

**Follow-Up Audit
Childhood Lead Poisoning Prevention**

July 1999

City Auditor's Office

City of Kansas City, Missouri

July 26, 1999

Honorable Mayor and Members of the City Council:

This follow-up audit of the city's childhood lead poisoning prevention efforts was initiated in accordance with the City Auditor's Office policy of assessing the implementation of audit recommendations.

The April 1994 performance audit found that the city needed to have a lead poisoning prevention program because an effective program could reduce the long-term costs related to lead poisoning. We noted that federal and state funds would be available to help fund such a program. We also found that lead did not appear to pose a threat to the city's water supply. We made a number of recommendations intended to develop a comprehensive lead poisoning prevention program, improve the city's inspection activities, and assist property owners to abate lead hazards.

Since our original audit, the city has made substantial progress in addressing lead poisoning prevention. The Health Department:

- has improved its screening efforts;
- generally completes inspections in a timely manner;
- tracks and reports on test results and inspections using a database designed for lead programs; and
- has made progress in education efforts about lead poisoning prevention.

We recommend that the city target future screening efforts, require health care providers to report the results of all blood lead level tests, establish goals for the timeliness of lead hazard abatements, and identify groups that might benefit from further education efforts.

The draft follow-up report was sent to the city manager and the director of health on June 23, 1999. Their response is appended. We appreciate the courtesy and cooperation extended to us during this project by staff of the Health Department. The audit team for this project was Joan Pu, Michael Eglinski, and Aloysia George.

Mark Funkhouser
City Auditor

Follow-Up Audit: Childhood Lead Poisoning Prevention

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Follow-Up Audit: Childhood Lead Poisoning Prevention

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Introduction

Audit Objectives

This follow-up audit of the Health Department's childhood lead poisoning prevention program was conducted pursuant to Article II, Section 13 of the Charter of Kansas City, Missouri, which establishes the Office of the City Auditor and outlines the city auditor's primary duties.

A performance audit is an objective, systematic examination of evidence to independently assess the performance of a government organization, program, activity, or function in order to provide information to improve public accountability and facilitate decision-making.¹ A follow-up audit examines the actions an agency has taken in response to the findings and recommendations in a previous audit.

This follow-up audit was designed to answer the following questions:

- How should the city approach blood lead level screening?
- Does the Health Department identify lead hazards in a timely manner and are those hazards abated in a timely manner?
- Does the Health Department provide lead poisoning information to the general public, health care providers, and other target populations to improve awareness of lead hazards and reduce lead poisoning?

Scope and Methodology

The follow-up audit was not designed or intended to be another full audit of the city's childhood lead poisoning prevention program. It was designed to determine the progress made in addressing findings and recommendations identified in the April 1994 performance audit.

We conducted this audit in accordance with generally accepted government auditing standards, with the exception of the completion of an external quality control review of the office within the last three years.² Our methods included:

¹ Comptroller General of the United States, *Government Auditing Standards* (Washington, DC: U.S. Government Printing Office, 1994), p. 14.

² The last review was in April 1995. An external review is planned for the current year.

- Interviewing staff in the Health Department.
- Reviewing city code and state statute.
- Analyzing and assessing the reliability of data in the *Systematic Tracking of Elevated Lead Levels and Remediation* database.
- Interviewing stakeholders knowledgeable about lead poisoning and public health.
- Reviewing literature including the Missouri Department of Health's *Lead Manual* and the Centers for Disease Control and Prevention's *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*.
- Reviewing Health Department documents including lead program annual reports and lead awareness educational materials.

The 1994 audit found that lead did not threaten the city's water supply. The Water Services Department provided us with a letter stating that the city remains in compliance with the EPA's lead and copper rule. We did not conduct any further audit work related to the city's water supply.

The Health Department's lead poisoning case management activities were excluded from the scope of this follow-up audit. No information was omitted from this report because it was deemed privileged or confidential.

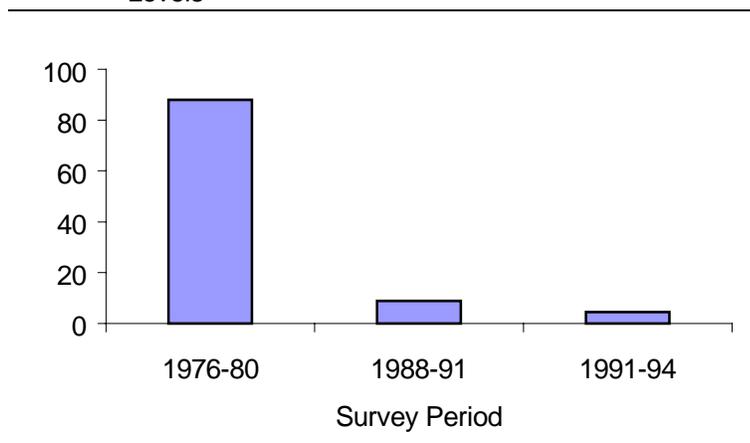
Background

Elevated levels of lead in blood can cause significant problems. Lead can cause reductions in IQ, reading and learning difficulties, hyperactivity, and behavioral problems. At very high levels, lead poisoning can cause coma, convulsions, and death.

Children are more likely to be exposed to common sources of lead – such as dust and chips from lead-containing paint – and absorb lead more readily than adults. Children under the age of six, whose nervous systems are still developing, are most vulnerable to the effects of exposure to lead.

In recent years, the levels of lead in the blood of children nationwide have decreased substantially. (See Exhibit 1.) Elimination of lead in paint, gasoline, and cans are largely responsible for the decline in children with elevated blood lead levels.

Exhibit 1. Percent of Children (Age 1-5) with Elevated Blood Lead Levels³



Source: National Health and Nutrition Examination Surveys.

Despite the substantial decline, certain groups remain at higher risk of elevated blood lead levels. Children's risks for exposure to lead are strongly associated with living in older housing and being from low-income families.

City Program Established in May 1995

The city established a childhood lead poisoning prevention program in May 1995. The city's program includes screening, case management, inspection, and community outreach. In addition, the city has a grant from the U.S. Department of Housing and Urban Development (HUD) to help low-income property owners fund abatement of lead hazards and to increase awareness through education and outreach.

Program staff are housed in two divisions of the Health Department. Staff from the maternal child health division are responsible for lead screening, case management, and community outreach, while staff from the environmental health services division are responsible for inspections. The Housing and Community Development Department has had some responsibilities related to the HUD grant that are being transferred to the Health Department.

Legislative Authority

City code gives the health director authority to address lead poisoning in the city. The health director may inspect dwellings for lead "upon reasonable suspicion." The director is responsible for reviewing property

³ Blood lead levels greater than or equal to 10 µg/dL.

owners' plans to remediate lead hazards. City code also prohibits lead-containing paint and requires health care providers to report elevated blood lead levels to the health director (state law has a similar reporting requirement).

Summary of the 1994 Performance Audit

The 1994 performance audit found that the city needed a lead poisoning prevention program because an effective program could reduce the long-term costs related to lead poisoning. We noted that federal and state funds would be available to help fund such a program. We recommended strengthening the city's efforts to inspect for lead hazards and enforce abatement requirements. We also found that lead did not appear to pose a threat to the city's water supply.

We made a number of recommendations intended to develop a comprehensive lead poisoning prevention program, improve the city's inspection efforts, and assist property owners to abate lead hazards.

Appendix A lists the recommendations from the 1994 audit. Audit Report Tracking System (ARTS) reports submitted by management are included in Appendix B.

Findings and Recommendations

Summary

The Health Department established a childhood lead poisoning program after our original audit. The program – funded by the city, and by state and federal grants – has significantly improved the department’s ability to identify and monitor children with elevated blood lead levels.

The Health Department improved the screening of children for blood lead levels. The city provides free screening and tracks the results of tests conducted by the department and other health care providers. In the last two years, substantially more test results have been reported to the city. In the future, the department should target screening toward those most at risk for lead poisoning. Changing the city ordinance to require health care providers to report the results of all blood lead level tests would help the department identify target areas.

Inspectors in the Health Department identify lead hazards in a timely manner. Property owners are responsible for abating the lead hazards identified by the city. Abating these hazards often takes six months or more. Neither the city nor the state have established guidelines for the amount of time it should take to abate lead hazards. The Health Department should develop criteria for the timeliness of abatements and track timeliness.

The city has made progress in providing education related to lead poisoning. The Health Department used a variety of methods to provide information to the general public, health care providers, and some target populations. In the future, the Health Department should identify other groups that might benefit from education efforts.

Health Department Has Improved Its Screening Efforts

The Health Department developed a childhood lead poisoning prevention program. The program – funded by the city, and by state and federal grants – has significantly improved the department’s ability to identify and monitor children with elevated blood lead levels. Screening is intended to identify children with elevated blood lead levels and to establish baseline data about the extent of lead poisoning problems.

The 1994 performance audit found that the Health Department did not perform city-wide screening of children's blood lead levels, although the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) suggested universal screening of all children under 6 years of age in its 1991 guidelines. The audit also found that the city needed a childhood lead poisoning prevention program.

The Program Addresses Screening

The Health Department has provided screening, and tracked and reported on screening results. The number of test results reported to the Health Department has increased in the last two fiscal years.

Blood lead screening is an important element of a lead poisoning prevention program. Screening is intended to identify children who have elevated blood lead levels and to help establish baseline levels of lead poisoning. The baseline level helps understand the extent of the lead poisoning problem and evaluate efforts to prevent lead poisoning.

Health Department provides free screening. The department established a lead clinic to provide free screening. A nurse coordinates and conducts screening. The lead clinic has provided screening at:

- A community clinic
- Day care centers
- Health fairs
- Community events
- Head Start sites
- Schools

Children living in Kansas City can receive free screening at the Health Department. In addition, the department's well-child clinic screens all children receiving the services. The department has screened about 1,100 to 1,400 children each year since 1995. (See Exhibit 2.)

Exhibit 2. Blood Lead Level Screenings by the Health Department

Year	Lead Clinic	Well-Child Clinic	Total
1995	600	534	1,134
1996	471	806	1,277
1997	695	512	1,207
1998	981	395	1,376

Source: Health Department, 1998 CLPPP Annual Report.

The department tracks and reports on screening results. The state and the city require physicians and labs to report results of elevated blood lead level tests to the Health Department.⁴ The department uses a software application called Systematic Tracking of Elevated Lead Levels and Remediation (STELLAR) to track these reported cases. STELLAR also keeps test results of non-elevated blood lead levels reported by physicians and labs or tested by the Health Department. To comply with CDC grant requirements, quarterly reports to the state are generated by STELLAR.

**STELLAR:
Systematic Tracking of Elevated Lead Levels and Remediation**

The Health Department uses Systematic Tracking of Elevated Lead Levels and Remediation (STELLAR) to track and report screening results.

STELLAR is a software application developed by Centers for Disease Control and Prevention to provide childhood lead poisoning prevention programs with a practical means of tracking medical and environmental activities in lead poisoning cases. It is intended to help track:

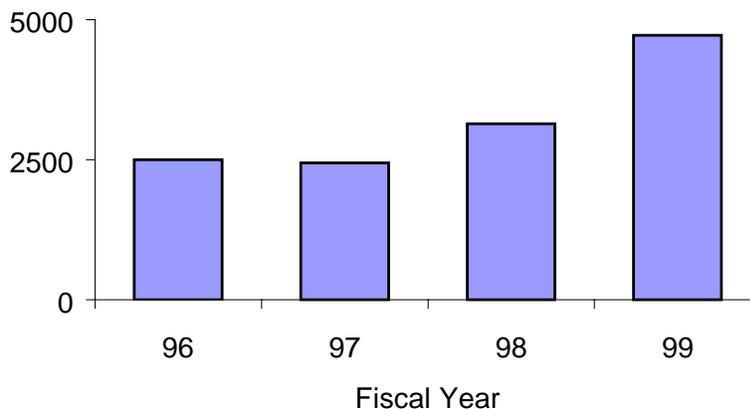
- screening of children for lead toxicity;
- identification and confirmation of cases;
- medical management of cases; and
- investigation and abatement of lead hazards, primarily from leaded-paint, in the home environment of cases

Source: Centers for Disease Control and Prevention, *STELLAR User Guide, Version 2.2a*, September 1995, p. 2.

Number of reported test results increased. The number of reported test results has increased substantially in the last two fiscal years. Exhibit 3 shows the number of test results reported to the Health Department for children with addresses in Kansas City. The exhibit includes tests done by the Health Department and tests reported by other health care providers.

⁴ Code of Ordinances, Kansas City, Missouri, Sections 34-54 and 34-56; RSMo 701.326.

Exhibit 3. Number of Test Results Reported to the Health Department



Source: Health Department, STELLAR data.

Future Screening Efforts Should Be Targeted to Those at Risk

Although the 1994 audit recommended citywide screening, which was consistent with the 1991 CDC recommendation, a targeted approach would be more effective in Kansas City for future screening efforts. A targeted screening approach means only those children who are at risk receive screening for blood lead levels. Targeted screening focuses resources on reaching the children at the greatest risk for lead poisoning.

Universal screening was recommended. The 1994 audit recommended screening all children younger than 72 months for elevated blood lead levels citywide. The CDC recommended universal screening in its 1991 guidelines. Part of the reason for citywide universal screening was to develop baseline information about elevated blood lead levels in the city, which could be used to target interventions to high-risk areas.

Targeted screening would focus resources. The CDC suggested in its 1997 guidelines for screening that more effective screening is necessary and should be focused where children are most likely to benefit.⁵ A targeted approach means only children who are at risk are screened for blood lead levels. At present, blood lead levels in the U.S. population continue to decline. However, the CDC found that many U.S. children with elevated lead levels are still not being identified.

⁵ Centers for Disease Control and Prevention, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*, November 1997, p. v.

Targeted screening is appropriate for several reasons:

- Risk factors are well-known. The known association of elevated blood lead levels with well-understood and identifiable risk factors makes targeted screening feasible. Children’s risks for exposure to lead are strongly associated with living in older housing and being from low-income families.

Exposure Source or Risk Factors

- Pre-1950 housing
- Demographic factors (e.g. poverty)
- Industrial sources, parental occupation (take-home exposure)
- Drinking water
- Hobbies, traditional remedies, ceramicware, cosmetics

Source: Centers for Disease Control and Prevention, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*, November 1997, p. 22.

- Blood lead levels have declined. The average blood lead levels of children have declined nationwide as lead has been removed from paint, cans, and gasoline.
- Targeted screening focuses resources where they are most needed. Risk factors, including poverty and older housing, are not equally distributed in Kansas City. Universal screening of all children would dilute efforts to reach those at greatest risk as children who are not at risk may be unnecessarily screened.
- The CDC’s current guidelines recognize the logic of targeted screening. The 1991 guidelines recommended universal screening, but the 1997 guidelines recognize the importance of targeted screening. The CDC recommended universal screening where the risk for lead exposure is widespread and targeted screening where risk is less or is confined to specific geographic areas or to certain sub-populations.

The Health Department has made some targeted efforts. The Health Department has identified high-risk areas – where housing units built before 1950 are greater than 27 percent – by using the CDC suggested risk factors. The day care center and the community clinic where the department performs regular screening are located in the identified high-risk areas. The department also screens all children receiving its services. Most of these children are from low-income families.

The Missouri Department of Health has been working on a statewide screening plan. The plan, when it is adopted, will probably recommend universal screening. However, the statewide plan should allow local health agencies to use a targeted or universal screening approach depending on local conditions. We recommend the Health Department continue its efforts on targeted screening, explore targeted screening strategies, and develop a screening plan appropriate to the situations in Kansas City.

Baseline Data Will Benefit Targeted Screening Approach

The Health Department does not know the baseline of elevated blood lead levels in Kansas City, as the city and the state do not currently require health care providers to report all test results. Results of tests for children who do not have elevated blood lead levels are not routinely reported to the Health Department. Reporting all blood lead level tests would help the department identify target areas.

A citywide baseline level of lead poisoning may not be developed when targeted screening approach is applied. However, the baseline level of certain areas will help the department understand the extent of lead poisoning problems in the targeted and potential targeted areas and evaluate lead poisoning prevention efforts.

We recommend the city change its ordinance to require reporting of all results of blood lead level tests. The reporting will help the department understand the extent of lead poisoning in Kansas City. Currently the ordinance only requires reporting of tests that find elevated blood lead levels.

Inspections Are Timely; Resolving Cases Often Takes 6 Months or More

The Health Department generally conducts lead inspections in a timely manner; abating or otherwise resolving lead hazards often takes about six months. Inspections are triggered when the Health Department has reasonable suspicion of a lead hazard.⁶ Specifically, the department conducts inspections when a child with an elevated blood lead level is reported, a day care inspector identifies a potential lead hazard, or a homeowner applies for a grant to abate lead hazards. Most of the inspections relate to children with elevated blood lead levels. The property owner is responsible for abating identified hazards. Neither the

⁶ Code of Ordinances, Kansas City, Missouri, Section 34-405.

city nor the state have established guidelines for the amount of time it should take to abate lead hazards.

In the 1994 performance audit, we identified several problems with inspections and abatements. Inspections were not always completed in a timely manner; the system for referring cases to inspectors was ineffective; and the Health Department was lax in enforcing abatement requirements. We made a number of recommendations to help low-income property owners pay for the removal of lead hazards, improve the city's ability to get information on children with elevated blood lead levels, and track inspection activities.

Inspections Generally Meet Timeliness Guidelines

Most inspections related to children with elevated blood lead levels are completed within the guidelines of the Missouri Department of Health's *Lead Manual*. In most circumstances, the guidelines call for an environmental assessment to be completed within 15 working days of the case being referred to an inspector in the city's community environmental health division. In general, the Health Department has completed the lead inspection within 15 days of the initial referral.⁷ (See Exhibit 4.)

Exhibit 4. Inspections Completed Within 15 Working Days of Referral

FY of Referral	Inspections Completed Within 15 Working Days	Inspections Not Completed Within 15 Working Days
1996	42	34
1997	115	16
1998	110	20
1999	90	33

Source: Health Department, STELLAR data.

Inspectors usually made contact with parents, guardians and/or landlords during the 15 working day period even in the cases where an inspection was not completed within 15 working days. In these cases, program staff had about three contacts within 15 working days of the referral.

Most inspections related to very high levels of blood lead are completed within the guidelines. We identified 22 referrals for inspections triggered by blood lead levels in the range of 45-69 µg/dL. In these cases the guidelines call for an inspection within five working days.

⁷ We limited our analysis to inspections triggered by reports of children with elevated blood lead levels. The program also conducts inspections when an owner-occupant applies for HUD grant funds or a day care inspector identifies a potential lead hazard.

Program staff completed inspections within the guidelines for two-thirds (15) of the cases. In the seven cases when an inspection was not completed within five days, program staff usually made efforts to address the case within five days (for example, attempted to make contact or held a conference with the landlord).

Database Used to Track and Report on Inspections

The Health Department tracks inspection activities through the STELLAR database and uses the information to report on timeliness. In addition, the supervisor of the lead inspection program has developed spreadsheets to track activities. In the 1994 performance audit, we recommended the department establish a system to record complete information on inspections.

The city can use STELLAR to track detailed information about inspection activities. Among the data that can be tracked for each address are dates of referrals for inspection, inspections, abatements, and case closures. The system also tracks the results of completed inspections and “events” related to each address. Events can include inspections, attempted contacts, conferences with landlords, and reinspections.

The STELLAR system also allows for reporting on inspection activities. The program’s quarterly reports give the number of initial inspections and the number that were completed within the guidelines. According to the reports, during the 1997-98 grant year the program met the inspection timeliness goals about 80 percent of the time. The Missouri Department of Health uses STELLAR to collect and analyze statewide data on lead programs and to submit data to the CDC.

Inspection activities that are not related to children with elevated blood lead levels are tracked in spreadsheets rather than STELLAR. The lead supervisor developed spreadsheets to track inspections related to HUD grant applications and day care inspections when those cases are not related to children with elevated blood lead levels. The spreadsheets include the dates the cases were referred and inspections were completed.

Resolving Lead Hazards Often Takes Six Months or More

Resolving lead hazards in a home often takes six months or more. Most of the city’s inspections result in identification of lead hazards. In cases where the city identified a lead hazard, the time it took to abate or close the case was often six months or more (the median was 180 days).

According to Health Department staff, completing abatements in a timely manner can be difficult. Neither the city nor the state have established guidelines for the amount of time it should take to abate lead hazards.

To identify lead hazards, the city conducts inspections. Before inspecting a property, the city is required to notify the property owner by certified mail and provide three days notice.⁸ Inspectors look for lead hazards and test materials at the property. The inspectors talk to the residents about the property and the children's habits. The inspectors can measure the amount of lead present using a x-ray fluorescence analyzer. In some cases, the Water Services Department tests the household's water for lead. Inspectors find that there are lead hazards in the homes of most children with elevated blood lead levels.

Once lead hazards are identified, abating the hazards requires:

- Developing and reviewing a plan of action.
- Implementing the plan.
- Conducting any necessary follow-up.

Property owners are responsible for abating lead hazards.⁹ Abating a hazard may require covering or removing lead-based paint. The owner is required to develop, and submit to the Health Department for approval, a plan to abate the lead hazards. Health Department staff will assist the property owner to develop these plans.

A Plan of Action to Abate Lead Hazards

In some cases, abating lead hazards can require relatively simple work. The plan of action for a case we reviewed called for the property owner to take the following steps:

1. Mist areas with water to minimize production of lead contaminated dust and scrape loose paint.
2. Repaint with two coats of paint to seal the remaining lead based paint to wood.
3. Replace the top riser board of the front steps.
4. Complete a final clean up, clearance examination, and reinspection.

Source: Health Department files.

⁸ RSMo 701.304. In late June 1999, the governor signed legislation that will eliminate the three day notice requirement. The new law takes effect in August 1999.

⁹ Code of Ordinances, Section 34-406.

Property owners are responsible for paying for the abatement work, although in some cases the city provides funding. Abatement work can be costly. Nationwide, the cost of abatements can be anywhere from \$1,500 to \$20,000 per dwelling unit.¹⁰ In Kansas City, the average cost for 14 abatements funded through the HUD grant in 1998 was about \$13,000.

The city currently has a grant from HUD that can pay for lead abatement in certain situations. In the 1994 audit, we made recommendations intended to help low-income property owners pay for abatement. The grant is limited to people who own and occupy housing built before 1978 that is frequented by a child under the age of six. To receive a grant, an applicant must have a household income that is less than 80 percent of the area's median income.

Lead Safe 2000

Lead Safe 2000 is a city program to control lead hazards in homes. The project began in July 1997 after the city was awarded a \$4.9 million grant from the U.S. Department of Housing and Urban Development.

The program helps low-income homeowners abate lead hazards. To qualify for a grant, a homeowner must occupy the property, have a family income less than 80 percent of the area's median, and have a child under the age of six who lives in or frequents the home. The grant is limited to work on housing built before 1978. The Health Department helps qualified applicants by inspecting for lead, providing free blood tests, and abating the hazards. Licensed contractors remove the lead hazards.

The grant provides funds for lead hazard control in owner-occupied units, specialized cleaning to remove lead dust in rental units, job training for lead abatement supervisors, new business development, community capacity building/public awareness, and program evaluation.

The city conducts follow-up inspections of properties that are being abated. During the period of 1996-99, the program reinspected about 300 houses at least once.

Since there are no clear guidelines for how long it should take to resolve cases involving lead hazards, we recommend the Health Department carefully track the amount of time it takes to abate lead hazards and

¹⁰ Jacobs, David, "The Economics of Lead-Based Paint Hazards in Housing", *Lead Perspectives*, October 1996, p. 3.

develop criteria for timeliness of abatement efforts. The program should use STELLAR to routinely record abatement due dates.

Department Uses a Cooperative Approach to Address Hazards

The Health Department's approach – seeking voluntary compliance – is consistent with state guidelines and emphasizes a negotiated approach to abating lead hazards. Management told us that the department tries to get compliance without having to use formal enforcement procedures. The program has not yet taken a property owner to court to enforce compliance with the city code.

The state guidelines emphasize an approach that is consistent with the city's approach. The Missouri Department of Health *Lead Manual* emphasizes a negotiated approach to abate lead hazards:

Intervention options will be negotiated between the health department representative and the owner, operator or occupant.... During the negotiations, efforts will be made to obtain a commitment from the responsible party to comply with the DOH [Department of Health] regulations requiring that the correction of identified lead hazards be completed within a reasonable time period.¹¹

While the *Lead Manual* emphasizes a negotiation/cooperation approach to abatement, it does allow for enforcement as a last resort. According to the manual:

Every effort is to be exhausted in order to achieve regulatory compliance.... In the event that compliance does not occur following administrative efforts, additional actions will be taken at the discretion of the Department of Health.¹²

Progress Made in Lead Poisoning Prevention Education

The childhood lead poisoning prevention program includes a public education component. The Health Department has provided education to the general public, health care providers and some target populations. The department has used different methods and provided a range of

¹¹ Missouri Department of Health, *Lead Manual*, 1996, p. 4-5.

¹² Missouri Department of Health, *Lead Manual*, 1996, p. 4-13.

information to the different populations. In the future, the Health Department should identify other groups that might benefit from education efforts.

In 1994, we found that the Health Department was lacking in their efforts to provide the public with lead poisoning prevention and awareness education. We recommended that the department provide the public with information on lead poisoning and prevention through different media and activities.

Public Education Is Part of the City's Program

The Health Department hired a community outreach coordinator in 1997 after establishing the childhood lead poisoning prevention program. The coordinator is responsible for being a liaison between the program and outside agencies, and providing public and professional education.

The department has been awarded state and federal grants, such as from CDC and HUD, for public education on lead poisoning and prevention. The community outreach coordinator's position is funded by grants. The department also contracted LeadBusters, Inc., a community-based organization advocating lead poisoning prevention. LeadBusters has provided information to the public through presentations, a telephone hotline, and messages on billboards and buses.

Education Aimed at the Public, Health Care Providers and Others

The program has provided educational information to the general public, health care providers and other target populations, such as children of at-risk ages and their caregivers. The program has used different educational methods and provided a range of information to the different groups.

Education efforts addressed most of the target populations. The program has used appropriate educational methods to provide information to the general public and most of the target populations. Effective public education on lead poisoning prevention should provide information to the general public and different target populations.

Different educational methodologies, such as mass media, presentations, resource materials, and brochures and flyers, should be used according to the needs of the general public, health care providers, and other target populations. Health care providers include physicians, nurses, and other health care professionals. Other target populations include children of at-risk ages, parents, caregivers, general contractors, home remodelers,

plumbers, and carpenters. Exhibit 5 summarizes the populations targeted, methods applied and information provided by the program.

Exhibit 5. Education Methods Used and Information Provided to Different Groups

Target Population	Methods	Information
General public	<ul style="list-style-type: none"> • Ads on mass media (e.g. TV, radio and newspaper) • Radio talk show • Presentations/ exhibitions at health fairs, or other events • Brochures and flyers 	<ul style="list-style-type: none"> • Causes, effects and symptoms of lead poisoning • Sources of lead • Ways of preventing lead poisoning • Program information
Child care staff	Presentations at conferences and day care centers	<ul style="list-style-type: none"> • Causes, effects and symptoms of lead poisoning
School faculty	Presentations at conferences and schools	<ul style="list-style-type: none"> • Sources of lead • Ways of preventing lead poisoning
Children and preschoolers	Presentation at schools	<ul style="list-style-type: none"> • Program information
Health care providers	Presentations at hospitals and nursing schools Mass mailings	<p>In addition to the similar information provided to the above populations, the following resource materials were provided:</p> <ul style="list-style-type: none"> • Recommended guidelines for screening and follow-up • Statistic information of incidences, ages of housing and poverty levels • Literature

Sources: Health Department, CLPPP Quarterly Activity Report, July 1997 – Dec. 1998; and educational information distributed by the Health Department.

Client Education

Information should be conveyed regarding the causes, effects, symptoms, and treatments to caregivers. Removing paint chips or dust, wet mopping, preventing access to lead hazards, and providing meals high in calcium and iron are actions that caregivers can take to prevent or reduce the risk of lead poisoning.

Source: Missouri Department of Health, *Lead Manual*, p. 1-5.

Community Education

Literature such as pamphlets, fact sheets, and video tapes can be effective in communicating these ideas to caregivers and community members. Other ways to convey information include neighborhood newspapers or newsletters. Use of mass media such as newspapers, television stations, and radio stations can help increase community awareness of lead poisoning and what can be done to prevent it. Local organizations such as churches, community groups, schools, and businesses may also help to inform the neighborhood about the dangers of lead poisoning.

Source: Missouri Department of Health, *Lead Manual*, p. 1-6.

The program conducted limited evaluations of education efforts.

The program uses the pre-test and post-test at some formal presentations to evaluate the results of the presentations. The tests evaluate the public awareness of lead poisoning prevention to some extent.

Information on the total number of blood lead level tests performed by all health care providers would help the department evaluate educational efforts. Over time, the department could track measures such as the percent of children screened for blood lead levels and the portion with elevated levels. The department identified these measures as indicators relevant to a lead hazard awareness campaign.

Health Department Should Identify Other Populations for Education

The program has targeted most of the populations to provide educational information. However, limited education has been provided to contractors such as house remodelers, renovators, carpenters, and plumbers. These contractors who do construction work in homes could be educated to recognize lead hazards in homes and share information

about lead poisoning prevention with the residents. In addition, some lead poisoning incidents are caused by exposure to lead during home renovation work. Being aware of lead hazard and poisoning could reduce the chances of lead exposure of the contractors and the residents. The program has been awarded a HUD grant for a lead hazard awareness campaign. The grant will enable the program, which began in April 1999, to provide education to real estate agents, maintenance workers, and home remodelers.

We recommend that the Health Department identify other populations that would also benefit from educational efforts, including people in businesses that do construction work in homes and people who work with children of high-risk ages.

Recommendations

1. The director of health should use a targeted approach to blood lead level screening even if the state adopts a plan for universal screening.
2. The city manager should submit for council consideration an ordinance that would require health care providers to report the results of all blood lead level tests.
3. The director of health should develop criteria for the timeliness of lead hazard abatements and track timeliness.
4. The director of health should determine whether there are other populations – such as people that do construction work in homes and people who work with children at high-risk ages – that might benefit from education about lead poisoning and prevention.

Appendix A

1994 Audit Recommendations

1994 Audit Recommendations

1. The City Manager should include funds for a Childhood Lead Poisoning Prevention Program in his recommended budget. A comprehensive screening and prevention program would enable the department to be proactive in preventing lead poisoning in the city.
 2. The City Manager should include funds in the recommended budget to cover the cost of purchasing an atomic absorption spectrophotometer (AA). This would enable the Health Department to detect dangerous levels of lead in a child's blood and to follow-up cases of poisoned children. The acquisition of in-house equipment would allow the Health Department to improve the effectiveness and efficiency of its screening efforts.
 3. The director of Health should continue to apply for grants from the Missouri Department of Health, the Centers for Disease Control, the U.S. Department of Housing and Urban Development, and other appropriate sources to supplement the screening and abatement activities.
 4. The director of Health should continue to increase public education and awareness by:
 - Incorporating lead information in the childhood parenting classes to educate potential parents on lead poisoning and prevention.
 - Educating the public on primary lead prevention activities through health fairs and community activities, day care centers, and the federal Head Start Program.
 - Providing information on lead poisoning and prevention through billboards, broadcast media, bus-stops, brochures, and other available sources through cooperation with private businesses, foundations, neighborhood communities and other non-profit organizations.
 5. The director of Health should identify the base-line levels and the extent of lead poisoning in Kansas City using the established guidelines of the Centers for Disease Control. Such a screening effort should enlist the cooperation of private organizations, the medical community, foundations, inner city landlords, and neighborhood groups to identify exposure patterns and high risk populations.
 6. The director of Health should study the feasibility of cooperative lead screening services with surrounding counties and cities through joint funding for an extended Childhood Lead Poisoning Prevention Program.
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7. The director of Health should coordinate with the Housing and Community Development and the Neighborhood and Community Services departments in the abatement of lead by publicizing the availability of rehabilitation loans and free paint to affected homeowners and citizens.
 8. The director of Health should encourage property owners to utilize the Special Housing Rehabilitation program in the abatement of lead during their court hearings.
 9. The director of Health should formulate a memorandum of understanding with the hospitals, health centers, and neighborhood communities to share information of childhood lead poisoning in the City.
 10. The director of Health should establish a review and monitoring system and an effective logging system to ensure timely action is taken and complete information of all reported requests and violations is recorded.
 11. The director of Health should reinstitute the response to the public requests for residential lead inspections, a service that encourages property owners to involve themselves in the prevention and abatement of lead poisoning in the city.
 12. The director of Health should establish a cooperative relationship with private industry, the health care community, property owners, inner City landlords, neighborhood communities, and abatement contractors in the operation of the childhood lead poisoning prevention program.
 13. The director of Health should coordinate with the Water Department to increase public awareness of testing household water for lead, a service that would ensure customers of the safety of their water supply by identifying and eliminating lead in household plumbing.
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Appendix B

Audit Report Tracking System (ARTS) Reports

Audit Report Tracking System			
1. Audit Title Childhood Lead Poisoning Prevention	2. This Report Date October 14, 1993		
3. Department Health	4. Last Report Date NA		
5. Department Head Richard M. Biery, M.D., M.S.P.H.	6. Contact Person/Phone Kevin Wells - 923-2600		
7. Audit Release Date April, 1993	8. ARTS Number 94-6-1		
9. Status of All Audit Recommendations			
<u>Status</u>	<u>Date</u>	<u>Status</u>	<u>Date</u>
1. Implemented	10/14/94	10. Implemented	10/14/94
2. Implemented	10/14/94	11. In Progress	10/14/94
3. Implemented	10/14/94	12. Implemented	10/14/94
4. Implemented	10/14/94	13. Implemented	10/14/94
5. In Progress	10/14/94		
6. In Progress	10/14/94		
7. In Progress	10/14/94		
8. Implemented	10/14/94		
9. Implemented	10/14/94		
10. Recommendations Included in this Report			
<p>Recommendation No. 1: The City Manager should include funds for a Childhood Lead Poisoning Prevention Program in his recommended budget. A comprehensive screening and prevention program would enable the department to be proactive in preventing lead poisoning in the City.</p> <p>Description of Status: Implemented. The department has reoriented its current budget to provide testing for department child health clinic patients, to provide case management for all patients reported to the health department with elevated blood lead levels, to develop and implement a city-wide lead poisoning reporting/tracking/referral system, and to provide education and information to both the professional community and the public at large. In addition, the department has identified funding for a lead program coordinator and has filled this position.</p>			
<p>Recommendation No. 2: The City Manager should include funds in the recommended budget to cover the cost of purchasing an atomic absorption spectrophotometer (AA). This would enable the Health Department to detect dangerous levels of lead in a child's blood and to follow-up cases of poisoned children. The acquisition of in-house equipment would allow the Health Department to improve the effectiveness and efficiency of its screening efforts.</p> <p>Description of Status: Implemented. The department has purchased an atomic absorption spectrophotometer for its laboratory and is awaiting installation and certification.</p>			
<p>Recommendation No. 3: The director of Health should continue to apply for grants from the Missouri Department of Health, the Centers for Disease Control the US Department of Housing and Urban Development, and other appropriate sources to supplement the screening and abatement activities.</p> <p>Description of Status: Implemented. The department submitted a grant application to the Missouri Department of Health for \$333,285 in CDC pass-through funding for childhood lead poisoning prevention for FY 94-95, but was denied funding mainly due to lack of an existing program within the department. A grant application has been submitted in cooperation with Wyandotte County Health Department and Leadbusters to the EPA and has been awarded \$50,000 for educational services.</p>			

Audit Report Tracking System

Audit Title: Childhood Lead Poisoning Prevention

Report Date: October 14, 1994

10 Recommendations Included in this Report

(continued)

Recommendation No. 4: The director of Health should continue to increase public education and awareness by:

- A.) Incorporating lead information in the childhood parenting classes to educate potential parents on lead poisoning and prevention.
- B.) Educating the public on primary lead prevention activities through health fairs, and community activities, day care centers, and and the federal Head Start Program.
- C.) Providing information on lead poisoning and prevention through billboards, broadcast media, bus-stops, brochures, and other available sources through cooperation with private businesses, foundations, neighborhood communities and other non-profit organizations.

Description of Status: Implemented. The department is pursuing a two-tiered approach to the problem of community awareness concerning lead poisoning.

- a.) All Maternal and Child Health programs will provide appropriate information of lead poisoning. Other departmental programs that have high client volume, e.g. Vital Records, STD, will also provide appropriate information.
- b.) The department was one of the founding participants in the metropolitan-wide Lead Poisoning Prevention Coalition ("Leadbusters") and is working through this coalition to provide community and professional education, sound data collection and appropriate clinical and environmental screening and intervention. The education/public awareness subcommittee of the coalition will be an effective source of information by maximizing the use of pro bono services from local ad agencies and the media.

Recommendation No. 5: The director of Health should identify the base-line levels and the extent of lead poisoning in Kansas City using the established guidelines of the Centers for Disease Control. Such a screening effort should enlist the cooperation of private organizations, the medical community, foundations, inner City landlords, and neighborhood groups to identify exposure patterns and high risk populations.

Description of Status: In Progress. The department agrees that it is critical to know the true incidence of childhood lead poisoning in Kansas City. This can best be accomplished through true studies and not just reported incidents from area service providers. A study component was included in the department's proposal submitted to the State but was not funded. The department will conduct limited studies in selected high risk areas during the current fiscal year. A data collection activity is also a part of the Leadbusters plan.

Recommendation No. 6: The director of Health should study the feasibility of cooperative lead screening services with surrounding counties and cities through joint funding for an extended Childhood Lead Poisoning Prevention program.

Description of Status: In Progress. Joint childhood lead poisoning prevention activities have been discussed with the membership of "Leadbusters" and have been viewed favorably, even across the Missouri-Kansas border. The department will continue to pursue this as an effective strategy to combat lead poisoning metropolitan wide.

Recommendation No. 7: The director of Health should coordinate with the Housing and Community Development and the Neighborhood and Community Services departments in the abatement of lead by publicizing the availability of rehabilitation loans and free paint to affected homeowners and citizens.

Description of Status: In Progress. The Health Department has had discussions with several City Departments and Community agencies to facilitate lead paint poisoning remediation. Rehab Loan Corporation expressed enthusiasm to work with the Health Department in this effort. It has provided eligibility criteria, and other information regarding its services. The Executive Director suggested Rehab Loan Corp. and the Health Department cooperatively develop an informational brochure. The Neighborhood and Community Services Department has agreed to expedite its process in providing free paint by directly accepting referrals from affected homeowners, rather than through their neighborhood associations. The Department is hindered in that the funds are limited, and new cases may only be accepted from March through July. Housing and Community Development has a program directed toward apartment building owners. However, funds for this program are extremely limited. Further contact with each of these groups is planned to continue the development of gathering resource information.

Page 3 of 3
Audit Report Tracking System
Audit Title: Childhood Lead Poisoning Prevention
Report Date: October 14, 1994
10 Recommendation Included in this Report (continued)
<p>Recommendation No. 8: The director of Health should encourage property owners to utilize the Special Housing Rehabilitation program in the abatement of lead during their court hearing.</p> <p>Description of Status: Implemented. The Special Housing Rehabilitation Program will be utilized as enforcement activities continue. Every attempt will be made, however, to satisfactorily conclude that cases before going to court. Many owners/occupants of living units with lead problems are economically disadvantaged. Therefore, the inspectors have tried to work cooperatively with the responsible parties to seek compliance.</p> <p>Recommendation No. 9: The director of Health should formulate a memorandum of understanding with the hospitals, health centers, and neighborhood communities to share information of childhood lead poisoning in the City.</p> <p>Description of Status: Implemented. Lead poisoning is already a reportable occurrence under City Ordinance. The service providers' responsibilities have been reiterated through communication with professional organizations and with the major service providers, as well as the Lead Poisoning Prevention Coalition. A reporting/tracking/referral system has been established which allows area providers a central point to transmit information, as well as feedback on community aspects of the patient's care. Again, Leadbusters has been helpful with the community education aspects.</p> <p>Recommendation No. 10: The director of Health should establish a review and monitoring system and an effective logging system to ensure timely action is taken and complete information of all reported requests and violations is recorded.</p> <p>Description of Status: Implemented. A manual reporting/tracking/referral system has been developed in the High Risk program that follows the patients at any point they enter the system. This system has been operational since August 1, 1994. A software reporting/tracking/referral system "STELLAR" has recently been installed which should improve environmental records of inspection activities, request for services logging and reporting.</p> <p>Recommendation No. 11: The director of Health should reinstitute the response to public requests for residential lead inspections, a service that encourages property owners to involve themselves in the prevention and abatement of lead poisoning in the City.</p> <p>Description of Status: In progress. The Health Department will reinstitute the requests by citizens for residential lead inspection as staff time and financing become available. The department is currently answering phone inquiries regarding the health effects of lead, low cost abatement techniques, contractor information, and regulatory information. The department is also working with Leadbusters to develop a speakers bureau and training packets to provide to neighborhood associations, community groups, landlords, health care providers, and child care organizations. Funding constraints have limited participation in this activity.</p> <p>Recommendation No. 12: The director of Health should establish a cooperative relationship with private industry, the health care community, property owners, inner City landlords, neighborhood communities, and abatement contractors in the operation of the childhood lead poisoning prevention program.</p> <p>Description of Status: Implemented. A cooperative relationship between the department and the many community entities involved in childhood lead poisoning prevention is being fostered both through the Lead Poisoning Prevention Coalition and through proposed working groups and task forces to be sponsored by the department by calendar year 1994. The department is committed to continuing its involvement with community groups and service providers.</p> <p>Recommendation No. 13: The director of Health should coordinate with the Water Department to increase public awareness of testing household water for lead, a service that would ensure customers of the safety of their water supply by identifying and eliminating lead in household plumbing.</p> <p>Description of Status: Implemented. The department informs all residents of housing units undergoing environmental assessment for lead about the availability of household water testing. Additionally, information is available to department clients that provides lead poisoning prevention strategies including methods to minimize lead in drinking water.</p>

Audit Report Tracking System			
1. Audit Title	2. This Report Date		
Childhood Lead Poisoning Prevention	October 14, 1994		
3. Department	4. Last Report Date		
Health	N/A		
5. Department Head	6. Contact Person/Phone		
Richard M. Biery, M.D., M.S.P.H.	Kevin Wells, 923-2600		
7. Audit Release Date	8. ARTS Number		
April 1994	94-6-1 (Revised)		
9. Status of All Audit Recommendations			
<u>Status</u>	<u>Date</u>	<u>Status</u>	<u>Date</u>
1. Partially Implemented	10/14/94	10. Implemented	10/14/94
2. Implemented	10/14/94	11. Non-Implemented	10/14/94
3. Implemented	10/14/94	12. In Progress	10/14/94
4. In Progress	10/14/94	13. Implemented	10/14/94
5. In Progress	10/14/94		
6. In Progress	10/14/94		
7. In Progress	10/14/94		
8. Implemented	10/14/94		
9. Implemented	10/14/94		
10. Recommendations Included in this Report			
<p>Recommendation No. 1: The City Manager should include funds for a Childhood Lead Poisoning Prevention Program in his recommended budget. A comprehensive screening and prevention program would enable the department to be proactive in preventing lead poisoning in the City.</p> <p>Description of Status: Partially Implemented. The Health Department has been able to use a small amount from its current budget to: 1) provide testing for Health Department Child Health Clinic patients only, to provide case management for these patients, and, to the extent possible, other patients reported to the Health Department with elevated blood levels; and, 2) develop and implement a city-wide lead poisoning reporting, tracking, and referral system, and to provided education and information to both the professional community and the public at large. The Lead Poisoning Prevention Coalition (LeadBusters) has received one-time EPA funding to assist with this component and has identified federal funding for a lead program coordinator. That position has been filled.</p> <p>Recommendation No. 2: The City Manager should include funds in the recommended budget to cover the cost of purchasing an atomic absorption spectrophotometer (AA). This would enable the Health Department to detect dangerous levels of lead in a child's blood and to follow-up cases of poisoned children. The acquisition of in-house equipment would allow the Health Department to improve the effectiveness and efficiency of its screening efforts.</p> <p>Description of Status: Implemented. the Health Department has purchased an AA for its laboratory and is awaiting installation and certification.</p>			

Page 2 of 4
Audit Report Tracking System
Audit Title: Childhood Lead Poisoning Prevention
Report Date: October 14, 1994 (Revised)
10. Recommendations Included in this Report (continued)
<p>Recommendation No. 3: The Director of Health should continue to apply for grants from the Missouri Department of Health, the Centers for Disease Control, the US Department of Housing and Urban Development, and other appropriate sources to supplement the screening and abatement activities.</p> <p>Description of Status: Implemented. The Health Department submitted a grant application to the Missouri Department of Health for \$333,285 in CDC pass through funding for childhood lead poisoning prevention for FY 94-95, but was denied funding mainly due to the lack of an existing program within the Health Department. An EPA grant application has been submitted in cooperation with Wyandotte County Health Department and LeadBusters. The grant application was successful with a \$50,000 award for educational services.</p> <p>Recommendation No 4: The Director of Health should continued to increase public education and awareness by :</p> <ul style="list-style-type: none"> A.) Incorporating lead information in the childhood parenting classes to education potential parents on lead poisoning and prevention. B.) Educating public on primary lead prevention activities through health fairs, community activities, day care centers, and the federal Head Start programs. C.) Providing information on lead poisoning and prevention through billboards, broadcast media, bus-stops, brochures, and other available sources through cooperation with private businesses, foundations, neighborhood communities and other non-profit organizations. <p>Description of Status: In Progress. The Health Department is pursuing a two-tiered approach to the problem of community awareness concerning lead poisoning.</p> <p>1) All Maternal and Child Health programs will provide appropriate information on lead poisoning. Other Health Department programs that have high client volume, e.g., Vital Records and STD, will also provide appropriate information.</p> <p>2) The Health Department was a founding participant in the metropolitan wide LeadBusters. The Health Department is working through this coalition to provide community and professional education, sound data collection, and appropriate clinical and environmental screening and intervention. The education and public awareness subcommittee of the coalition will be an effective source of information by maximizing the use of pro bono services from local ad agencies and the media.</p> <p>Recommendation No. 5: The Director of Health should identify the base-line levels and the extent of lead poisoning in Kansas City using the established guidelines of the Centers for Disease Control. Such a screening effort should enlist the cooperation private organizations, the medical community, foundations, inner-city landlords, and neighborhood groups to identify exposure patterns and high risk populations.</p> <p>Description of Status: In Progress. The Health Department agrees it is critical to know the true incidence of childhood lead poisoning in Kansas City. This can best be accomplished through true studies and not just reported incidents from area service providers. The Health Department will conduct limited studies in selected high risk areas during the current fiscal year. A data collection activity is also a part of the LeadBusters plan.</p>

Audit Report Tracking System

Audit Title: Childhood Lead Poisoning Prevention
Report Date: October 14, 1994 (Revised)

10. Recommendations Included in this Report (continued)

Recommendation No. 6: The Director of health should study the feasibility of cooperative lead screening services with surrounding counties and cities through joint funding for an extended Childhood Lead Poisoning Prevention program.

Description of Status: In Progress. Joint childhood lead poisoning prevention activities have been discussed with the membership of LeadBusters and have been viewed favorably, even across the Missouri-Kansas border. The Health Department will continue to pursue this as an effective strategy to combat lead poisoning metropolitan wide.

Recommendation No. 7: The Director of Health should coordinate with the Housing and Community development and the Neighbor and Community Services Departments in the abatement of lead by publicizing the availability of rehabilitation loans and free paint to affected homeowners and citizens.

Description of Status: In Progress. The Health Department has had discussions with city departments and community agencies to facilitate lead paint poisoning remediation. Rehab Loan Corporation expressed enthusiasm to work with the Health Department in this effort. It has provided eligibility criteria, and other information regarding its services. The Executive Director suggested Rehab Loan Corporation and the Health Department cooperatively develop an information brochure. The Neighborhood and Community Services Department agreed to expedite its process in providing free paint by directly accepting referrals from affected homeowners, rather than through their neighborhood associations. The Health Department is hindered in that the funds are limited. The Housing and Community Development Department has a program directed toward apartment building owners. However, funds for this program are extremely limited. Further contact with each of these groups is planned to continue the development of gathering resource information.

Recommendation No. 8: The Director of Health should encourage property owners to utilize the Special Housing Rehabilitation program in the abatement of lead during their court hearing.

Description of Status: Implemented. The Special Housing Rehabilitation Program will be utilized as enforcement activities continue. Every attempt will be made, however, to satisfactorily conclude cases before going to court. Many owners and occupants units with lead problems are economically disadvantaged. Therefore, the inspectors have tried to work cooperatively with the responsible parties to seek compliance.

Recommendation No. 9: The Director of Health should formulate a memorandum of understanding with the hospitals, health centers, and neighborhood communities to share information of childhood lead poisoning in the city.

Description of Status: Implemented. Lead poisoning is already a reportable occurrence under city ordinance. The service providers' responsibilities have been reiterated through communication with professional organizations and with the major service providers, as well as the LeadBusters. A reporting, tracking, and referral system has been established which allows area providers a central point to transmit information, as well as feedback on community aspects of the patient's care. Again, LeadBusters has been helpful with the community education aspects.

Recommendation No. 10: The Director of Health should establish a review and monitoring system and an effective logging system to ensure timely action is taken and complete information of all reported requests and violations is recorded.

Description of Status: Implemented. A manual reporting, tracking, and referral system has been developed in the High Risk Program that follows the patients at any point they enter the system. This system has been operational since August 1, 1994. A software reporting, tracking, and referral system, STELLAR, has recently been installed which should improve environmental records of inspection activities, requests for services logging and reporting.

Page 4 of 4
Audit Report Tracking System
Audit Title: Childhood Lead Poisoning Prevention Report Date: October 14, 1994 (Revised)
10. Recommendations Included in this Report (continued)
<p>Recommendation No. 11: The Director of Health should reinstitute the response to public request for residential lead inspections, a service that encourages property owners to involve themselves in the prevention and abatement of lead poisoning in the city.</p> <p>Description of Status: Non-Implemented. The Health Department will reinstitute response to citizens' requests for residential lead inspections when staff time and financing becomes available. The Health Department is currently answering phone inquires regarding the health effects of lead, low cost abatement techniques, contractor information, and regulatory information.</p> <p>Recommendation No. 12: The Director of Health should establish a cooperative relationship with private industry, the health care community, property owners, inner- city landlords, neighborhood communities, and abatement contractors in the operation of the childhood lead poisoning prevention program.</p> <p>Description of Status: In Progress. A cooperative relationship between the Health Department and the many community entities involved in childhood lead poisoning prevention is being fostered both through the Lead Poisoning Prevention Coalition and through proposed working groups and task forces to be sponsored by the Health Department by calendar year 1994. The Health Department is committed to continuing its involvement with community groups and service providers.</p> <p>Recommendation No. 13: The Director of Health should coordinate with the Water Department to increase public awareness of testing household water for lead, a service that would ensure customers of the safety of their water supply by identifying and eliminating lead in household plumbing.</p> <p>Description of Status: Implemented. The Health Department informs all residents for housing units undergoing environmental assessment for lead about the availability of household water testing. Additionally, information is available to Health Department clients that provide lead poisoning prevention strategies including methods to minimize lead in drinking water.</p>

Audit Report Tracking System			
1. Audit Title Childhood Lead Poisoning Prevention	2. This Report Date May 14, 1995		
3. Department Health	4. Last Report Date October 14, 1994		
5. Department Head Richard M. Biery, M.D., M.S.P.H.	6. Contact Person/Phone Sid Bates, 923-2600		
7. Audit Release Date April 1994	8. ARTS Number 94-6-2		
9. Status of All Audit Recommendations			
<u>Status</u>	<u>Date</u>	<u>Status</u>	<u>Date</u>
1. Implemented	5/14/95	10. Implemented	10/14/94
2. Implemented	10/14/94	11. Non-Implemented	5/14/95
3. Implemented	10/14/94	12. In Progress	5/14/95
4. Implemented	5/14/95	13. Implemented	10/14/94
5. In Progress	5/14/95		
6. In Progress	5/14/95		
7. Implemented	5/14/95		
8. Implemented	10/14/94		
9. Implemented	10/14/94		
10. Recommendations Included in this Report			
<p>Recommendation No. 1: The City Manager should include funds for a Childhood Lead Poisoning Prevention Program in his recommended budget. A comprehensive screening and prevention program would enable the department to be proactive in preventing lead poisoning in the City.</p> <p>Description of Status: Implemented. The fiscal year 1995-96 budget includes \$201,000 for a Childhood Lead Poisoning Prevention Program.</p> <p>Recommendation No 4: The Director of Health should continued to increase public education and awareness by :</p> <ul style="list-style-type: none"> A.) Incorporating lead information in the childhood parenting classes to education potential parents on lead poisoning and prevention. B.) Educating public on primary lead prevention activities through health fairs, community activities, day care centers, and the federal Head Start programs. C.) Providing information on lead poisoning and prevention through billboards, broadcast media, bus-stops, brochures, and other available sources through cooperation with private businesses, foundations, neighborhood communities and other non-profit organizations. <p>Description of Status: Implemented. The Health Department is pursuing a two-tiered approach to the problem of community awareness concerning lead poisoning.</p> <p>1) All Maternal and Child Health programs will provide appropriate information on lead poisoning. Other Health Department programs that have high client volume, e.g., Vital Records and STD, will also provide appropriate information.</p>			

Page 2 of 3
Audit Report Tracking System
Audit Title: Childhood Lead Poisoning Prevention Report Date: May 14, 1995
10. Recommendations Included in this Report (continued)
<p>2) The Health Department was a founding participant in the metropolitan wide LeadBusters. The Health Department is working through this coalition to provide community and professional education, sound data collection, and appropriate clinical and environmental screening and intervention. The education and public awareness subcommittee of the coalition will be an effective source of information by maximizing the use of pro bono services from local ad agencies and the media.</p> <p>Recommendation No. 5: The Director of Health should identify the base-line levels and the extent of lead poisoning in Kansas City using the established guidelines of the Centers for Disease Control. Such a screening effort should enlist the cooperation private organizations, the medical community, foundations, inner-city landlords, and neighborhood groups to identify exposure patterns and high risk populations.</p> <p>Description of Status: In Progress. The Health Department agrees it is critical to know the true incidence of childhood lead poisoning in Kansas City. This can best be accomplished through true studies and not just reported incidents from area service providers. During the past six months the Health Department conducted limited studies in selected high risk areas. Over 200 children have been screened for lead poisoning at one early childhood center. Over 150 children have been screened at a local day care center. Data from these screenings have been collected and will be considered with other upcoming screenings to produce a true incidence of childhood lead poisoning. A data collection activity is also part of the LeadBusters plan.</p> <p>Recommendation No. 6: The Director of health should study the feasibility of cooperative lead screening services with surrounding counties and cities through joint funding for an extended Childhood Lead Poisoning Prevention program.</p> <p>Description of Status: In Progress. Joint childhood lead poisoning prevention activities have been discussed with the membership of LeadBusters and have been viewed favorably, even across the Missouri-Kansas border. The Health Department will continue to pursue this as an effective strategy to combat lead poisoning metropolitan wide.</p> <p>Recommendation No. 7: The Director of Health should coordinate with the Housing and Community development and the Neighborhood and Community Services Departments in the abatement of lead by publicizing the availability of rehabilitation loans and free paint to affected homeowners and citizens.</p> <p>Description of Status: Implemented. Health Department handouts have been revised to include referral information concerning loans and grants from Rehab Loan Corporation and the Housing and Community Development Department. The pamphlets also include referral information regarding free paint from the Neighborhood and Community Services Department.</p> <p>Recommendation No. 11: The Director of Health should reinstitute the response to public request for residential lead inspections, a service that encourages property owners to involve themselves in the prevention and abatement of lead poisoning in the city.</p> <p>Description of Status: Non-Implemented. The Health Department will reinstitute response to citizens' requests for residential lead inspections when staff time and financing becomes available. The Health Department is currently answering phone inquiries regarding the health effects of lead, low cost abatement techniques, contractor information, and regulatory information.</p> <p>Recommendation No. 12: The Director of Health should establish a cooperative relationship with private industry, the health care community, property owners, inner- city landlords, neighborhood communities, and abatement contractors in the operation of the childhood lead poisoning prevention program.</p>

Page 3 of 3
Audit Report Tracking System
Audit Title: Childhood Lead Poisoning Prevention Report Date: May 14, 1995
10. Recommendations Included in this Report (continued)
Description of Status: In Progress. A cooperative relationship between the Health Department and the many community entities involved in childhood lead poisoning prevention is being fostered both through the Lead Poisoning Prevention Coalition and through proposed working groups and task forces to be sponsored by the Health Department by June 1995. The Health Department is committed to continuing its involvement with community groups and service providers.

Audit Report Tracking System			
1. Audit Title	2. This Report Date		
Childhood Lead Poisoning Prevention	October 16, 1995		
3. Department	4. Last Report Date		
Health	May 14, 1995		
5. Department Head	6. Contact Person/Phone		
Richard M. Biery, M.D., M.S.P.H.	Pat Webb, 923-2600		
7. Audit Release Date	8. ARTS Number		
April 1994	94-6-3		
9. Status of All Audit Recommendations			
Status	Date	Status	Date
1. Implemented	05/14/95	10. Implemented	10/14/94
2. Implemented	10/14/94	11. Non-Implemented	10/14/95
3. Implemented	10/14/94	12. Implemented	10/14/95
4. Implemented	05/14/95	13. Implemented	10/14/94
5. In Progress	10/14/95		
6. Implemented	10/14/95		
7. Implemented	05/14/95		
8. Implemented	10/14/94		
9. Implemented	10/14/94		
10. Recommendations Included in this Report			
<p>Recommendation No. 5: The Director of Health should identify the base-line levels and the extent of lead poisoning in Kansas City using the established guidelines of the Centers for Disease Control. Such a screening effort should enlist the cooperation private organizations, the medical community, foundations, inner-city landlords, and neighborhood groups to identify exposure patterns and high risk populations.</p> <p>Description of Status: ^{Implem?} In-Progress. The Health Department collected data through limited studies in selected high risk areas. The latest of these studies involved 269 children from Head Start centers in five different geographic areas of the city who were screened for lead poisoning. The Health Department is also screening children at day care centers, a weekly Lead Clinic, and Well Child clinics held at several different locations in the city. All lead screening data collected by the Health Department has been combined with data reported from other health care providers into a data base. This data base will allow the Health Department to determine the incidence of lead poisoning in Kansas City.</p>			
<p>Recommendation No. 6: The Director of Health should study the feasibility of cooperative lead screening services with surrounding counties and cities through joint funding for an extended Childhood Lead Poisoning Prevention program.</p> <p>Description of Status: Implemented. The Health Department supports metropolitan wide activities for lead poisoning prevention through LeadBusters, Mothers of Lead Exposed Children, and the Maternal Child Health Coalition. The Health Department participated in the national conference held by LeadBusters (9/95) by providing lead screening for children. Other country and city health departments are providing lead screening to children in their geographic areas. The Missouri Department of Health provides environmental support for areas that are outside of Kansas City that are unable to provide their own environmental support.</p>			

Audit Report Tracking System

Audit Title: Childhood Lead Poisoning Prevention
Report Date: October 14, 1995

10. Recommendations Included in this Report (continued)

Recommendation No. 11: The Director of Health should reinstitute the response to public request for residential lead inspections, a service that encourages property owners to involve themselves in the prevention and abatement of lead poisoning in the city.

Description of Status: Non-Implemented. The Health Department responds to public requests for residential lead inspections with information, literature, and referral. The Health Department has not had staff or financing available to perform environmental inspections. Providing response to public requests for residential inspections is one issue the Lead Poisoning Advisory Board will be addressing in the near future.

Recommendation No. 12: The Director of Health should establish a cooperative relationship with private industry, the health care community, property owners, inner-city landlords, neighborhood communities, and abatement contractors in the operation of the childhood lead poisoning prevention program.

Description of Status: Implemented. A cooperative relationship between the Health Department and the many community entities involved in childhood lead poisoning prevention is being fostered both through the Lead Poisoning Prevention Coalition and through working groups and task forces sponsored by the Health Department. In July 1995, the Health Department organized a lead Poisoning Advisory Board made up of representatives from neighborhood organizations, real estate, housing, the medical community, the banking industry, and contractors. The Board meets quarterly and discusses lead poisoning issues with recommendations going to the Director of Health. The Health Department is committed to continuing its involvement with community groups and service providers.

Audit Report Tracking System			
1. Audit Title	2. This Report Date		
Childhood Lead Poisoning Prevention	October 25, 1996		
3. Department	4. Last Report Date		
Health	October 16, 1995		
5. Department Head	6. Contact Person/Phone		
Richard M. Biery, M.D., M.S.P.H.	Pat Webb, 923-2600		
7. Audit Release Date	8. ARTS Number		
April 1994	94-6-4		
9. Status of All Audit Recommendations			
Status	Date	Status	Date
1. Implemented	05/14/95	10. Implemented	10/14/94
2. Implemented	10/14/94	11. Implemented	10/25/96
3. Implemented	10/14/94	12. Implemented	10/14/95
4. Implemented	05/14/95	13. Implemented	10/14/94
5. Implemented	10/25/96		
6. Implemented	10/14/95		
7. Implemented	05/14/95		
8. Implemented	10/14/94		
9. Implemented	10/14/94		
10. Recommendations Included in this Report			
<p>Recommendation No. 5: The Director of Health should identify the base-line levels and the extent of lead poisoning in Kansas City using the established guidelines of the Centers for Disease Control. Such a screening effort should enlist the cooperation of private organizations, the medical community, foundations, inner-city landlords, and neighborhood groups to identify exposure patterns and high risk populations.</p> <p>Description of Status: Implemented. The Health Department has developed a substantial computerized data base of lead poisoning cases within the Kansas City aread utilizing the STELLAR software program developed by the Centers for Disease Control designed specifically for this purpose. Through this data base, the Health Department has been able to identify high risk areas within the community and exposure patterns. The base-line levels and extent of lead poisoning in Kansas City can be approximated from this data. The STELLAR data base is updated weekly and includes reports from areas health care providers. It also includes lead screening data collected by the Health Department at lead screening clinics and well child clinics. A variety of community-based organizations have sponsored health fairs and special clinics through the year where children have been tested for lead poisoning by Health Department associates.</p>			
<p>Recommendation No. 11: The Director of Health should reinstitute the response to public request for residential lead inspections, a service that encourages property owners to involve themselves in the prevention and abatement of lead poisoning in the city.</p> <p>Description of Status: Implemented. Environmental inspections for lead are performed when a child with an elevated blood lead level has been identified. These children are identified through lead screening clinics managed by the Health Department and through referrals from areas health care providers. In response to a citizen request for an inspection where no child with an elevated blood lead level has been identified, the Health Department responds with information on</p>			

Audit Report Tracking System

Audit Title: Childhood Lead Poisoning Prevention
Report Date: October 14, 1995

10. Recommendations Included in this Report (continued)

prevention of lead poisoning, literature, and referral. The citizen is supplied with a list of qualified, licensed lead inspectors within the area.

Appendix C

City Manager's and Health Director's Response



Office of the City Manager

DATE: July 19, 1999
TO: Mark Funkhouser
FROM: Robert L. Collins, City Manager
SUBJECT: Draft of Childhood Lead Poisoning Prevention Follow-Up Audit Report

Please find attached the City's response to the above noted Audit. Please contact either Dr. Archer or myself if you wish to discuss this in greater detail or if you have any questions.


Robert L. Collins

RLC:emm
Attachment
cc: Dr. Rex Archer, Health Department

RECEIVED
JUL 19 1999
CITY AUDITOR'S
OFFICE



Inter-Departmental Communication

Health Department

DATE: July 08, 1999

TO: Mark Funkhouser, City Auditor

FROM: Rex Archer, MD, MPH, Director of Health

SUBJECT: Lead Poisoning Audit

Thank you for your review of the Childhood Lead Poisoning Prevention Program. The progress made in the program over the past five years stems from the original audit performed by your office. Since that time, a comprehensive program has been established providing services including lead screening, environmental inspections, case management of lead-poisoned children, and community outreach activities. Funding resources have been obtained including general revenue, state, and federal grant funds. A \$4.9 million dollar grant from HUD was awarded to the City of Kansas City in 1997 to remediate lead hazards in homes of low-income families. The efforts of the Childhood Lead Poisoning Prevention Program have resulted in identification of children at risk for lead poisoning, assurance of appropriate environmental and medical follow-up, increased reporting of blood lead levels from area health care providers, and prevention of lead poisoning through education, public awareness activities, and lead hazard remediation.

After considering the recommendations from your office, the Health Department respectfully submits the following response:

Recommendation 1: The Director of Health should use a targeted approach to blood lead level screening even if the state adopts a plan for universal screening.

Response: **Agree in part.** The Director of Health should use a targeted approach to using resources available for blood lead screening activities. Health Department resources should be focused on areas needing the most assistance determined by housing data, poverty data, and blood lead data. At the same time, the Health Department should encourage health care providers to use a universal approach to screening as recommended in the proposed state lead-screening plan.

The reason is two-fold. First of all, there is a high level of mobility within the population. Children frequently move from a high-risk area to a low-risk area and vice versa. Unless universal screening is in place, these children at risk will be missed in screening efforts.

The second reason relates to health care provider practices. It is unlikely that physicians and other providers will look at a list of zip codes each time they see a patient under 6 years of age to determine if he/she lives in a high risk area. Of 49 zip codes in Kansas City, 22 of them are considered high risk based on CDC criteria ($\geq 27\%$ homes built before 1950). Also the Health Department has found that children are sometimes exposed to lead hazards at day care centers or homes of relatives where they frequently visit. This information would not be readily available to health care providers.

Recommendation 2: The City Manager should submit for council consideration an ordinance that would require health care providers to report the results of all blood lead level tests.

Response: **Agree.** Without universal reporting of all blood lead levels, it is not possible to determine whether or not children are being adequately screened for lead poisoning. Complete blood lead data would allow the program to identify high-risk areas upon which to focus lead poisoning screening and prevention efforts.

Recommendation 3: The Director of Health should develop criteria for the timeliness of lead hazard abatements and track timeliness.

Response: **Agree.** The timeliness of lead hazard abatement is not under full control of the Director of Health. Property owners are responsible for completion of lead abatement work. Lead abatement is expensive (average cost \$13,000 for houses enrolled in the HUD grant project). Many property owners do not have the resources available to perform lead abatement. These factors make it difficult to enforce a strict time line for abatement, however tracking timeliness is possible through the use of the STELLAR software (Systematic Tracking of Elevated Lead Levels and Remediation) program.

The Director of Health has access to data through STELLAR that can be tracked for completion of lead abatement work. When the baseline data of timeliness is known, it would be possible to develop criteria for timeliness. Factors affecting timeliness include the type of intervention needed to make the unit lead-safe, the cost of the intervention, and availability of resources. These factors should be considered in the development of criteria for timeliness.

Recommendation 4: The Director of Health should determine whether there are other populations – such as people that do construction work in homes and people who work with children at high-risk ages – that might benefit from education about lead poisoning and prevention.

Response: **Agree.** The Health Department has plans this year to educate realtors, home remodelers, students, teachers, and foster parents. As other groups are identified, strategies will be developed and implemented to reach those target groups either directly or through community-based organizations such as LeadBusters, Inc.

The greatest challenge for the City of Kansas City Missouri in lead poisoning prevention efforts is to find resources and strategies to sustain an ongoing local lead hazard reduction program after federal resources have been depleted. The Health Department suggests consideration of the following strategies that could be implemented at the federal, state or local levels depending upon political will:

1. Tax incentives to encourage and support lead hazard remediation efforts.
2. Requiring lead inspections before sale of all pre-1978 housing.
3. Integrate safe practices of dealing with lead hazards in all City housing strategies and development plans. These practices could be clearly defined in the City's Consolidated Plan. This could include the adoption of cost-effective voluntary measures for lead hazard control and performing dust-wipe testing for lead at the conclusion of each project. It could include utilizing CDBG and HOME funds for lead-safe rehab of at-risk housing occupied by low- and moderate- income families.

Thank you for this opportunity to respond. If you have questions, please contact me at your convenience.