIPHRP and IDPH teams reached out to the CLAW members to gain access to their networks. CLAW members were provided with the email language and survey link to forward on to their networks. Due to this method of dissemination, it is unknown how many individuals received the survey.

Survey

The survey consisted of eighty-eight total questions generated through a planning process by the IIPHRP and IDPH team. The questions were broken down by sector-specific stakeholder groups identified as crucial to lead poisoning prevention by IDPH, IIPHRP, and the CLAW. Questions were brainstormed through a capstone course at the University of Iowa College of Public Health by graduate students who spent a semester researching each stakeholder group. Once these questions were compiled, they were reviewed for clarity, and then reviewed with the CLAW. Questions were subsequently revised and reviewed before distribution. This process ensured the questions were understandable and would provide useful information to the project. This survey took approximately 10 minutes for respondents to complete, depending on stakeholder group selection. Responses to this survey were confidential and were reviewed to identify general themes.

The following is the breakdown of amount of questions asked of each stakeholder group. The full set of survey questions can be found in the appendix.

Total	88
Demographic Information	8
Public and Private Property Rental	12
Water Utility	8
Contractor	10
Medical Providers	13
Title V	9
Public Health	10
Funding Authority	8
Housing Inspector	10

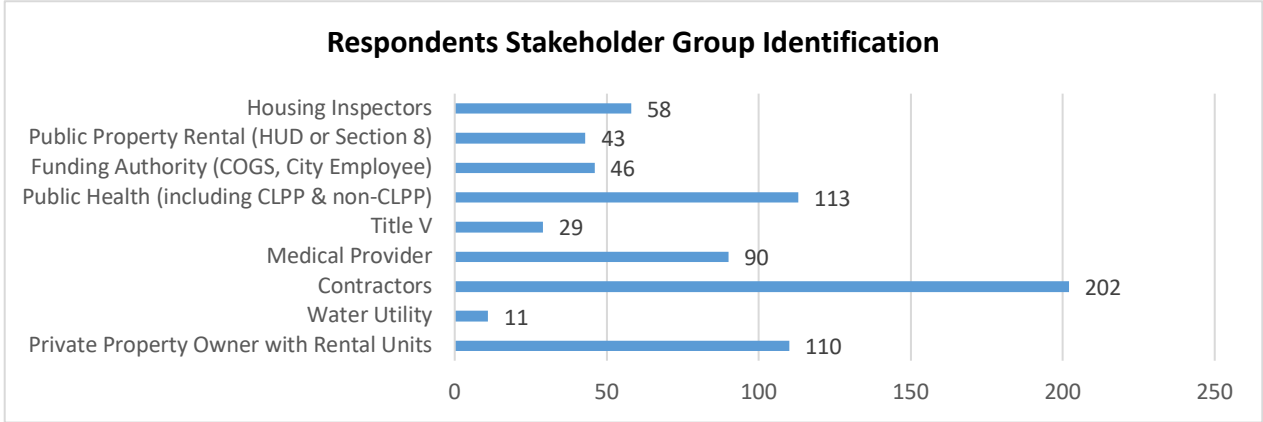
Results

The Lead and Housing Survey was sent to the CLAW to distribute to their networks. The survey did receive a total of 496 responses in the three-week period it was active. Due to the nature of using a network distribution approach, the reach of the survey is unknown to us.

Please note a large portion the questions are select all that apply. The graphs shown for these questions display how many selected each response. There are many questions where respondents selected more than one response, which is important to consider as you look at the data below.

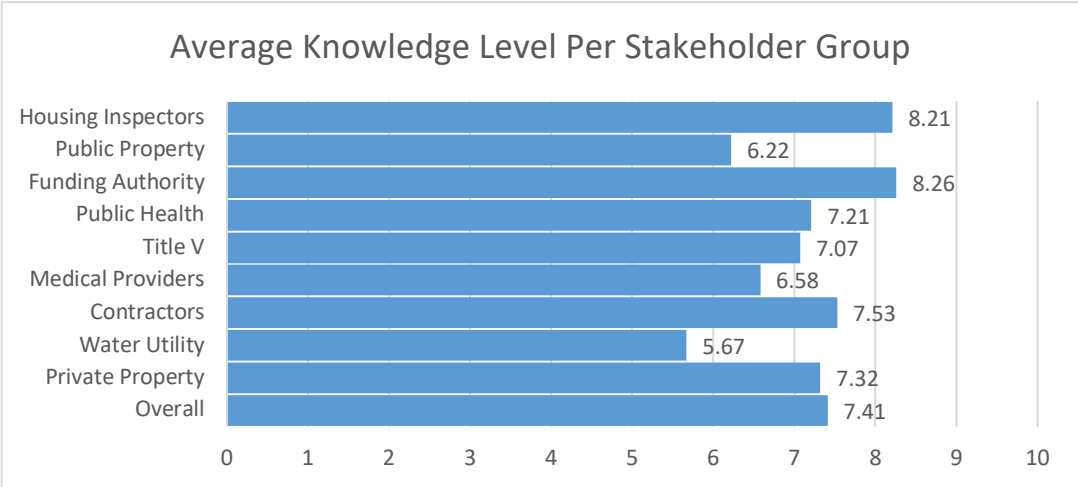
Overall

Of the 496 responses, there were 702 stakeholder group selections. The breakdown of survey responses is as follows:

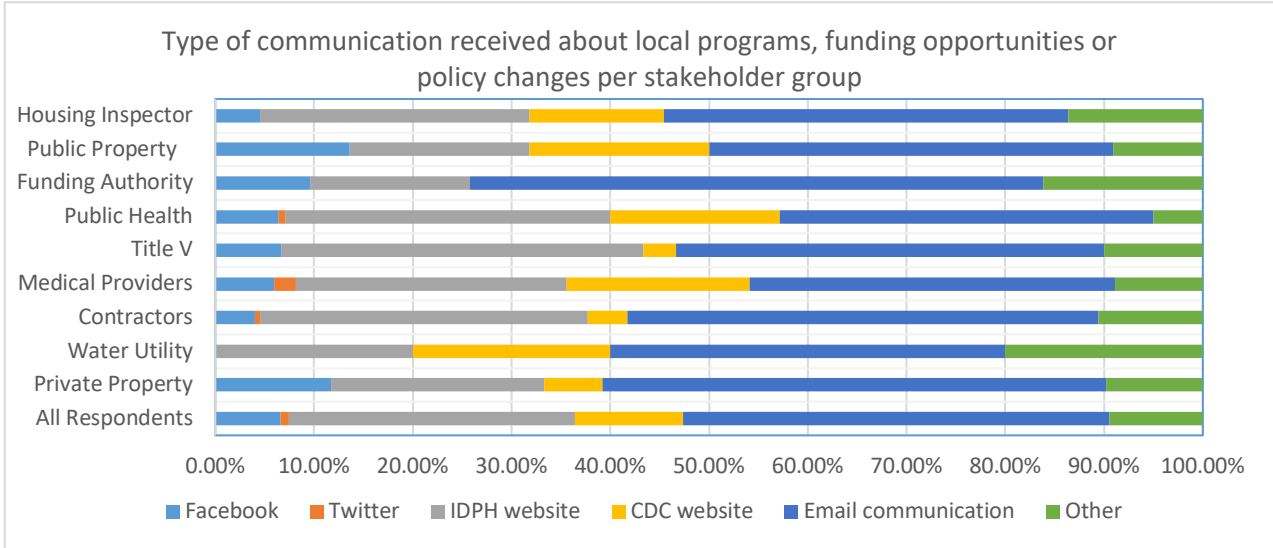


Due to the limited number of responses in some of the stakeholder groups, a portion of the data is insufficient to draw conclusions on.

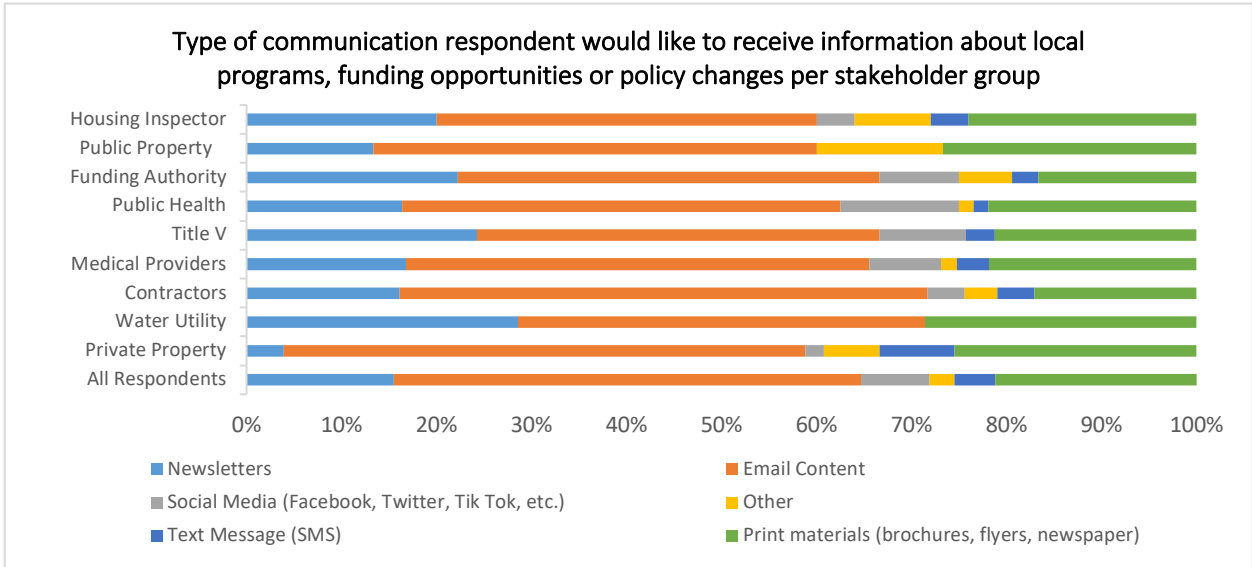
The overall average knowledge level about lead poisoning issues in Iowa on a scale of 1 to 10 is 7.41. The group identifying as having the most knowledge is funding authorities and the group identifying as having the least knowledge is water utilities.



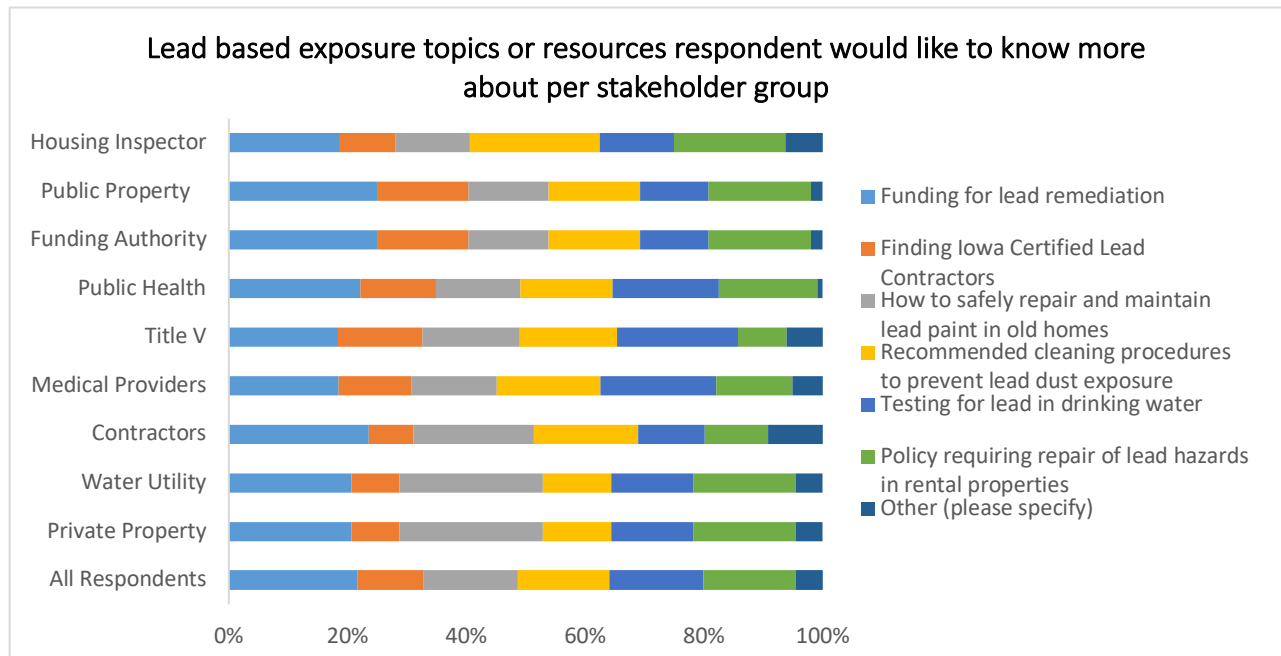
The majority of communication received from all respondents is email communication, followed by information from the IDPH website. Responses were consistent among stakeholder groups ranking communication received as email communication, IDPH website, CDC website, other, Facebook, and Twitter. Other responses included: never receiving communication, HUD, US Mail, in person meetings, personal research, and local public health.



The type of communication respondents would like to receive is email communication, followed by print materials. Responses were consistent among stakeholder groups ranking communication they would like to receive as email communication, print materials, newsletters, social media, text messages, and other. Other responses included: mail, radio, billboards, group meetings.

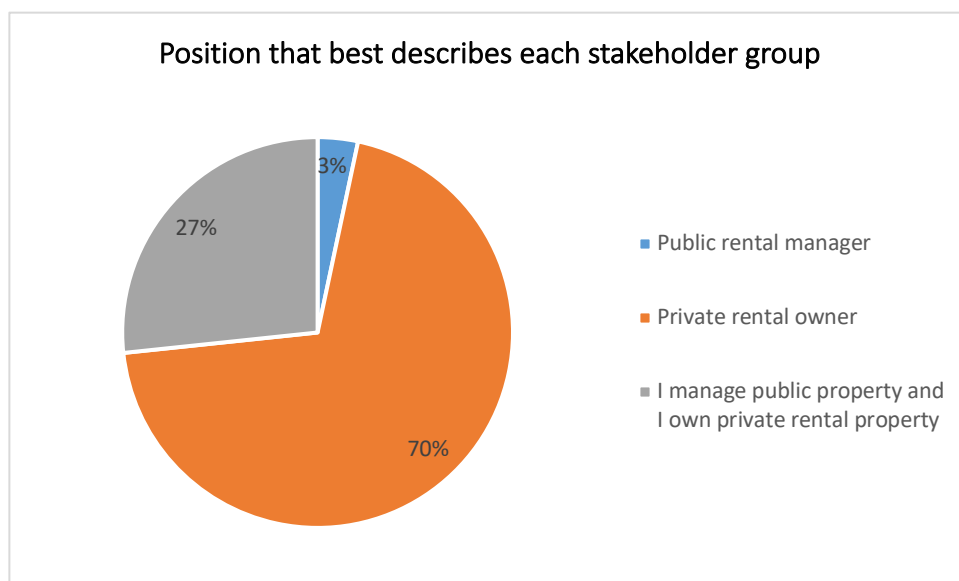


The lead-based exposure topics/resources that respondents would like to know more about were ranked evenly, with funding for lead remediation as being the most selected. This is followed by how to safely repair and maintain lead paint in homes, testing for lead in drinking water, policy requiring repair of lead hazards in rental properties, recommended cleaning procedures to prevent lead dust exposure, finding Iowa certified lead contractors, and other. Other responses included: certification classes, lead in farm buildings, symptoms of lead poisoning, generalized information, enforcement of repairs, other sources of lead besides paint, risk factors.

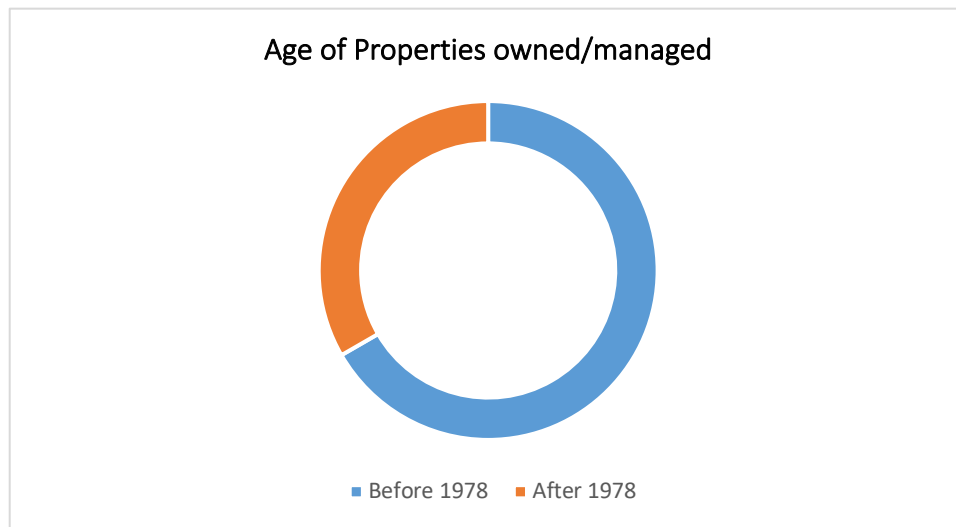


Private Property

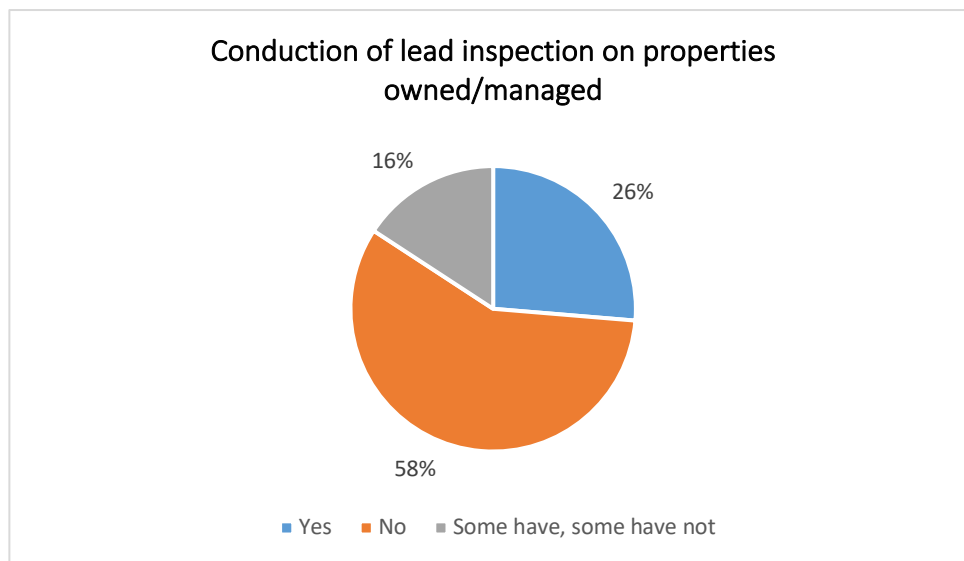
The bulk of the stakeholder group (70%) reported to be private rental owners in Iowa. While 27% and 3% of the group reported to manage public property and/or own private rental properties.



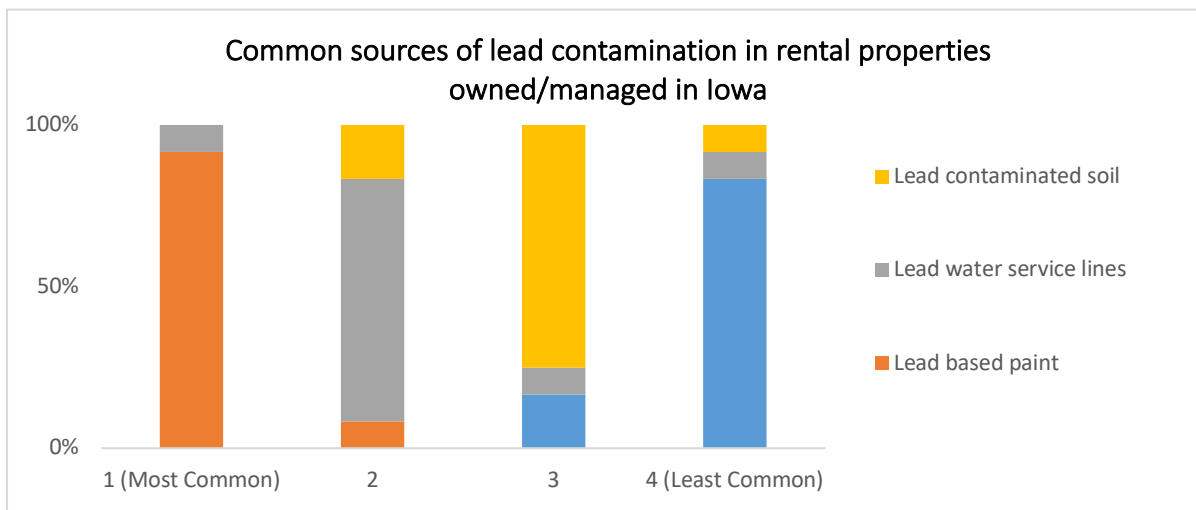
Per this survey, the stakeholders mostly own/manage rental properties built before 1978.



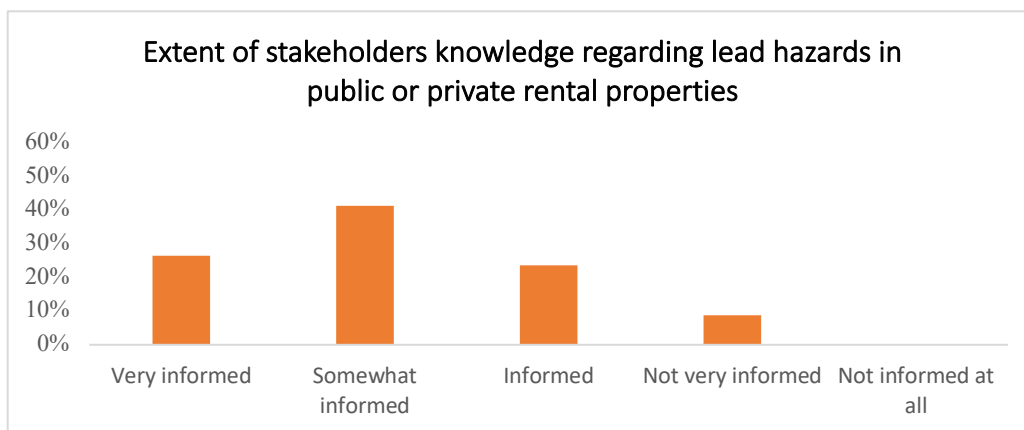
Most of the stakeholders (58%) reported to have never conducted lead inspection on properties owned or managed, 26% reported to have done lead inspection and 16% reported to have conducted lead inspection on some properties but not others. With the high percentage of pre-1978 properties, this is a concern.



Stakeholders noted lead-based paint as the common source of lead contamination in rental properties owned/managed in Iowa. Lead water service lines, lead contaminated soil and properties located near an industry that use or produce lead products were reported to be the next common sources of lead contamination, in that order.



Most of the stakeholders reported being 'somewhat informed' or 'very informed' regarding the extent of their knowledge on lead hazards in public or private rental properties, with none being 'not informed at all'.



The majority of respondents (63%) would apply for available funding to repair lead hazards in their rental properties.

When asked how often the water in the properties is tested for lead by the city, county, or state, the majority of respondents (63%) were unaware of the frequency of water testing.

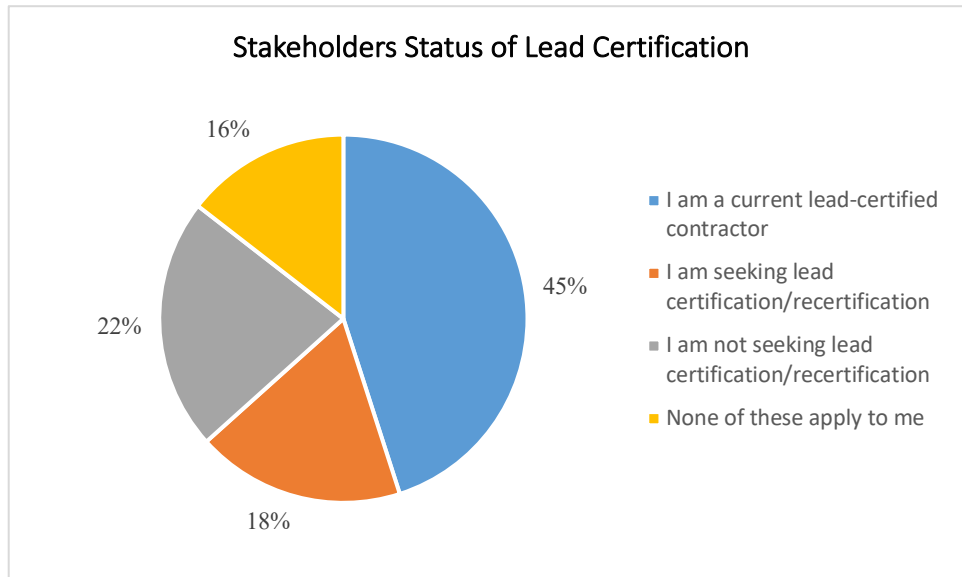
Water Utility

Due to a small number of responses, there is insufficient data to analyze.

Contractors

When asked the role in the organization, the majority of respondents identified as owners, others included project manager, carpenter, consultant, foreman, crew member, safety manager.

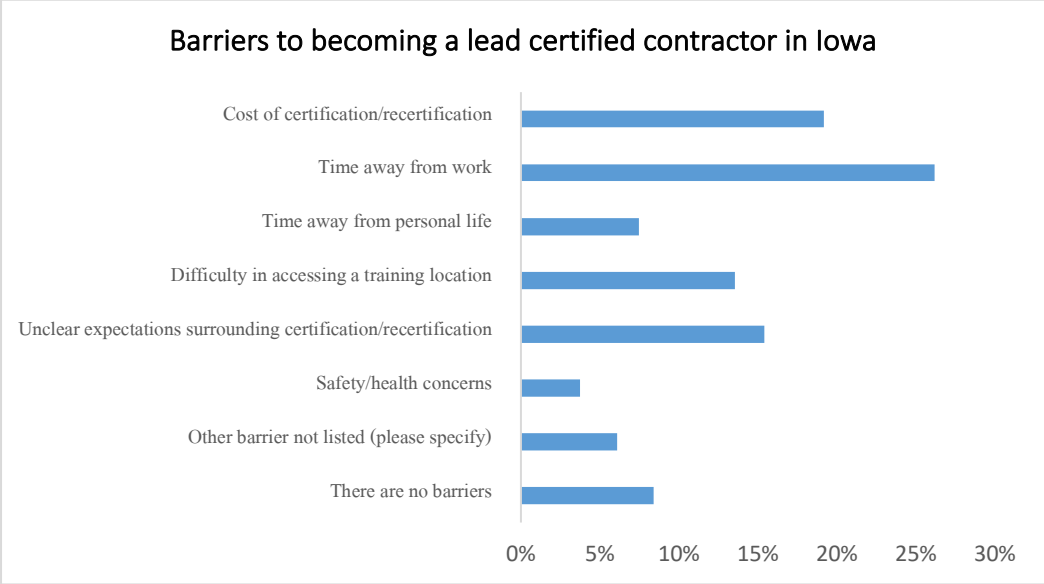
Most of our stakeholders (45%) are currently lead-certified contractors, while 18% are seeking lead certification/recertification and 22% are not seeking lead certification/recertification, while 16% do not think the options apply to them.



The majority of respondents agree with the following statements:

- Lead poisoning is an issue in Iowa.
- Lead-certified contractors play a role in addressing lead exposure.
- The information and process to become lead-certified is easily understood and easy to find.

In exploring the greatest challenges to becoming a lead-certified contractor in Iowa, the biggest barrier reported is taking time away from work and the cost of certification/recertification. The subsequent barrier are the unclear expectations around obtaining certification and the difficulty in accessing a training location. Other responses included: loss of competitive pricing in the market, constant recertification, course only offered in English.

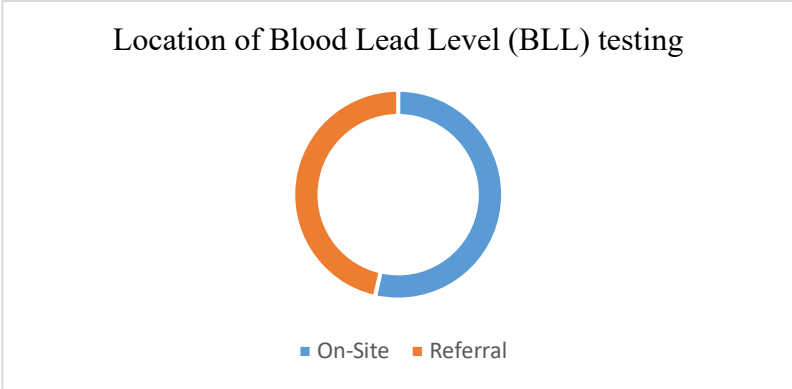


74.22% of respondents noted that they would attend a paid training to become a lead-certified contractor, while 81.25% of respondents noted that they would not attend a free training to become a lead-certified contractor.

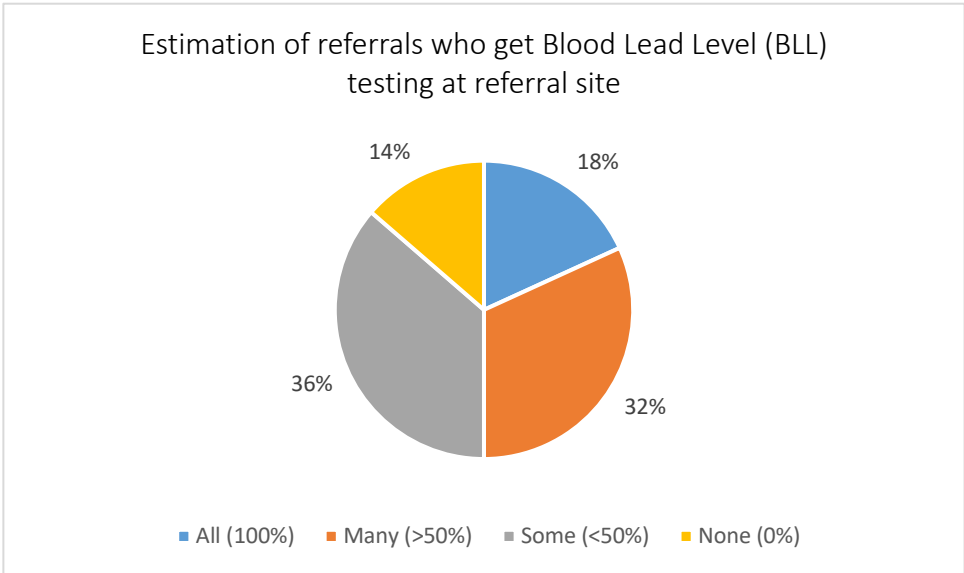
To expand on this, respondents were asked what would encourage them to become a lead certified contractor. The responses included: free, online course, courses made more available, providing renewal reminder, making it required, additional training resources, access to training without missing a full day of work.

Medical Providers

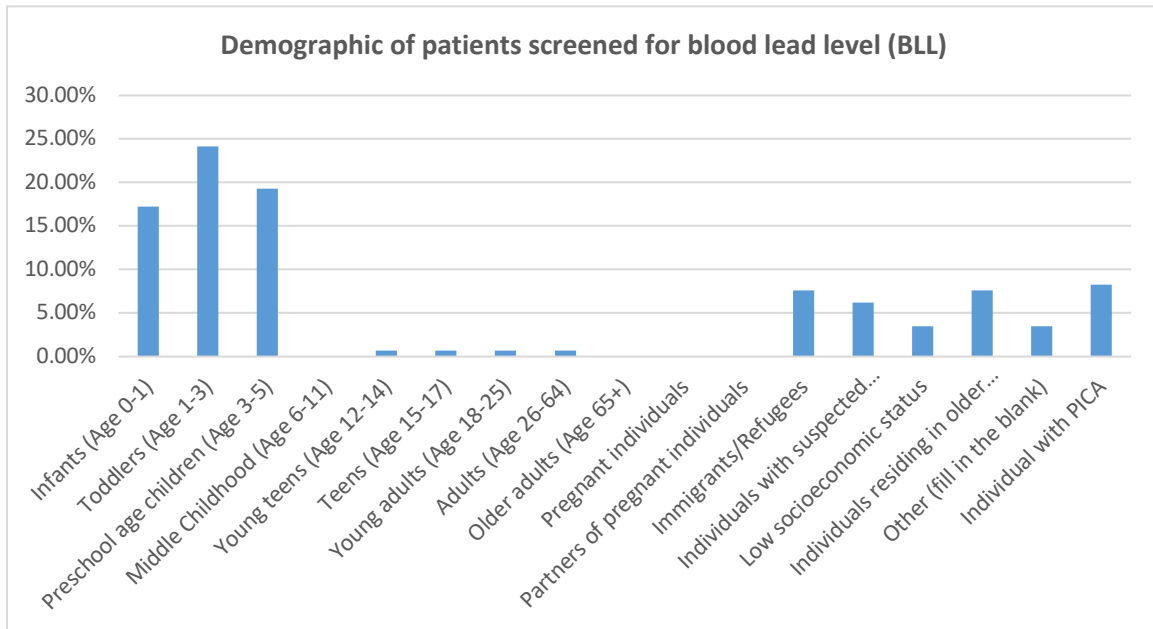
Just above half of medical providers reported to provide on-site blood lead level testing.



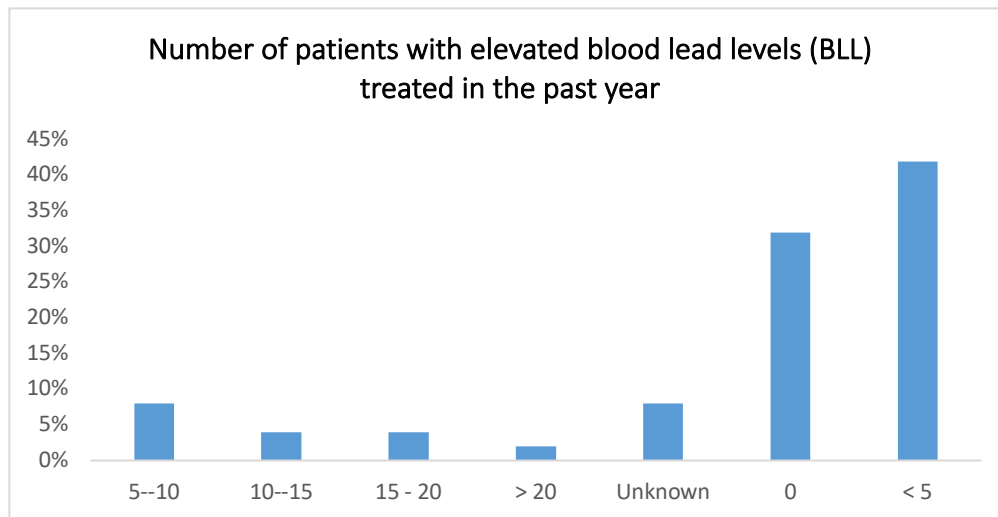
With the high percentage of referral blood lead testing, respondents were asked to give an estimation of patients who have been referred to get a blood lead level (BLL) testing at a different site; 18% of the medical providers reported that 100% of their referred patients got tested at a different site while 32% reported many (more than 50%) of their referred patients got tested. While 36% and 14% reported less than 50% of their patients or none got tested at a referral site, respectively.



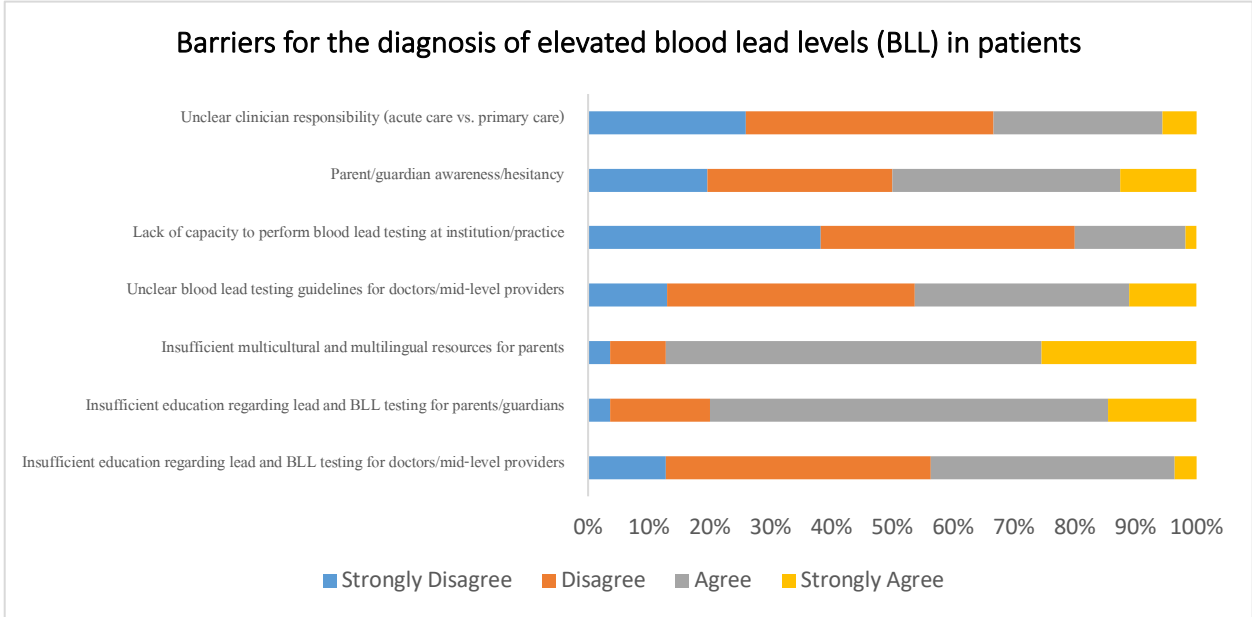
The demographic group of patients screened most for blood lead level by medical providers are children between the ages of 0 – 5, with a portion of children with elevated risk being screened.



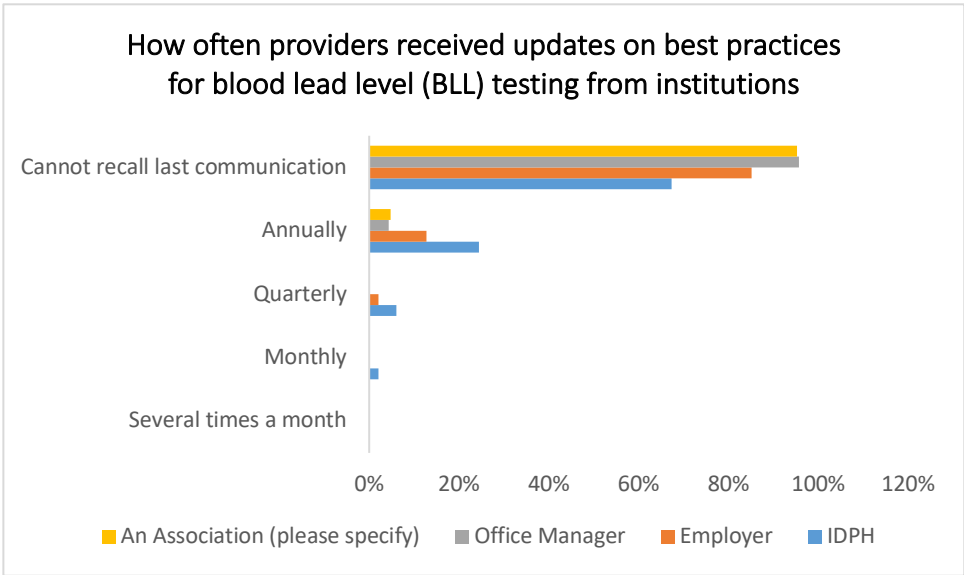
Most of the medical provider respondents reported to have treated less than 5 patients for elevated blood lead levels, followed by treating no patients with elevated blood lead levels.



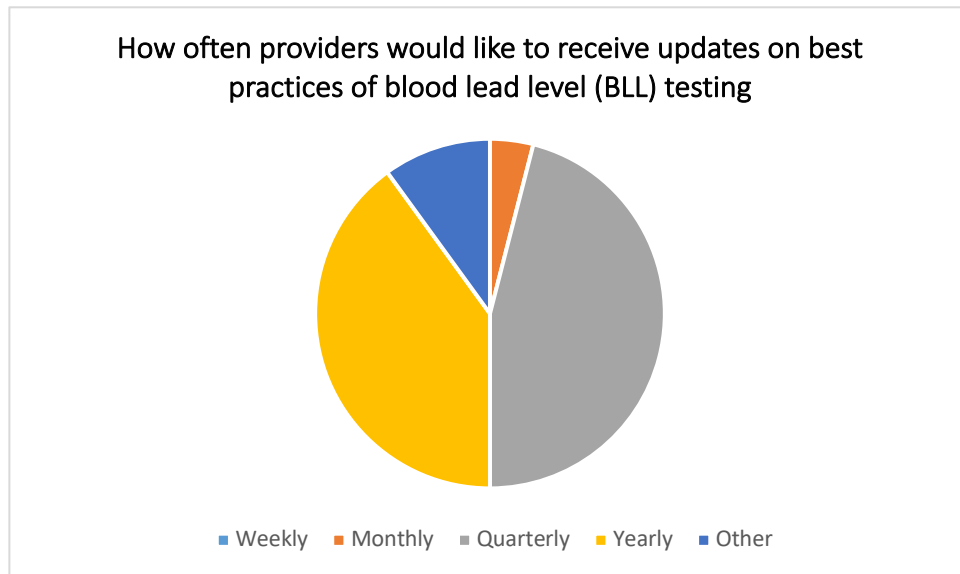
Medical Providers reported to agree that there are insufficient multicultural and multilingual resources for parents and insufficient education regarding lead and BLL testing for parents and guardians, followed by parent/guardian awareness/hesitancy, and unclear blood lead testing guidelines for doctors/mid-level providers.



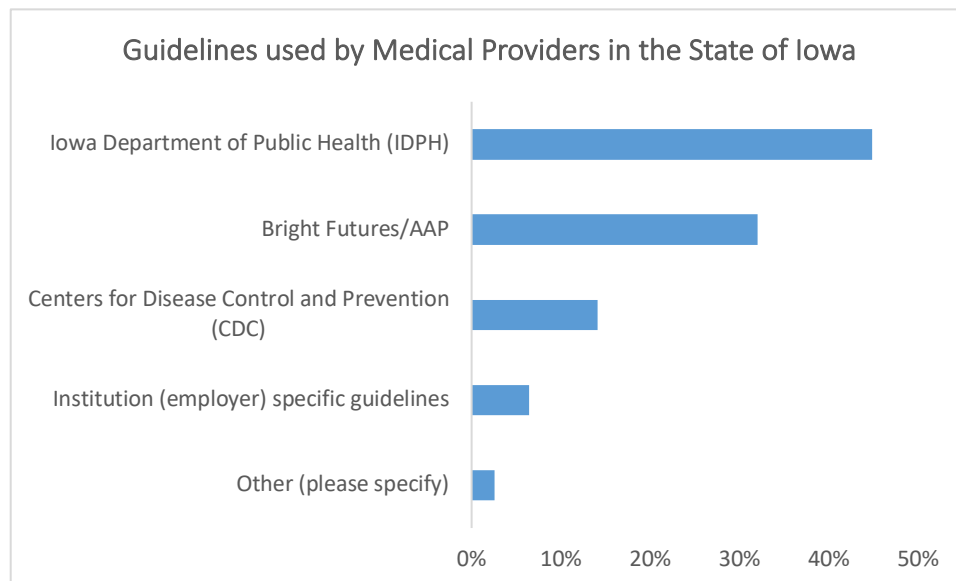
When asked how often medical providers received BLL testing updates from IDPH, an employer, an office manager or any other association; the bulk reported to not be able to recall the last communication received, or to have received some information on an annual basis.



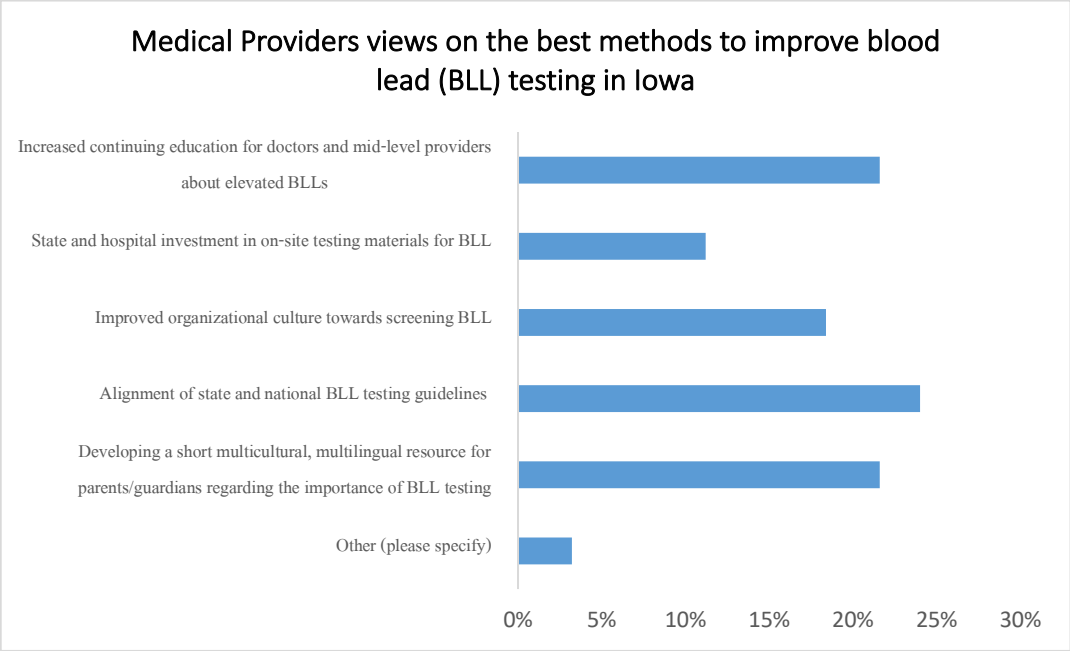
When asked how often medical providers would like to receive updates on best practices of BLL testing, they responded to prefer quarterly or yearly updates.



The majority of medical providers in Iowa use BLL testing guidelines from the Iowa Department of Public Health and Bright Futures/AAP.

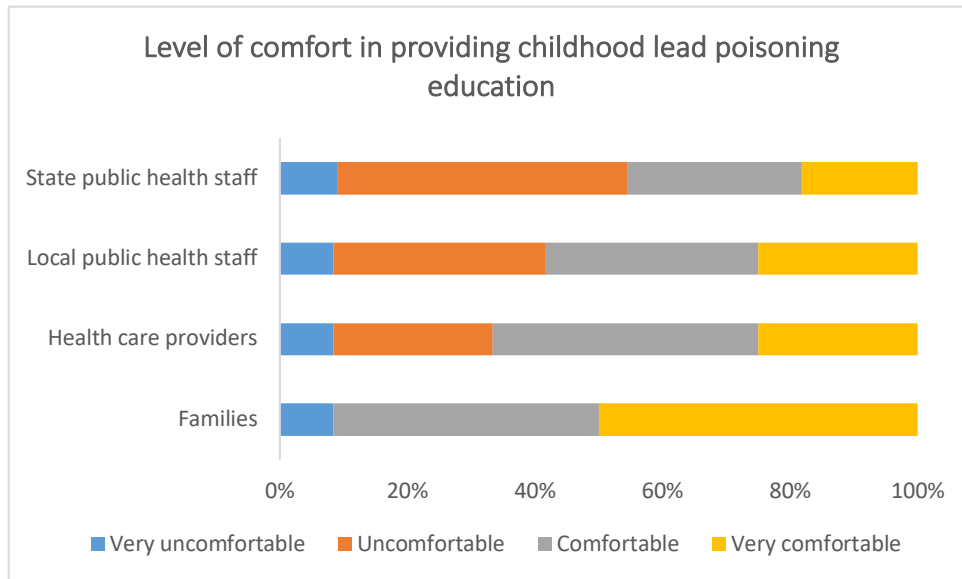


On the best methods to improve BLL testing in Iowa, medical providers agreed with the options presented which includes: Increased continuing education for doctors and mid-level providers about elevated BLLs, State and hospital investment in on-site testing materials for BLL, Improved organizational culture towards screening BLL (i.e., more support to have conversations with parents about lead, screening for all children, etc.), Alignment of state and national BLL testing guidelines (i.e., Bright Futures/AAP, Medicaid, IDPH), Developing a short (3 minute or less) multicultural, multilingual resource to share with parents/guardians regarding the importance of childhood BLL testing.

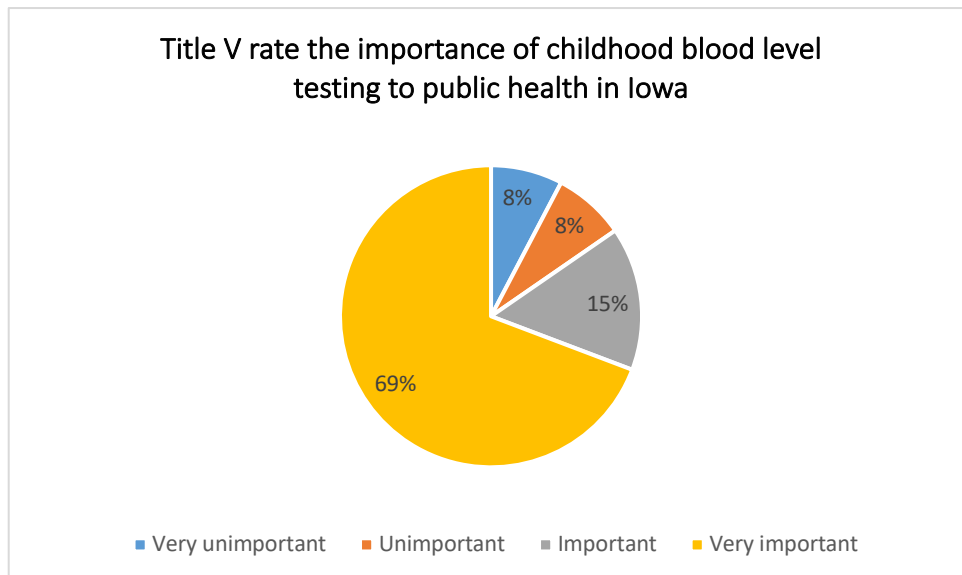


Title V

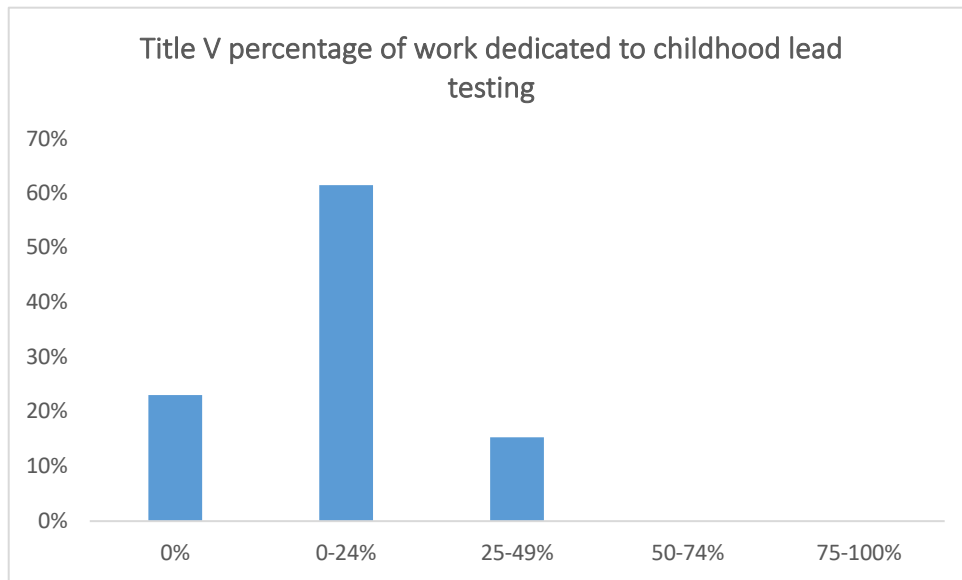
Title V reported to be very comfortable providing childhood lead poisoning education to families and least comfortable in providing same education to state public health staff.



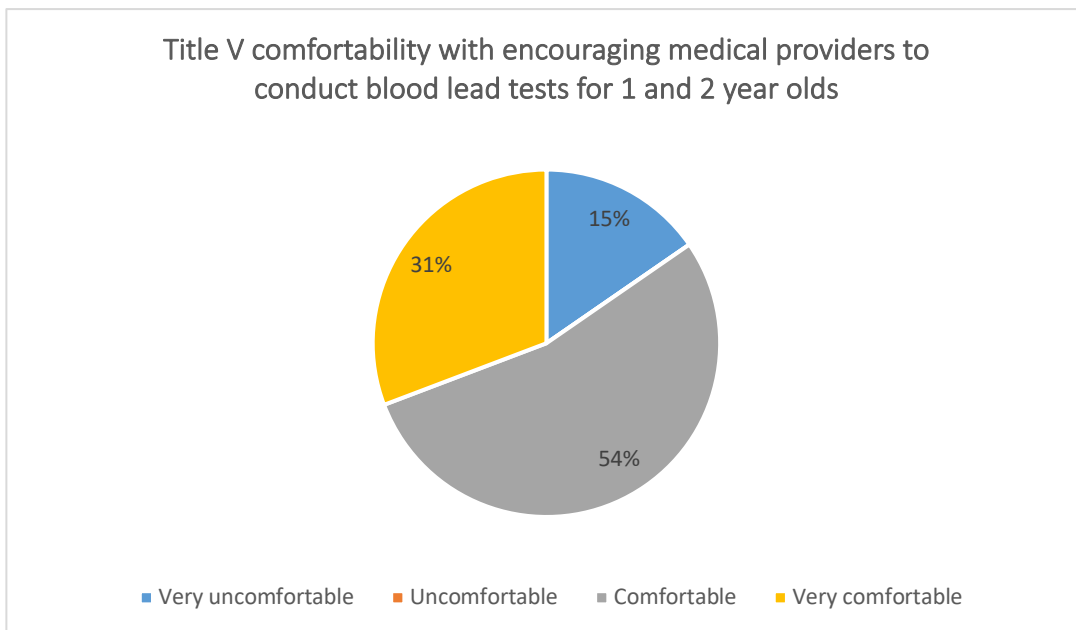
Title V respondents find it rated the importance of childhood blood lead level testing to public health in Iowa as “very important”.



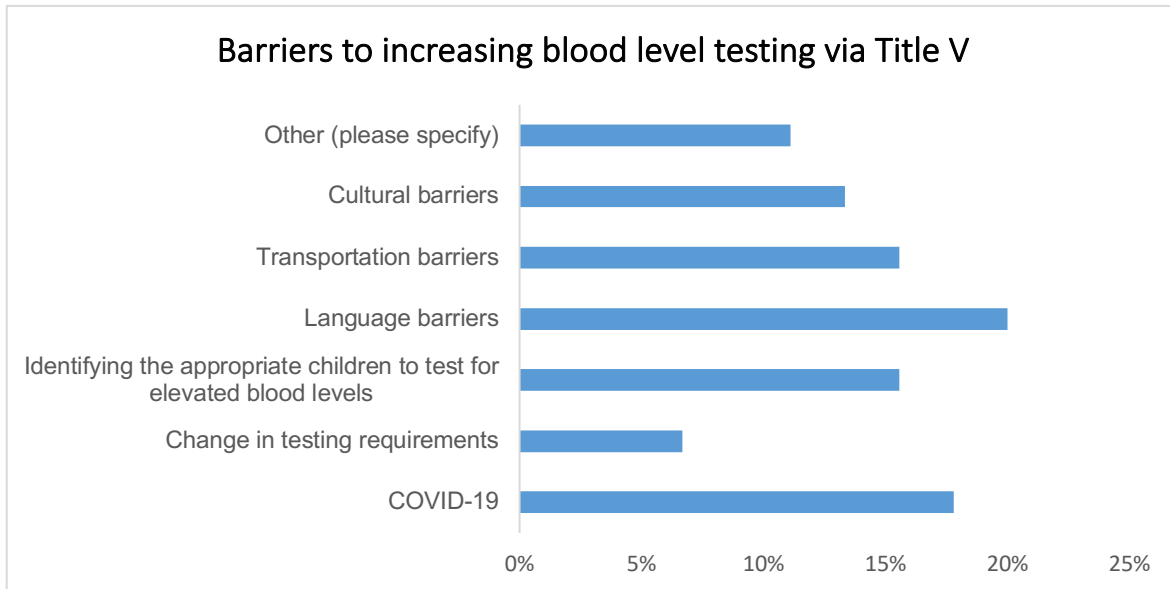
Most of Title V respondents reported to dedicate 0-24% of their work to childhood lead testing.



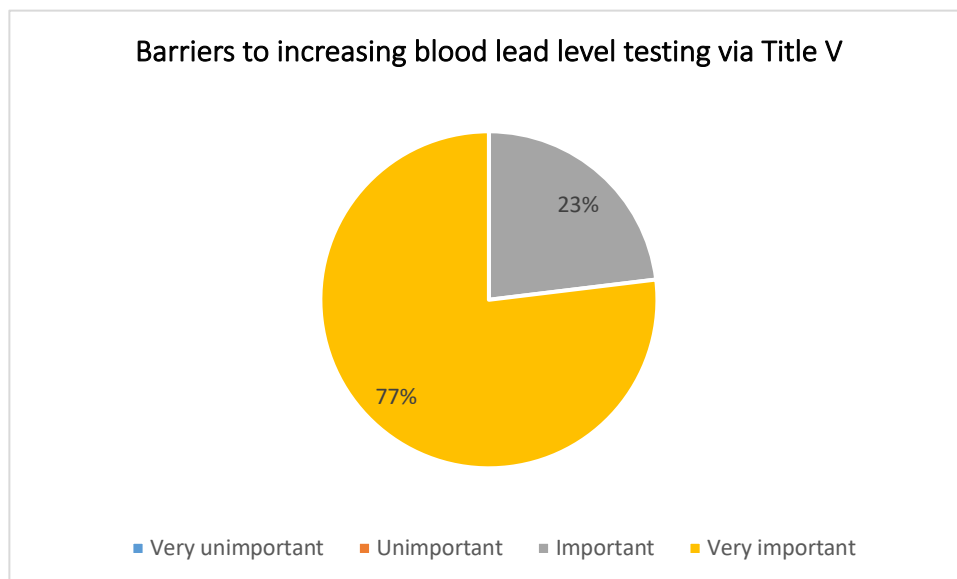
85% of Title V respondents reported to be comfortable with encouraging medical providers to conduct blood lead tests for 1- and 2-year-olds, while 15% are very uncomfortable.



To explore the challenges and barriers to increasing blood level testing through Title V, respondents were asked to select the barriers to increasing blood lead level testing. The respondents agreed with the options given almost equally. The greatest barrier was noted to be language barriers followed by COVID-19, identifying the appropriate children to test, transportation barriers, cultural barriers, other, and change in testing requirements. Other responses included: time, getting physicians to do the testing, lack of a centralized system.



All Title V respondents said it is important to address the barriers to increasing blood lead level testing through Title V.

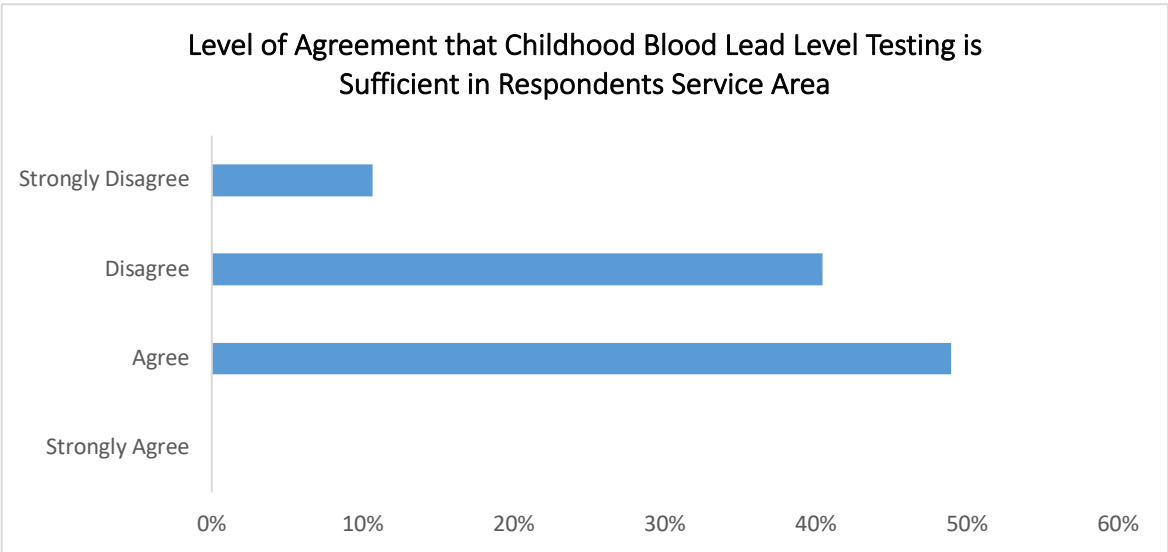


Public Health

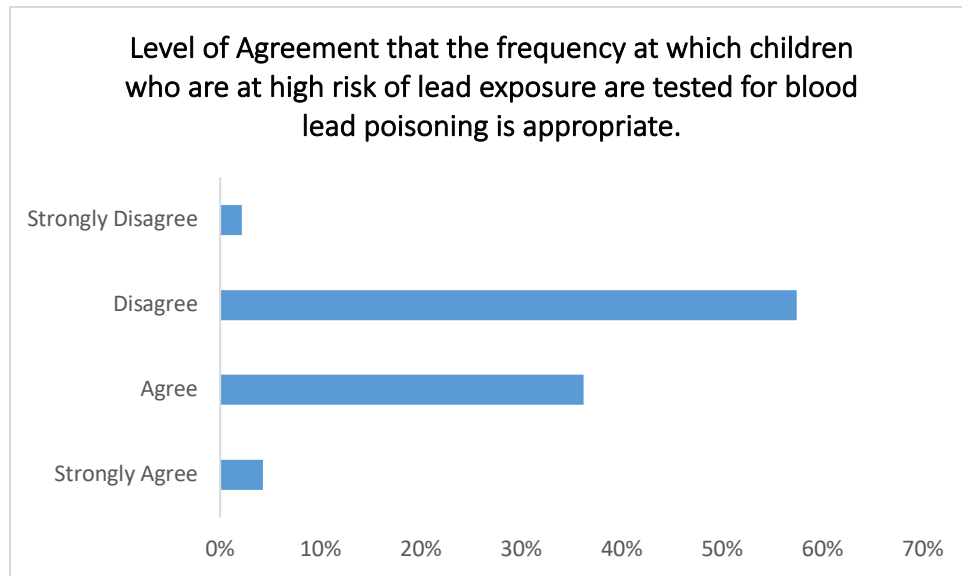
When asked what strategies are most effective in preventing children in your service area from being exposed to lead hazards, they were ranked (most effective to least effective) as the following: an intervention directly from your organization, grant programs targeted at pre-1978 housing to assist in funding lead hazard removal, outreach to landlords concerning safe practices for the identification and removal of lead hazards in their properties, education/outreach through parenting and peer groups to pregnant women and current parents regarding lead safety practices, and education of pregnant women and current parents through healthcare providers regarding lead safety practices.



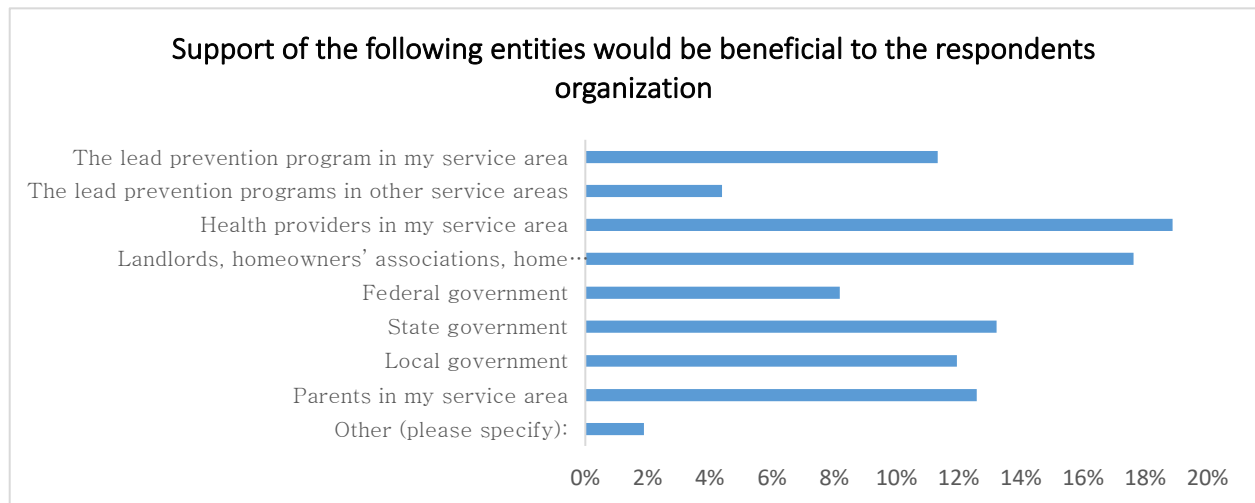
Level of agreement that childhood blood lead level testing is sufficient in respondents service area: 48.94% agree, while 40.43% disagree and 10.64% strongly disagree. Respondent expansion on response can be found in the appendix.



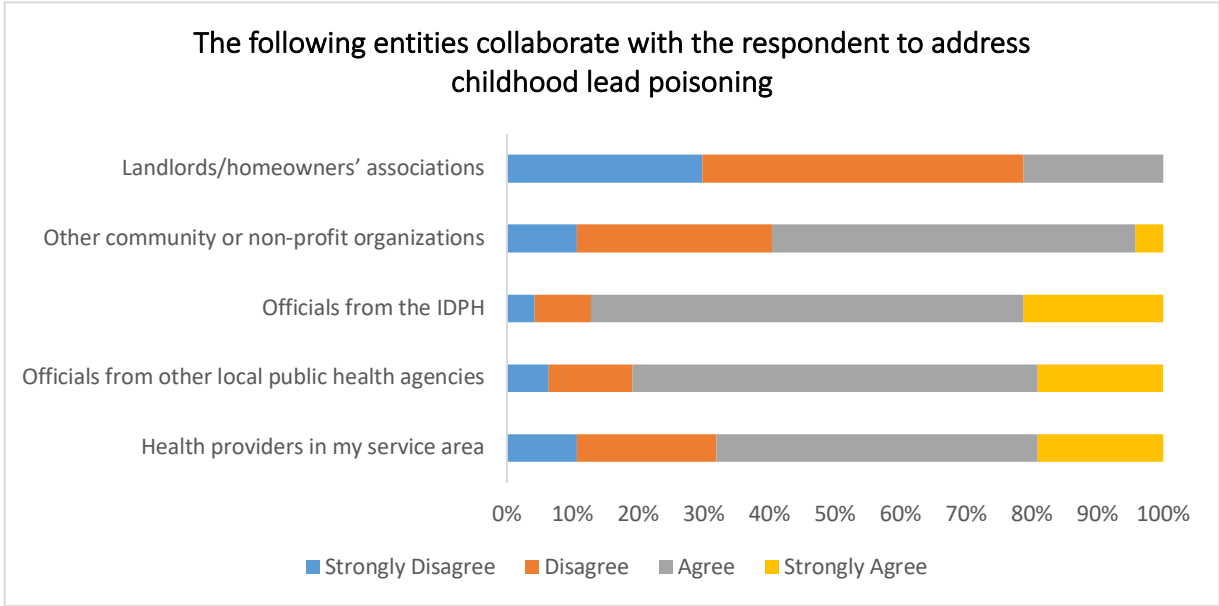
The majority of respondents (57.45%) disagree with the statement: the frequency at which children who are at high risk of lead exposure are tested for blood lead poisoning is appropriate. Respondent expansion on response can be found in the appendix.



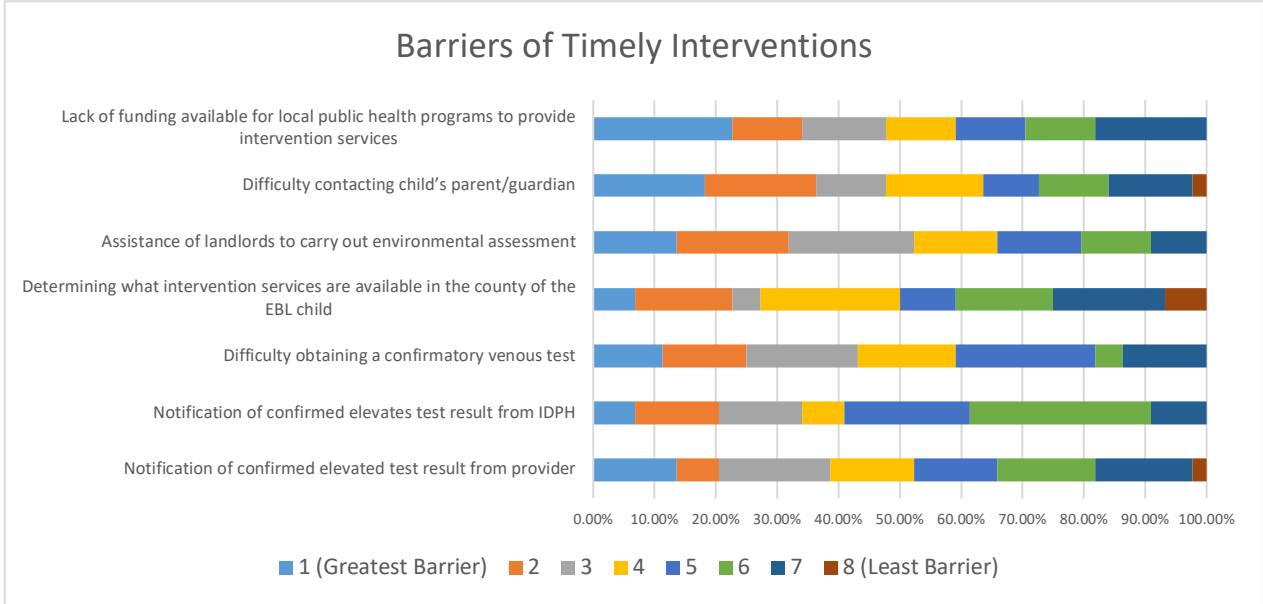
When asked which entities would be beneficial to the respondent's organization, respondents noted healthcare providers in service area, landlords/homeowners' associations, and state government would be the most beneficials.



When asked which entities collaborate most with respondents, IDPH officials are found to collaborate most with respondents, while landlords/homeowners' associations are found to collaborate the least.

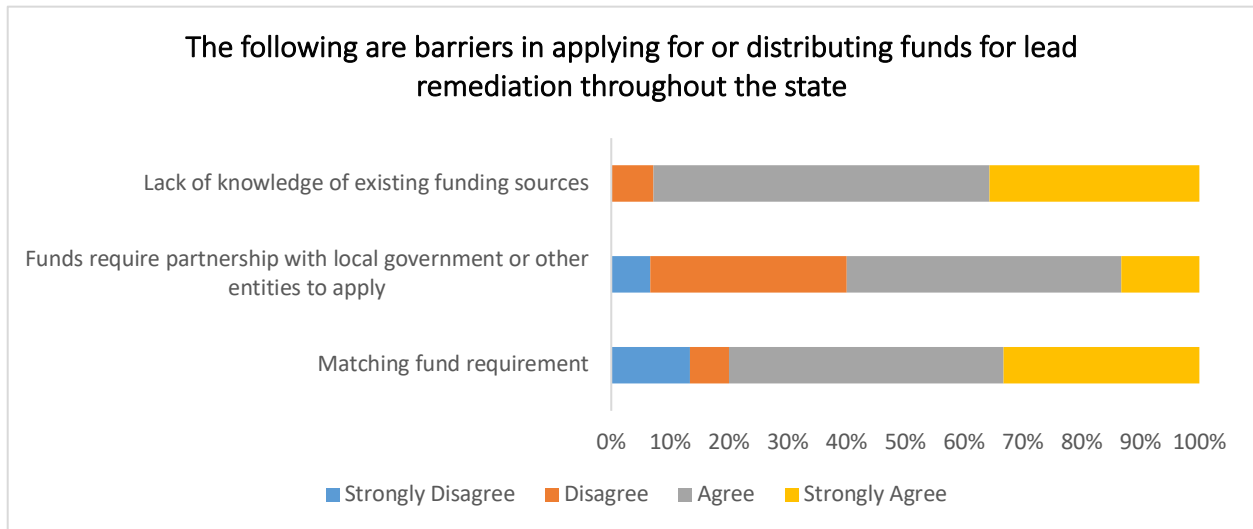


Respondents were asked what the barriers to preventing timely interventions after an initial elevated blood lead level. On average, all options were seen as barriers with small variation between each ranking. The ranking of barriers from greatest to least is as follows: assistance of landlords to carry out environmental assessment, difficulty contacting child's parent/guardian, lack of funding available for local public health programs to provide intervention services, difficulty obtaining a confirmatory venous test, notification of confirmatory elevated test result from provider, notification of confirmatory elevated test result from IDPH, determining what intervention services are available.

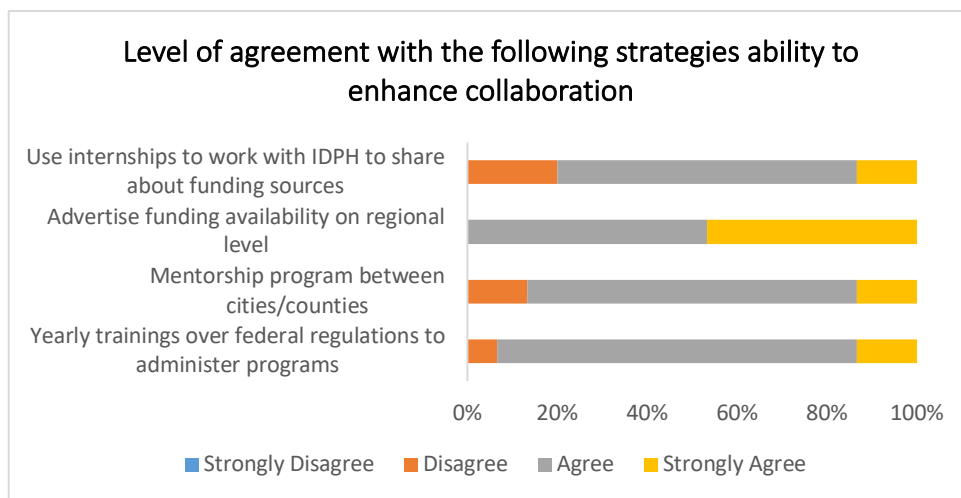


Funding Authority

Greatest barrier in applying for or distributing funds for lead remediation is lack of knowledge of existing funding sources, while matching fund requirements were not seen as a big barrier.



When asked which of the provided methods to enhance collaboration between governments in improving lead remediation, all methods were seen to be important. Although closely ranked, the order of methods was advertise funding availability on regional level, yearly trainings over federal regulations to administer programs, mentorship program between cities/counties, and mentorship program between cities/counties.



Funding authority respondents have a ranked preference for learning about lead poisoning prevention funding resources (most preferred to least preferred) of: emails, newsletters, website, social media.

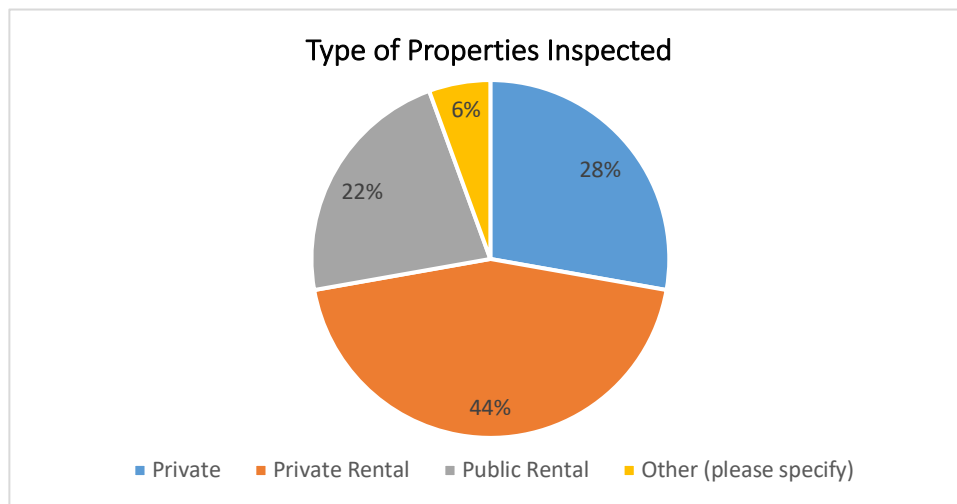
Public Property

Due to a small number of responses, there is insufficient data to analyze.

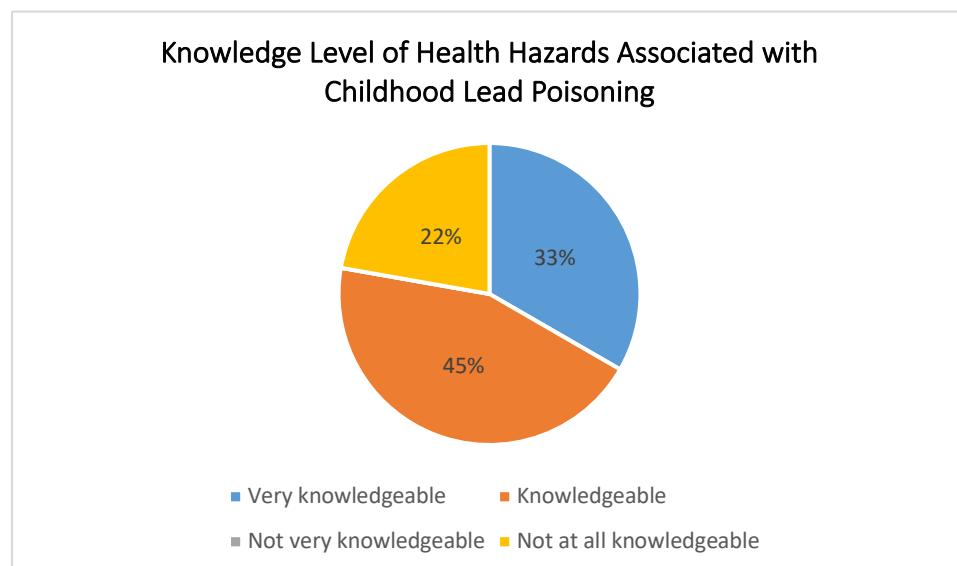
Housing Inspector

Of all housing inspector respondents, 77.8% were aware of the Iowa Department of Public Health lead professional certification program, while 85.71% of respondents are certified by the IDPH lead professional certification program.

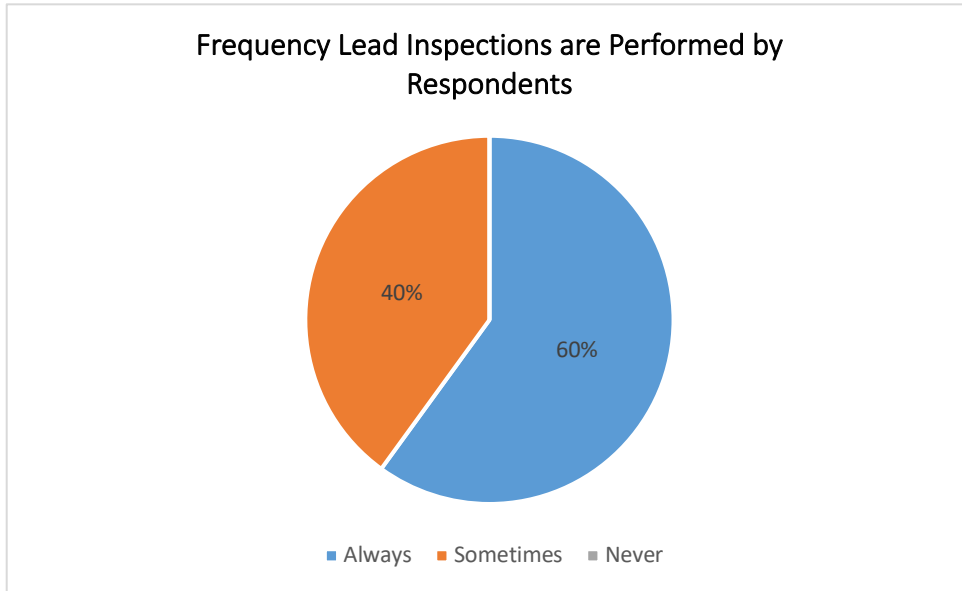
The majority of respondents inspect private rental properties.



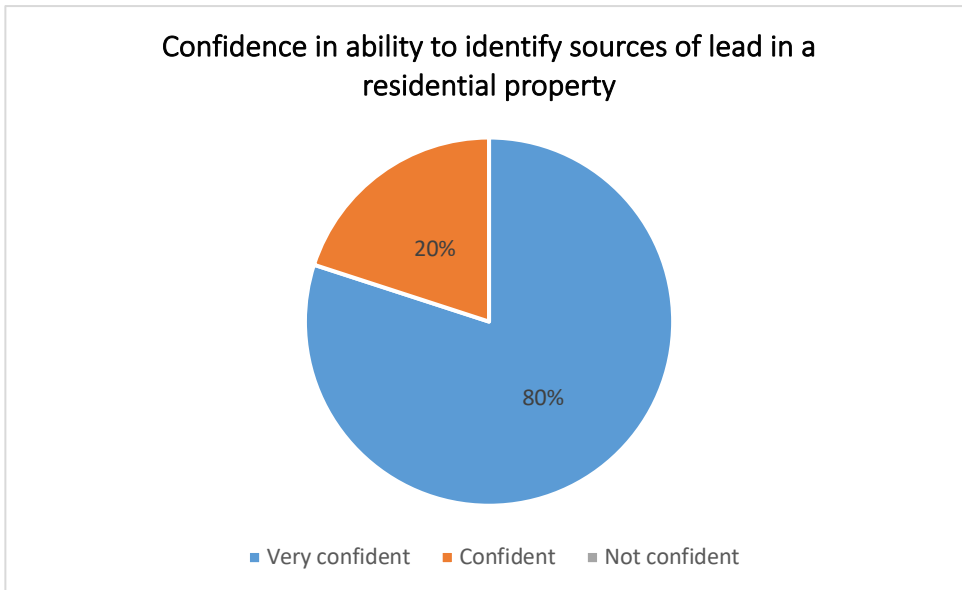
Only 22% of responses were not at all knowledgeable of health hazards associated with childhood lead poisoning.



When asked the frequency of lead inspections performed, 60% of respondents always perform lead inspections and 40% sometimes perform lead inspections.



All respondents identified being confident in their ability to identify sources of lead in a residential property.



Recommendations

The IIPHRP developed recommendations based on the results obtained. These recommendations aim to provide strategies to decrease the barriers faced in reducing childhood lead poisoning and increasing blood lead level (BLL) testing. Below is a summary of the recommendations for IDPH to improve the outreach and collaboration between sectors to increase knowledge and awareness on childhood lead poisoning.

- **Data sharing for providers, public health, and Title V:** Based on barriers to testing and follow-up, a system to share data between providers, public health, and Title V is necessary to ensure all children are getting tested and follow-up is provided. This will also aim to decrease the barrier of notification of confirmatory test results.
- **Assist in facilitating collaboration between all sectors:** There is a mutual agreement that knowledge acquired from one group when shared with the other groups, can assist in decreasing the rate of childhood lead poisoning and increase BLL testing. Providing a space for all sectors to learn from each other and collaborate multiple times through the year will help overcome barriers.
- **Development of multicultural and multilingual educational resources for families and guardians:** Medical Providers face barriers to lead poisoning diagnoses that can be avoided if there is more access to equitable resources for diverse communities. To increase BLL testing, there needs to be a focus on either increasing on-site testing, referral testing, or both. This can be combatted by increasing parental awareness and communication between public health and medical providers, and providers with families. A strategy postulated, and mostly agreed with, is to develop a short multicultural and multilingual resource to share with parents and guardians regarding testing and increasing continuing education for doctors and mid-level providers on BLL testing. Title V would need to assess barriers in providing equal lead poisoning education to public health staff as to families; Providing a multicultural resource would aid Title V's ability to better communicate the importance of timely and accurate blood lead level testing.
- **Alignment of state and national blood lead testing guidelines and follow up:** Reducing the action level for intervention will reduce confusion and assist in protecting more children in Iowa. Policy to require blood lead tests at 1 and 2 years of age is also warranted.
- **Make certification training more accessible:** Contractors would benefit greatly if efforts were made to ease the process and decrease the time needed to gain lead certification/recertification. Providing lead certification online in a self-paced format would not only speed up the process of acquiring certification, but it would also decrease the time needed to obtain certification. The cost of lead-certification is a big barrier faced by contractors. Consider making certification mandatory to combat the loss of competitive pricing in the market.
- **Providing regular communication to all sectors:** The stakeholders would benefit the most from the provision of timely and accurate information on childhood lead poisoning, funding for lead remediation, how to safely repair and maintain lead paint in old homes, the importance of home inspection, clear and consistent testing updates. Email communication and newsletters received quarterly were the preferred mode of communication.
- **Create and maintain a central repository for information:** All sectors have noted the need for easier access to resources including open funding opportunities, available intervention services across the state, and resources for targeted outreach to specific populations.

Overall, there is a constant need for creating and distributing awareness on childhood lead poisoning and the importance of blood lead level testing. This need arises from lack of knowledge around lead exposure and childhood lead poisoning, lack of access to blood lead level testing, lack of data sharing and lack of equitable educational resources that consider diverse cultures and languages that exist in our communities in Iowa.

Due to limited responses of stakeholder groups, it is recommended that targeted outreach be completed to gain a clearer understanding of barriers those groups may face. Those stakeholder groups include water utility and public property.

Appendix

Survey Questions

	Question	Question Type	Choices
Overall	What county do you live in?	Multiple Choice	All 99 counties
	What counties do you work in?	Multiple choice, select all that apply	All 99 counties
	How knowledgeable are you about lead hazards and lead poisoning issues in Iowa?	Rank	1 (least knowledgeable) - 10 (very knowledgeable)
	How do you receive communication about local programs, funding opportunities or policy changes? Select all that apply	Multiple choice, select all that apply	Facebook, Twitter, IDPH website, CDC website, email communication, other (please specify)
	How would you like to receive information about local programs, funding opportunities or policy changes?	Multiple choice, select all that apply	Newsletters, Email content, Social Media, Text Message, Print Materials, Other (please specify)
	What lead based exposure topics or resources would you like to know more about?	Multiple choice, select all that apply	Funding for lead remediation, Finding Iowa Certified Lead Contractors, How to safely repair and maintain lead paint in old homes, Recommended cleaning procedures to prevent lead dust exposure, Testing for lead in drinking water, Policy requiring repair of lead hazards in rental properties, Other (please specify)
	Lead Poisoning Prevention involves many stakeholders. What stakeholder group do you mostly align with?	Multiple choice, select all that apply	Private Property Owner with Rental Units, Public Property Rental (HUD or Section 8), Water Utility, Contractors, Medical Provider, Title V, Public Health (including CLPP & non-CLPP), Funding Authority (COGS, City Employee), Housing Inspectors
Public/Private Property	Which best describes your position?	Multiple Choice	Public rental manager, Private rental owner, I manage public property and I own private rental property
	What is the extent of your knowledge regarding lead hazards in public or private rental properties?	Multiple Choice	Very informed, Somewhat informed, Informed, Not very informed, Not informed at all
	When were the properties that you own or manage built?	Multiple Choice	Before 1978, After 1978
	In what counties do you own or manage single-family or multi-family residential properties?	Multiple choice, select all that apply	All 99 counties
	Have the properties that you own or manage ever been inspected for lead?	Multiple Choice	Yes, No, Some have and some have not
	For the properties that have been inspected was the remediation, abatement or renovation completed?	Multiple Choice	Yes, No, Project is still ongoing, There was no recommended action

	Question	Question Type	Choices
	What were the barriers to completing the lead remediation, abatement or renovation actions that were recommended?	Multiple choice, select all that apply	Lack of funding to make proper repairs, Time allowed by law to make proper repairs, Lead paint repair is too costly and time consuming, Lack of knowledge to properly repair lead hazards, Not enough lead certified contractors in my area, Unit(s) are occupied, Can't afford to have units unoccupied for time it takes to complete lead hazard repairs, I have no barriers
	If funding were available to repair lead hazards in the public or private rental properties you own would you apply?	Multiple Choice	Yes, No
	If no, why?	Multiple choice, select all that apply	No contractors to do the work, Too many restrictions, Costs too much out of pocket, Takes too much time, Don't want to have to disclose if lead-based paint is identified, Mitigation has taken place, No mitigation is needed, No not interested in applying for governmental funds
	There are several primary sources of lead poisoning associated with housing in Iowa. In your opinion, which of the following primary sources are more common in the counties where you own or manage rental property?	Rank (1=most common, 4=least common)	Property is located near an industry that uses or produces lead products, Lead based paint, Lead water service lines, Lead contaminated soil
	How often is the water in your public or private rental properties tested for lead by the city, county, or state?	Multiple Choice	Every 6 months, Every 1 year, Every 3 years, Less than once every 3 years, I am unaware of my water being tested for lead
Water Utility	What is your job position / title?	Text entry	
	Are you a public or private water source?	Multiple choice	Public, Private
	How concerned are you about lead exposure to children in Iowa water sources?	Multiple choice	No concerned at all, Mildly concerned, Moderately concerned, Very concerned
	What would you like more information on regarding lead from water sources?	Multiple choice, select all that apply	Health effects from exposure to lead in water, Funding for lead exposure mitigation, Awareness of risk of exposure, Water testing for elevated lead levels, Blood lead level testing in children, Locations of lead and water risk in Iowa, Other (please specify)

	Question	Question Type	Choices
	What do you believe are the best solutions for preventing lead exposure from water sources?	Rank (1 being the best)	Universal testing for all water sources in Iowa (private wells and public sources), Focus testing in schools (PreK-12), Change lead piping to other materials, Use point-source filters, Improve blood testing in children, Add chelating or binding agents to the water, Other (please specify)
	How often does your city/county test for lead in water?	Multiple choice	Every 6 months, Every 1 year, Every 3 years, Less than once every 3 years, I am unaware of my water being tested for lead
	What is the biggest barrier to testing for lead in water?	Text entry	
Contractors	What is your job position / title? (foreman, crew member, owner, etc)	Text entry	
	Please tell us if the following apply to you:	Multiple choice	I am a current lead-certified contractor, I am seeking lead certification/recertification, I am not seeking lead certification/recertification, None of these apply to me
	Rate your level of agreement with the following statement: I believe lead poisoning is an issue in Iowa.	Multiple choice	Strongly disagree, Disagree, Agree, Strongly agree, Unknown/not sure
	Rate your level of agreement with the following statement: I believe lead-certified contractors play a role in addressing lead exposure.	Multiple choice	Strongly disagree, Disagree, Agree, Strongly agree, Unknown/not sure
	In Iowa there are opportunities to become lead-certified. This certification ensures that contractors are properly trained to remediate lead hazards in a safe manner. Is the information and process to become lead-certified and/or recertified clearly understood - please indicate below. I know where to find information about how to become certified	Multiple choice	Yes, No
	In Iowa there are opportunities to become lead-certified. This certification ensures that contractors are properly trained to remediate lead hazards in a safe manner. Is the information and process to become lead-certified and/or recertified clearly understood - please indicate below. I understand the process to become certified/recertified	Multiple choice	Yes, No

	Question Type	Choices	Question
	What do you believe are the greatest challenges and barriers to becoming a lead-certified contractor in Iowa and remaining recertified? (Select all that apply)		Cost of certification/recertification, Unclear expectations surrounding certification/recertification, Time away from work, Safety/health concerns, Time away from personal life, Other barrier not listed (please specify), Difficulty in accessing a training location, There are no barriers
	Would you attend a paid training to become a lead-certified contractor?	Multiple choice	Yes, No
	Would you attend a free training to become a lead-certified contractor?	Multiple choice	Yes, No
	What would encourage and/or enable you to get certified and/or recertified as a lead contractor?	Text entry	
Medical Providers	What is your job position / title?	Text entry	
	How much of a concern are elevated blood lead levels in your practice?	Rank (0=no concern, 10=very concerned)	0 (no concern) - 10 (very concerned)
	What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Insufficient education regarding lead and BLL testing for doctors/mid-level providers.	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
	What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Insufficient education regarding lead and BLL testing for parents/guardians.	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
	What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Insufficient multicultural and multilingual resources for parents.	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
	What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Unclear blood lead testing guidelines for doctors/mid-level providers.	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree

Question Type	Choices	Question
What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Lack of capacity to perform blood lead testing at institution/practice.	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Parent/guardian awareness/hesitancy.	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Unclear clinician responsibility (acute care. primary care).	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
What do you see as challenges or barriers for the diagnosis of elevated blood lead levels (BLL) in patients? Rate your level of agreement with the following statements. Other (please specify).	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
Does your location offer on-site blood lead level (BLL) testing or do you provide a referral to an outside lab?	Multiple choice, select all that apply	On-Site, Referral
How many of the referred individuals do you estimate actually go and receive blood lead testing at referral site?	Multiple choice	All (100%), Many (>50%), Some (<50%), None (0%)
What demographic of patients do you screen for blood lead level (BLL) testing?	Multiple choice, select all that apply	Infants (Age 0-1), Toddlers (Age 1-3), Preschool age children (Age 3-5), Middle Childhood (Age 6-11), Young teens (Age 12-14), Teens (Age 15-17), Young adults (Age 18-25), Adults (Age 26-64), Older adults (Age 65+), Individual with PICA, Pregnant individuals, Partners of pregnant individuals, Immigrants/Refugees, Individuals with suspected occupational lead exposure, Low socioeconomic status, Individuals residing in older homes, Other (fill in the blank)
How many patients have you cared for in the past year with an elevated blood lead level (BLL) (anything above 5 µg/dL)?	Multiple choice	0, <5, 5-10, 10-15, 15-20, >20, Unknown, Other (please specify)

	Question Type	Choices	Question
	How often do you receive communication regarding updates on best practices for blood lead level (BLL) testing (from office manager, the institution you are employed at, or from the Iowa Department of Public Health, etc.)?	Multiple choice, Likert scale.	Several times a month, Monthly, Quarterly, Annually, Cannot recall last communication
	How often would you like to receive an update on best practices of blood lead level testing?	Multiple Choice	Weekly, Monthly, Quarterly, Yearly, Other
	Which guidelines do you follow for Blood Lead Testing (BLL)?	Multiple choice, select all that apply	Bright Futures/AAP, Iowa Department of Public Health (IDPH), Institution (employer) specific guidelines, Centers for Disease Control and Prevention (CDC), Other (please specify)
	Please provide a short description of your institution's guidelines.	Text entry	
	What do you think could most help improve blood lead testing in Iowa?		Increased continuing education for doctors and mid-level providers about elevated BLLs, State and hospital investment in on-site testing materials for BLL, Improved organizational culture towards screening BLL (i.e., more support to have conversations with parents about lead, screening for all children, etc.), Alignment of state and national BLL testing guidelines (i.e., Bright Futures/AAP, Medicaid, IDPH), Developing a short (3 minute or less) multicultural, multilingual resource to share with parents/guardians regarding the importance of childhood BLL testing, Other (please specify)
Title V	What is your job position / title?	Text entry	
	How comfortable are you providing education about childhood lead poisoning to the following groups: Families, Health Care Providers, Local public health staff, state public health staff	multiple choice, Likert scale.	Very uncomfortable, uncomfortable, comfortable, very comfortable
	What percent of work would you say is dedicated to handling childhood lead testing?	Multiple Choice	0%, 0-24%, 25-49%, 50-74%, 75-100%
	How would you rate the importance of childhood blood level testing to public health in Iowa?	Multiple Choice	Very unimportant, Unimportant, Important, Very important
	How would you rate the importance of childhood blood lead level testing in Title V in Iowa?	Multiple Choice	Very unimportant, Unimportant, Important, Very important

	Question Type	Choices	Question
	What barriers are there to increasing blood lead level testing through Title V?	Multiple choice, select all that apply	COVID-19, Change in testing requirements, Identifying the appropriate children to test for elevated blood levels, Language barriers, Transportation barriers, Cultural barriers, Other (please specify)
	How comfortable are you encouraging providers to conduct blood lead tests for 1 and 2 year olds?	Multiple Choice	Very uncomfortable, uncomfortable, comfortable, very comfortable
	What resources do you need to implement the blood lead testing requirements for 1 and 2 year olds?	Text entry	
Public Health	What is your job position / title?	Text entry	
	What strategies are most effective in preventing children in your service area from being exposed to lead hazards?	Rank (1=most effective, 6=least effective)	Education/outreach through parenting and peer groups to pregnant women and current parents regarding lead safety practices, Education of pregnant women and current parents through healthcare providers regarding lead safety practices, Outreach to landlords concerning safe practices for the identification and removal of lead hazards in their properties, Grant programs targeted at pre-1978 housing to assist in funding lead hazard removal, An intervention directly from your organization, Other (please specify)
	Rate your level of agreement with the following statement: Child blood lead level testing is sufficient in my service area(s).	Multiple choice, Likert scale.	Strongly agree, agree, disagree, strongly disagree
	Please expand on your answer to the previous question.	Text entry	
	Rate your level of agreement with the following statement: the frequency at which children who are at high risk of lead exposure are tested for blood lead poisoning is appropriate.	Multiple choice, Likert scale.	Strongly agree, agree, disagree, strongly disagree
	Please expand on your answer to the previous question.	Text entry	
	After an initial test result showing an elevated blood lead level is confirmed, what barrier prevent timely interventions (I.e. home nursing visit, developmental testing, medical evaluation, inspection, etc.) from occurring?	Rank (1=greatest barrier, 8=least barrier)	Notification of confirmed elevated test result from provider, Notification of confirmed elevates test result from IDPH, Difficulty obtaining a confirmatory venous test, Determining what intervention services are available in the county of the EBL child, Assistance of landlords to carry out environmental assessment, Difficulty contacting child's parent/guardian, Lack of funding available for local public health programs to provide intervention services, Other (please explain)

	Question Type	Choices	Question
	When it comes to addressing childhood blood lead poisoning in my service area, my organization would benefit from the support of the following entities	Multiple choice, select all that apply	The lead prevention program in my service area, The lead prevention programs in other service areas, Health providers in my service area, Landlords, homeowners' associations, home inspectors etc. in my service area, Federal government, State government, Local government, Parents in my service area, Other (please specify)
	For each group listed below, rate your level of agreement with the following statement: This entity collaborates with my organization to address the problem of childhood blood lead poisoning in my jurisdiction. Groups: Health providers in my service area, Officials from other local public health agencies, Officials from the IDPH, Other community or non-profit organization, Landlords/homeowners' associations	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
Funding Authority	What is your job position / title?	Text entry	
	In your opinion, do you agree or disagree that the following are barriers in applying for or distributing funds for lead remediation throughout the state.: Matching fund requirement, Funds require partnership with local government or other entities to apply, Lack of Knowledge of existing funding sources, Other (please specify)	Multiple choice, Likert scale.	Strongly disagree, Disagree, Agree, Strongly agree
	For one (or more) of the barriers identified above, what is one suggestion you think would resolve or reduce the barriers?	Text entry	
	In your opinion, do you agree or disagree with the following methods to enhance collaboration between governments in improving lead remediation programs? Yearly trainings over federal regulations to administer programs, Mentorship program between cities/counties, Advertise funding availability on regional level, Use internships to work with IDPH to share about funding sources	Multiple choice, select all that apply	Strongly disagree, Disagree, Agree, Strongly agree
	Please rank your preferences for learning about lead poisoning prevention funding resources by dragging the item up or down.	Rank (1=being most preferred, 5=least preferred)	Social media, Newsletter, Emails, Website, Other (please specify)
	If you have previously received funds for lead hazard repair, would you be willing to mentor a small/rural city or county in developing a lead hazard repair program?	Multiple Choice	Yes, No, I have never received funds

	Question	Question Type	Choices
Housing Inspector	What is your job position / title?	Text entry	
	What type of properties do you inspect?	Multiple choice, select all that apply	Private, Private Rental, Public Rental, Other (please specify)
	How knowledgeable are you about the health hazards associated with childhood lead poisoning?	Multiple Choice, Likert scale.	Very knowledgeable, Knowledgeable, Not very knowledgeable, Not at all knowledgeable
	Are you aware of the Iowa Department of Public Health Lead Professional Certification Program?	Multiple Choice	Yes, No
	Are you certified by the IDPH through the Lead Professional Certification Program?	Multiple Choice	Yes, No
	How frequently do you inspect for lead in homes?	Multiple Choice	Always, Sometimes, Never
	How confident do you feel in identifying sources of lead in residential properties (i.e.lead paint, plumbing, etc.)?	Multiple Choice	Very confident, Confident, Not confident
	What are the reasons you have not completed the Lead Professional Certification Program?	Multiple choice, select all that apply	Time constraints, Unaware of certification program, Not interested in becoming certified, Lack of information regarding the program, Cost of training, Can't find a training course when needed, Other (please specify)
	What else would you like us to know regarding your role as a housing inspector in preventing lead poisoning?	Text entry	

Response Expansion

Public Health

Expansion on agreement that childhood blood lead level testing is sufficient in respondents service area.

Testing volume is low

Hard to convince families to get their children tested.

Child are not getting tested due to COVID concerns

Children in Iowa are required to be tested before entering kindergarten, but from the time they are mobile, around 8 months or so, until they stop having so much hand to mouth activity, around 2 or 3 years old, that is when they are most at risk and should be tested more than once in that time period. many providers are unwilling to complete the 24 mo. lead level

screening at WIC clinics and Dr offices

the Providers in our area do a good job of testing at age 1, but not enough test at age 2

If providers would order the 24 month test I would have chosen a Strongly Agree

Families need better access to lead testing and education

We have a gap of 25% lead testing.

Our local medical providers do a nice job of following up with lead testing

I think it is good but can always be better.

Not only are the rates too low but the standards which categorize a high blood level have not been updated in our state, which continues to mask the rates.

Follow up testing is not always followed by families.

Low number of parents that follow through with follow up testing

Education needs to be provided to families/parents on what to look for, and how to correct a problem before your child gets a high lead test

We have many who utilize healthcare in SD, they are not aware of the need and often do not test levels. We often have local providers who sign a letter stating a child is at low risk and doesn't need to be tested.

Providers have no access to the Blood Lead testing database for verification if a blood lead test has been done on their patient. They also assume that if they patient is enrolled in WIC then they have had a blood lead test, which is not always true.

It is happening but probably to a minimum standard, improvements and increased testing could likely be achieved

many providers don't test until going into school system d/t 1 required test law, many don't believe lead poisoning is a problem esp when the BLL is 10, they see 5-10 as no issue, they also seem to think that 1 good test means no future one needed, also have heard "it's too traumatic" to do every year

Even before COVID, the rate was below the state requiriment

Doctor's offices are not testing kids when they should be tested per IDPH, even though we have reached out and educated the providers. I am not only calling the parents of the children on my case load, but also calling the doctor's offices to make sure they are doing what they are supposed to to keep the children safe and healty.

n/a

We are supposed to rely on medical providers completing lead testing; however, not many of them do, & if they do, they don't test past 1 year of age.

More tests can be done. Earlier.

majority of clinics are screening and testing per public health recommendations

Available through health services

Have no information for landlords

Kids who have well checks get routinely tested by drs here. If they miss their well child's that's when it gets missed most often.

Children are being tested, but maybe not as often as recommended

I've been able to get bll testing for nearly every child in my school.

Many of the children doctor in South Dakota, where lead testing is not required for Kindergarten. This is the biggest barrier we have to children receiving lead testing, as the South Dakota providers do not order the test.

Approximately 10% of children enrolled in Head Start did not receive blood lead level testing per EPSDT recommendations during the 20-21 school year.

The lead requirement is listed on our physical exam paperwork and the majority are tested. Problems arise if a child moves into district and tells a medical provider they have been tested in the past but we have no access to the result. They do not want to have the child "poked again" Some will provide a result and some do not.

Out of 32 to 35 students I may have one that wasn't tested by the age of five. But this is not that often. That child has usually moved into the district.

We are not doing a good job of capturing two and three year olds through lead testing

I've read that this has been declining, even before the COVID-19 pandemic. Both in Iowa and around the country.

State law requiring testing before school age is appropriate.

Almost all health care providers offer blood lead testing in addition to it being available at the public health immunization clinics and WIC

I usually only have 5 or less children that do not turn in lead levels in Kindergarten

Expansion on agreement that the frequency at which children who are at high risk of lead exposure are tested for blood lead poisoning is appropriate.

Frequency is low

Down due to COVID

Kids from low income families aren't getting tested.

If a child is specifically categorized as being high risk, yearly testing, which is not done for all or required, but is what typically takes place if any testing takes place at all, is not enough. Overall and statistically it is probably enough, but on an individual level, a year is a long time for a developing child to be lead poisoned. I would recommend every three months for kids at high risk. WIC does iron check with a finger prick, and people have to pick up their check every month, so it seems like a good connection to get a test at

not routinely completing on 2 year olds

We are not notified of elevated lead levels at this time.

Needs to be consistent testing of all children at ages 1 and 2

I have seen providers only order a 12 month lead lab then at 36 months they are elevated. EPSDT says 12 and 24 months for testing or I feel if a child is high risk they should be tested yearly-the lead screenings done at well children are not sufficient in early detection as they are just a screening and not an actual test

Families need better access to lead testing and education

It could be better: 1, 2 & 3 years old.

Our local medical providers do a nice job of following up with lead testing

I think it is good but can always be better

we have a higher rate in older neighborhoods

More education needs to occur in the physician offices.

Guidance seems appropriate but how often children are actually tested seems doubtful.

Increase testing frequency can convey how serious lead poisoning is.

disagree

Again many utilize health care outside of Iowa, and often providers unaware of historically elevated levels. Again it is a problem with local providers as well, thinking a child is at low risk and sending a letter to the school stating they believe the child is at low risk.

There should be an 18 month threshold for those that are living with additional risk factors or have had slightly elevated blood lead test results.

The frequency at which it is recommended is probably appropriate, but not sure it is happening to that level

if this means that the providers are testing at the rec. freq. i say no. IF this means the chart for testing is appropriate, then i would agree

Kids may be tested at 1 years old and not tested again until they are starting school

The intervals for testing allows for the parent/guardian to initiate lifestyle changes to assist in lowering the BLL.

Please see above. Providers don't typically test children after their 1 year well child exam.
 Earlier. More frequent.
 PCHD has good follow up of children with high lead levels
 Mandatory- expected with kindergarten enrollment
 Only test is at 2-4 years old. Older children need tested too
 Agree
 Oftentimes, lead testing is not performed at well child appointments or children are not completing well child visits on the routine schedule, which leads to less testing.
 I believe it should be an annual test done with yearly physicals.
 Availability of testing for high risk children varies from county to county.
 Most parents follow through on this requirement
 I believe the area physicians do a good job at testing if the child goes to their regular wellness exams.
 We are not routinely obtaining lead testing in the 2-3 year old population.
 If this is in fact on the decline, this wouldn't be true.
 I believe children are exposed more than parents realize
 Very few health care providers recommend lead testing after 12 months of age
 As long as they go to well child exams

Funding Authority

For one (or more) of the barriers identified above, what is one suggestion you think would resolve or reduce the barriers?

Make funding options more clear and promote them better. Allow as many ranges of groups as possible to apply.
 Simplify the process and increase awareness through trusted parties
 Testing children for lead paint and notifying parents of the opportunities
 enforcing rules on contractors who are working w/o LBP training or certification.
 Matching fund requirement
 make funds easier to attain locally
 easier access to funding
 I think the match can be a challenge. There needs to be more outreach with health care providers and social services. Our community has a program and my feedback for that is- I don't think those in healthcare are testing older children bc it is not required. I think testing should occur for 6, 7, 8 year olds. Lots of lead poisoned children are over the age of 5. I think it is hard for providers to get the word out to all those in hospitals/health care providers- I have sent out communication to three different staff members at a hospital- and I talked to someone that worked there and they never received the information at all. There is no awareness of lead and the dangers of it- it needs to be brought up at medical conferences, and be top of mind for Pediatricians, day cares, those working with children. .
 Partner with other organizations such as housing trust funds to provide matching funds
 do applications at the county, rather than city, level
 Continual funding availability
 outreach to building contractors, including electricians and plumbers