

# Evaluation of the First Seven Months of a Pilot Lead Project in the City of St. Louis

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Summary. The City of St. Louis has a lead epidemic, with poisoning rates 7 to 10 times that of the US average. St. Louis City government has been accused of “apathy” in its treatment of lead. Critics charge the City with waiting until after a child is poisoned before testing the home. They advocate that it remediate homes on a block by block basis in order to prevent children from being poisoned.

The City of St. Louis announced a pilot project in March, 2005. It was intended to educate residents about lead and remediate every home on 3300 Nebraska. This evaluation is based on an independent survey concerning progress of the pilot project. The rate of progress found in this evaluation suggests that the City may never complete the task of lead removal.

Interviewers surveyed residents of all 31 inhabited homes on 3300 Nebraska and 37 homes on adjacent blocks during October 1–11, 2005. An unexpected finding was a large discrepancy between home listed on the City’s 3300 Nebraska Checklist and the actual homes found by interviewers. A 31.9% error rate for the Checklist resulted from homes that were listed but did not exist, homes that existed but were not listed, and residences that had been combined. The City’s failure to accurately identify homes on the targeted block raises doubts concerning its ability to complete the project.

Over 90% of respondents on all three blocks knew that lead causes serious health problems. Over 70% indicated that they would like the City to remove lead from their homes. Residents of 3300 Nebraska more often knew they were living in a highly contaminated area. This finding indicates that the City’s educational efforts had measurable success seven months after its April 2005 festival.

The authors identified four stages for addressing lead in a targeted area, with each stage corresponding to a survey question: (a) test the home for lead; (b) offer to treat lead problems; (c) set a date to begin lead treatment; and (d) complete lead treatment.

Residents of 3300 Nebraska were far more likely than those on neighboring blocks to report that their homes had been tested for lead. There was a smaller difference confirming that 3300 Nebraska residents had more often received an offer to remove lead. The third step, setting a specific date for lead treatment to begin, slightly favored those on 3300 Nebraska. But the critical question of whether lead treatment had been completed found no difference between 3300 Nebraska and comparison residents.

Seven months after beginning the pilot project, the City of St. Louis has made no progress in completing the task of lead removal. This suggests that the education and testing programs could be more for public relations than being the first steps in actually grappling with lead poisoning.

The authors recommend that the St. Louis Board of Aldermen declare a Lead Emergency. The first phase of a Lead Emergency should include the Health Commissioner’s ordering inspection of all homes in high risk areas, removal of lead from empty homes before they can be occupied, and phased removal of lead from 100% of remaining homes. The current evaluation identified 16 vacant units on 3300 Nebraska. The City of St. Louis could begin by removing lead from these properties.

Lead is an entirely preventable problem. For most of the last century, the lead industry kept government from taking steps to prevent poisoning. Now that over 90% of the public is aware of the dangers of lead, some governments appear to be more interested in creating the impression that they are fighting lead than taking concrete steps to remove it from buildings.

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# Evaluation of the First Seven Months of a Pilot Lead Project in the City of St. Louis

by Don Fitz, Ph.D. & Kathleen Logan-Smith, B.A.

Missouri has a unique combination of lead problems. Its lead belt is the source of 95% of all US lead mined and its largest city, St. Louis, has a lead epidemic among children. Children under six in the City of St. Louis are lead poisoned at a rate at least 7 to 10 times the US average. Reports suggest a rate as high as 55% in some black neighborhoods of St. Louis in the period 2000–2003. [1]

Lead poisoning in children first was reported in 1892. By 1904 the major cause was identified as dust from lead-based paint. [2] Lead reduces performance in school because it lowers intelligence, makes it difficult to pay attention, and harms hearing. These effects stay with a person through adulthood. Lead is associated with aggression and delinquency in boys. At high levels, lead can lead to kidney disease, blindness, seizures and death. [3]

Until the 1950's lead was added to most paint to make it more durable. [4] Aging lead paint becomes dust as it ages and is released by rubbing against another surface as in doors or windows or when it falls off in flakes. Lead poisoning happens when this dust is ingested or inhaled. Scraping paint without proper precautions can worsen the problem.

Recent studies have documented connections between brain chemistry, lead, violence and alcohol. The brain chemical serotonin inhibits impulsiveness. Serotonin helps people to think before they act. People with low levels of serotonin find it harder to consider the consequences of what they do. [5]

Research shows that lead reduces levels of serotonin. Prisoners with low serotonin levels commit more frequent aggressive behavior and more violent behavior or were more likely to have set fires impulsively. Additionally, alcohol metabolizes serotonin. A person with low levels of serotonin from lead poisoning will have even lower levels after drinking alcohol. [5]

Though research has long documented health dangers from lead, the lead industry has had an exceptionally powerful lobby in the US. For six decades it persuaded Congress not to regulate lead in paint and other products. Many other countries, including Great Britain, Tunisia, Yugoslavia, Cuba and Greece, banned lead paint by the 1930s. [6]

Massachusetts contemplated a ban on lead paint in 1933, but intense lobbying by the Lead Industries of America defeated that effort as a dangerous precedent that might lead to regulation nationwide. The United States finally banned lead from paint in 1978 and then, in 1980, from most gasoline. [6]

The City of St. Louis is an example of a local government that has a reputation for being sluggish in combating lead. In 1969, the well known civil rights activist Ivory Perry realized the connection between windows and lead poisoning. “Most poor people don’t have air conditioning, and they raise the windows in the summertime, and most of the little kids put their mouths on the windowsills.” [7] With support from the scientist and environmental activist Barry Commoner, in 1970 Perry was able to persuade the St. Louis Board of Aldermen to pass legislation aimed at forcing landlords to detoxify rental property. [7] City Code Chapter 11.22 requires landlords to remediate property immediately when a child has been poisoned. [8]

After more than 30 years have passed, the City of St. Louis continues to have scandalous approaches to lead. In November 2003, St. Louis Mayor Francis Slay’s office released its report, *Lead Safe St. Louis*. The Mayor’s office described it as “a comprehensive action plan for the eradication of childhood lead poisoning in St. Louis by 2010.” [9]

Less than four months later, the Mayor’s lead program was wracked by a media exposé. A March 14, 2004 editorial in the *St. Louis Post-Dispatch* critiqued the Health Department for its “apathy” and “gross incompetence.” The Health Department had attempted to create the impression that the rate of lead

poisoning had gone down by testing more children from wealthier homes and fewer low income children at high risk. [10]

A follow-up story documented that “improperly calibrated lab equipment resulted in a phony decrease in the percentage of lead-poisoned children.” Though the Health Department had known for over 2 ½ years that tests for lead poisoning in over 3000 children could have errors, it failed to notify parents. [11]

A disturbing aspect of the Mayor’s plan is that it does not consider a child to be lead poisoned unless tests show more than 10 micrograms of lead per deciliter of blood (mcg/deciliter). Months before the Mayor’s report, documentation of a loss of seven IQ points in children with lead poisoning under 10 mcg/ deciliter was published. [12] Other studies show that “at levels as low as 1 to 3 mcg/deciliter, lead reduces children’s IQ, diminishes math and reading skills, and changes behavior for the worse.” [13]

Critics charged that the Mayor’s approach would “continue to use children as lead detectors.” This means waiting until after a child is found poisoned before a team is sent to test the home. In contrast, a truly preventive program would look at geographical areas of the City that have the highest level of lead contamination (zip codes 63107 and 63118) and test homes on a block by block basis to find those that need remediation. This would target contaminated homes in order to prevent children from being poisoned. Low income children who live in rental property and move frequently are at particularly high risk of moving into a home with poison risks. Rental properties with active hazards have poisoned multiple children in a single year. Addressing these high risk properties should be a top priority. [8]

Those advocating that priority be given to testing buildings point to Milwaukee’s program of focusing on windows, particularly in rental properties, which become the major source of lead dust from the friction of opening and closing. That program averaged \$180 per window, which comes to about \$1800 per housing unit. Milwaukee reports that no child has been poisoned in units they have treated in this fashion. [14]

Partially in response to this criticism, the City of St. Louis announced a pilot project in March 2005. Called the “Lead Safe Blocks Campaign - 3300 Nebraska,” it planned to address lead problems in “a City block in one of our most severely lead-affected zip code neighborhoods.” [15] Its director announced that an April 9, 2005 festival was designed to initiate “...a program of outreach, education, testing, and remediation with the plan to make every dwelling on the block lead safe.” [16]

In July 2005 members of Health & Environmental Justice met with City officials and offered to assist with the Lead Safe Block project by going door-to-door to reach property owners that it had not reached. At that time, the City had only contacted two property owners. The City did not follow up on this offer. In September, 2005, inability of the authors to receive information from the City concerning progress on removing lead on the targeted block resulted in a decision by the Gateway Green Alliance to conduct an independent survey to measure progress on the 3300 Nebraska project.

## **Method**

The authors designed a survey to be used with residents of 3300 Nebraska and two comparison blocks: the block to the immediate east (3300 Oregon) and immediate west (3300 Pennsylvania). Interviewers asked residents 10 questions:

1. Did you know that lead poisoning can cause serious health problems, especially in children?
2. Did you know that homes in this neighborhood have some of the highest levels of lead in St. Louis?
3. How many children (under the age of 18 years) live here? What are their ages?
4. Do you own or rent your home?
5. Has this home been tested for lead this year (since January 1, 2005)?

6. Has anyone offered to do lead removal for this home?
7. Has anyone set a specific date for lead removal for this home?
8. Has lead removal from this home been completed?
9. Would you like the City of St. Louis to remove lead from this home?
10. Do you have any brief comments about lead problems that you would like to make?

Before going to the next residence, interviews noted the respondent's ethnicity and gender.

The authors solicited volunteer interviewers from amongst people who had come to a public meeting on lead, as well as the authors themselves. Interviewers included 3 white males, 2 black males, 1 Hispanic male, 3 white females and 1 black female. Training in interview technique was done by one of the authors and took less than 15 minutes. It consisted of a trainer role-playing an interviewer with the trainee role-playing an interviewee and then reversing roles and finally discussing potential problems with approaching residents.

In order to reach residents at home, interviewers went door to door on weekends and after work: noon on Saturday, October 1; 3:30 pm on Sunday, October, 2; 4:30 pm on Monday, October 3; 10:00 am on Saturday, October 8; 3:00 pm on Sunday, October 9; and 4:30 pm on Tuesday, October 11. When necessary, interviews were conducted in Spanish, which sometimes meant noting that residents only spoke Spanish so that a bilingual interviewer could return to the residence. Most interviews took less than 10 minutes, though many residents wished to talk longer about lead issues.

All but one of the interviews was conducted with a resident who owned or rented the home. During the sixth attempt to reach one resident, the landlord, who was working on an adjacent apartment, indicated that she was extremely difficult to contact. Information from the landlord about the property and tenant as well as his knowledge of lead poisoning was used for the interview.

## **Results**

### **Homes on 3300 Nebraska**

A totally unexpected finding was the degree of discrepancy between the City of St. Louis document, 3300 Nebraska Checklist, and what interviewers found when they went door-to-door. [17] The Checklist provides 62 addresses, including one (3300-02) indicated to be a "Corner park," two (3304 and 3315) which are each indicated to be a "Vacant lot," and one (3342) indicated as "HCD says one unit." This left 58 residences.

However, there were seven addresses listed (3303, 3307, 3319, 3321, 3335, and 3339, where only 2 of 4 listed units exist) where there is no house. Some addresses were for locations where there never could have been a house because there was no space for the number between two existing properties.

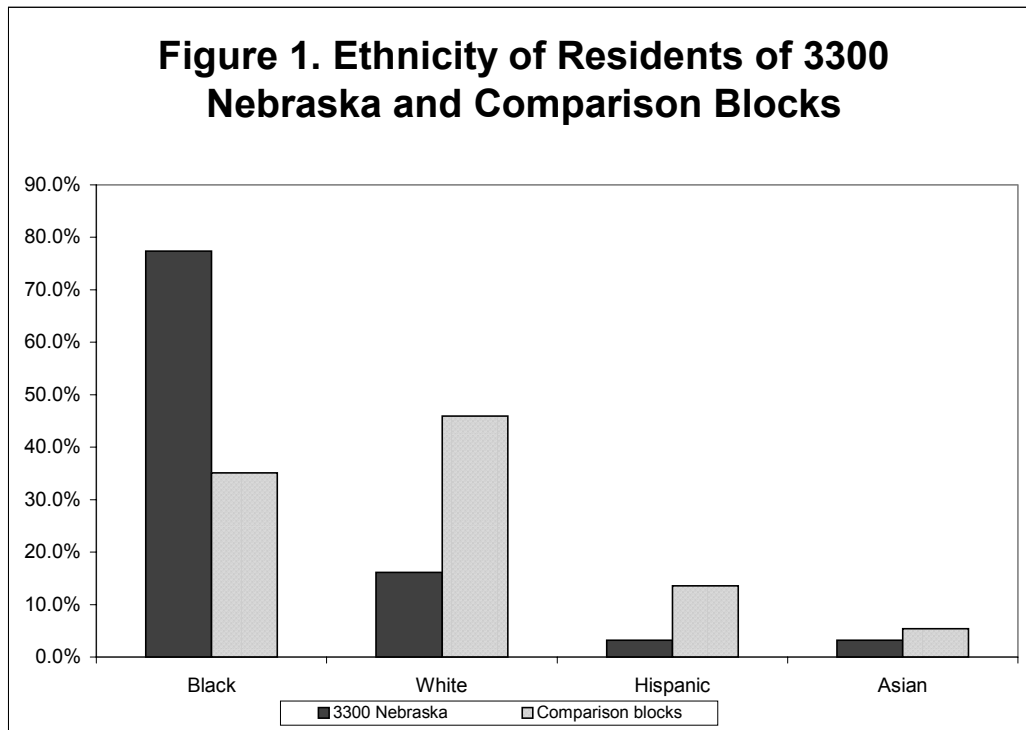
Additionally, there were several locations (3305, 3313, 3343, 3308 [2], 3314) where the checklist indicated 2 or 3 residences and there was only one residence. This resulted in a reduction of six residences from the total.

Interviewers also discovered two residences (3349, 3351) which exist even though they do not appear on the City's Checklist for 3300 Nebraska. The subtraction of 13 nonexistent residences and addition of 2 discovered residences resulted in 47 unique homes where people could have been living.

Interviewers documented that 16 of these residences were empty, leaving 31 occupied residences on 3300 Nebraska. Interviews were completed at all 31 occupied residences on 3300 Nebraska as well as 20 residences on 3300 Oregon and 17 residences on 3300 Pennsylvania.

## Demographics

Over three quarters (77.4%) of 3300 Nebraska respondents and a third (35.1%) of respondents on the comparison blocks were black. A sixth (16.1%) of those on 3300 Nebraska were white as were 45.9% of those on neighboring blocks. The 3300 Nebraska block had a single (3.2%) Hispanic and Asian respondent each. Comparison blocks had 13.5% Hispanic and 5.4% Asian respondents. [18]



On 3300 Nebraska, two thirds (67.7%) of those who answered the door were women, while 45.9% of those who answered the door on the comparison blocks were women. [19]

Families on 3300 Nebraska averaged 1.23 children while comparison blocks averaged 0.92 children per home. Of 3300 Nebraska respondents, 45.2% reported having 0 children, 12.9% reported having 1 child, and 42.0% reported having 2 or more children. Of respondents on comparison blocks, 48.6% reported having 0 children, 27.0% reported having 1 child, and 24.3% reported having 2 or more children. [20]

On all three blocks, a majority of residents reported renting rather than owning their homes. Renting was more frequent (67.7%) among 3300 Nebraska than among comparison (56.8%) residents. [21]

## Lead awareness

Three questions looked at respondents' awareness of lead dangers. The first of these, "Did you know that lead poisoning can cause serious health problems, especially in children?" received over 90% "yes" responses on both 3300 Nebraska (90.3%) and the comparison blocks (91.9%). [22]

The two groups were differentiated by the second question, "Did you know that homes in this neighborhood have some of the highest levels of lead in St. Louis?" On 3300 Nebraska, 61.3% answered "yes," but this was the case with only 37.8% of those on the comparison blocks. [23]

The third question on lead awareness asked, "Would you like the City of St. Louis to remove lead from this home?" As with the first question, there was no difference between the two groups. Almost three quarters of both those on 3300 Nebraska (71.4%) and the comparison blocks (74.1%) said "yes." [24] However, unlike the first two lead awareness questions which were answered by all residents, 10

respondents in each group did not give a “yes” or “no” answer. They gave answers like, “I would have to think about it,” “I would have to ask the landlord,” or “There isn’t any lead in the house.”

### **Stages of lead treatment**

Four questions examined the stage of lead treatment at each home. There was a large difference between the two groups for the first question, “Has this home been tested for lead this year?” The majority (56.7%) of residents on 3300 Nebraska said “yes.” Fewer than 1 in 10 (8.1%) of residents on the comparison blocks said “yes.” [25]

There was a smaller difference between the two groups for second question on lead treatment, “Has anyone offered to do lead removal for this home?” While 28.6% of 3300 Nebraska residents said “yes,” only 8.8% of those on the comparison blocks did so. [26]

There was less than a 10% difference between 3300 Nebraska and comparison residents on the third question on lead treatment, “Has anyone set a specific date for lead removal for this home?” None (0.0%) of the comparison homes answered “yes” and only 9.5% of those on 3300 Nebraska did so. [27]

There was no difference between the two groups on the fourth question, “Has lead removal from this home been completed?” Two respondents on both 3300 Nebraska (8.7%) and the comparison blocks (7.7%) said “yes.”

### **Conclusion**

At the same time interviewers were talking to residents on three City blocks in south St. Louis, a child was reported to have been lead poisoned at a Mann Elementary School, which is just a few miles away. [28] This underscores the need for the City of St. Louis to take an aggressive approach to removing lead from buildings before children are poisoned.

By the seventh month after the beginning of the project that the City of St. Louis should have had an accurate listing of the homes targeted for the project. The discovery that this failed to happen did not inspire confidence that the City was making significant movement toward the elimination of lead from homes on the identified block. The authors identified 47 homes which could potentially be inhabited. This figure resulted from adjustments to the 3300 Nebraska Checklist which included 6 phantom residences that did not exist, 7 residences that the Checklist did not acknowledge had been combined, and 2 residences that existed but did not appear on the Checklist. These 15 mistakes meant that the City had an error rate of 31.9% in the relatively simple task of identifying homes on a single block.

Demographic results indicated that the City did select a block which matches profiles of areas most at risk for lead poisoning. [4] In comparison to adjacent blocks, 3300 Nebraska residents reported more often being renters than home-owners and having more children per home. Residents interviewed on 3300 Nebraska were more often women and were over twice as likely to be black.

Over 90% of residents of all three blocks indicated that they knew that lead causes serious health problems. But over 60% of Nebraska residents reported knowing that they lived in a highly contaminated area while fewer than 40% of those on the comparison blocks were aware of this. This confirms that the City’s educational program raised awareness on the targeted block. Still, the fact that almost 40% of 3300 Nebraska residents did not know that they live in a highly contaminated area indicates that ongoing education is needed. Since over two thirds of Nebraska residents reported renting their homes, it is likely that many have recently moved into the area. Lead education should not be limited to a single festival in April 2005, but must be a process which continuously informs new residents of potential dangers.

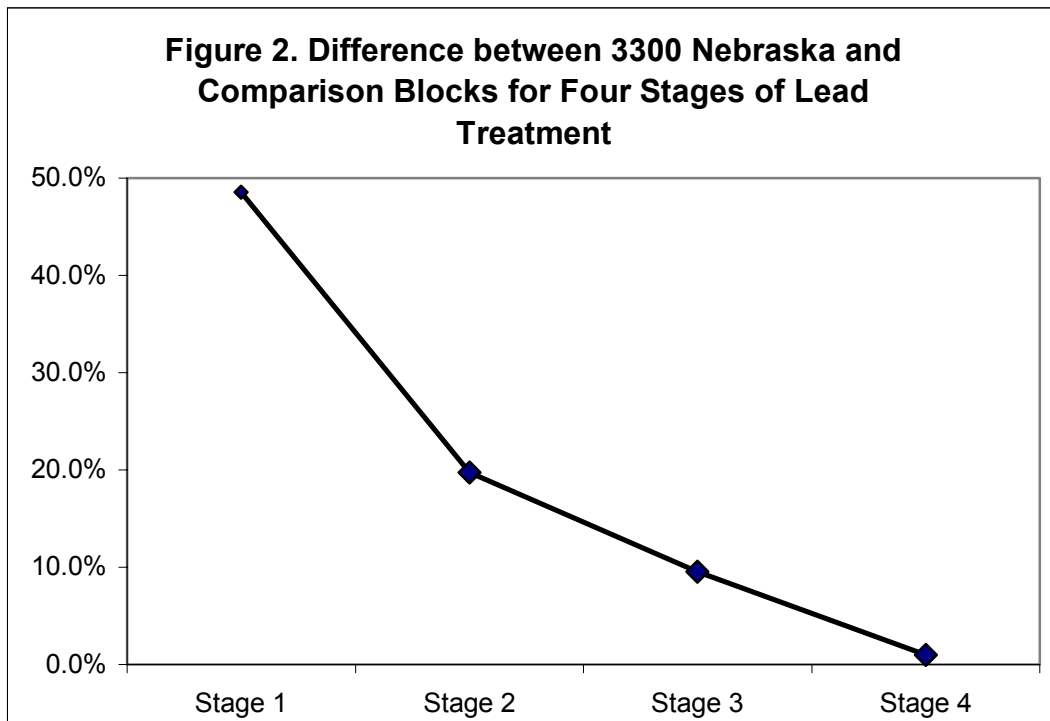
A surprising finding was that there was no difference between the two groups in responses to the third lead awareness question asking if they would like lead to be removed from their home. A little over 70% of each group said “yes.” The authors felt like people they interviewed were quick to respond to

the first two questions, but often paused before answering the third one and came back with their own question, such as “Who would pay for it?” or “When would it be done?”

It is interesting that even though those living on 3300 Nebraska were more aware that they lived in a highly contaminated area, they were not more willing to have lead treated in their homes. Responses to this question might indicate more of a distrust of government officials than lack of concern with lead. Some residents suggested to interviewers that they thought the City lacked the competence to complete the work and others may have been concerned with issues such as the custody of their children. However, this does not detract from the fact that a majority of those on all three blocks did indicate that they would like lead treatment to be completed.

Addressing lead in a targeted area would need to proceed through four stages at each home:

1. Test the home for lead;
2. Offer to treat lead problems;
3. Set a date to begin lead treatment; and
4. Complete the lead treatment.



These steps are reflected in items 5 through 8 of the interview. Comparing answers to these four questions reveals a very clear pattern. Residents of 3300 Nebraska were far more likely (by 49 percentage points) than those on neighboring blocks to report that their homes had been tested for lead since the beginning of the year. The question of whether anyone had offered to do lead treatment found the gap narrowing, but still favoring the 3300 Nebraska residents (by 20 percentage points). The third phase, setting a specific date for lead treatment to begin favored the 3300 Nebraska residents by a little less than 10 percentage points. But the critical question of whether lead treatment had been completed found no difference between 3300 Nebraska and comparison residents — only 2 residents in each group reported that lead treatment had been completed.

Inclusion of the comparison blocks of 3300 Oregon and 3300 Pennsylvania proved critical for interpreting the findings. If only residents of 3300 Nebraska had been interviewed, the two homes where lead had been treated might seem to indicate that the City’s program is proceeding, though at a

very slow pace. But the finding that the number reporting the cleanup being finished is exactly the same in both groups demonstrates that it makes no difference whether a person lives on 3300 Nebraska or a neighboring block. This evidence indicates that, seven months after beginning the pilot project, the City of St. Louis has made no progress at all in completing the task of making the block “lead safe” (over and above what would occur without the project). Unfortunately, this suggests that the City of St. Louis may never complete the task lead removal.

Surveyed residents indicated that they want the City to deal with the lead problem. Over 90% recognized that lead as a serious health problem. And over 70% said they would like help in treating lead in their homes, even if that might raise concerns.

This evaluation confirms that the City of St. Louis has made initial steps that are essential components of a meaningful lead program — identifying an at-risk neighborhood, educating most of its residents, and testing many homes. Though the data do not confirm rates as high as the authors would prefer, 3300 Nebraska is ahead of comparison blocks. But completion of lead treatment is not sluggish — it is non-existent in comparison to adjacent blocks. This suggests that the education and testing programs could be more for public relations than being the first steps in actually removing lead from buildings.

It should be kept in mind that interviewers identified 16 vacant units among the 47 residences on 3300 Nebraska. If the City of St. Louis were aggressively addressing lead, it could achieve removal of lead from these properties before they are rented. This would certainly deal with the fact that almost 30% of respondents did not want lead treatment to proceed in homes where they were living. Treating an empty residence does not inconvenience a tenant.

The authors recommend that the Board of Aldermen declare a Lead Emergency in the City of St. Louis. The first phase of a Lead Emergency should include the Health Commissioner’s ordering inspection of all homes in high-risk areas, removal of lead from empty homes before they can be occupied and phased removal of lead from 100% of remaining homes. A priority task is the development of programs to assist landlords with low-income tenants in removing lead from their properties. The authors recommend that the city focus first on its most active and pressing hazard by replacing windows in low-income pre-1950 homes in high-risk areas.

Lead is an entirely preventable problem. For most of the last century, the lead industry successfully kept government from taking steps to prevent poisoning. Now that over 90% of the public is aware of the dangers of lead, some governments, such as the City of St. Louis, appear to be more interested in creating the impression that they are fighting lead than taking concrete steps to remove it from where children live. Thankfully, there are projects, such as that in Milwaukee, that prove that positive work can be done. The authors hope that other city governments realize that, however great the costs of genuine lead removal programs are, they are much less than the health and social costs of inaction.

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18. Chi-square (2) = 12.16,  $p < .01$ . For ease of readability, statistics are reported in the notes rather than text.
19. Chi-square (1) = 3.25,  $p < .10$ .
20. Chi-square (2) = 3.29, n.s.
21. Chi-square (1) < 1.0, n.s.
22. Chi-square (1) < 1.0, n.s.
23. Chi-square (1) = 3.71,  $p < .06$ .
24. Chi-square (1) < 1.0, n.s.
25. Chi-square (1) = 18.66,  $p < .01$ . This is based on the 67 (out of 68 possible) residents who responded.
26. Chi-square (1) = 4.10,  $p < .05$ .
27. Chi-square (1) = 2.88, n.s.
28. Greg Jonsson, Schools move quickly on lead paint. *St. Louis Post-Dispatch*, October 11, 2005, p. C2.