

Childhood Lead Poisoning in The City of St. Louis



Annual Report 2004

City of St. Louis
Department of Health
Childhood Lead Poisoning Prevention Program

Statistics at a Glance

City of St. Louis Childhood Lead Poisoning Surveillance 2004

Demographics

2000 Census population, children < 6 years of age St. Louis, Missouri	28,369
St. Louis City Children Screened	13,249
Percent eligible screened	46.7%
Mean age in years	2.8
Male:Female Ratio	1.03
Race (%)	
African American	5,601 (42.3%)
Caucasian	636 (4.8%)
Asian	101 (0.8%)
Other	112 (0.8%)
Native American	12 (< 0.1%)
Multiracial	7 (< 0.1%)
Not reported	6,780 (51.2%)

Lead Poisoning, City of St. Louis:

*Note: Blood lead level units are based on micrograms per deciliter ($\mu\text{g}/\text{dl}$)

Prevalent Cases ($\text{Pb} \geq 10 \mu\text{g}/\text{dl}$)	1,189
Screening Prevalence Rate (%)	9.0%
Incident Cases ($\text{Pb} \geq 10 \mu\text{g}/\text{dl}$)	629
Screening Incidence Rate (%)	5.5%
Case Distribution	
CDC I ($\text{Pb} < 10$)	12,060 (91.0%)
CDC II ($\text{Pb} = 10-19$)	1,005 (7.6%)
CDC III ($\text{Pb} = 20-44$)	169 (1.3%)
CDC IV ($\text{Pb} = 45-69$)	14 (0.1%)
CDC V ($\text{Pb} \geq 70$)	1 (< 0.1%)
State of Missouri Screening Prevalence Rate (2004)	3.0%
U.S. Estimated Prevalence Rate (NHANES 1999-2002)	1.6%

Note: Screening Prevalence and Incidence rates are based on the number of children screened not on the actual population (SPR=total number of cases out of the total number screened; SIR=number of new cases for the year out of the number of new cases plus the number of children that either were not previously screened or previously had a blood lead level below 10 $\mu\text{g}/\text{dl}$).

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<http://stlouis.missouri.org/citygov/health/>

Contents

Executive Summary	1
Introduction	3
Screening Guidelines	3
Surveillance of Childhood Lead Poisoning	4
Childhood Lead Poisoning in the City of St. Louis, 2004	5
Screening for Lead Poisoning	5
Health Providers of Lead Screenings	5
Blood Lead Test Results	6
Severity of Lead Poisoning	7
Seasonality and Lead Poisoning	8
Profile of Lead Poisoned Children in the City of St. Louis, 2004	9
Screening by Age	9
Lead Poisoning Within Age Groups	9
Race and Lead Poisoning	11
Gender and Lead Poisoning	11
Lead Level History of Children Screened in 2004	12
Geography and Lead Poisoning	12
St. Louis City's Childhood Lead Poisoning Prevention Program and Lead Inspection and Hazard Control, 2004	15
Lead Poisoning Prevention and Control Activities	15
Lead Inspection and Hazard Control	16
Lead Safe St. Louis	19
2004 Accomplishments and Activities	19
Limitations and Discussion	20
Summary	21
Appendix	22

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Figures

Figure 1 Children Screened for Lead Poisoning, City of St. Louis 1998-20045

Figure 2 Children Less Than 6 Years of Age Diagnosed with Lead Poisoning,
City of St. Louis 1996-20046

Figure 3 Case Distribution of all Children Screened, City of St. Louis 20047

Figure 4 Seasonal Variation in Screening Prevalence and Screening Incidence Rates,
City of St. Louis 20048

Figure 5 Children Tested for Lead Poisoning by Age, City of St. Louis 20049

Figure 6 Prevalent and Incident Cases of Lead Poisoning by Age,
City of St. Louis 200410

Figure 7 Prevalent and Incident Cases of Lead Poisoning by Race,
City of St. Louis 200411

Figure 8 Elevated Blood Lead Level Screening Prevalence and Incidence Rates for
the 20 Neighborhoods with the highest SPRs, City of St. Louis 200414

Tables

Table 1 Missouri Lead Testing Plan (updated in 2004)3

Table 2 CDC Classification of Childhood Lead Poisoning and Follow-Up Actions4

Table 3 CDC Class by Lead Level History, City of St. Louis 200412

Table 4 Health Education Activities Conducted by the Childhood Lead Poisoning
Prevention Program, City of St. Louis 200416

Table 5 Inspection Referrals Made to the Lead Inspection and Hazard Control
Section of The Building Division, City of St. Louis 2003-200417

Table 6 Lead Inspection Activities and Remediations, City of St. Louis 2003-200418

Table 7 Court Activities for Lead Remediation, City of St. Louis 200418

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Appendix

Table A-1 Health Care Providers of Blood Lead Screenings, City of St. Louis 2003-200423

Table A-2 Demographic Profile of Children Screened for Lead Poisoning,
City of St. Louis, 2004 (N=13,249)24

Table A-3 Screening and Childhood Lead Poisoning Rates by ZIP Code,
City of St. Louis 2004 (Ranked by highest SPR)25

Table A-4 Screening and Childhood Lead Poisoning Rates by Ward,
City of St. Louis 2004 (Ranked by highest SPR)26

Table A-5 Screening and Childhood Lead Poisoning Rates by Neighborhood,
City of St. Louis 2004 (Ranked by highest SPR)27

Table A-6 Screening and Childhood Lead Poisoning Rates by Census Tract,
City of St. Louis 200430

Map B-1 Elevated Blood Lead Level Screening Prevalence Rates by ZIP Code,
City of St. Louis 200433

Map B-2 Elevated Blood Lead Level Screening Incidence Rates by ZIP Code,
City of St. Louis 200434

Map B-3 Elevated Blood Lead Level Screening Prevalence Rates by Ward,
City of St. Louis 200435

Map B-4 Elevated Blood Lead Level Screening Incidence Rates by Ward,
City of St. Louis 200436

Neighborhood Map Legend Neighborhood Number and Neighborhood Name37

Map B-5 Elevated Blood Lead Level Screening Prevalence Rates by Neighborhood,
City of St. Louis 200438

Map B-6 Elevated Blood Lead Level Screening Incidence Rates by Neighborhood,
City of St. Louis 200439

Executive Summary

Approximately 310,000 U.S. children aged 1-5 years have blood lead levels greater than the Centers for Disease Control (CDC) recommended level of 10 micrograms of lead per deciliter of blood (NHANES 1999-2002 survey).

Lead poisoning can affect nearly every system in the body. Because lead poisoning often occurs with no obvious symptoms, it frequently goes unrecognized. Lead poisoning can cause learning disabilities, behavioral problems, and at very high levels, seizures, coma, and even death.

The major source of lead exposure among U.S. children is lead-based paint and lead-contaminated dust found in deteriorating buildings. Lead-based paints were banned for use in housing in 1978. However, approximately 24 million housing units in the United States have deteriorated lead paint and elevated levels of lead-contaminated house dust. More than 4 million of these dwellings are home to one or more young children.

Childhood Lead Poisoning in the City of St. Louis, 2004

Ninety-nine percent of the housing stock in the City of St. Louis was built before 1978 when lead-based paints were banned. This puts residents in the City of St. Louis, especially children, at great risk for being lead poisoned.

In order to identify children with lead poisoning, the City of St. Louis Department of Health has a surveillance system in place to track the number of children less than 6 years of age screened for lead poisoning in the City each year and their blood lead results. In 2004, 46.7% of city children less than 6 years of age were screened for lead poisoning. Based on the Missouri Lead Testing Plan updated by the Missouri

Department of Health and Senior Services in 2004, 100% of children under the age of 6 should be screened for lead poisoning annually. The City of St. Louis still has some hurdles to overcome in order to obtain this goal. Even though the primary responsibility for screening children under 6 years of age falls on the private providers, the Health Department's role is to ensure that children in the City of St. Louis are being screened. Of the 13,249 children screened for lead poisoning in 2004, 1,189 (9.0%) had a blood lead level of 10 µg/dl or greater, which is the CDC's definition of lead poisoning.

Profile of Lead-Poisoned Children in the City of St. Louis, 2004

Age is an important indicator of lead poisoning among children less than 6 years of age. Children under the age of 1 typically have lower rates of lead poisoning than children over the age of 1. Children 1 year and up are more mobile, they tend to put things in their

mouths and they have poor hygiene, which can all contribute to lead poisoning. In 2004, 7.0% of the 1 year olds screened for lead poisoning had a blood lead level of 10 µg/dl or greater. This is less than the screening prevalence rate for children two years of

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

age (13.4%). Two year olds are more active than 1 year olds and once a child is poisoned, the lead remains in their body so if a child has an elevated blood lead level when they are 1 year of age they may still have an elevated level at 2 years of age. Repeated exposure to lead can also contribute to a child continually being poisoned.

In and of itself, race is not an indicator of childhood lead poisoning (CLP). However, other risk factors such as poverty, poor housing stock and poor access to medical care are higher among minorities and these factors contribute to CLP. In 2004, a little less than half of the children screened and reported to the Health Department were African American (42.3%). African American children account for 68.5% of all lead poisoned children in 2004 and they make

up 55.5% of all newly identified cases in the City in 2004.

Where a child lives in the City of St. Louis can also play a role in their exposure to lead. Some areas of the City have older more poorly maintained housing stock than others. When examining lead poisoning in the City it is important to look within geographic boundaries (ZIP Code, ward, neighborhood and census tract) to determine the high risk areas of the City. In 2004, the ZIP Codes with the highest screening prevalence rates are: 63107, 63118, 63113, 63120 and 63115. The wards with the highest rates are: 3, 4, 20, 9 and 22, and the neighborhoods with the highest rates are: Hyde Park, Benton Park West, Fairground Neighborhood, The Greater Ville and College Hill.

St. Louis City's Childhood Lead Poisoning Prevention Program, 2004

The Childhood Lead Poisoning Prevention Program (CLPPP) is located in the City of St. Louis Department of Health and it functions to maintain the blood lead screening surveillance system and perform lead poisoning prevention activities. The CLPPP offers blood lead screenings to children under 6 years of age and coordinates educational workshops for parents, daycares, schools, community organizations and health professionals. In 2004, the Health Department screened 1,037 children and presented at 68 educational events. The Lead Inspection and Hazard Control

Section formerly housed by the City of St. Louis Department of Health became part of the Building Division in 2004. The unit coordinates with the CLPPP and offers environmental investigations and remediation support. The unit consists of certified lead hazard inspectors, certified lead abatement workers and data entry clerks. In 2004, the unit identified 632 units with lead violations and remediated 121 properties out of the 510 remediated by various programs.

Lead Safe St. Louis

The Lead Safe St. Louis Program was initiated in November 2003 when Mayor Francis G. Slay announced the City's new "Comprehensive Action Plan for the Eradication of Childhood Lead Poisoning in St. Louis By 2010."

In 2004, the program sponsored several educational and training events, received additional HUD funds, and received nationwide recognition for the City's efforts to eradicate childhood lead poisoning.

Introduction

Although rates have dropped in the last few years, childhood lead poisoning (CLP), defined as a blood lead level of greater than or equal to 10 micrograms per deciliter (µg/dl) in children less than 72 months of age, is a chronic problem in the City of St. Louis. The percentage of screened children found to have elevated blood lead levels is substantially higher in the City of St. Louis (9.0%) than in the State of Missouri (3.0%) and the rest of the nation (1.6%). In 2004, CLP in the City of St. Louis accounts for 48.9% of all

lead poisoned children in the State of Missouri (1,189/2,431).

Since 1996, the City of St. Louis Department of Health (Health Department) has published annual reports on lead surveillance data and related program activities. The purpose of these reports is to inform residents, caregivers, health care providers and policy makers of the presence of CLP in the City of St. Louis so they can take the necessary steps to address this problem.

Screening Guidelines

It is important to detect and treat lead poisoning at a young age to mitigate the impact of CLP on a child. In 2004, screening for CLP in the City of St.

Louis follows guidelines contained in the Missouri Lead Testing Plan ([Table 1](#)).

Table 1
Missouri Lead Testing Plan (updated in 2004)

Devised by the Missouri Department of Health and Senior Services

High-Risk Areas	Non-High Risk Areas
<ul style="list-style-type: none"> • Any <u>child under the age of six years</u> living in or visiting for 10 hours per week or more, the high-risk area, <u>will be tested annually</u> for lead. • Day care facilities are required to record a "<u>proof of lead testing</u>" signed by the Health Care Provider performing the test <u>within thirty (30) days of the child's enrollment</u>. If the parent/guardian does not provide it or a written statement stating why they do not want the child tested, the Day care facility is to offer the parent assistance in scheduling a test. • Any <u>child found to be at High-Risk</u>, is living in a residence that was built before 1978, and is <u>undergoing renovation, may be tested every six months</u> and once following completion of the work. (Also applies to children found to be at high-risk in non high-risk areas.) 	<ul style="list-style-type: none"> • Any <u>child under the age of six years</u> visiting for 10 hours per week or more, a high-risk area, <u>will be tested annually</u> for lead. • All <u>Medicaid eligible children</u> will be blood tested for lead at 12 and 24 months of age. It is recommended that all children (regardless of Medicaid eligibility) be tested for lead at 12 and 24 months of age. (This statement does not appear in the law, but applies as HCFA policy and DHSS recommendations.) • Beginning at <u>age six months up to age six years</u> every child will <u>be screened by verbal risk assessment</u> (DHSS/DSS questionnaire) to determine whether they are at high risk. • <u>Every child, less than age six, found to be at high risk, will be tested for lead.</u>

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

These guidelines incorporate recommendations from the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics and the Missouri Medicaid Program, and call for the testing of children less than 72 months of age at least twice between 12 and 24 months of age. Preferably one test is given at 12 months and another test at 24 months.

The City of St. Louis is defined as a high risk area; therefore, all children less than 6 years of age are required to receive an annual blood lead test. A child's primary

health care provider should offer screening as part of their routine care. Such testing permits the early identification of CLP during a child's most vulnerable years. Any child between the ages of 12 and 72 months who has never been tested needs to be tested immediately.

The CDC, the State of Missouri and the Health Department all recommend follow-up actions when a child is found to be lead poisoned (Table 2). The Health Department provides many of these follow-up actions.

Table 2
CDC Classification of Childhood Lead Poisoning and Follow-up Actions

CDC Class	Blood Lead Level (µg/dl)	CDC/State Recommended Actions
Class I	< 9	No action, acceptable risk
Class II	10-19	Risk reduction education
Class II (After repeat test)	15-19	Risk reduction education, environmental investigation, case management
Class III	20-44	Risk reduction education, environmental investigation, case management
Class IV	45-69	Chelation therapy and same as Class III actions
Class V	≥ 70	Two drug chelation and same as Class III actions

The CLPPP offers case management for uninsured children who have blood lead levels of 10 µg/dl or greater.

Surveillance of Childhood Lead Poisoning

The City of St. Louis Department of Health collects and analyzes all reports of blood lead tests performed on children under the age of 6 living in the City of St. Louis. State regulation and local code require the reporting of all blood lead test results whether elevated or not to the local health department.

The Health Department is responsible for the daily entry of lead test results for those children who reside in the City

into the **Systematic Tracking of Elevated Lead Levels and Remediation (STELLAR)** database. The software is provided by the CDC in Atlanta, GA. As of May, 2005, lead test results are entered into **Missouri Health Strategic Architectures and Information Cooperative (MOHSAIC)**, which is a statewide database created and maintained by the Missouri Department of Health and Senior Services to centralize surveillance data.

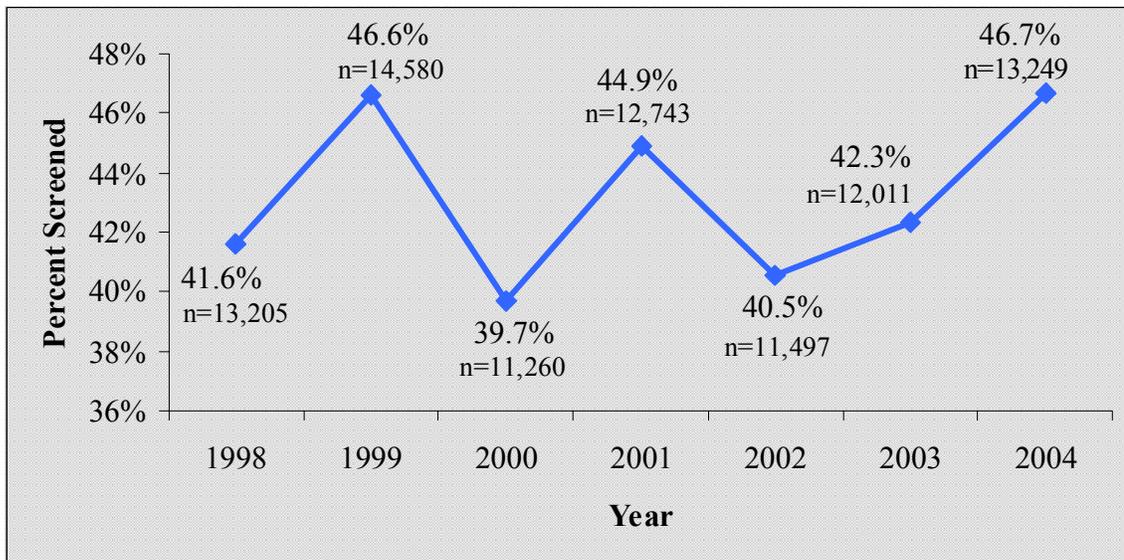
Childhood Lead Poisoning in the City of St. Louis, 2004

Screening for Lead Poisoning

In 2004, 47% (13,249/28,369) of city children less than 6 years of age were screened for lead poisoning (Figure 1). The rate of children screened increased again in 2004 after increasing in 2003. Based on the Missouri Lead Testing Plan, all St. Louis City children under

the age of 6 should be tested annually for lead poisoning. This means that all 28,369 children under the age of 6 should have been tested in 2004 and that over 50% of these children are not being tested according to the recommended timeframe.

Figure 1
Children Screened for Lead Poisoning, City of St. Louis 1998-2004



Health Providers of Lead Screenings

In previous years, community providers such as the Federally Qualified Health Centers and Connect Care performed the majority of the lead screenings. In 2001, this trend began to change with private physicians, clinics and hospitals providing a major portion of blood lead screenings. The Federally Qualified Health Centers, Connect Care and the Health Department screened 4,092 out of 13,249 (30.9%) children in 2004 (Table A-1). Private Physicians, Private

Practices and Hospitals screened 8,120 (61.3%) (Table A-1). The higher screening rate in this group is encouraging since screening should be a part of comprehensive health services for all children. In the past, providers who served low income or uninsured clients and those who targeted high risk children tended to have higher screening prevalence rates than private practices/physicians and hospitals.

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 City of St. Louis, Department of Health

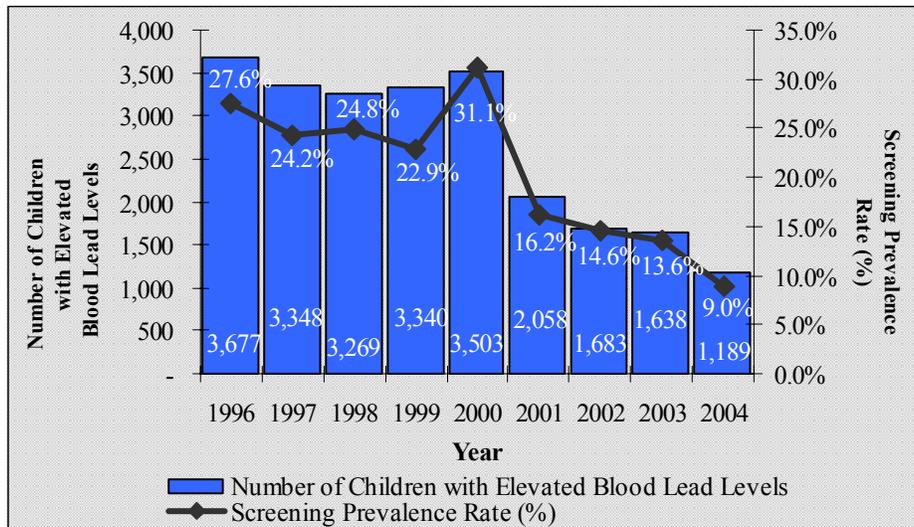
Blood Lead Test Results

The screening prevalence rate (SPR) of CLP is the number of children screened with blood lead levels $\geq 10 \mu\text{g/dl}$ out of the total number of children screened. It includes those who test elevated for the first time (incident cases) and those with elevated test results from prior screenings. It is difficult to reduce the lead body burden in children, especially if continued exposure occurs. Once poisoned, children can maintain elevated levels for some time unless aggressive measures are taken. The screening incidence rate (SIR) is the number of new cases of lead poisoning out of the

number of children being tested for the first time plus the number of children testing positive for the first time and the number that previously tested negative.

The City of St. Louis began to see a marked decrease in the number of children poisoned by lead in 2001. Between 2001 and 2003, the number of cases each year leveled out. 2004 is marked by another substantial decrease in SPR (Figure 2). Several factors may influence the drop in screening prevalence from 2003 to 2004.

Figure 2
Children Less Than 6 Years of Age Diagnosed with Lead Poisoning,
City of St. Louis 1996-2004



Increased screening affects prevalence by increasing the chance that children who do not have elevated blood lead levels are tested. Enhanced enforcement of the Early and Periodic Screening, Diagnostic and Treatment Service for children enrolled in Medicaid may account for an increase in the number of children screened. In 2002, Attorney General Jay Nixon reached a settlement with Healthcare USA of Missouri to spend \$1.1 million to conduct lead screening on St. Louis-area children who

were Medicaid recipients in 2003. This could account for the increase in the number of children screened from 2002 to 2004.

Once children turn 6 years of age they are no longer tracked by the Health Department, which could also explain a decrease in the number of prevalent cases. It is possible that more children were 6 years of age or older between 2003 and 2004. Another factor could be screening patterns. If children in high

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

risk areas are not screened this may cause the screening prevalence to appear lower than normal. Increased awareness through education may also have an effect on lowering the number of children lead poisoned as well as remediation and abatement efforts. An increase in the number of vacant housing and abandoned lots in high risk areas of the City may also play a role in decreasing the number of lead poisoned children. Future studies are planned by the Health Department to determine which factors have a significant

influence on the decline in the number of children lead poisoned each year.

The overall screening incidence rate (SIR) for the City of St. Louis in 2004 is 5.5% and the SPR is 9.0%, which is a substantial decrease from 2003. However, there is insufficient evidence to conclude that the problem is being resolved. Over half of the children at risk in the City of St. Louis are still not being screened annually by their health care providers. Nothing is known about their blood lead levels.

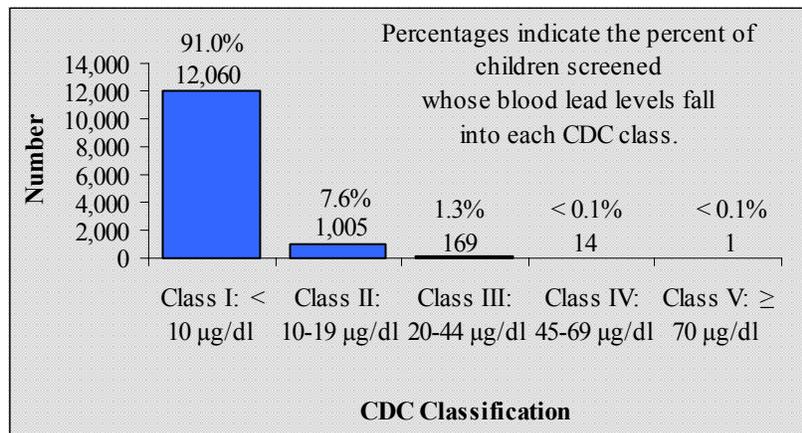
Severity of Lead Poisoning

The majority of the children screened in 2004 (91.0%) (Figure 3), have test results below 10 µg/dl, the level at which a child is considered lead poisoned. The rest of the children screened either fall into the second class with blood lead levels between 10-19 µg/dl or in the third class with blood lead levels between 20-44 µg/dl.

µg/dl), less than .1% in Class IV (45-69 µg/dl) and less than .1% in Class V (≥ 70 µg/dl) (Figure 3). Despite the fact that most lead poisoned children are in the lowest CDC Elevated Class, these figures are alarming since even these low levels of blood lead can have an adverse impact on a child's development. Determining the acceptable level of lead in a child's blood has been a source of debate. Experts state that no level of lead is acceptable and that the CDC should lower the level that currently defines lead poisoning.

In 2004, 1,189 or 9.0% of all children tested have elevated blood lead levels (Figure 3). Of the 13,249 children screened in 2004, 7.6% are in Class II (10-19 µg/dl); 1.3% in Class III (20-44

Figure 3
Case Distribution of all Children Screened, City of St. Louis 2004



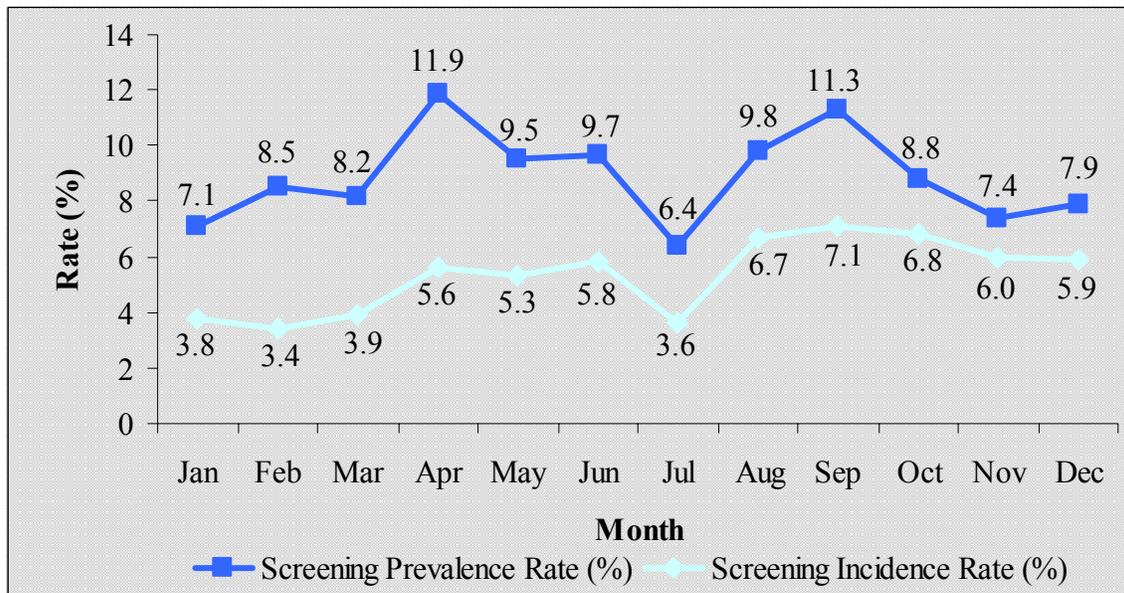
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City of St. Louis, Department of Health

Seasonality and Lead Poisoning

Higher screening prevalence and screening incidence rates are traditionally seen in the summer months and into the fall of the year (Figure 4). In 2004, a peak occurs in April and again in September. For the most part, the rates remain fairly consistent throughout the year with a decrease

reported in July (Figure 4). Regardless of increased screening during the peak months, the increase in cases found may be due to greater exposure during these months to contaminated soil while playing outside or from soil being tracked in from the outside.

Figure 4
Seasonal Variation in Screening Prevalence and Screening Incidence Rates,
City of St. Louis 2004



Profile of Lead Poisoned Children in the City of St. Louis, 2004

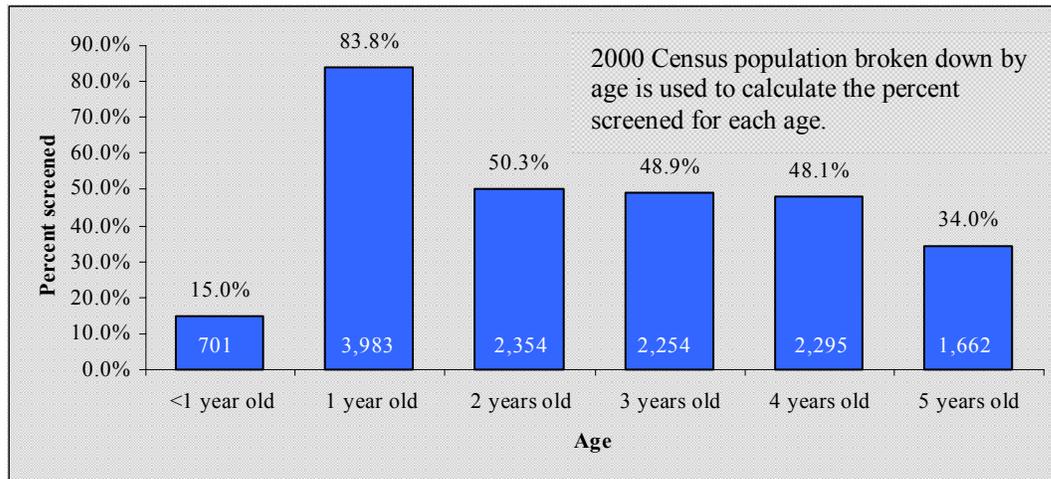
Screening by Age

Looking within age groups, the highest screening rate (84%) is for children 1 year old (Figure 5). This is the age at which the first recommended screening should occur. A similar peak in screenings should appear in the 2-5 year

old populations indicating that children are being consistently screened on an annual basis. However, screening appears to drop off once a child reaches 1 year of age.

Figure 5

Children Tested for Lead Poisoning by Age, City of St. Louis 2004



Lead Poisoning Within Age Groups

The highest age-specific SIR in 2004 is 8.7% among the 2 year olds screened for lead poisoning (Figure 6). The identification of incident cases in this 'second testing cohort' of older children may be due to the failure of health care providers to fully implement screening recommendations at younger ages or the increased activity of 2 year olds.

Children 2 years of age also have the highest SPR (13.4%) (Figure 6). These children are more active in exploring their environments and also have poor hand-washing skills. The SPR rate stays relatively high through the rest of the age groups greater than or equal to 3 years of age. The longer a child remains

elevated the greater the risk of long term damage to their development.

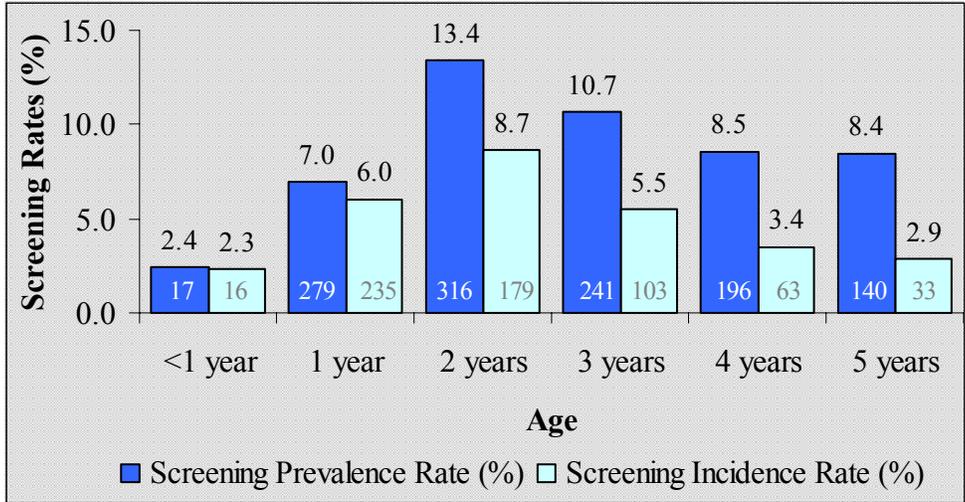
The SPR for children 1 year of age decreased considerably with a reported rate of 12.4% in 2003 and a rate of 7.0% in 2004 (Figure 6), indicating that fewer children at this age are being lead poisoned. There are still fewer children being poisoned at this age than at 2 and up. Children at 1 year of age are less mobile than children at 2 years of age. Two and 3 year olds may also have higher screening prevalence rates than 1 year olds because lead stays in a child's blood stream and is difficult to get rid of once a child becomes poisoned. Therefore, it is important to also look at the screening incidence rate, which only

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

includes the new cases of lead poisoning. The SIR for 2 year olds (8.7%) is still higher than that for 1 year olds (6.0%), but it does begin to decrease for 3 year olds (5.5%) (Figure 6).

The screening prevalence and incidence rates for children less than 1 year of age are almost identical (Figure 6). Children at this age are young enough that they have never been tested before.

Figure 6
Prevalent and Incident Cases of Lead Poisoning by Age,
City of St. Louis 2004



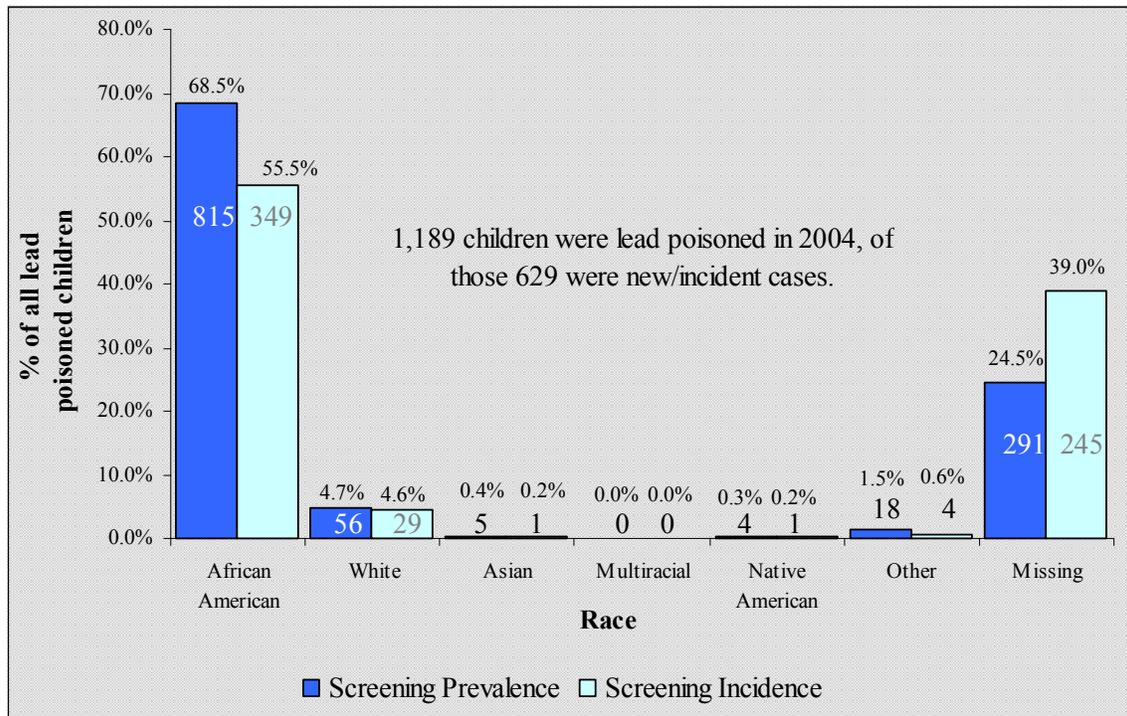
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 City of St. Louis, Department of Health

Race and Lead Poisoning

In and of itself, race is not an indicator of CLP. However, other risk factors such as poverty, poor housing stock and poor access to medical care as well as poor quality medical care are higher among minorities and these factors contribute to CLP. In 2004, a little less than half of the children screened and reported to the Health Department are African American (42.3% or 5,601/13,249) (Table A-2), which is approximately a 17% decrease from the percent screened in 2003. This could account for the drop in SPR and SIR in

2004 since the African American population has been traditionally the high risk population. However, the percentage of Caucasians screened also dropped in 2004 and the percentage that did not report race increased so it is difficult to draw any real conclusions based on race. African American children account for 68.5% (815/1,189) of all lead poisoned children in 2004 and they make up 55.5% of all newly identified cases in the City in 2004 (Figure 7).

Figure 7
 Prevalent and Incident Cases of Lead Poisoning by Race, City of St. Louis 2004



Gender and Lead Poisoning

Nearly even numbers of males and females were tested for CLP in 2004. Females make up 48.1% of children tested in 2004 while males make up 49.5%. Males are only slightly more

likely to be lead poisoned (SPR=9.5%) than females (SPR=8.7%) in 2004 (Table A-2).

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City of St. Louis, Department of Health

Lead Level History of Children Screened in 2004

Of those children in 2004 who tested < 10 µg/dl, 9.6% or 1,162 (Table 3) had an elevated blood lead level in the past. Of those children who had a blood lead level ≥ 10 µg/dl in 2004, 47.1% or 560 (Table 3) previously had an elevated blood lead level. Twenty-two percent of children with elevated blood lead levels

(258/1,189) never had an elevated blood lead level before 2004 and 31.2% (371/1,189) were tested for the first time in 2004 (Table 3). These numbers indicate both a problem of chronic lead poisoning in St. Louis City children and a substantial risk for children living in the City to become poisoned.

Table 3
CDC Class by Lead Level History, City of St. Louis 2004

CDC Classes Not Elevated	Screened for first time		Children Screened in Previous Years				Total screened
	N	%	Never elevated		Previously elevated		
			N	%	N	%	
Class I < 10 µg/dl	6,398	53.1	4,500	37.3	1,162	9.6	12,060
CDC Classes Elevated	Screened for first time		Children Screened in Previous Years				Total screened
	N	%	Never elevated		Previously elevated		
			N	%	N	%	
Class II 10-19 µg/dl	301	30.0	225	22.4	479	47.7	1,005
Class III 20-44 µg/dl	62	36.7	31	18.3	76	45.0	169
Class IV 45-69 µg/dl	7	50.0	2	14.3	5	35.7	14
Class V ≥ 70 µg/dl	1	100.0	0	-	0	-	1
Classes II through V	371	31.2	258	21.7	560	47.1	1,189

Geography and Lead Poisoning

The use of geography in lead surveillance assists the Health Department in developing targeted programs in high prevalence areas. It also allows for the analysis of the CLP problem on a smaller, more local scale.

Maps can help local leaders understand the problem as it affects their community and motivate them to develop, promote and participate in prevention activities.

ZIP Code

Screening rates by ZIP Code range from 0.0% to 100% in 2004 (Table A-3). The ZIP Codes were sorted and ranked by the SPR to determine which ZIP Codes have the highest prevalence of lead poisoning in 2004. The number of prevalent cases and population under 6 were also taken into account when sorting the ZIP Codes. The 5 ZIP Codes with the highest SPRs in 2004 are: 63107 (24.3%), 63118 (17.1%), 63113 (16.5%), 63120 (14.4%) and 63115

(13.1%) (Table A-3). With the exception of 63120, these ZIP Codes were also reported as having the highest prevalence in 2003 and all of these ZIP Codes continue to have among the highest occurrences of new cases (incidence) in 2004. For a visual representation of the screening prevalence and screening incidence rates by ZIP Code in 2004 refer to Maps B-1 and B-2 on pages 34 and 35.

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Ward

Screening rates by ward range from 11.7% to 65.2% in 2004 (Table A-4). Two of the wards with the highest screening rates also have the highest screening prevalence rates. The 5 wards with the highest SPRs in 2004 are: Ward 3 (24.5%), Ward 4 (21.0%), Ward 20 (19.1%), Ward 9 (14.4%) and Ward 22 (14.0%) (Table A-4). With the

exception of Ward 22, these wards also had the highest SPRs in 2003 and have among the highest screening incidence rates in 2004. For a visual representation of the screening prevalence and screening incidence rates by ward in 2004 refer to Maps B-3 and B-4 on pages 36 and 37.

Neighborhood

Screening rates by neighborhood range from 0.0% to 60.8% (Table A-5). Neighborhoods were ranked by screening prevalence rate to determine which neighborhoods had the highest prevalence of lead poisoning. Ranking also took into account the number of prevalent cases and the population under six. Grouping children by neighborhood creates small sub-groups; therefore, some neighborhoods appear to have high SPRs when they only have a few cases of lead poisoning and small population size. These neighborhoods were not included in the ranking of neighborhood by SPR. The five neighborhoods with the highest SPRs in 2004 are: Hyde Park (26.5%), Benton Park West (26.2%),

Fairground Neighborhood (26.2%), The Greater Ville (24.4%) and College Hill (21.6%) (Figure 8 and Table A-5). These neighborhoods also have some of the highest SIRs in 2004. The top 20 neighborhoods with the highest screening prevalence rates in 2004 are graphically represented in Figure 8.

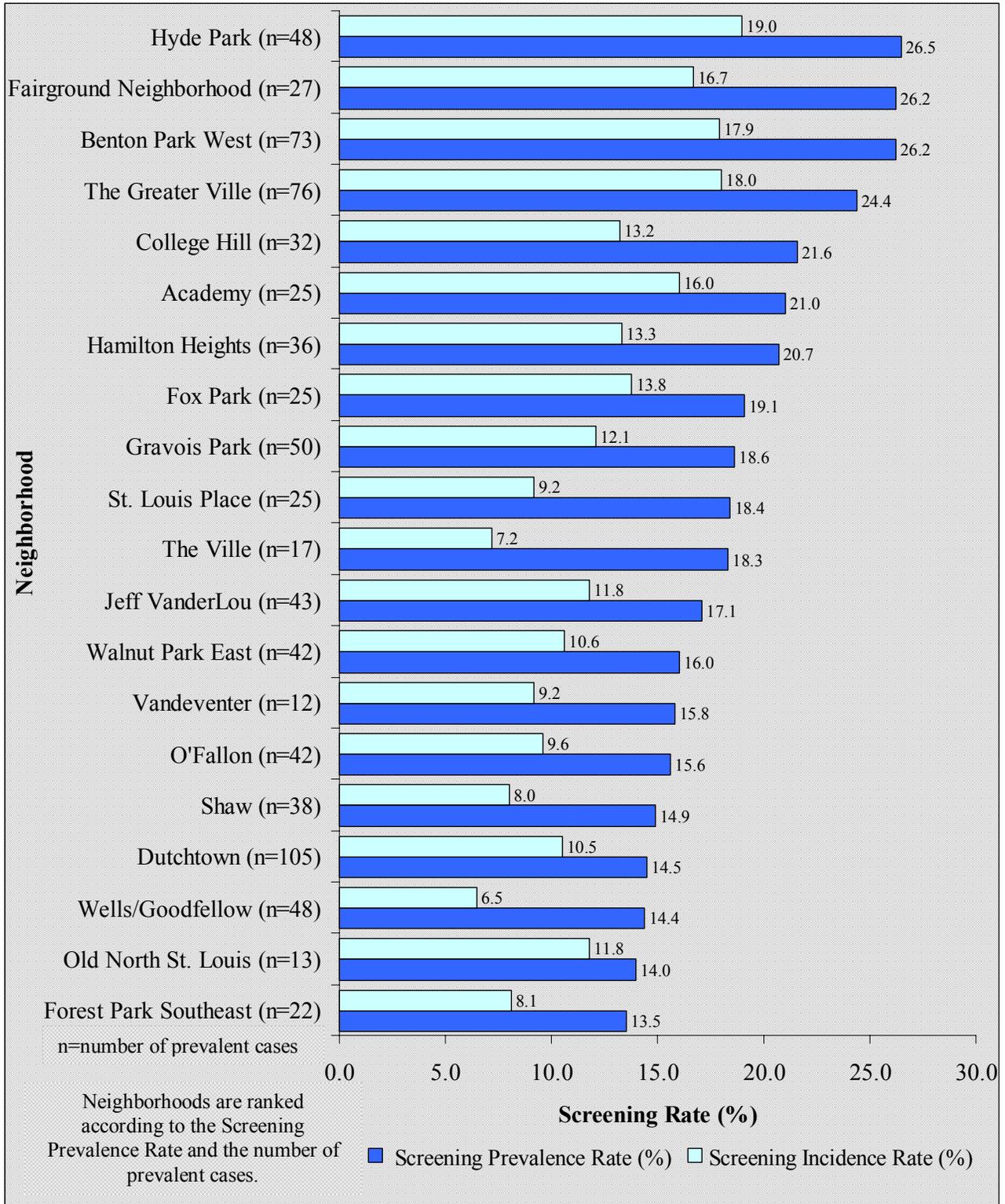
Neighborhood boundaries identify smaller areas for prevention and control than ZIP Code. For a visual representation of the screening prevalence and screening incidence rates by neighborhood in 2004 refer to Maps B-5 and B-6 on pages 39 and 40.

Census Tract

Screening rates by census tract range from 0.0% to 60.8% in 2004 (Table A-6). The 5 census tracts with the highest SPRs in 2004 are: 1267 (34.0%), 1115 (30.0%), 1242 (27.3%), 1104 (26.3%)

and 1105 (25.6%) (Table A-6). These census tracts also have among the highest SIRs in 2004. Data on housing broken down by census tract are available from the 2000 Census and the City Assessor's Office.

Figure 8
Elevated Blood Lead Level Screening Prevalence and Incidence Rates for the 20 Neighborhoods with the highest SPRs, City of St. Louis 2004



St. Louis City's Childhood Lead Poisoning Prevention Program and Lead Inspection and Hazard Control, 2004

Lead Poisoning Prevention and Control Activities

The primary role of the Health Department is to ensure that primary care providers are providing routine lead screenings according to the Missouri Lead Testing Plan and ensure that children with elevated blood lead levels receive appropriate follow-up. However, the Health Department also offers screenings. In 2004, the Health Department offered blood lead screenings in the Childhood Lead Poisoning Prevention Clinic and organized off-site screenings in the community. The Health Department screened 1,037 children or 7.8% of all children tested in 2004 (Table A-1), which is almost the same as 2003 when the Health Department screened 979 (8.2%) children. The Health Department identified 151 lead poisoned children (Table A-1), 12.7% of all children found with CLP in 2004. Out of the 3 Health Department screening sites, the lead clinic identified the most cases (n=73, SPR=28.9%) (Table A-1).

In warm weather months, the mobile van rotates through neighborhoods to offer outreach, education and screening activities. In 2004, the van screened 99 children and identified 29 with elevated blood lead levels.

The Lead Clinic is where blood lead tests are performed to verify cases of childhood lead poisoning and to monitor

a child's progress throughout the many months it may take for their blood lead level to drop and remain below 10 µg/dl. This clinic is also the repository of testing and case management files for all children reported with an elevated blood lead test. In 2004, the Clinic provided lead testing for 253 children (Table A-1). These are children who were referred in for additional testing by an outreach worker, case manager or their primary care provider.

Beyond the provision of testing at off-site events, outreach workers provide one-on-one education to parents and care providers. They also educate on the ways to prevent childhood lead poisoning and on the resources available to families with a lead poisoned child. The CLPPP has many educational brochures available in English as well as other languages to address the influx of immigrants and refugees into the City of St. Louis.

Lead education is the primary responsibility of the lead educator, but all portions of the CLPPP play a role in educating the public and child care providers about the hazards of lead poisoning and how to prevent it. In 2004, CLPPP gave presentations to 4,765 persons at 68 educational events (Table 4).

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Table 4
Health Education Activities Conducted by the Childhood Lead Poisoning Prevention Program, City of St. Louis 2004

Function	Audience Type	Age Group	Number of Participants	Number of Events
Educational	Daycares, Schools	<6	1,321	19
Educational	Parents/School Staff	Adults	765	15
Informational/Educational	Community Fairs	Adults	1,730	20
Educational	Community Organizations	Adults	863	13
Conference /Group Meeting	Health Professionals	Adults	86	1

The Outreach team also plays a critical role in locating a child once an elevated test result is received. Laboratory reports do not always include locating information and addresses, and even when addresses are provided they may be incorrect. Outreach workers attempt to find children so they can receive follow-up testing or other case management activities.

In 2004, the Clinic also served as the source of referrals to the Lead Inspection and Hazard Control Section. Clinic staff prepared referrals for environmental investigation on those children with any single blood lead test ≥ 15 $\mu\text{g}/\text{dl}$ and on some that had a blood lead test ≥ 10 $\mu\text{g}/\text{dl}$. In 2004, the clinic made 497 such referrals (Table 5).

Lead Inspection and Hazard Control

The Lead Inspection and Hazard Control Section formerly housed by the City of St. Louis Department of Health became part of the Building Division in 2004. The unit coordinates with the CLPPP and offers environmental investigations and remediation support. The unit consists of certified lead hazard inspectors, certified lead abatement workers and data entry clerks. Lead inspections are performed on a request and/or referral basis from a variety of sources. In 2004, the majority of reports (43.0%) are clinic referrals (Table 5), which occur when an inspection is requested to follow-up on a lead poisoned child. This is secondary prevention, taken after the poisoning has

occurred but to prevent further exposure or the occurrence of new cases. Occasionally, clinic referrals are made on pregnant women but these are less common. Referrals from the other sources (Citizens Service Bureau, Day Care Centers, the Building Division, Conservation District and Section 8 Housing) are not the result of a child being lead poisoned but are for primary prevention so as to identify and correct a lead hazard prior to a child being exposed. These referrals amount to 57.0% of all referrals in 2004, which shows that the Lead Inspection and Hazard Control Section is increasing its efforts to practice primary prevention (Table 5).

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Table 5
Inspection Referrals Made to the Lead Inspection and Hazard Control Section of the Building Division, City of St. Louis 2003-2004

Referral Source	2003**		2004		2003-2004
	Number	Percent	Number	Percent	Percent Change
Lead Clinic	171	11.5	333	28.8	94.7
HUD Elevated*	898	60.2	157	13.6	-82.5
HUD Prevention*	7	0.5	7	0.6	0.0
<i>Clinic Total</i>	1,076	72.2	497	43.0	-53.8
Citizens' Service Bureau	330	22.1	382	33.0	15.8
Day Care Centers	25	1.7	21	1.8	-16.0
Building Division	0	0.0	2	0.2	0.0
Conservation District	28	1.9	216	18.7	671.4
Section 8 Housing	31	2.1	38	3.3	22.6
Unknown	1	< 0.1	1	< 0.1	0.0
Total	1,491	100.0	1,157	100.0	-22.4

*HUD Elevated: referral made due to a child having a BLL of $\geq 15 \mu\text{g/dl}$

*HUD Prevention: referral made due to a child having a BLL of $\geq 10 \mu\text{g/dl}$

**Lead Inspection and Hazard Control Section was housed by the Health Department

After a referral is made, a lead inspector goes out to the property and performs an inspection. In 2004, 54.1% (632/1,168) of the units initially inspected proved to have lead hazards (Table 6). The property owners were cited with violations under Chapter 11.22.120 of the City of St. Louis Revised Code and given a set time for remediation to take place. The volume of re-inspections (3,685) (Table 6) includes monitoring the progress of properties towards remediation and follow-up clearance testing after remediation is completed.

An inspection was not permitted by the occupant for 79 housing units (Table 6) and is a serious impediment to the reduction or removal of lead from a child's environment. In 2004, a total of 510 properties were remediated (Table 6) in order to reduce the risk of lead poisoning to other children. This is an increase from 2003 when 359 properties were remediated. The Building Division was able to increase the number of properties remediated in 2004 by contracting some of the work out to private contractors.

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Table 6
Lead Inspection Activities and Remediations, City of St. Louis 2003-2004

Activity	2003	2004	Percent Change
Dwelling Units Inspected	1,327	1,168	-12.0%
Hazardous Units	520	632	21.5%
Re-inspections	4,820	3,685	-23.5%
Attempts to Inspect	2,545	2,194	-13.8%
Inspections not Permitted	127	79	-37.8%
Owner/Agent Remediations	279	241	-13.6%
Private Contractor Remediations	0	94	0.0%
Building Division Remediations	80	121	51.3%
Other Remediation Sources--includes Urban League	0	54	0.0%

An important component of the Building Division's Lead Inspection and Hazard Control Section is the lead remediation team that actually performs lead remediation work in homes of private citizens to protect a lead poisoned child from further exposure. Families who receive this assistance must meet HUD or the City of St. Louis income standards and have a child under the age of 6 in the home at least part time. In 2004, the Lead Hazard Control team remediated 121 homes, which is an increase from the 80 homes remediated in 2003. A total of 510 properties were remediated by various programs (Table 6).

When lead hazards are not corrected within the specified time period, the property is referred to court for legal action. In 2004, 309 cases relating to lead hazards were referred to court and arraigned (Table 7). The disposition of the cases indicates that 1 case was dismissed and 8 cases were dismissed due to payment costs (Table 7). Bench warrants for failure to show were issued on 164 of the cases although these warrants are not served on defendants (Table 7). The total amount of fines collected from charged cases in 2004 was \$5,548.50 (Table 7).

Table 7
Court Activities for Lead Remediation, City of St. Louis 2004

Arraigned Cases	309
Disposition of Cases	
Bench warrant	164
Continued	91
Continued for trial	11
Dismissed	1
Nolle processed	10
Stayed for payment	22
Cases dismissed on payment costs	8
Additional Information	
Units remediated via court process	33
Total fines paid	\$5,548.50

Lead Safe St. Louis

2004 Accomplishments and Activities

Provided by Jeanine Arrighi, Director of Lead Safe Saint Louis

The Lead Safe St. Louis Program was initiated in November 2003 when Mayor Francis G. Slay announced the City's new "Comprehensive Action Plan for the Eradication of Childhood Lead Poisoning in St. Louis By 2010." The plan provided for coordination of the City's agencies tasked with lead poisoning response and prevention activities including the Department of Public Safety's Building Division, the Community Development Administration (CDA), and the Department of Health's Childhood Lead Poisoning Prevention Program, along with the City's Problem Properties Court. In addition, the plan established a Lead Safe St. Louis (LSSL) Task Force and six ad hoc committees formed to bring community-based organizations, faith-based organizations, government agencies, advocacy groups, health organizations, children's organizations and other interested citizens into partnership with the City in its mission to eradicate childhood lead poisoning.

Among the successes of the program in 2004, the City was able to secure \$7 million additional HUD Lead Hazard Control and Lead Hazard Reduction Demonstration Grant funds to continue the efforts to make St. Louis housing lead safe. Mayor Slay received recognition for the City's efforts in a \$100,000 award from the United States

Conference of Mayor's "Lead Safe for Kid's Sake" program. The City continued to receive the highest ranking from HUD of "green" status regarding grant production goals, with 1,168 lead housing evaluations performed and 536 houses found to be lead safe through these evaluations, and 510 houses remediated to lead safe clearance. The LSSL program sponsored its first "Lead Safe Kids and Homes Week" in keeping with the national lead poisoning prevention week October 24-31, 2004. The City celebrated the primary prevention initiative of making homes lead safe before children are poisoned with a special Mayor's Day celebration at the remediated home of one of St. Louis' citizens. Other media events, special lead testing opportunities, as well as training in lead safe work practices were offered to the community. LSSL also introduced its Lead Safe St. Louis telephone hotline (314-259-3455) and website (www.lead safestlouis.org), as well as publication of four new brochures including "Derek the Dinosaur's Coloring Book about Lead." A congressional appropriation is being utilized to develop a new web-based database for the CDA's Healthy Home Repair Program, which provides for lead hazard remediation as well as home repairs to bring the homes into safe compliance with codes.

Limitations and Discussion

Surveillance data are subject to limitations and the interpretations of the findings reported must be viewed with these limitations in mind. Children are not randomly tested for lead exposure. Screening for lead poisoning in the City of St. Louis is weighted towards those at greatest risk, and the rates in this report are likely higher than true population rates. True childhood lead poisoning prevalence and incidence rates require that all children at risk have an equal chance of selection into the population studied. Although a large percentage of St. Louis City children who are at risk of lead poisoning are included in the surveillance database, not all at risk are included. The missing 50% could represent children tested but not reported to the Health Department. However, it is more likely that the majority of children not appearing in the surveillance database were not lead screened in 2004.

The surveillance sample includes all children under the age of 6 screened for lead poisoning in the City of St. Louis. Housing age and the condition of housing are risk factors for CLP.

Traditionally in the City of St. Louis, poor children were more likely to be screened for lead exposure than their affluent cohorts. This is largely due to the screening practices of experienced

community health centers and because poor areas tend to be targeted for lead screening and education more than affluent areas due to higher screening prevalence and incidence rates in poor areas. This is slowly starting to change as testing appears to be increasing among the private providers. More research needs to be done to determine whether Medicaid providers are screening all of the children that are eligible for their care. Even though the prevalence of lead poisoning in the City of St. Louis appears to be on a continual decline, still not enough is known about whether the high risk population is being reached. More complete data on race would need to be obtained to determine whether African Americans, traditionally the group at highest risk, is being screened. Also, providers may not choose to test children between the ages of 3-5 years because they do not consider them to be high risk. Providers also neglect to screen younger children. Fifty percent of children younger than 3 years of age, at the greatest risk, were not tested in 2004.

The decreasing prevalence and incidence rates are encouraging, however, the screening prevalence and incidence rates reported still portray a level of extreme risk for segments of St. Louis City children.

Summary

Childhood lead poisoning rates declined substantially in the City of St. Louis between 2003 and 2004, but the City still accounts for 48.9% of all lead poisoned children in Missouri. In spite of the seriousness of the problem, fewer than half of the City's children under the age of six even receive the required annual blood lead test.

The marked decrease in the screening prevalence rate (from 13.6% in 2003 to 9.0% in 2004) has not been tested for statistical significance. The screening incidence rate in 2004 (5.5%) was considerably lower than the rate in 2003 (9.7%), which indicates that the number of new cases of lead poisoning is decreasing. What is still discouraging is the astounding number of children who continue to carry a lead burden in their bodies from year to year.

Until all City children receive the recommended annual screening from their primary health care provider, surveillance data will not reflect a true picture of childhood lead poisoning in the City of St. Louis.

The preferred remedy for the lead poisoning problem is to prevent children from ever being poisoned in the first place through primary prevention. Methods include providing lead-safe homes and play areas, educating people about lead hazards and how to protect children from them, and improving childhood nutrition to retard the absorption of lead by their bodies.

When we cannot prevent initial lead poisoning, we must turn to the second best method for controlling the problem, secondary prevention. This is the early detection and treatment of poisoned children and the removal or reduction of lead hazards from their environment. Early detection and treatment can help health care providers reduce a child's lead body burden and can help the community and parents identify lead hazards and work to remove them. However, early detection is possible only if children receive lead tests. Since the majority of our children still do not receive lead tests, we must assume that many health care providers and families still are uninformed about the risks and long-term effects of lead poisoning.

Appendix

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

**Table A-1
Health Care Providers of Blood Lead Screenings, City of St. Louis 2003-2004**

Provider	Number Screened		Percent of Total		Percent Change	Number ≥ 10 µg/dl		SPR (%)		New Cases		SIR (%)	
	2003	2004	2003	2004		2003	2004	2003	2004	2003	2004	2003	2004
St. Louis City Health Department													
Van	269	99	2.2	0.7	-66.6	97	29	36.1	29.3	65	18	31.0	22.0
Fixed Screening	481	685	4.0	5.2	29.3	32	49	6.7	7.2	20	23	4.9	3.9
Lead Clinic	229	253	1.9	1.9	0.0	84	73	36.7	28.9	31	27	20.4	15.3
<i>STLCHD Sub total</i>	<i>979</i>	<i>1,037</i>	<i>8.2</i>	<i>7.8</i>	<i>-4.0</i>	<i>213</i>	<i>151</i>	<i>21.8</i>	<i>14.6</i>	<i>116</i>	<i>68</i>	<i>15.1</i>	<i>8.0</i>
Connect Care													
Homer G. Phillips	134	170	1.1	1.3	14.6	45	35	33.6	20.6	21	11	22.8	10.0
Florence Hill	352	295	2.9	2.2	-24.0	69	42	19.6	14.2	33	20	13.1	9.3
Lillian Courtney	381	307	3.2	2.3	-26.9	68	36	17.8	11.7	38	14	13.1	5.8
Max Starkloft	490	492	4.1	3.7	-9.0	103	70	21.0	14.2	56	35	15.8	9.4
<i>Connect Care Sub total</i>	<i>1,357</i>	<i>1,264</i>	<i>11.3</i>	<i>9.5</i>	<i>-15.6</i>	<i>285</i>	<i>183</i>	<i>21.0</i>	<i>14.5</i>	<i>148</i>	<i>80</i>	<i>15.0</i>	<i>8.5</i>
Community Health Centers													
<i>Grace Hill</i>													
South Jefferson	14	19	0.1	0.1	19.5	2	1	14.3	5.3	2	0	14.3	0.0
Neighborhood	15	206	0.1	1.6	1195.7	3	19	20.0	9.2	3	12	20.0	6.8
Soulard	25	45	0.2	0.3	61.7	4	5	16.0	11.1	2	2	10.0	5.0
Water Tower	20	78	0.2	0.6	246.3	7	15	35.0	19.2	5	4	29.4	6.3
<i>Grace Hill Sub total</i>	<i>74</i>	<i>348</i>	<i>0.6</i>	<i>2.6</i>	<i>326.3</i>	<i>16</i>	<i>40</i>	<i>21.6</i>	<i>11.5</i>	<i>12</i>	<i>18</i>	<i>18.2</i>	<i>6.0</i>
<i>Family Care</i>													
Carondelet	129	8	1.1	0.1	-94.4	11	0	8.5	0.0	7	0	6.4	0.0
Health Center	217	288	1.8	2.2	20.1	47	31	21.7	10.8	24	16	13.9	6.5
<i>Family Care Sub total</i>	<i>346</i>	<i>296</i>	<i>2.9</i>	<i>2.2</i>	<i>-22.4</i>	<i>58</i>	<i>31</i>	<i>16.8</i>	<i>10.5</i>	<i>31</i>	<i>16</i>	<i>11.0</i>	<i>6.3</i>
Myrtle Hilliard	648	576	5.4	4.3	-19.5	159	96	24.5	16.7	79	38	16.8	8.9
Peoples	1,088	1,215	9.1	9.2	1.2	114	96	10.5	7.9	69	51	7.3	4.8
<i>CHCs Sub total</i>	<i>2,156</i>	<i>1,791</i>	<i>18.0</i>	<i>13.5</i>	<i>-24.7</i>	<i>347</i>	<i>192</i>	<i>16.1</i>	<i>10.7</i>	<i>191</i>	<i>89</i>	<i>10.8</i>	<i>5.9</i>
Hospitals													
Cardinal Glennon	774	936	6.4	7.1	9.7	122	80	15.8	8.5	82	54	12.4	6.6
St. Louis Children's Hospital	1,889	2,104	15.7	15.9	1.0	278	202	14.7	9.6	146	109	9.2	6.0
Forest Park Hospital	94	168	0.8	1.3	62.6	16	21	17.0	12.5	10	11	12.2	7.3
St. Louis University Hospital	27	34	0.2	0.3	16.6	1	2	3.7	5.9	0	2	0.0	6.1
Other Hospitals	62	44	0.5	0.3	-35.7	8	4	12.9	9.1	5	3	9.1	7.1
<i>Hospitals Sub total</i>	<i>2,846</i>	<i>3,286</i>	<i>23.7</i>	<i>24.8</i>	<i>4.7</i>	<i>425</i>	<i>309</i>	<i>14.9</i>	<i>9.4</i>	<i>243</i>	<i>179</i>	<i>10.1</i>	<i>6.2</i>
Other Categories													
Clinics/Group Practices	3,408	3,962	28.4	29.9	5.4	274	213	8.0	5.4	175	127	6.2	3.5
Private Physicians	975	872	8.1	6.6	-18.9	93	42	9.5	4.8	63	30	7.3	3.7
All Others	290	393	2.4	3.0	24.3	1	28	0.3	7.1	0	22	0.0	6.2
<i>Other Categories Sub total</i>	<i>4,673</i>	<i>5,227</i>	<i>38.9</i>	<i>39.5</i>	<i>1.4</i>	<i>368</i>	<i>283</i>	<i>7.9</i>	<i>5.4</i>	<i>238</i>	<i>179</i>	<i>6.4</i>	<i>3.7</i>
Grand Total	12,011	13,249	100.0	100.0	0.0	1,638	1,189	13.6	9.0	936	629	9.7	5.5

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

Table A-2
Demographic Profile of Children Screened for Lead Poisoning, City of St. Louis 2004 (N=13,249)

Demographic	Number Screened	Percent of Total Screened	Number ≥ 10 µg/dl	Screening Prevalence Rate (%)	Number New Cases	Screening Incidence Rate (%)	< 10 µg/dl		10-19 µg/dl		20-44 µg/dl		45-69 µg/dl		≥ 70 µg/dl	
							N	%	N	%	N	%	N	%	N	%
Age																
Less than 1 year old	701	5.3	17	2.4	16	2.3	684	97.6	14	2.0	3	0.4	0	0.0	0	0.0
1 year old	3,983	30.1	279	7.0	235	6.0	3,704	93.0	227	5.7	49	1.2	2	0.1	1	0.0
2 years old	2,354	17.8	316	13.4	179	8.7	2,038	86.6	253	10.7	55	2.3	8	0.3	0	0.0
3 years old	2,254	17.0	241	10.7	103	5.5	2,013	89.3	207	9.2	31	1.4	3	0.1	0	0.0
4 years old	2,295	17.3	196	8.5	63	3.4	2,099	91.5	174	7.6	21	0.9	1	0.0	0	0.0
5 years old	1,662	12.5	140	8.4	33	2.9	1,522	91.6	130	7.8	10	0.6	0	0.0	0	0.0
Gender																
Female	6,378	48.1	552	8.7	294	5.3	5,826	91.3	470	7.4	76	1.2	5	0.1	1	0.0
Male	6,560	49.5	626	9.5	328	5.8	5,934	90.5	526	8.0	91	1.4	9	0.1	0	0.0
Unknown	311	2.4	11	3.5	7	2.3	300	96.5	9	2.9	2	0.6	0	0.0	0	0.0
Race																
African American	5,601	42.3	815	14.6	349	8.2	4,786	85.4	683	12.2	121	2.2	10	0.2	1	0.0
White	636	4.8	56	8.8	29	5.5	580	91.2	44	6.9	11	1.7	1	0.2	0	0.0
Asian	101	0.8	5	5.0	1	1.1	96	95.0	5	5.0	0	0.0	0	0.0	0	0.0
Multiracial	7	< 0.1	0	0.0	0	0.0	7	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Native American	12	< 0.1	4	33.3	1	14.3	8	66.7	3	25.0	1	8.3	0	0.0	0	0.0
Other	112	0.8	18	16.1	4	5.6	94	83.9	14	12.5	3	2.68	1	0.9	0	0.0
Unknown	6,780	51.2	291	4.3	245	3.7	6,489	95.7	256	3.8	33	0.5	2	0.0	0	0.0

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

**Table A-3
Screening and Childhood Lead Poisoning Rates by ZIP Code, City of St. Louis 2004 (Ranked by highest SPR)**

ZIP Code	Population <6 Years	Number Screened	Percent Screened	Number ≥ 10 µg/dl	SPR (%)	New Cases (%)	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Total Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Pre-1950 Housing
63107	1551	719	46.4	175	24.3	88	16.8	7,929	28.7	71.3	5,655	44.8	55.2	93.2
63118	3214	1221	38.0	209	17.1	111	11.8	15,326	25.6	74.4	11,409	37.4	62.6	92.4
63113	1307	593	45.4	98	16.5	44	9.4	8,540	26.4	73.6	6,286	46.9	53.1	95.8
63120	1079	499	46.2	72	14.4	36	9.1	4,848	18.5	81.5	3,949	58.5	41.5	87.5
63115	2050	858	41.9	112	13.1	61	8.6	12,421	19.5	80.5	9,998	55.3	44.7	91.1
63110	1886	601	31.9	75	12.5	34	7.0	10,179	17.8	82.2	8,371	39.3	60.7	88.9
63112	1729	805	46.6	87	10.8	37	5.6	12,574	20.1	79.9	10,045	35.5	64.5	93.6
63104	1811	660	36.4	66	10.0	40	7.0	9,847	18.6	81.4	8,016	36.4	63.6	86.4
63111	1889	742	39.3	71	9.6	48	7.6	10,508	16.3	83.7	8,797	44.7	55.3	87.3
63136	356	120	33.7	11	9.2	4	4.3	1,694	10.5	89.5	1,516	70.5	29.5	76.9
63106	1395	630	45.2	55	8.7	29	5.5	6,250	32.0	68.0	4,247	13.3	86.7	85.2
63103	102	35	34.3	3	8.6	0	0.0	3,609	18.6	81.4	2,939	1.3	98.7	65.5
63108	714	271	38.0	22	8.1	16	6.6	11,675	13.2	86.8	10,135	26.7	73.3	87.5
63147	915	380	41.5	29	7.6	17	5.2	5,071	12.6	87.4	4,432	66.8	33.2	79.7
63116	4114	1091	26.5	70	6.4	41	4.2	22,844	10.3	89.7	20,497	57.9	42.1	83.1
63101	78	78	100.0	4	5.1	3	4.7	730	41.2	58.8	429	7.2	92.8	36.1
63139	1517	248	16.3	8	3.2	4	1.7	12,344	6.3	93.7	11,569	61.3	38.7	76.4
63109	2078	338	16.3	10	3.0	7	2.1	15,042	4.5	95.5	14,358	61.8	38.2	81.8
63102	23	7	30.4	1	14.3	1	16.7	870	24.8	75.2	654	2.1	97.9	74.4
63105	26	3	11.5	0	0.0	0	0.0	727	9.2	90.8	660	46.1	53.9	98.4
63117	31	1	3.2	0	0.0	0	0.0	302	5.3	94.7	286	56.6	43.4	93.5
63119	18	0	0.0	0	0.0	0	0.0	201	3.5	96.5	194	1.5	98.5	44.4
63123	188	1	0.5	0	0.0	0	0.0	1,246	2.6	97.4	1,214	92.8	7.2	11.7
63125	0	1	0.0	0	0.0	0	0.0	1	0.0	100.0	1	0.0	100.0	20.3
63130	32	3	9.4	0	0.0	0	0.0	154	3.2	96.8	149	59.7	40.3	93.4
63133	58	0	0.0	0	0.0	0	0.0	113	46.0	54.0	61	14.8	85.2	82.6
63137	75	8	10.7	0	0.0	0	0.0	491	5.9	94.1	462	56.1	43.9	72.6
63138	2	0	0.0	0	0.0	0	0.0	3	33.3	66.7	2	50.0	50.0	75.0
63143	131	5	3.8	0	0.0	0	0.0	815	8.6	91.4	745	66.6	33.4	81.3
Not geocoded	-	3331	-	11	0.3	8	0.2	-	-	-	-	-	-	-
City Total	28,369	13,249	46.7	1,189	9.0	629	5.5	176,354	16.6	83.4	147,076	46.9	53.1	85.3

Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

**Table A-4
Screening and Childhood Lead Poisoning Rates by Ward, City of St. Louis 2004 (Ranked by highest SPR)**

Ward	Population <6 Years	Number Screened	Percent Screened	Number ≥ 10 µg/dl	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Total Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Pre-1950 Housing
Ward - 03	908	572	63.0	140	24.5	67	16.2	5670	29	71	4033	44	56	93
Ward - 04	793	439	55.4	92	21.0	48	14.3	6321	25	75	4727	47	53	95
Ward - 20	907	591	65.2	113	19.1	55	12.5	5693	28	72	4076	38	63	93
Ward - 09	1316	473	35.9	68	14.4	38	10.0	7048	23	77	5449	36	64	90
Ward - 22	795	464	58.4	65	14.0	26	7.1	5585	25	76	4214	47	53	91
Ward - 18	750	367	48.9	49	13.4	29	9.6	6522	22	79	5120	38	62	94
Ward - 27	900	442	49.1	58	13.1	28	8.2	4669	13	87	4073	72	28	83
Ward - 08	1279	316	24.7	40	12.7	20	7.6	6488	15	85	5492	38	63	95
Ward - 25	1365	527	38.6	62	11.8	42	9.5	6348	17	83	5258	42	58	92
Ward - 01	940	431	45.9	50	11.6	24	6.7	5735	19	81	4621	58	42	93
Ward - 21	956	426	44.6	49	11.5	28	7.7	5899	17	83	4909	55	45	90
Ward - 05	1224	598	48.9	64	10.7	31	6.2	6878	33	67	4635	20	80	85
Ward - 07	1097	327	29.8	35	10.7	23	8.5	7926	23	78	6154	24	76	88
Ward - 26	870	469	53.9	50	10.7	26	6.6	6361	22	78	4966	36	64	92
Ward - 15	1168	360	30.8	38	10.6	22	7.3	6437	14	86	8846	46	54	93
Ward - 17	682	350	51.3	36	10.3	16	5.7	7491	17	83	6192	25	75	85
Ward - 06	1101	431	39.1	39	9.0	21	5.7	6314	20	80	5061	37	63	83
Ward - 11	1123	335	29.8	28	8.4	21	7.1	6198	15	85	5290	54	47	80
Ward - 02	1027	339	33.0	27	8.0	16	5.6	4863	16	84	4106	60	40	79
Ward - 19	693	329	47.5	25	7.6	15	5.5	5198	78	23	4030	17	83	88
Ward - 10	1464	198	13.5	13	6.6	5	2.9	6996	9	91	6374	47	53	77
Ward - 13	1389	257	18.5	12	4.7	5	2.2	5987	8	92	5484	65	35	93
Ward - 12	940	110	11.7	5	4.5	3	2.8	6476	4	96	6193	71	29	54
Ward - 14	1310	268	20.5	11	4.1	7	2.8	5874	8	92	5388	56	44	92
Ward - 24	832	108	13.0	4	3.7	2	2.0	6819	93	7	6321	59	42	79
Ward - 23	962	126	13.1	2	1.6	2	1.6	6265	4	96	6012	77	24	77
Ward - 28	544	143	26.3	2	1.4	1	0.8	7803	10	90	7055	33	68	93
Ward - 16	1034	122	11.8	1	0.8	0	0.0	6490	3	97	6297	69	31	74
Not geocoded	-	3331	-	11	0.3	8	0.2	-	-	-	-	-	-	-
City Total	28,369	13,249	46.7	1,189	9.0	629	5.5	176,354	14.7	85.3	150,376	46.9	53.1	85.3

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

**Table A-5
 Screening and Childhood Lead Poisoning Rates by Neighborhood, City of St. Louis 2004 (Ranked by highest SPR)**

Neighborhood Number	Neighborhood	Population <6 Years	Number Screened	Percent Screened ≥ 10 $\mu\text{g}/\text{dl}$	Number ≥ 10 $\mu\text{g}/\text{dl}$	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Total Occupied	Percent Owner Occupied	Percent Renter Occupied
65	Hyde Park	426	181	42.5	48	26.5	24	19.0	1767	29	71	1252	35	65
30	Benton Park West	647	279	43.1	73	26.2	37	17.9	2540	27	73	1863	73	27
67	Fairground Neighborhood	215	103	47.9	27	26.2	11	16.7	1216	29	71	866	48	52
56	The Greater Ville	688	311	45.2	76	24.4	43	18.0	4221	24	76	3220	49	51
66	College Hill	313	148	47.3	32	21.6	15	13.2	1342	32	69	919	46	54
51	Academy	284	119	41.9	25	21.0	15	16.0	1729	28	72	1252	54	46
78	Hamilton Heights	359	174	48.5	36	20.7	17	13.3	1852	26	74	1371	50	51
24	Fox Park	384	131	34.1	25	19.1	13	13.8	1549	30	71	1101	37	63
19	Gravois Park	686	269	39.2	50	18.6	24	12.1	2818	28	72	2024	66	34
60	St. Louis Place	257	136	52.9	25	18.4	10	9.2	1395	33	67	931	40	60
57	The Ville	211	93	44.1	17	18.3	5	7.2	1492	27	73	1091	36	64
59	JeffVanderLou	561	252	44.9	43	17.1	24	11.8	3463	28	72	1492	35	66
72	Walnut Park East	456	263	57.7	42	16.0	21	10.6	2111	19	81	1710	64	36
58	Vandeventer	182	76	41.8	12	15.8	6	9.2	1183	29	71	842	50	50
68	O'Fallon	625	270	43.2	42	15.6	21	9.6	3269	19	82	2666	52	48
27	Shaw	811	256	31.6	38	14.9	16	8.0	3802	18	82	3120	39	61
16	Dutchtown	1808	723	40.0	105	14.5	62	10.5	8445	19	81	6856	41	59
50	Wells/Goodfellow	790	334	42.3	48	14.4	17	6.5	4063	27	73	2978	46	54
63	Old North St. Louis	241	93	38.6	13	14.0	9	11.8	1036	42	59	606	21	79
39	Forest Park Southeast	341	163	47.8	22	13.5	10	8.1	1831	23	77	1409	34	66
53	Fountain Park	160	62	38.8	8	12.9	5	9.3	1010	25	75	756	32	68
26	Compton Heights	98	24	24.5	3	12.5	3	14.3	688	12	88	607	65	35
52	Kingsway West	260	120	46.2	15	12.5	9	9.5	1978	19	81	1609	46	54
54	Lewis Place	155	90	58.1	11	12.2	6	8.5	1045	28	72	757	47	53
33	Peabody, Darst, Webbe	310	166	53.5	20	12.0	7	5.0	779	28	72	560	3	97
49	Visitation Park	79	34	43.0	4	11.8	3	9.7	576	15	84	488	22	78
28	McRee Town	289	70	24.2	8	11.4	4	6.8	824	35	65	539	22	78
1	Carondelet	828	270	32.6	30	11.1	21	8.7	4730	15	85	4004	52	48
76	Walnut Park West	342	121	35.4	13	10.7	5	5.4	1592	11	89	1414	72	28
71	Mark Twain	420	176	41.9	18	10.2	9	6.0	2281	22	78	1775	36	64
22	Benton Park	336	100	29.8	10	10.0	6	7.6	2377	26	74	1755	42	58
25	Tower Grove East	693	206	29.7	20	9.7	14	8.1	3485	21	79	2766	39	62
42	Clayton/Tamm	127	21	16.5	2	9.5	2	9.5	1436	7	93	1333	53	47
18	Marine Villa	296	107	36.1	10	9.3	6	7.1	1576	25	75	1175	40	61

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

Neighborhood Number	Neighborhood	Population <6 Years	Number Screened	Percent Screened	Number $\geq 10 \mu\text{g/dl}$	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Total Occupied	Percent Owner Occupied	Percent Renter Occupied
55	Kingsway East	364	146	40.1	12	8.2	7	5.7	2162	20	80	1739	52	48
69	Penrose	545	242	44.4	19	7.9	10	4.8	3565	15	85	3028	61	39
35	Downtown	11	13	118.2	1	7.7	1	11.1	1050	35	65	684	1	99
48	West End	635	315	49.6	23	7.3	10	3.7	3347	22	73	2317	30	70
74	Baden	695	268	38.6	19	7.1	11	4.8	3697	14	86	3184	57	43
62	Columbus Square	285	115	40.4	8	7.0	4	4.2	1236	37	63	776	7	93
15	Tower Grove South	1270	385	30.3	26	6.8	15	4.5	7308	14	86	6316	48	52
70	Mark Twain/I-70 Industrial	51	31	60.8	2	6.5	1	3.6	393	8	92	362	87	14
23	McKinley Heights	236	82	34.7	5	6.1	5	7.0	1101	24	77	842	27	73
46	Skinker/DeBalviere	244	66	27.0	4	6.1	3	5.5	2348	10	90	2106	59	42
34	Lasalle	158	50	31.6	3	6.0	3	6.4	650	7	93	606	28	72
73	North Point	261	110	42.1	6	5.5	3	3.1	1648	3	97	1592	84	16
3	Holly Hills	317	75	23.7	4	5.3	3	4.2	1887	8	92	1734	58	42
43	Franz Park	172	20	11.6	1	5.0	0	0.0	1318	8	92	1216	67	33
31	The Gate District	343	129	37.6	6	4.7	4	3.4	1636	17	83	1354	36	64
17	Mount Pleasant	399	177	44.4	8	4.5	5	3.3	2281	15	85	1941	31	70
13	Southwest Garden	334	67	20.1	3	4.5	2	3.1	3188	10	90	2856	43	57
5	Bevo Mill	1153	278	24.1	12	4.3	7	2.8	5984	8	92	5513	64	36
14	North Hampton	520	116	22.3	5	4.3	3	2.8	4524	5	95	4279	48	53
2	Patch	236	95	40.3	4	4.2	3	3.8	1513	19	81	1228	51	49
29	Tiffany	135	71	52.6	3	4.2	2	3.1	571	12	88	501	25	75
61	Carr Square	349	196	56.2	8	4.1	5	2.8	1327	26	74	966	99	1
6	Princeton Heights	608	97	16.0	4	4.1	1	1.2	4033	5	95	3817	69	31
21	Soulard	162	25	15.4	1	4.0	1	4.2	2216	18	82	1825	28	72
4	Boulevard Heights	558	80	14.3	3	3.8	1	1.3	4093	4	92	3939	85	16
9	Lindenwood Park	687	103	15.0	3	2.9	2	2.0	5032	4	96	4819	29	71
77	Covenant Blu/Grand Center	237	124	52.3	3	2.4	2	2.0	1721	27	73	1252	11	89
47	DeBalviere Place	153	51	33.3	1	2.0	0	0.0	2409	14	86	2064	18	82
7	South Hampton	648	111	17.1	2	1.8	2	1.8	3675	5	95	3482	66	34

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

Neighborhood Number	Neighborhood	Population <6 Years	Number Screened	Percent Screened	Number $\geq 10 \mu\text{g/dl}$	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Total Occupied	Percent Owner Occupied	Percent Renter Occupied
8	St. Louis Hills	451	58	12.9	1	1.8	1	1.7	4077	3	97	3941	57	43
38	Central West End	451	142	31.5	1	0.7	1	0.8	9572	11	89	8488	26	74
79	North Riverfront	21	6	28.6	4	66.7	3	100.0	107	27	73	78	53	47
40	Kings Oak	17	5	29.4	2	40.0	0	0.0	113	12	87	100	59	41
41	Cheltenham	21	2	9.5	0	0.0	0	0.0	262	10	90	235	55	46
11	Clifton Heights	263	26	9.9	0	0.0	0	0.0	1642	7	93	1531	75	25
36	Downtown West	36	16	44.4	0	0.0	0	0.0	2073	20	80	1654	1	99
10	Ellendale	137	11	8.0	0	0.0	0	0.0	756	9	91	688	69	31
44	Hi-Point	128	19	14.8	0	0.0	0	0.0	1331	6	94	1256	49	51
20	Kosciusko	0	1	0.0	0	0.0	0	0.0	-	-	-	-	-	-
32	Lafayette Square	109	24	22.0	0	0.0	0	0.0	1007	12	86	888	35	65
37	Midtown	65	4	6.2	0	0.0	0	0.0	1532	19	81	1442	1	99
64	Near North Riverfront	25	5	20.0	0	0.0	0	0.0	157	52	48	75	36	64
75	Riverview	18	0	0.0	0	0.0	0	0.0	96	8	92	90	79	21
12	The Hill	157	15	9.6	0	0.0	0	0.0	1486	7	93	1385	66	34
45	Wydown/Sinker Not geocoded	26	5	19.2	0	0.0	0	0.0	727	9	91	660	46	54
		-	3331	-	11	0.3	8	0.2	-	-	-	-	-	-
	City Total	28,369	13,249	46.7	1,189	9.0	629	5.5	176,352	17.2	82.8	145,956	46.9	53.1

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

**Table A-6
 Screening and Childhood Lead Poisoning Rates by Census Tract, City of St. Louis 2004**

Census Tract	Population <6 Years	Number Screened	Percent Screened	Number ≥ 10 µg/dl	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Pre-1950 Housing
101100	186	19	10.2	0	0.0	0	0.0	1211	4	97	91.3	8.7	28
101200	194	33	17.0	1	3.0	1	3.0	1494	3	97.4	83.5	16.5	40
101300	377	73	19.4	1	1.4	1	1.4	2207	7	93.4	66.4	33.6	92
101400	236	71	30.1	7	9.9	5	7.8	1411	11	89.4	60.4	39.6	89
101500	290	96	33.1	6	6.3	4	4.8	1708	17	82.8	45.6	54.4	79
101800	259	117	45.2	15	12.8	12	11.9	1658	21	79.5	48.6	51.4	84
102100	179	20	11.2	1	5.0	1	5.0	1748	6	94.2	40.4	59.6	80
102200	428	54	12.6	2	3.7	1	1.9	3095	4	96.3	80.5	19.5	71
102300	111	14	12.6	0	0.0	0	0.0	930	4	96.0	86.3	13.7	33
102400	233	52	22.3	4	7.7	2	4.7	1211	7	92.6	63.0	37.0	94
102500	175	25	14.3	2	8.0	0	0.0	1047	7	93.5	70.3	29.7	81
103100	203	33	16.3	0	0.0	0	0.0	1819	3	97.3	52.0	48.0	77
103400	170	9	5.3	0	0.0	0	0.0	971	5	95.3	73.7	26.3	86
103600	115	26	22.6	0	0.0	0	0.0	702	5	95.4	72.1	27.9	58
103700	188	25	13.3	1	4.0	0	0.0	1461	8	91.9	68.1	31.9	89
103800	277	41	14.8	2	4.9	2	4.9	1883	4	96.1	81.1	18.9	80
103900	90	3	3.3	0	0.0	0	0.0	496	10	91	76	24	73
104100	191	22	11.5	1	4.5	0	0.0	1453	8	91.7	63.8	36.2	77
104200	196	30	15.3	1	3.3	1	3.3	2091	6	94.2	50.3	49.7	84
104500	97	17	17.5	3	17.6	1	6.7	1051	9	90.8	53.9	46.1	74
105100	155	0	0.0	0	0.0	0	0.0	2054	10	90	39	61	96
105198	155	27	17.4	1	3.7	1	4.0	0	0	0	0	0	0
105200	153	59	38.6	4	6.8	2	4.1	1629	12	88.3	34.1	65.9	82
105300	219	112	51.1	11	9.8	6	6.2	1362	21	79.1	25.0	75.0	89
105400	282	136	48.2	8	5.9	3	2.7	1110	27	72.6	23.7	76.3	94
105500	211	109	51.7	11	10.1	5	5.2	1518	21	79.1	48.0	52.0	93
106100	273	117	42.9	25	21.4	12	14.5	1390	25	75.5	49.5	50.5	98
106200	300	98	32.7	10	10.2	4	5.0	1239	31	69.3	37.6	62.4	85
106300	299	113	37.8	16	14.2	4	4.5	1411	22	78.5	46.9	53.1	90
106400	232	113	48.7	22	19.5	10	11.5	1715	25	75.2	48.7	51.3	91
106500	219	130	59.4	15	11.5	8	7.8	1676	21	79.4	48.7	51.3	98
106600	211	102	48.3	17	16.7	9	11.3	1208	27	72.6	47.8	52.2	97
106700	364	146	40.1	12	8.2	7	5.7	2162	20	80.4	52.0	48.0	95
107100	51	31	60.8	2	6.5	1	3.6	393	8	92.1	86.5	13.5	83
107200	150	86	57.3	14	16.3	10	13.7	707	19	80.8	57.1	42.9	80
107300	463	170	36.7	16	9.4	6	4.4	2289	9	91.0	74.8	25.2	79
107400	306	177	57.8	28	15.8	11	8.8	1404	19	81.1	67.6	32.4	91
107500	304	127	41.8	14	11.0	8	7.4	1064	16	83.7	68.5	31.5	95
107600	165	91	55.2	7	7.7	4	5.2	1222	27	72.8	57.3	42.7	93

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

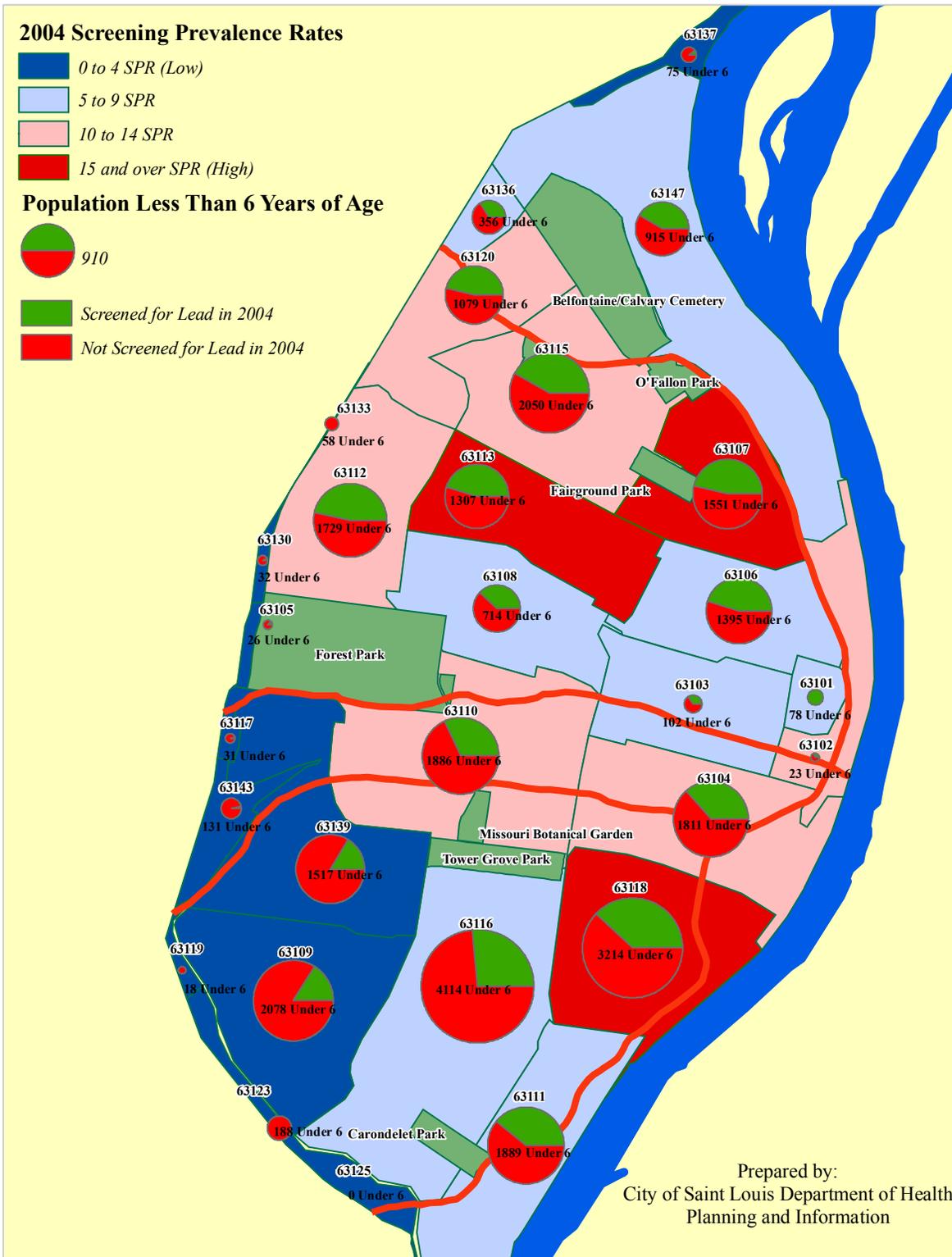
Census Tract	Population <6 Years	Number Screened	Percent Screened	Number ≥ 10 µg/dl	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Pre-1950 Housing
107700	307	134	43.6	6	4.5	2	1.7	2067	14	86.3	62.2	37.8	90
108100	296	133	44.9	8	6.0	5	4.3	1526	11	88.6	73.9	26.1	83
108200	181	65	35.9	5	7.7	4	6.9	1240	8	91.9	61.1	38.9	78
108300	209	85	40.7	6	7.1	3	4.1	1083	10	90.1	71.5	28.5	84
108400	104	20	19.2	2	10.0	1	5.6	557	15	85.1	39.2	60.8	68
108500	63	26	41.3	1	3.8	0	0.0	365	27	72.6	36.2	63.8	72
109600	383	148	38.6	35	23.6	22	18.6	1832	15	85.0	51.7	48.3	89
109700	420	192	45.7	40	20.8	20	13.8	1899	33	67.1	45.2	54.8	85
110100	301	110	36.5	14	12.7	9	9.8	1779	20	80.5	58.6	41.4	88
110200	306	136	44.4	19	14.0	6	5.6	1592	21	78.9	52.1	47.9	93
110300	262	114	43.5	22	19.3	12	14.1	1744	24	76.1	46.6	53.4	94
110400	262	133	50.8	35	26.3	22	20.4	1554	24	76.1	49.0	51.0	98
110500	181	90	49.7	23	25.6	9	15.8	1038	30	70.4	46.9	53.1	93
111100	155	65	41.9	11	16.9	6	10.9	962	29	70.6	48.9	51.1	92
111200	147	76	51.7	13	17.1	6	10.2	1098	34	65.6	44.0	56.0	96
111300	179	78	43.6	17	21.8	5	8.8	1279	28	71.9	36.2	63.8	95
111400	151	83	55.0	19	22.9	8	12.7	1129	30	70.2	47.7	52.3	94
111500	129	40	31.0	12	30.0	7	22.6	670	27	73.0	44.2	55.8	94
112100	194	60	30.9	0	0.0	0	0.0	2753	13	87.2	29.4	70.6	90
112200	172	72	41.9	16	22.2	10	17.2	990	22	78.0	40.2	59.8	97
112300	231	117	50.6	18	15.4	11	11.3	1494	25	75.0	39.3	60.7	98
112400	107	23	21.5	0	0.0	0	0.0	2687	9	90.8	23.5	76.5	92
113100	169	37	21.9	1	2.7	0	0.0	1784	7	93.3	46.6	53.4	70
113400	76	12	15.8	0	0.0	0	0.0	509	11	88.6	49.0	51.0	77
113500	154	11	7.1	0	0.0	0	0.0	1408	7	93.0	67.0	33.0	81
114100	614	134	21.8	5	3.7	3	2.4	4925	5	94.8	49.3	50.7	83
114200	329	47	14.3	0	0.0	0	0.0	2698	5	95.2	62.7	37.3	65
114300	538	87	16.2	2	2.3	2	2.3	2770	5	95.5	74.0	26.0	94
115100	321	75	23.4	6	8.0	2	3.1	1962	7	93.1	58.2	41.8	95
115200	345	106	30.7	6	5.7	3	3.2	1699	10	89.7	37.0	63.0	82
115300	566	194	34.3	11	5.7	8	4.7	2578	15	85.5	62.3	37.7	87
115400	304	84	27.6	5	6.0	2	2.7	1413	10	89.7	68.2	31.8	91
115500	629	253	40.2	32	12.6	20	9.6	2987	17	82.8	45.3	54.7	96
115600	475	201	42.3	9	4.5	6	3.5	2745	15	85.0	32.7	67.3	85
115700	377	189	50.1	30	15.9	19	12.0	1890	19	80.6	38.3	61.7	91

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

Census Tract	Population <6 Years	Number Screened	Percent Screened	Number ≥ 10 µg/dl	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Pre-1950 Housing
116100	297	110	37.0	9	8.2	6	6.3	1768	11	88.9	50.5	49.5	83
116200	505	123	24.4	6	4.9	4	3.7	2458	14	85.8	51.3	48.7	96
116300	521	169	32.4	16	9.5	9	6.5	3207	15	84.7	37.5	62.5	96
116400	597	240	40.2	49	20.4	22	12.2	2483	23	76.7	36.6	63.4	95
116500	470	124	26.4	11	8.9	10	9.7	2266	22	78.0	39.2	60.8	95
117100	112	32	28.6	2	6.3	2	6.7	1181	15	84.7	20.5	79.5	96
117200	765	234	30.6	37	15.8	16	8.6	3155	20	80.4	36.1	63.9	98
117300	284	128	45.1	8	6.3	6	5.3	1487	17	83.1	36.0	64.0	95
117400	437	127	29.1	13	10.2	8	7.5	2330	16	83.6	43.4	56.6	96
118100	247	122	49.4	11	9.0	5	5.2	994	33	67.0	34.5	65.5	88
118400	20	0	0.0	0	0.0	0	0.0	953	17	83	1	99	18
118500	97	33	34.0	4	12.1	3	10.3	363	17	82.6	56.3	43.7	77
118600	217	70	32.3	13	18.6	5	10.4	1291	20	79.7	34.2	65.8	89
119100	152	62	40.8	0	0.0	0	0.0	4483	11	88.9	23.3	76.7	74
119200	90	32	35.6	2	6.3	1	3.7	960	23	77.4	45.5	54.5	89
119300	111	36	32.4	0	0.0	0	0.0	1324	14	86.4	4.5	95.5	63
120100	58	24	41.4	2	8.3	1	5.0	503	31	69.4	37.0	63.0	92
120200	144	67	46.5	12	17.9	6	12.2	543	22	78.5	38.7	61.3	93
120300	164	91	55.5	16	17.6	6	8.1	916	34	65.7	40.2	59.8	78
121100	80	13	16.3	1	7.7	1	7.7	865	11	89.2	1.6	98.4	83
121200	311	162	52.1	7	4.3	4	3.1	1477	33	66.8	7.6	92.4	78
121300	119	59	49.6	1	1.7	1	1.8	613	31	69.2	7.3	92.7	92
121400	7	1	14.3	0	0.0	0	0.0	143	38	62.2	3.4	96.6	71
122100	180	57	31.7	1	1.8	0	0.0	864	12	88.3	38.5	61.5	63
122200	0	3	0.0	0	0.0	0	0.0	2	0	100.0	50.0	50.0	51
122400	433	182	42.0	21	11.5	9	5.8	1088	17	82.7	22.1	77.9	86
123100	426	148	34.7	24	16.2	13	11.8	1973	26	73.9	39.5	60.5	88
123200	170	52	30.6	3	5.8	2	3.9	1193	20	79.8	36.9	63.1	91
123300	288	101	35.1	8	7.9	6	7.1	1716	21	79.1	34.9	65.1	96
123400	153	30	19.6	1	3.3	1	3.4	2070	17	83.4	27.1	72.9	87
124100	600	235	39.2	47	20.0	22	12.7	2645	30	69.8	35.1	64.9	92
124200	477	216	45.3	59	27.3	31	19.4	1918	28	72.0	33.2	66.8	93
124300	293	85	29.0	8	9.4	5	7.9	2145	27	72.6	41.5	58.5	96
124600	216	80	37.0	7	8.8	4	6.2	1023	27	73.4	41.7	58.3	77
125500	36	16	44.4	0	0.0	0	0.0	1963	19	80.9	1.3	98.7	77
125600	52	31	59.6	1	3.2	1	3.8	1310	29	70.7	0.5	99.5	63
125700	480	240	50.0	15	6.3	8	3.9	1795	36	64.3	5.1	94.9	33
126600	357	135	37.8	22	16.3	12	11.0	1534	39	61.1	28.1	71.9	90
126700	214	94	43.9	32	34.0	16	25.8	1017	31	69.2	31.4	68.6	93
Not geocoded	-	3331	-	11	0.3	8	0.2	-	-	-	-	-	-
City Total	28,369	13,249	46.7	1,189	9.0	629	5.5	175,925	14.7	85.3	46.9	53.1	85.3

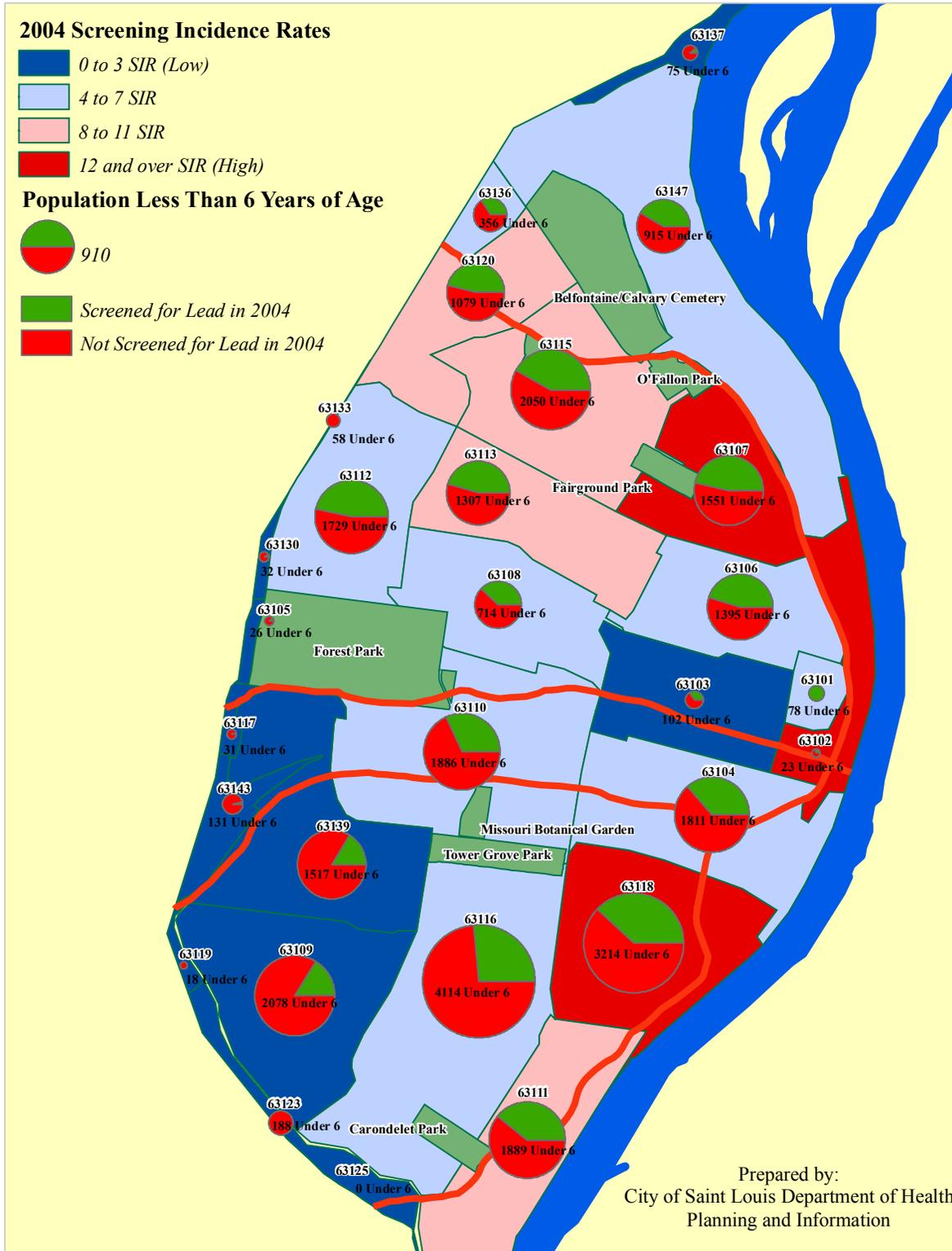
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 City of St. Louis, Department of Health

Map B-1
Elevated Blood Lead Level Screening Prevalence Rates by ZIP Code, City of St. Louis 2004



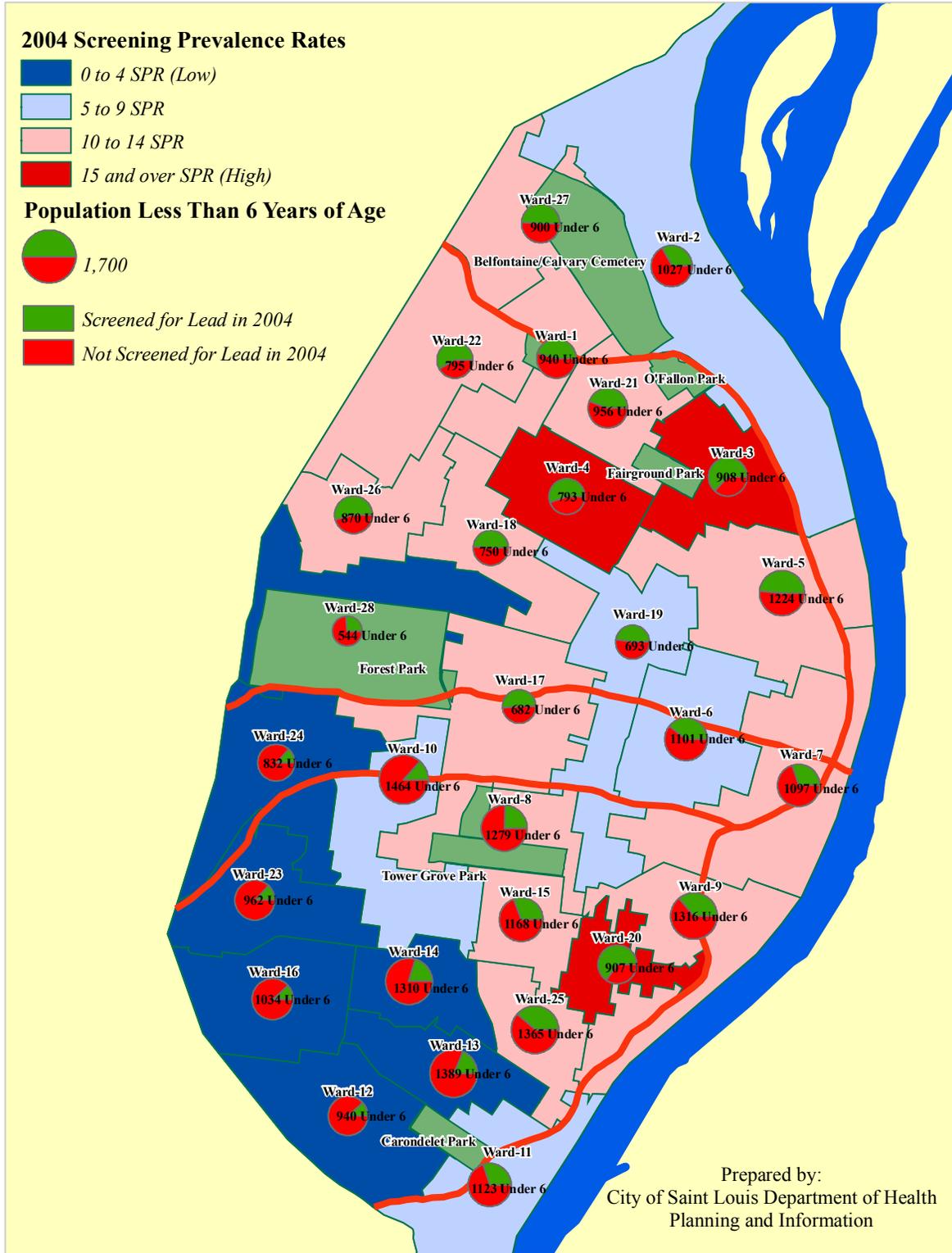
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Map B-2
Elevated Blood Lead Level Screening Incidence Rates by ZIP Code, City of St. Louis 2004



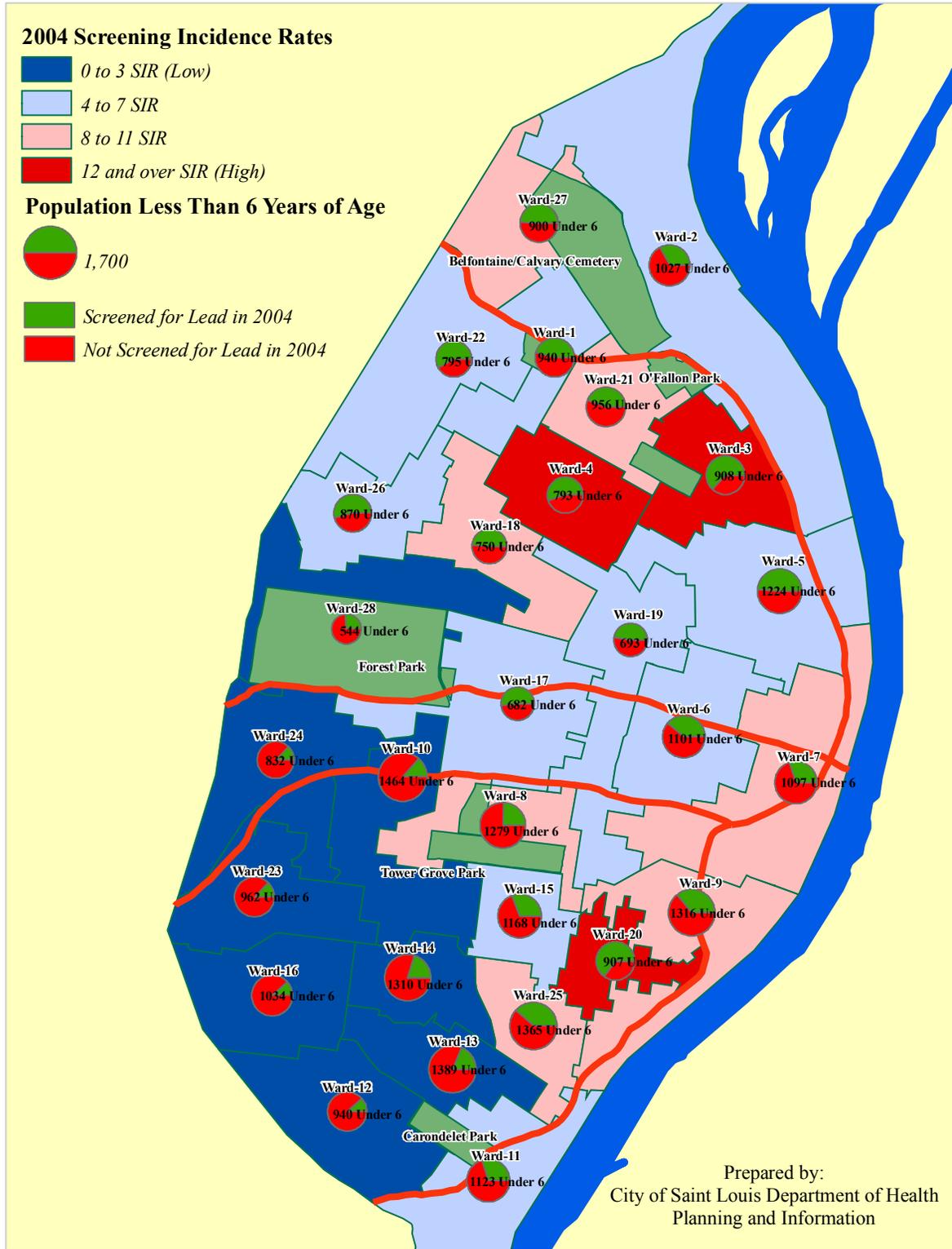
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 City of St. Louis, Department of Health

Map B-3
Elevated Blood Lead Level Screening Prevalence Rates by Ward, City of St. Louis 2004



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 City of St. Louis, Department of Health

Map B-4
Elevated Blood Lead Level Screening Incidence Rates by Ward, City of St. Louis 2004



Childhood Lead Poisoning Prevention Program Annual Report 2004
City of St. Louis, Department of Health

Neighborhood Map Legend

Neighborhood Number and Neighborhood Name

Neighborhood (NHD) Number	Neighborhood Name	Neighborhood (NHD) Number	Neighborhood Name
1	Carondelet	41	Cheltenham
2	Patch	42	Clayton-Tamm
3	Holly Hills	43	Franz Park
4	Boulevard Heights	44	Hi-Point
5	Bevo Mill	45	Wydown/Skinker
6	Princeton Heights	46	Skinker/DeBaliviere
7	South Hampton	47	DeBaliviere Place
8	St. Louis Hills	48	West End
9	Lindenwood Park	49	Visitation Park
10	Ellendale	50	Wells/Goodfellow
11	Clifton Heights	51	Academy
12	The Hill	52	Kingsway West
13	Southwest Garden	53	Fountain Park
14	North Hampton	54	Lewis Place
15	Tower Grove South	55	Kingsway East
16	Dutchtown	56	The Greater Ville
17	Mount Pleasant	57	The Ville
18	Marine Villa	58	Vandeventer
19	Gravois Park	59	JeffVanderLou
20	Kosciusko	60	St. Louis Place
21	Soulard	61	Carr Square
22	Benton Park	62	Columbus Square
23	McKinley Heights	63	Old North St. Louis
24	Fox Park	64	Near North Riverfront
25	Tower Grove East	65	Hyde Park
26	Compton Heights	66	College Hill
27	Shaw	67	Fairground Neighborhood
28	McRee Town	68	O'Fallon
29	Tiffany	69	Penrose
30	Benton Park West	70	Mark Twain/I-70 Industrial
31	The Gate District	71	Mark Twain
32	Lafayette Square	72	Walnut Park East
33	Peabody, Darst, Webbe	73	North Point
34	Lasalle	74	Baden
35	Downtown	75	Riverview
36	Downtown West	76	Walnut Park West
37	Midtown	77	Covenant Blu/Grand Center
38	Central West End	78	Hamilton Heights
39	Forest Park Southeast	79	North Riverfront
40	Kings Oak		

Childhood Lead Poisoning Prevention Program Annual Report 2004
 City of St. Louis, Department of Health

Map B-5

Elevated Blood Lead Level Screening Prevalence Rates by Neighborhood, City of St. Louis 2004

