

Childhood Lead Poisoning in The City of St. Louis



Annual Report 2005

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

Statistics at a Glance

City of St. Louis Childhood Lead Poisoning Surveillance 2003-2005

Demographics	2003		2004		2005	
2000 Census population, children < 6 years of age St. Louis, Missouri	28,369		28,369		28,369	
St. Louis City Children Screened	12,011		13,249		11,227	
Percent eligible screened	42.3%		46.7%		39.6%	
Mean age in years	3.0		2.8		3.0	
Male:Female Ratio	1.03		1.03		1.03	
Race (%)						
African American	6,094	50.7%	5,601	42.3%	8,067	71.9%
White	735	6.1%	636	4.8%	2,032	18.1%
Asian	103	0.9%	101	0.8%	157	1.4%
Native American	< 10	< 0.1%	12	< 0.1%	< 10	< 0.1%
Pacific Islander					< 10	< 0.1%
Multiracial	<10	< 0.1%	<10	< 0.1%		
Other	102	0.9%	112	0.8%		
Race Missing	4,965	41.3%	6,780	51.2%	961	8.6%
Lead Poisoning, City of St. Louis						
Blood lead level units are based on micrograms per deciliter (µg/dl)	2003		2004		2005	
Prevalent Cases (Pb ≥ 10 µg/dl)	1,638		1,189		1,025	
Screening Prevalence Rate (%)	13.6%		9.0%		9.1%	
Incident Cases (Pb ≥ 10 µg/dl)	936		629		406	
Screening Incidence Rate (%)	9.7%		5.5%		4.0%	
Case Distribution						
CDC I (Pb < 10)	10,373	86.4%	12,060	91.0%	10,202	90.9%
CDC II (Pb = 10-19)	1,421	11.8%	1,005	7.6%	842	7.5%
CDC III (Pb = 20-44)	209	1.7%	169	1.3%	170	1.5%
CDC IV (Pb = 45-69)	<10	< 0.1%	14	0.1%	10	0.1%
CDC V (Pb ≥ 70)	0	0.0%	1	< 0.1%	3	< 0.1%
State of Missouri Screening Prevalence Rate (2005)	4.4%		3.0%		2.8%	
U.S. Estimated Prevalence Rate (NHANES 1999-2002)	2.2%		1.6%		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 µg/dl).

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The 2005 CLPPP Annual Report can be downloaded from:

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

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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 ($\mu\text{g}/\text{dl}$) 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.

Childhood Lead Poisoning in the City of St. Louis, 2005

More than 90% 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 (Health Department) 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 2005, 39.6% 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

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.

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 achieve 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 11,227 children screened for lead poisoning in 2005, 1,025 (9.1%) had a blood lead level of 10 $\mu\text{g}/\text{dl}$ or greater, which is the CDC's definition of lead poisoning.

Profile of Lead-Poisoned Children in the City of St. Louis, 2005

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 2005, 9.0% of the 1 year olds screened for lead poisoning had a blood lead level of 10 $\mu\text{g}/\text{dl}$ or greater.

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This is less than the screening prevalence rate for children two years of age (14.1%). 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 2005, 72% of the children screened and reported to the Health Department were African American. African American children account for

83.9% of all lead poisoned children in 2005.

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 2005, the ZIP codes with the highest screening prevalence rates are: 63107, 63113, 63120, 63118 and 63115. The wards with the highest rates are: 3, 4, 20, 1 and 18, and the neighborhoods with the highest rates are: Hyde Park, Fairground Neighborhood, Hamilton Heights, Lewis Place and The Ville.

St. Louis City's Childhood Lead Poisoning Prevention Program, 2005

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, case management and risk reduction services, and coordinates educational workshops for parents, daycares, schools, community organizations and health professionals. In 2005, the Health Department screened 1,388 children and

presented at 124 educational events. The Lead Inspection and Hazard Control Section of the Building Division 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 2005, the unit identified 467 units with lead violations and remediated 125 properties out of the 423 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 2005, the program sponsored several educational and training events, received additional funds from the Missouri Foundation for Health, HUD and the EPA, 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 (g/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 (9.1%) than in the State of Missouri (2.8%) and the rest of the nation (1.6%). In 2005, CLP in the City of St. Louis accounts for 48.0% of all

lead poisoned children in the State of Missouri (1,025/2,135).

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 2005, 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 (DHSS)

High-Risk Areas	Non-High Risk Areas
<p>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.</p> <p>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.</p> <p>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.)</p>	<p>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.</p> <p>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 <u>12 and 24 months of age</u>. (This statement does not appear in the law, but applies as HCFA policy and DHSS recommendations.)</p> <p>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.</p> <p><u>Every child, less than age six, found to be at high risk, will be tested for lead.</u></p>

Note: The entire City of St. Louis is considered a high risk area.

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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 City of St. Louis Department of Health 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 and risk reduction education 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 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.

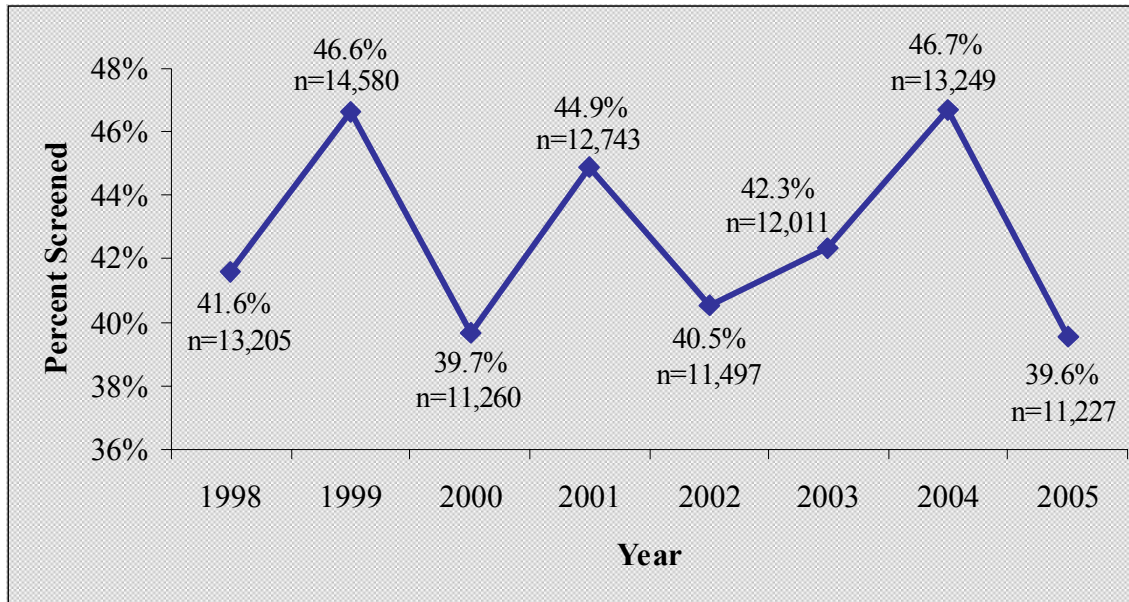
Childhood Lead Poisoning in the City of St. Louis, 2005

Screening for Lead Poisoning

In 2005, 39.6% (11,227/28,369) of St. Louis City children less than 6 years of age were screened for lead poisoning (Figure 1). The rate of children screened decreased in 2005 after increasing in 2003 and 2004. 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 2005 and that over 60% of these children are not being tested according to the recommended timeframe.

Figure 1
Children Screened for Lead Poisoning, City of St. Louis 1998-2005



Health Providers of Lead Screenings

In 2001 through 2004, private physicians, clinics and hospitals began providing a major portion of blood lead screenings. This trend ended in 2005 with a drop in the total number of children screened due in a large part to a decrease in testing by private physicians and clinics. The Federally Qualified Health Centers, Connect Care and the Health Department screened 5,912 out of 11,227 (52.7%) children in 2005 (Table A-1). Private Physicians, Private

Practices and Hospitals screened 5,256 (46.8%) (Table A-1). The lower screening rate in this group is discouraging since screening should be a part of comprehensive health services for all children.

A substantial drop in the number of children under 6 screened for lead was detected early on in 2005. This decrease in screenings led to the implementation of the Physician Outreach Program.

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Lead Safe St. Louis trained 13 teams to educate and encourage physicians to

screen children under the age of 6 for lead poisoning.

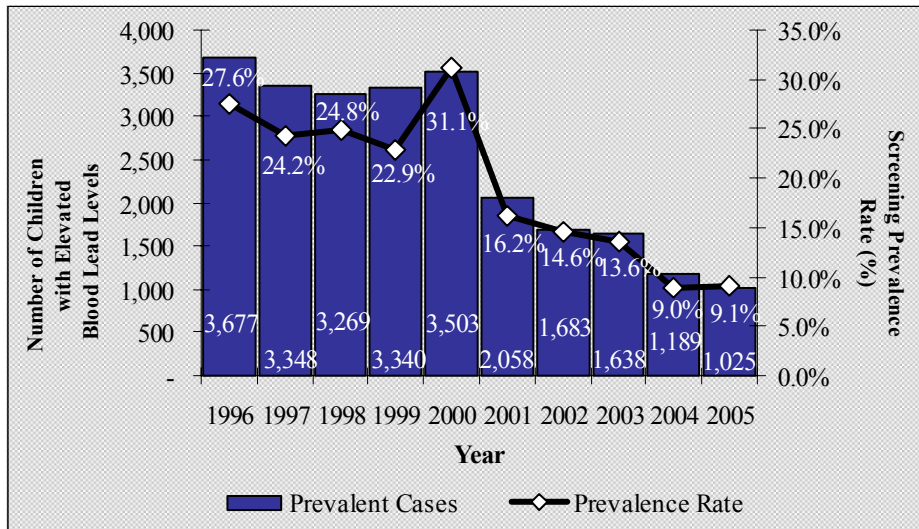
Blood Lead Test Results

The screening prevalence rate (SPR) of CLP is the number of children screened with blood lead levels ≥ 10 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 was marked by another substantial decrease in SPR, followed by another leveling out in 2005 (Figure 2 and Table A-2).

Figure 2
Children Less Than 6 Years of Age Diagnosed with Lead Poisoning, City of St. Louis 1996-2005



Decreased screening affects prevalence by increasing the chance that children who do have elevated blood lead levels are tested. The low screening rate in 2005 indicates that children that have already been screened are continuing to be screened and that some children are never screened. Because designated high risk areas of the City are

consistently targeted for lead screening, more children are screened who have elevated blood lead levels. Even though there was a substantial decrease in the number of children screened for lead poisoning in 2005, compared to 2004, the screening prevalence rate has not changed.

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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 2004 and 2005. Another factor could be screening patterns. If children in high 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, assuming people are moving into safer housing in the City.

There is still 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.

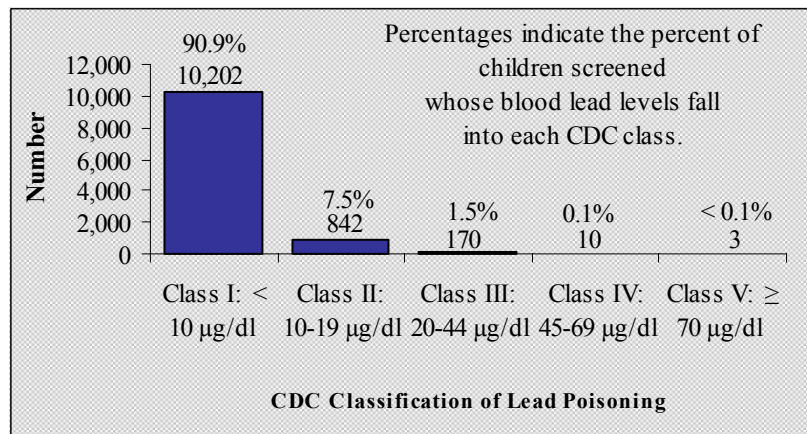
Severity of Lead Poisoning

The majority of the children screened in 2005 (90.9%) (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), 0.1% in Class IV (45-69 µg/dl) and less than 0.1% 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 2005, 1,025 or 9.1% of all children tested have elevated blood lead levels (Figure 3). Of the 11,227 children screened in 2005, 7.5% are in Class II (10-19 µg/dl); 1.5% in Class III (20-44

Figure 3
Case Distribution of all Children Screened, City of St. Louis 2005



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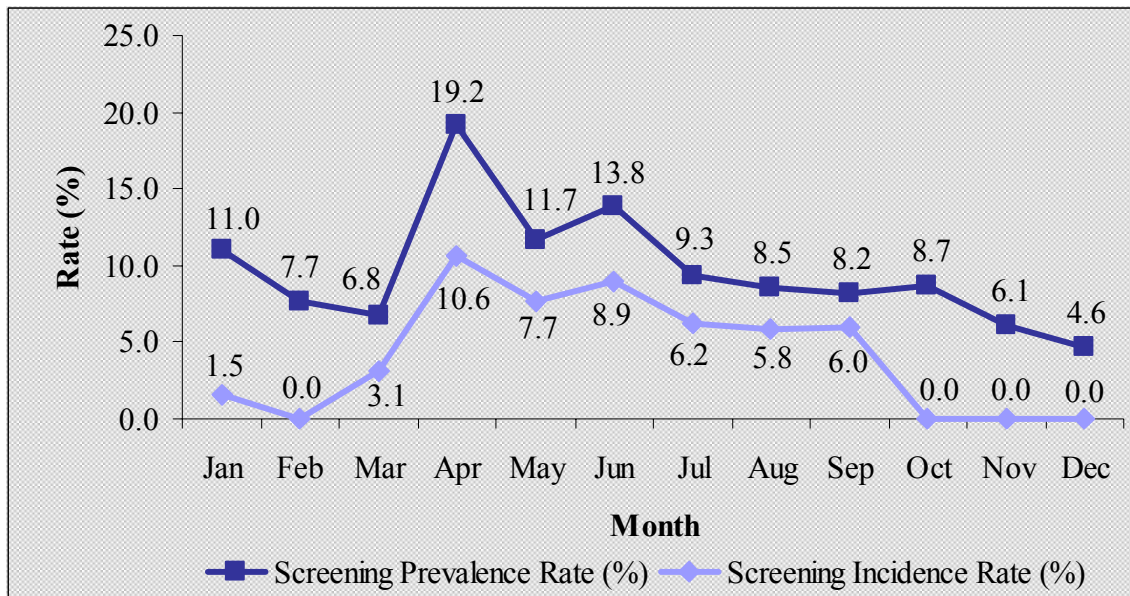
Seasonality and Lead Poisoning

Higher screening prevalence and screening incidence rates are traditionally seen in the summer months and into the fall of the year (Figure 4). In 2005, a peak occurs in April. For the most part, the rates remain fairly consistent throughout the year with increases reported in April, May and June and decreases in November and December (Figure 4). In February, October, November and December, there

were no new cases of lead poisoning even though there were prevalent cases reported in those months.

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 2005



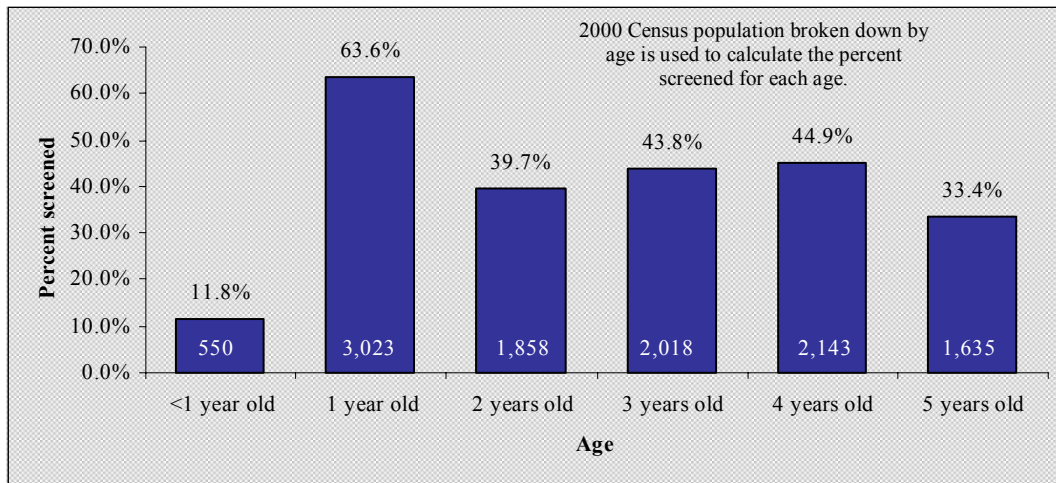
Profile of Lead Poisoned Children in the City of St. Louis, 2005

Screening by Age

Looking within age groups, the highest screening rate (63.6%) is for children 1 year of age (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 2005



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Lead Poisoning Within Age Groups

The highest age-specific SIR in 2005 is 6.2% 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.

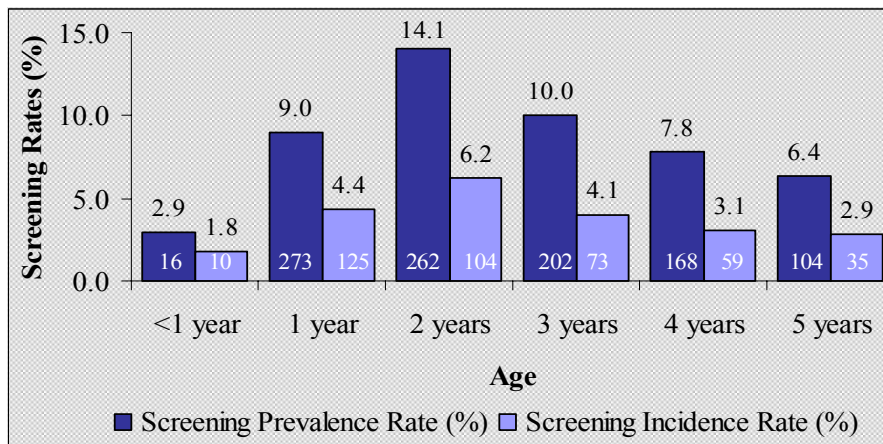
Children 2 years of age also have the highest SPR (14.1%) in 2005 (Figure 6). These children are more active in exploring their environments and also have poor hand-washing skills. The SPR rate stays relatively high through the rest of the age groups greater than or equal to 3 years of age. The longer a child remains elevated the greater the risk of long term damage to their development.

The SPR for children 1 year of age increased in 2005 with a reported rate of 7.0% in 2004 and a rate of 9.0% in 2005

(Figure 6), indicating that slightly more 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 includes the new cases of lead poisoning. The SIR for 2 year olds (6.2%) is still higher than that for 1 year olds (4.4%), but it does begin to decrease for 3 year olds (4.1%) (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 2005



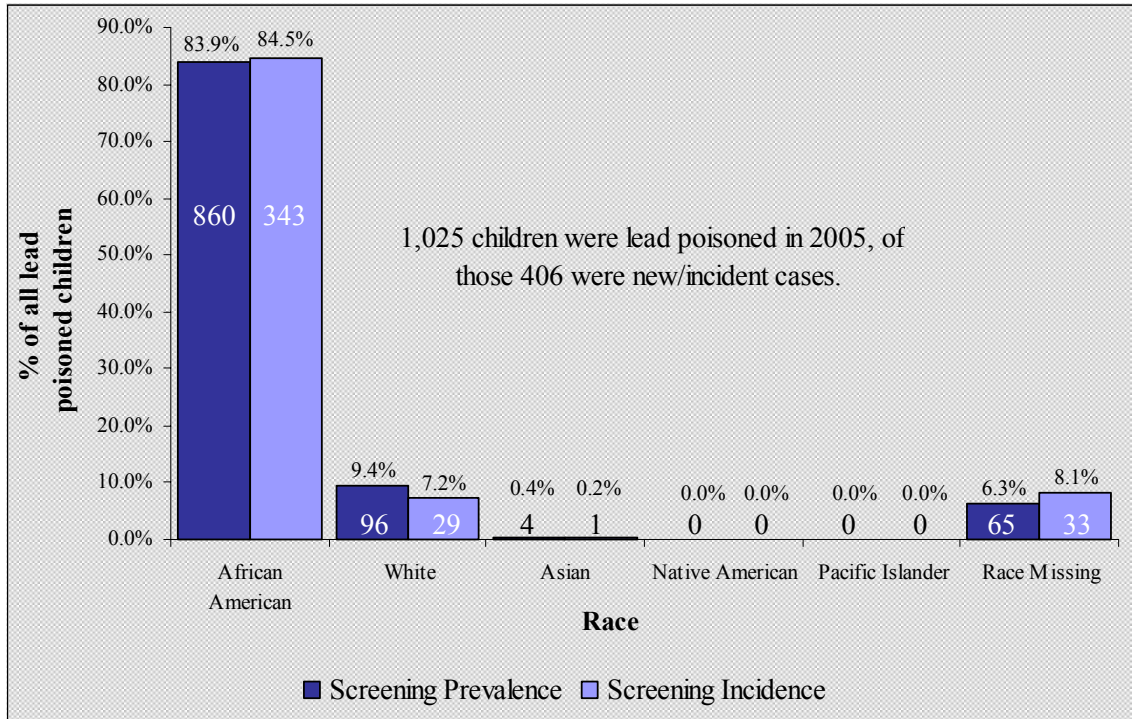
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Race and Lead Poisoning

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 2005, 72% of the

children screened and reported to the Health Department were African American. African American children account for 83.9% (860/1,025) of all lead poisoned children in 2005 (Figure 7).

Figure 7
Prevalent and Incident Cases of Lead Poisoning by Race, City of St. Louis 2005



Gender and Lead Poisoning

Nearly even numbers of males and females were tested for CLP in 2005. Females make up 49.2% of children tested in 2005 while males make up 50.7%.

Males are only slightly more likely to be lead poisoned (SPR=9.4%) than females (SPR=8.9%) in 2005 (Table A-3).

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Lead Level History of Children Screened in 2005

Of those children in 2005 who tested < 10 µg/dl, 4.1% or 416 (Table 3) had an elevated blood lead level in the past. Of those children who had a blood lead level ≥ 10 µg/dl in 2005, 60.4% or 619 (Table 3) previously had an elevated blood lead level. Fourteen percent of children with elevated blood lead levels

(142/1,025) never had an elevated blood lead level before 2005 and 25.7% (264/1,025) were tested for the first time in 2005 (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 2005

CDC Classes Not Elevated	Screened for first time		Children Screened in Previous Years				Total screened
			Never elevated		Previously elevated		
	N	%	N	%	N	%	
Class I < 10 µg/dl	4,247	41.6	5,539	54.3	416	4.1	10,202
CDC Classes Elevated	Screened for first time		Children Screened in Previous Years				Total screened
			Never elevated		Previously elevated		
	N	%	N	%	N	%	
Class II 10-19 µg/dl	230	27.3	131	15.6	481	57.1	842
Class III 20-44 µg/dl	32	18.8	10	5.9	128	75.3	170
Class IV 45-69 µg/dl	2	20.0	1	10.0	7	70.0	10
Class V ≥ 70 µg/dl	0	0.0	0	0.0	3	100.0	3
Classes II through V	264	25.7	142	13.9	619	60.4	1,025

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 3.4% to 98.7% in 2005 (Table A-4). The ZIP codes were sorted and ranked by the SPR to determine which ZIP codes have the highest prevalence of lead poisoning in 2005. 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 2005 are: 63107 (18.5%), 63113 (13.6%), 63120 (12.8%), 63118 (12.7%) and 63115

(12.5%) (Table A-4). These ZIP codes were also reported as having the highest prevalence in 2004 and all of these ZIP Codes continue to have among the highest occurrences of new cases (incidence) in 2005. For a visual representation of the screening prevalence rates by ZIP code in 2005 refer to Maps B-1 and B-2 on pages 36 and 37.

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Ward

Screening rates by ward range from 15.2% to 72.3% in 2005 (Table A-5). The 5 wards with the highest SPRs in 2005 are: Ward 3 (20.9%), Ward 4 (16.6%), Ward 20 (14.6%), Ward 1 (14.3%) and Ward 18 (12.4%) (Table A-5). With the exception of Ward 1 and

Ward 18, these wards also had the highest SPRs in 2004 and have among the highest screening incidence rates in 2005. For a visual representation of the screening prevalence rates by ward in 2005 refer to Maps B-3 and B-4 on pages 38 and 39.

Neighborhood

Screening rates by neighborhood range from 11.1% to 84.3% (Table A-6). 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 6. 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 2005 are: Hyde Park (24.1%), Fairground Neighborhood

(22.4%), Hamilton Heights (20.3%), Lewis Place (19.4%) and The Ville (18.2%) and (Figure 8 and Table A-6). These neighborhoods also have some of the highest SIRs in 2005. The top 20 neighborhoods with the highest screening prevalence rates in 2005 are graphically represented in Figure 8.

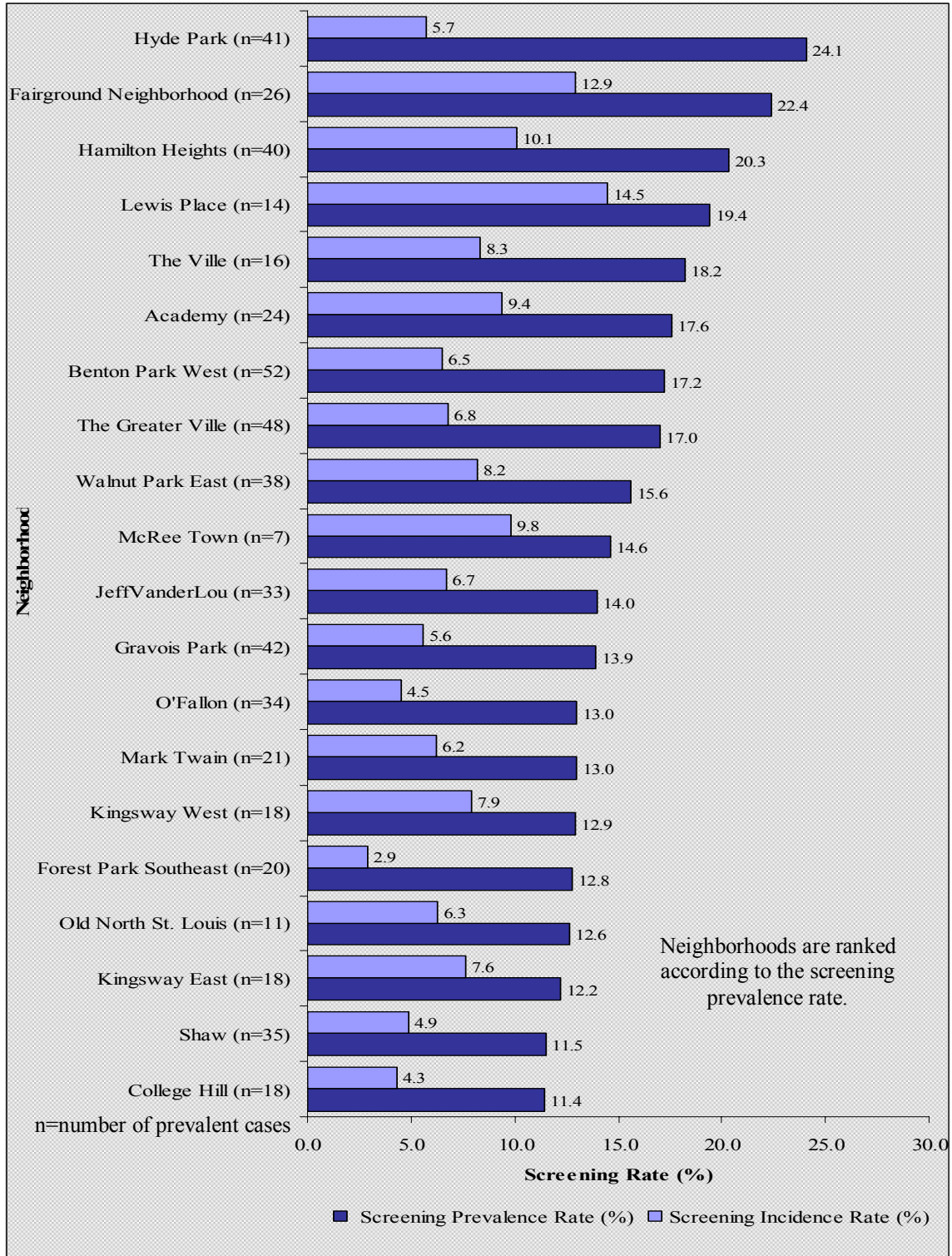
Neighborhood boundaries identify smaller areas for prevention and control than ZIP code. For a visual representation of the screening prevalence rates by neighborhood in 2005 refer to Maps B-5 and B-6 on pages 41 and 42.

Census Tract

Screening rates by census tract range from 5.0% to 84.3% in 2005 (Table A-7). The 5 census tracts with the highest SPRs in 2005 are: 126700 (26.9%), 111400 (25.3%), 110400 (22.6%) 120200 (22.6%),

and 106100 (21.0%) (Table A-7). 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 2005



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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 2005, the Health Department offered blood lead screenings in the Childhood Lead Poisoning Prevention Clinic and organized off-site screenings in the community. Off-site screenings include: health fairs, daycare centers schools and neighborhood outreach. The Health Department screened 1,388 children or 12.4% of all children tested in 2005 (Table A-1), which is more than the number screened in 2004 when the Health Department screened 1,037 (7.8%) children. The Health Department identified 121 lead poisoned children (Table A-1), 11.8% of all children found with CLP in 2005. Out of the 3 Health Department screening sites, the lead clinic identified the most cases (n=73, SPR=29.0%) (Table A-1).

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 2005, the Clinic provided lead testing for 252 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 other languages to address the influx of immigrants and refugees into the City of St. Louis.

The Health Department also staffs a full-time social worker who visits families in their homes and provides additional information and assistance. One of the programs carried out by the social worker the High-Efficiency Particulate Air (HEPA) Vacuum Loan Program. A HEPA vacuum is different than a regular household vacuum in that it contains a special filter that is able to trap very fine dust particles, such as lead dust, that are too small to see. Through the HEPA Vacuum Loan Program, families receive an initial home visit when they receive the vacuum and a follow-up home visit when the vacuum is picked up. In 2005, 136 homes were serviced through the HEPA Vacuum Loan Program. The social worker also provides outreach services to families, including: accessing housing resources, relocation, obtaining nutritional foods, utilities assistance and facilitation with

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landlords. In 2005, 111 homes received education and outreach services.

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 2005, CLPPP gave presentations to 5,987 persons at 124 educational events (Table 4).

**Table 4
Health Education Activities Conducted by the Childhood Lead Poisoning Prevention Program, City of St. Louis 2005**

Function	Audience Type	Age Group	Number of Participants	Number of Events
Educational	Daycares, Schools	5-12 year of age	3,808	55
Educational	Parents/School Staff	Adults	74	9
Informational/Educational	Community Fairs	Adults	1,829	40
Educational	Community Organizations	Adults	271	19
Conference /Group Meeting	Health Professionals	Adults	5	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 2005, 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 2005, the clinic made 380 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 2005, almost 30% of reports were 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, Section 8 Housing, Lead Safe St. Louis Hotline and Aldermen) 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 approximately 70% of all referrals in 2005, which shows that the Lead Inspection and Hazard Control Section is increasing its efforts to practice primary prevention (Table 5).

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Table 5
Inspection Referrals Made to the Lead Inspection and Hazard Control Section of the Building Division, City of St. Louis 2004-2005

Referral Source	2004		2005		2004-2005 Percent Change
	Number	Percent	Number	Percent	
Lead Clinic	333	50.7	380	40.8	14.1
Citizens' Service Bureau	382	58.1	365	39.2	-4.5
Day Care Centers	21	3.2	15	1.6	-28.6
Conservation District	216	32.9	51	5.5	-76.4
Section 8 Housing	38	5.8	30	3.2	-21.1
Lead Safe St. Louis Hotline			39	4.2	
Special--Aldermanic Requests			432	46.4	
Total	657	100.0	932	100.0	41.9

After a referral is made, a lead inspector goes out to the property and performs an inspection. In 2005, 64.6% (467/723) 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 (4,352) (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 60 housing units (Table 6) and is a serious impediment to the reduction or removal of lead from a child's environment. In 2005, a total of 423 properties were remediated (Table 6) in order to reduce the risk of lead poisoning to other children.

Table 6
Lead Inspection Activities and Remediations, City of St. Louis 2004-2005

Activity	2004	2005	Percent Change
Dwelling Units Inspected	1,168	723	-38.1%
Hazardous Units	632	467	-26.1%
Re-inspections	3,685	4,352	18.1%
Attempts to Inspect	2,194	2,271	3.5%
Inspections not Permitted	79	60	-24.1%
Owner/Agent Remediations	241	218	-9.5%
Private Contractor Remediations	94	80	-14.9%
Building Division Remediations	121	125	3.3%

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 the homes of

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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 2005, the Lead Hazard Control team remediated 125 homes, which is a slight increase from the 121 homes remediated in 2004. A total of 423 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 2005, 384 cases relating to lead hazards were referred to court and arraigned (Table 7). The disposition of the cases indicates that 7 cases were dismissed and 7 cases were dismissed due to payment costs (Table 7). Bench warrants for failure to show were issued on 109 of the cases although these warrants are not served on defendants (Table 7). The total amount of fines collected from charged cases in 2005 was \$6,392.50 (Table 7).

Table 7
Court Activities for Lead Remediation, City of St. Louis 2005

Arraigned Cases	384
Disposition of Cases	
Bench warrant	109
Continued	143
Continued for trial	11
Dismissed	7
Nolle processed	12
Stayed for payment	51
Cases dismissed on payment costs	7
Additional Information	
Units remediated via court process	57
Total fines paid	\$6,392.50

Lead Safe St. Louis

2005 Accomplishments and Activities

Provided by Jeanine Arrighi, Director of Lead Safe Saint Louis

Lead Safe St. Louis (LSSL), initiated in late 2003, continued development of initiatives begun in 2004 within City agencies and with the wider community through Mayor Slay's Lead Safe St. Louis Task Force. The Task Force was honored this year with the U.S. Environmental Protection Agency (EPA) Children's Environmental Health Excellence Award in recognition of the collaborative effort and the significant reduction in childhood lead poisoning in St. Louis. Mayor Slay himself was awarded the Champion for Children Award by the Children's Health Forum.

LSSL was able to secure two new grants in 2005. The Missouri Foundation for Health funded a \$1.44 million grant to increase the numbers of children tested and homes made lead safe, by providing for additional nursing staff, a media campaign, and an expansion of the Citizen Advocate program begun under grants from HUD and the U.S. Conference of Mayors. The EPA granted a project entitled "Good Fences Make Good Neighbors," which funds a \$99,665 collaborative program among Saint Louis Public Schools (SLPS), their maintenance contractor, Sodexo, the St. Louis Lead Prevention Coalition, and the City, to increase testing of children and training of parents, staff, and neighborhood groups in the use of lead safe work practices. Through this grant, five elementary schools will be selected for the special education and outreach program, and the historic iron fences at each of these schools will be repainted to control lead-based paint hazards.

SLPS figured prominently in Lead Safe Programs in 2005, with a systematic blood lead testing program initiated through the schools. In one case, elevated blood lead levels (EBL) in two children from one family attending Horace Mann Elementary School triggered an EBL investigation in that school. When some paint and dust lead hazards were identified, SLPS immediately contracted to have the hazards corrected, and requested widespread testing of the school's children and staff. 165 students and staff were tested in 2 days, and only 5 students showed levels above 10 µg/dl, but all 5 were below 15 µg/dl. Sodexo has since trained much of its maintenance and custodial staff in lead safe work practices.

The City's collaborative programs were also recognized by the joint EPA, HUD and CDC Safe and Healthy Homes and Communities Initiative, with visits from each of those agencies to study best practices from St. Louis. The CDC also invited LSSL to participate in a Harvard School of Public Health (HSPH) evaluation program. Two graduate students from HSPH developed an evaluation model for the City's new Citizen Advocate program.

In the spring, LSSL utilized a collaboration of community partners to provide special outreach to one city block in St. Louis: 3300 Nebraska. Door-to-door visits and a special Lead Safe Block Party extended information and testing to this focus block. 18 children in the neighborhood were tested, 17 units were inspected, with 5

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containing no lead hazards and the remaining units referred for lead hazard controls.

Through City View, the City's accountability management program, LSSL noticed a significant decline in the rate of lead testing. This early detection enabled LSSL to collaborate with Medicaid providers and the Missouri Department of Health and Senior Services in an extensive outreach to the medical community in an effort to increase testing. Although the result did not return the testing rates experienced

in 2004, the 2005 data reflected the lower screening prevalence rate below 10% for the second year in a row. A special medical roundtable during Lead Safe Kids & Homes Week, celebrated October 23-29, 2005, was one of several events including the annual report to the community, a Mayor's Day event to celebrate a home made lead safe through LSSL's partner Grace Hill Neighborhood Health Centers, special outreach to grandparents through senior centers, and the annual lead safe work practices training day.

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. Only 40% of St. Louis City children who are at risk of lead poisoning are included in the surveillance database. The missing 60% 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 screened for lead in 2005. 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. A decreased screening rate in 2005 indicates that private providers are still failing to screen children for lead poisoning in the City of St. Louis. In addition to getting more private providers to perform blood lead screenings, validation studies need to be conducted 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. 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. Sixty-one percent of children younger than 3 years of age, at the greatest risk, were not tested in 2005.

The decreasing prevalence rate is encouraging, however, the screening prevalence rate reported still portrays a level of extreme risk for segments of St. Louis City children.

Summary

The childhood lead poisoning rate stayed at an all time low of around 9% in the City of St. Louis between 2004 and 2005, but the City still accounts for 48% 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. 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 are still uninformed about the risks and long-term effects of lead poisoning.

Appendices

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**Table A-1
Health Care Providers of Blood Lead Screenings, City of St. Louis 2004-2005**

Provider	Number Screened		Percent of Total		Percent Change	Number ≥ 10 µg/dl		SPR (%)		New Cases		SIR (%)	
	2004	2005	2004	2005		2004	2005	2004	2005	2004	2005	2004	2005
St. Louis City Health Department													
Van	99	33	0.7	0.3	-60.7	29	2	29.3	6.1	18	2	22.0	6.5
Fixed Screening	685	1,103	5.2	9.8	90.0	49	46	7.2	4.2	23	18	3.9	1.7
Lead Clinic	253	252	1.9	2.2	17.5	73	73	28.9	29.0	27	17	15.3	9.4
<i>STLCHD Sub total</i>	<i>1,037</i>	<i>1,388</i>	<i>7.8</i>	<i>12.4</i>	<i>58.0</i>	<i>151</i>	<i>121</i>	<i>14.6</i>	<i>8.7</i>	<i>68</i>	<i>37</i>	<i>8.0</i>	<i>3.0</i>
Connect Care													
Homer G. Phillips	170	108	1.3	1.0	-25.0	35	23	20.6	21.3	11	10	10.0	11.4
Florence Hill	295	222	2.2	2.0	-11.2	42	34	14.2	15.3	20	11	9.3	6.1
Lillian Courtney	307	250	2.3	2.2	-3.9	36	24	11.7	9.6	14	7	5.8	3.2
Max Starkloft	492	313	3.7	2.8	-24.9	70	45	14.2	14.4	35	16	9.4	6.1
<i>Connect Care Sub total</i>	<i>1,264</i>	<i>893</i>	<i>9.5</i>	<i>8.0</i>	<i>-16.6</i>	<i>183</i>	<i>126</i>	<i>14.5</i>	<i>14.1</i>	<i>80</i>	<i>44</i>	<i>8.5</i>	<i>5.8</i>
Community Health Centers													
<i>Grace Hill*</i>													
South Jefferson	19	45	0.1	0.4	179.5	1	7	5.3	15.6	0	4	0.0	9.8
Neighborhood	206	528	1.6	4.7	202.5	19	64	9.2	12.1	12	28	6.8	6.0
Soulard	45	137	0.3	1.2	259.3	5	15	11.1	10.9	2	3	5.0	2.5
Water Tower	78	411	0.6	3.7	521.8	15	73	19.2	17.8	4	27	6.3	7.9
<i>Grace Hill Sub total</i>	<i>348</i>	<i>1,121</i>	<i>2.6</i>	<i>10.0</i>	<i>280.1</i>	<i>40</i>	<i>159</i>	<i>11.5</i>	<i>14.2</i>	<i>18</i>	<i>62</i>	<i>6.0</i>	<i>6.4</i>
Family Care Health Centers	296	773	2.2	6.9	208.2	31	60	10.5	7.8	16	19	6.3	2.7
Myrtle Hilliard	576	672	4.3	6.0	37.7	96	105	16.7	15.6	38	48	8.9	8.4
Peoples	1,215	1,065	9.2	9.5	3.4	96	103	7.9	9.7	51	52	4.8	8.4
<i>CHCs Sub total</i>	<i>2,435</i>	<i>3,631</i>	<i>13.5</i>	<i>32.3</i>	<i>139.2</i>	<i>263</i>	<i>427</i>	<i>10.7</i>	<i>11.8</i>	<i>123</i>	<i>181</i>	<i>5.9</i>	<i>5.6</i>
Hospitals													
Cardinal Glennon	936	854	7.1	7.6	7.7	80	60	8.5	7.0	54	29	6.6	3.6
St. Louis Children's Hospital*	2,104	363	15.9	3.2	-79.6	202	50	9.6	13.8	109	18	6.0	5.7
Forest Park Hospital	168	0	1.3	0.0	-100.0	21	0	12.5	0.0	11	0	7.3	0.0
St. Louis University Hospital	34	17	0.3	0.2	-41.0	2	1	5.9	5.9	2	0	6.1	0.0
Other Hospitals	44	153	0.3	1.4	310.4	4	9	9.1	5.9	3	5	7.1	3.4
<i>Hospitals Sub total</i>	<i>3,286</i>	<i>1,387</i>	<i>24.8</i>	<i>12.4</i>	<i>-50.2</i>	<i>309</i>	<i>120</i>	<i>9.4</i>	<i>8.7</i>	<i>179</i>	<i>52</i>	<i>6.2</i>	<i>4.1</i>
Other Categories													
Clinics/Group Practices	3,962	3,044	29.9	27.1	-9.3	213	192	5.4	6.3	127	70	3.5	2.5
Private Physicians	872	825	6.6	7.3	11.6	42	35	4.8	4.2	30	20	3.7	2.5
All Others	393	59	3.0	0.5	-82.5	28	4	7.1	6.8	22	2	6.2	3.6
<i>Other Categories Sub total</i>	<i>5,227</i>	<i>3,928</i>	<i>39.5</i>	<i>35.0</i>	<i>-11.3</i>	<i>283</i>	<i>231</i>	<i>5.4</i>	<i>5.9</i>	<i>179</i>	<i>92</i>	<i>3.7</i>	<i>2.6</i>
Grand Total	13,249	11,227	100.0	100.0	0.0	1,189	1,025	9.0	9.1	629	406	5.5	4.0

*Prior to 2005, some of the children screened at Grace Hill Clinics were reported as being screened at St. Louis Children's Hospital.

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Table A-2
Childhood Lead Poisoning Rates, City of St. Louis 1971-2005

Criteria for Positive Blood PB/EP			
Year	(micrograms/deciliter)	# Screened	% Positive
1971	40 µg/dl	4,334	28.0%
1972	40 µg/dl	1,819	34.0%
1973	40 µg/dl	7,426	32.3%
1974	40 µg/dl	5,835	27.0%
1975	40 µg/dl	11,041	22.9%
1976	30 µg/dl	13,246	28.0%
1977	30 µg/dl	14,375	24.5%
1978	30 µg/dl	13,687	15.2%
1979	30 µg/dl	12,511	12.5%
1980	30 µg/dl	12,469	11.4%
1981	30 µg/dl	11,449	12.4%
1982	30 µg/dl	11,778	10.9%
1983	30 µg/dl	11,406	7.6%
1984	30 µg/dl	12,982	8.2%
1985	30 µg/dl	12,308	11.0%
1986	25 µg/dl	11,324	16.4%
1987	25 µg/dl	13,314	10.3%
1988	25 µg/dl	14,364	9.1%
1989	25 µg/dl	12,317	7.4%
1990	25 µg/dl	12,202	6.5%
1991	25 µg/dl	12,799	4.4%
1992	10 µg/dl	17,715	48.5%
1993	10 µg/dl	17,850	26.8%
1994	10 µg/dl	18,541	28.1%
1995	10 µg/dl	20,573	23.5%
1996	10 µg/dl	13,305	27.6%
1997	10 µg/dl	13,833	24.2%
1998	10 µg/dl	13,205	24.8%
1999	10 µg/dl	14,580	22.9%
2000	10 µg/dl	11,260	31.1%
2001	10 µg/dl	12,743	16.2%
2002	10 µg/dl	11,497	14.6%
2003	10 µg/dl	12,011	13.6%
2004	10 µg/dl	13,249	9.0%
2005	10 µg/dl	11,227	9.1%

Note: Prior to 1996, prevalence rates were not calculated using STELLAR.
 In 2005, data were converted to the MOHSAIC database.

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**Table A-3
 Demographic Profile of Children Screened for Lead Poisoning, City of St. Louis 2005 (N=11,227)**

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	550	4.9	16	2.9	10	1.8	534	97.1	12	2.2	<10	0.5	<10	0.2	0	0.0
1 year old	3,023	26.9	273	9.0	125	4.4	2,750	91.0	214	7.1	55	1.8	<10	0.1	0	0.0
2 years old	1,858	16.5	262	14.1	104	6.2	1,596	85.9	213	11.5	45	2.4	<10	0.1	<10	0.1
3 years old	2,018	18.0	202	10.0	73	4.1	1,816	90.0	170	8.4	29	1.4	<10	0.1	<10	<0.1
4 years old	2,143	19.1	168	7.8	59	3.1	1,975	92.2	140	6.5	27	1.3	<10	<0.1	0	0.0
5 years old	1,635	14.6	104	6.4	35	2.9	1,531	93.6	93	5.7	11	0.7	0	0.0	0	0.0
Gender																
Female	5,529	49.2	490	8.9	217	4.3	5,039	91.1	404	7.3	77	1.4	<10	0.1	<10	<0.1
Male	5,697	50.7	535	9.4	189	3.7	5,162	90.6	438	7.7	93	1.6	<10	<0.1	<10	<0.1
Gender Missing	1	<0.1	0	0.0	0	0.0	<10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Race																
African American	8,067	71.9	860	10.7	343	4.8	7,207	89.3	708	8.8	143	1.8	<10	0.1	<10	0.0
White	2,032	18.1	96	4.7	29	1.5	1,936	95.3	79	3.9	15	0.7	<10	<0.1	<10	<0.1
Asian	157	1.4	<10	2.5	<10	0.7	153	97.4	<10	1.3	<10	1.3	0	0.0	0	0.0
Native American	<10	0.1	0	0.0	0	0.0	<10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Pacific Islander	<10	<0.1	0	0.0	0	0.0	<10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Race Missing	961	8.6	65	6.8	33	3.6	896	93.2	53	5.5	10	1.1	<10	0.2	0	0.0

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**Table A-4
Screening and Childhood Lead Poisoning Rates by ZIP Code, City of St. Louis 2005 (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
63133*	58	2	3.4	1	50.0	1	50.0	113	46.0	54.0	61	14.8	85.2	82.6
63107	1,551	746	48.1	138	18.5	44	7.1	7,929	28.7	71.3	5,655	44.8	55.2	93.2
63113	1,307	632	48.4	86	13.6	37	6.7	8,540	26.4	73.6	6,286	46.9	53.1	95.8
63120	1,079	483	44.8	62	12.8	25	6.0	4,848	18.5	81.5	3,949	58.5	41.5	87.5
63118	3,214	1,364	42.4	173	12.7	65	5.4	15,326	25.6	74.4	11,409	37.4	62.6	92.4
63115	2,050	875	42.7	109	12.5	46	6.0	12,421	19.5	80.5	9,998	55.3	44.7	91.1
63112	1,729	881	51.0	102	11.6	46	5.9	12,574	20.1	79.9	10,045	35.5	64.5	93.6
63110	1,886	659	34.9	71	10.8	27	4.6	10,179	17.8	82.2	8,371	39.3	60.7	88.9
63103	102	63	61.8	5	7.9	2	3.4	3,609	18.6	81.4	2,939	1.3	98.7	65.5
63136	356	197	55.3	15	7.6	4	2.3	1,694	10.5	89.5	1,516	70.5	29.5	76.9
63111	1,889	732	38.8	48	6.6	17	2.5	10,508	16.3	83.7	8,797	44.7	55.3	87.3
63108	714	423	59.2	24	5.7	9	2.3	11,675	13.2	86.8	10,135	26.7	73.3	87.5
63106	1,395	681	48.8	38	5.6	15	2.3	6,250	32.0	68.0	4,247	13.3	86.7	85.2
63116	4,114	1,333	32.4	75	5.6	38	3.0	22,844	10.3	89.7	20,497	57.9	42.1	83.1
63147	915	369	40.3	20	5.4	7	2.1	5,071	12.6	87.4	4,432	66.8	33.2	79.7
63104	1,811	717	39.6	38	5.3	14	2.1	9,847	18.6	81.4	8,016	36.4	63.6	86.4
63123	188	25	13.3	1	4.0	1	4.0	1,246	2.6	97.4	1,214	92.8	7.2	11.7
63109	2,078	577	27.8	17	2.9	7	1.2	15,042	4.5	95.5	14,358	61.8	38.2	81.8
63139	1,517	316	20.8	2	0.6	1	0.3	12,344	6.3	93.7	11,569	61.3	38.7	76.4
63101	78	77	98.7	0	0.0	0	0.0	730	41.2	58.8	429	7.2	92.8	36.1
63102	23	7	30.4	0	0.0	0	0.0	870	24.8	75.2	654	2.1	97.9	74.4
63105	26	8	30.8	0	0.0	0	0.0	727	9.2	90.8	660	46.1	53.9	98.4
63117	31	5	16.1	0	0.0	0	0.0	302	5.3	94.7	286	56.6	43.4	93.5
63119	18	4	22.2	0	0.0	0	0.0	201	3.5	96.5	194	1.5	98.5	44.4
63125	0	7	-	0	0.0	0	0.0	1	0.0	100.0	1	0.0	100.0	20.3
63130	32	4	12.5	0	0.0	0	0.0	154	3.2	96.8	149	59.7	40.3	93.4
63137	75	11	14.7	0	0.0	0	0.0	491	5.9	94.1	462	56.1	43.9	72.6
63138	2	1	50.0	0	0.0	0	0.0	3	33.3	66.7	2	50.0	50.0	75.0
63143	131	22	16.8	0	0.0	0	0.0	815	8.6	91.4	745	66.6	33.4	81.3
Unknown	-	6	-	0	0.0	0	0.0	-	-	-	-	-	-	-
City Total	28,369	11,227	39.6	1,025	9.1	406	4.0	176,354	16.6	83.4	147,076	46.9	53.1	85.3

*ZIP codes with small populations of children under 6 appear to have high screening prevalence rates due to fewer children screened.

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**Table A-5
 Screening and Childhood Lead Poisoning Rates by Ward, City of St. Louis 2005 (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	540	59.5	113	20.9	38	8.7	5,670	28.9	71.1	4,033	44.3	55.7	93.3
Ward - 04	793	416	52.5	69	16.6	25	7.2	6,321	25.2	74.8	4,727	47.2	52.8	94.8
Ward - 20	907	656	72.3	96	14.6	35	6.2	5,693	28.4	71.6	4,076	37.5	62.5	93.3
Ward - 01	940	419	44.6	60	14.3	30	8.0	5,735	19.4	80.6	4,621	58.3	41.7	93.5
Ward - 18	750	402	53.6	50	12.4	21	6.0	6,522	21.5	78.5	5,120	38.0	62.0	93.9
Ward - 22	795	560	70.4	69	12.3	29	6.0	5,585	24.5	75.5	4,214	46.8	53.2	90.9
Ward - 26	870	449	51.6	54	12.0	24	5.9	6,361	21.9	78.1	4,966	35.6	64.4	91.6
Ward - 17	682	311	45.6	37	11.9	16	5.7	7,491	17.3	82.7	6,192	25.0	75.0	85.2
Ward - 27	900	481	53.4	52	10.8	20	4.7	4,669	12.8	87.2	4,073	71.6	28.4	82.7
Ward - 15	1,168	388	33.2	41	10.6	19	5.4	6,437	13.8	86.2	8,846	45.8	54.2	93.4
Ward - 09	1,316	479	36.4	48	10.0	17	4.0	7,048	22.7	77.3	5,449	36.2	63.8	89.6
Ward - 21	956	427	44.7	42	9.8	16	4.3	5,899	16.8	83.2	4,909	54.9	45.1	89.6
Ward - 08	1,279	384	30.0	36	9.4	11	3.2	6,488	15.4	84.6	5,492	37.6	63.4	94.9
Ward - 19	693	312	45.0	27	8.7	12	4.2	5,198	77.5	22.5	4,030	16.6	83.4	87.6
Ward - 06	1,101	458	41.6	34	7.4	14	3.3	6,314	19.8	80.2	5,061	37.4	62.6	82.8
Ward - 25	1,365	636	46.6	44	6.9	20	3.4	6,348	17.2	82.8	5,258	41.6	58.4	91.7
Ward - 05	1,224	623	50.9	42	6.7	16	2.8	6,878	32.6	67.4	4,635	19.9	80.1	84.7
Ward - 02	1,027	351	34.2	22	6.3	7	2.2	4,863	15.6	84.4	4,106	60.1	39.9	78.8
Ward - 11	1,123	335	29.8	21	6.3	6	1.9	6,198	14.7	85.3	5,290	53.5	46.5	79.9
Ward - 07	1,097	351	32.0	20	5.7	7	2.2	7,926	23.4	77.6	6,154	23.6	76.4	87.9
Ward - 14	1,310	340	26.0	16	4.7	6	1.9	5,874	8.3	91.7	5,388	55.6	44.4	92.4
Ward - 13	1,389	275	19.8	12	4.4	6	2.3	5,987	8.4	91.6	5,484	65.3	34.7	92.9
Ward - 10	1,464	267	18.2	11	4.1	6	2.3	6,996	8.9	91.1	6,374	46.9	53.1	77.4
Ward - 28	544	131	24.1	3	2.3	1	0.8	7,803	9.6	90.4	7,055	32.5	67.5	93.3
Ward - 12	940	179	19.0	2	1.1	1	0.6	6,476	4.4	95.6	6,193	70.6	29.4	53.7
Ward - 16	1,034	240	23.2	2	0.8	1	0.4	6,490	3.0	97.0	6,297	69.0	31.0	74.1
Ward - 24	832	150	18.0	1	0.7	1	0.7	6,819	92.7	7.3	6,321	58.5	41.5	79.1
Ward - 23	962	146	15.2	0	0.0	0	0.0	6,265	4.0	96.0	6,012	76.5	23.5	77.5
Not geocoded	-	521	-	1	0.2	1	0.2	-	-	-	-	-	-	-
City Total	28,369	11,227	39.6	1,025	9.1	406	4.0	176,354	14.7	85.3	150,376	46.9	53.1	85.3

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**Table A-6
 Screening and Childhood Lead Poisoning Rates by Neighborhood, City of St. Louis 2005 (Ranked by highest SPR)**

Neighborhood Number	Neighborhood	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
79*	North Riverfront	21	4	19.0	2	50.0	0	0.0	107	27	73	78	53	47
65	Hyde Park	426	170	39.9	41	24.1	7	5.7	1,767	29	71	1,252	35	65
67	Fairground Neighborhood	215	116	54.0	26	22.4	12	12.9	1,216	29	71	866	48	52
78	Hamilton Heights	359	197	54.9	40	20.3	16	10.1	1,852	26	74	1,371	50	51
54	Lewis Place	155	72	46.5	14	19.4	9	14.5	1,045	28	72	757	47	53
57	The Ville	211	88	41.7	16	18.2	6	8.3	1,492	27	73	1,091	36	64
51	Academy	284	136	47.9	24	17.6	11	9.4	1,729	28	72	1,252	54	46
30	Benton Park West	647	303	46.8	52	17.2	16	6.5	2,540	27	73	1,863	73	27
56	The Greater Ville	688	283	41.1	48	17.0	16	6.8	4,221	24	76	3,220	49	51
40*	Kings Oak	17	6	35.3	1	16.7	1	16.7	113	12	87	100	59	41
72	Walnut Park East	456	244	53.5	38	15.6	17	8.2	2,111	19	81	1,710	64	36
36*	Downtown West	36	26	72.2	4	15.4	1	4.8	2,073	20	80	1,654	1	99
28	McRee Town	289	48	16.6	7	14.6	4	9.8	824	35	65	539	22	78
64*	Near North Riverfront	25	7	28.0	1	14.3	0	0.0	157	52	48	75	36	64
59	JeffVanderLou	561	236	42.1	33	14.0	14	6.7	3,463	28	72	1,492	35	66
19	Gravois Park	686	302	44.0	42	13.9	15	5.6	2,818	28	72	2,024	66	34
26*	Compton Heights	98	23	23.5	3	13.0	0	0.0	688	12	88	607	65	35
71	Mark Twain	420	162	38.6	21	13.0	9	6.2	2,281	22	78	1,775	36	64
68	O'Fallon	625	262	41.9	34	13.0	10	4.5	3,269	19	82	2,666	52	48
52	Kingsway West	260	140	53.8	18	12.9	10	7.9	1,978	19	81	1,609	46	54
39	Forest Park Southeast	341	156	45.7	20	12.8	4	2.9	1,831	23	77	1,409	34	66
63	Old North St. Louis	241	87	36.1	11	12.6	5	6.3	1,036	42	59	606	21	79
55	Kingsway East	364	148	40.7	18	12.2	10	7.6	2,162	20	80	1,739	52	48
49*	Visitation Park	79	42	53.2	5	11.9	3	7.5	576	15	84	488	22	78
70*	Mark Twain/I-70 Industrial	51	43	84.3	5	11.6	1	2.6	393	8	92	362	87	14
27	Shaw	811	306	37.7	35	11.5	13	4.9	3,802	18	82	3,120	39	61
66	College Hill	313	158	50.5	18	11.4	6	4.3	1,342	32	69	919	46	54
69	Penrose	545	230	42.2	26	11.3	13	6.3	3,565	15	85	3,028	61	39
50	Wells/Goodfellow	790	389	49.2	44	11.3	20	5.8	4,063	27	73	2,978	46	54
37*	Midtown	65	18	27.7	2	11.1	1	5.9	1,532	19	81	1,442	1	99
58	Vandeventer	182	72	39.6	8	11.1	3	4.6	1,183	29	71	842	50	50
24	Fox Park	384	146	38.0	16	11.0	4	3.3	1,549	30	71	1,101	37	63
60	St. Louis Place	257	135	52.5	14	10.4	6	4.8	1,395	33	67	931	40	60

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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
25	Tower Grove East	693	237	34.2	23	9.7	15	6.9	3,485	21	79	2,766	39	62
16	Duchtown	1,808	871	48.2	81	9.3	35	4.4	8,445	19	81	6,856	41	59
53	Fountain Park	160	77	48.1	7	9.1	0	0.0	1,010	25	75	756	32	68
1	Carondelet	828	278	33.6	25	9.0	8	3.2	4,730	15	85	4,004	52	48
76	Walnut Park West	342	187	54.7	16	8.6	4	2.4	1,592	11	89	1,414	72	28
77	Covenant Blu/Grand Center	237	106	44.7	9	8.5	2	2.1	1,721	27	73	1,252	11	89
15	Tower Grove South	1,270	422	33.2	35	8.3	18	4.6	7,308	14	86	6,316	48	52
29	Tiffany	135	73	54.1	6	8.2	5	7.0	571	12	88	501	25	75
48	West End	635	314	49.4	25	8.0	11	3.8	3,347	22	73	2,317	30	70
22	Benton Park	336	104	31.0	8	7.7	4	4.2	2,377	26	74	1,755	42	58
18	Marine Villa	296	110	37.2	7	6.4	2	2.0	1,576	25	75	1,175	40	61
46	Skinker/DeBaliviere	244	53	21.7	3	5.7	3	6.0	2,348	10	90	2,106	59	42
74	Baden	695	269	38.7	15	5.6	6	2.4	3,697	14	86	3,184	57	43
14	North Hampton	520	149	28.7	7	4.7	4	2.8	4,524	5	95	4,279	48	53
38	Central West End	451	138	30.6	6	4.3	2	1.5	9,572	11	89	8,488	26	74
3	Holly Hills	317	70	22.1	3	4.3	1	1.5	1,887	8	92	1,734	58	42
31	The Gate District	343	130	37.9	5	3.8	1	0.8	1,636	17	83	1,354	36	64
47	DeBaliviere Place	153	54	35.3	2	3.7	0	0.0	2,409	14	86	2,064	18	82
23	McKinley Heights	236	81	34.3	3	3.7	1	1.3	1,101	24	77	842	27	73
13	Southwest Garden	334	84	25.1	3	3.6	0	0.0	3,188	10	90	2,856	43	57
17	Mount Pleasant	399	171	42.9	6	3.5	3	1.9	2,281	15	85	1,941	31	70
2	Patch	236	86	36.4	3	3.5	1	1.2	1,513	19	81	1,228	51	49
33	Peabody, Darst, Webbe	310	173	55.8	6	3.5	2	1.2	779	28	72	560	3	97
21	Soulard	162	32	19.8	1	3.1	1	3.1	2,216	18	82	1,825	28	72
5	Bevo Mill	1,153	332	28.8	10	3.0	5	1.6	5,984	8	92	5,513	64	36
7	South Hampton	648	234	36.1	7	3.0	0	0.0	3,675	5	95	3,482	66	34
11	Clifton Heights	263	38	14.4	1	2.6	1	2.6	1,642	7	93	1,531	75	25
6	Princeton Heights	608	122	20.1	3	2.5	2	1.7	4,033	5	95	3,817	69	31
61	Carr Square	349	208	59.6	5	2.4	2	1.0	1,327	26	74	966	99	1
73	North Point	261	105	40.2	2	1.9	1	1.0	1,648	3	97	1,592	84	16

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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
4	Boulevard Heights	558	116	20.8	2	1.7	1	0.9	4,093	4	92	3,939	85	16
8	St. Louis Hills	451	79	17.5	1	1.3	1	1.3	4,077	3	97	3,941	57	43
62	Columbus Square	285	115	40.4	1	0.9	0	0.0	1,236	37	63	776	7	93
41	Cheltenham	21	5	23.8	0	0.0	0	0.0	262	10	90	235	55	46
42	Clayton/Tamm	127	30	23.6	0	0.0	0	0.0	1,436	7	93	1,333	53	47
35	Downtown	11	13	-	0	0.0	0	0.0	1,050	35	65	684	1	99
10	Ellendale	137	24	17.5	0	0.0	0	0.0	756	9	91	688	69	31
43	Franz Park	172	26	15.1	0	0.0	0	0.0	1,318	8	92	1,216	67	33
44	Hi-Point	128	30	23.4	0	0.0	0	0.0	1,331	6	94	1,256	49	51
32	Lafayette Square	109	13	11.9	0	0.0	0	0.0	1,007	12	86	888	35	65
9	Lindenwood Park	687	109	15.9	0	0.0	0	0.0	5,032	4	96	4,819	29	71
75	Riverview	18	2	11.1	0	0.0	0	0.0	96	8	92	90	79	21
12	The Hill	157	21	13.4	0	0.0	0	0.0	1,486	7	93	1,385	66	34
45	Wydown/Sinker	26	8	30.8	0	0.0	0	0.0	727	9	91	660	46	54
34	Lasalle	158	52	32.9	0	0.0	0	0.0	650	7	93	606	28	72
	Not geocoded	-	521	-	1	0.2	1	0.2	-	-	-	-	-	-
	City Total	28,369	11,227	39.6	1,025	9.1	406	4.0	176,352	17.2	82.8	145,956	46.9	53.1

* Neighborhoods with small populations of children under 6 appear to have high screening prevalence rates due to fewer children screened.

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**Table A-7
 Screening and Childhood Lead Poisoning Rates by Census Tract, City of St. Louis 2005**

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	38	20.4	1	2.6	1	2.6	1,211	3.5	96.5	91.3	8.7	28.5
101200	194	40	20.6	1	2.5	0	0.0	1,494	2.6	97.4	83.5	16.5	39.6
101300	377	82	21.8	1	1.2	0	0.0	2,207	6.6	93.4	66.4	33.6	91.9
101400	236	72	30.5	4	5.6	1	1.5	1,411	10.6	89.4	60.4	39.6	89.0
101500	290	103	35.5	3	2.9	0	0.0	1,708	17.2	82.8	45.6	54.4	79.4
101800	259	100	38.6	12	12.0	4	4.5	1,658	20.5	79.5	48.6	51.4	84.2
102100	179	51	28.5	0	0.0	0	0.0	1,748	5.8	94.2	40.4	59.6	79.9
102200	428	76	17.8	0	0.0	0	0.0	3,095	3.7	96.3	80.5	19.5	71.4
102300	111	24	21.6	0	0.0	0	0.0	930	4.0	96.0	86.3	13.7	33.4
102400	233	41	17.6	4	9.8	2	5.1	1,211	7.4	92.6	63.0	37.0	93.5
102500	175	26	14.9	0	0.0	0	0.0	1,047	6.5	93.5	70.3	29.7	80.5
103100	203	35	17.2	1	2.9	1	2.9	1,819	2.7	97.3	52.0	48.0	77.4
103400	170	28	16.5	0	0.0	0	0.0	971	4.7	95.3	73.7	26.3	86.3
103600	115	18	15.7	0	0.0	0	0.0	702	4.6	95.4	72.1	27.9	57.5
103700	188	29	15.4	1	3.4	1	3.4	1,461	8.1	91.9	68.1	31.9	89.3
103800	277	42	15.2	0	0.0	0	0.0	1,883	3.9	96.1	81.1	18.9	80.0
103900	90	15	16.7	0	0.0	0	0.0	496	9.5	90.5	75.7	24.3	72.8
104100	191	31	16.2	0	0.0	0	0.0	1,453	8.3	91.7	63.8	36.2	77.1
104200	196	46	23.5	0	0.0	0	0.0	2,091	5.8	94.2	50.3	49.7	83.9
104500	97	26	26.8	1	3.8	1	3.8	1,051	9.2	90.8	53.9	46.1	74.1
105100	155	32	20.6	0	0.0	0	0.0	2,054	10.0	90.0	39.1	60.9	96.1
105200	153	41	26.8	3	7.3	3	7.7	1,629	11.7	88.3	34.1	65.9	81.9
105300	219	111	50.7	11	9.9	4	3.9	1,362	20.9	79.1	25.0	75.0	89.4
105400	282	125	44.3	7	5.6	3	2.5	1,110	27.4	72.6	23.7	76.3	94.0
105500	211	115	54.5	13	11.3	7	6.7	1,518	20.9	79.1	48.0	52.0	93.1
106100	273	157	57.5	33	21.0	15	11.9	1,390	24.5	75.5	49.5	50.5	98.1
106200	300	140	46.7	11	7.9	5	4.0	1,239	30.7	69.3	37.6	62.4	84.9
106300	299	106	35.5	12	11.3	3	3.4	1,411	21.5	78.5	46.9	53.1	90.0
106400	232	130	56.0	23	17.7	13	11.4	1,715	24.8	75.2	48.7	51.3	90.9
106500	219	153	69.9	16	10.5	9	6.4	1,676	20.6	79.4	48.7	51.3	97.7
106600	211	102	48.3	19	18.6	7	7.9	1,208	27.4	72.6	47.8	52.2	97.5
106700	364	147	40.4	18	12.2	10	7.6	2,162	19.6	80.4	52.0	48.0	94.8
107100*	51	43	84.3	5	11.6	1	2.6	393	7.9	92.1	86.5	13.5	82.9
107200	150	77	51.3	11	14.3	7	10.8	707	19.2	80.8	57.1	42.9	80.2
107300	463	235	50.8	16	6.8	4	1.9	2,289	9.0	91.0	74.8	25.2	78.7
107400	306	167	54.6	27	16.2	10	7.0	1,404	18.9	81.1	67.6	32.4	91.1
107500	304	119	39.1	15	12.6	5	4.8	1,064	16.3	83.7	68.5	31.5	93.1
107600	165	71	43.0	9	12.7	5	7.7	1,222	27.2	72.8	57.3	42.7	93.1

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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	123	40.1	15	12.2	6	5.4	2,067	13.7	86.3	62.2	37.8	90.3
108100	296	126	42.6	5	4.0	1	0.9	1,526	11.4	88.6	73.9	26.1	83.4
108200	181	68	37.6	3	4.4	2	3.2	1,240	8.1	91.9	61.1	38.9	77.9
108300	209	87	41.6	5	5.7	3	3.7	1,083	9.9	90.1	71.5	28.5	83.9
108400	104	26	25.0	3	11.5	1	4.2	557	14.9	85.1	39.2	60.8	68.3
108500	63	21	33.3	1	4.8	0	0.0	365	27.4	72.6	36.2	63.8	71.7
109600	383	151	39.4	24	15.9	8	6.3	1,832	15.0	85.0	51.7	48.3	89.4
109700	420	208	49.5	28	13.5	8	4.4	1,899	32.9	67.1	45.2	54.8	85.0
110100	301	114	37.9	16	14.0	7	7.0	1,779	19.5	80.5	58.6	41.4	88.2
110200	306	132	43.1	14	10.6	3	2.7	1,592	21.1	78.9	52.1	47.9	92.7
110300	262	96	36.6	13	13.5	6	7.2	1,744	23.9	76.1	46.6	53.4	94.2
110400	262	106	40.5	24	22.6	9	10.3	1,554	23.9	76.1	49.0	51.0	97.6
110500	181	102	56.4	21	20.6	10	12.2	1,038	29.6	70.4	46.9	53.1	92.9
111100	155	53	34.2	9	17.0	3	7.0	962	29.4	70.6	48.9	51.1	91.8
111200	147	62	42.2	10	16.1	5	9.1	1,098	34.4	65.6	44.0	56.0	95.7
111300	179	77	43.0	10	13.0	2	3.1	1,279	28.1	71.9	36.2	63.8	94.6
111400	151	75	49.7	19	25.3	9	15.3	1,129	29.8	70.2	47.7	52.3	94.1
111500	129	45	34.9	7	15.6	2	5.4	670	27.0	73.0	44.2	55.8	94.1
112100	194	66	34.0	3	4.5	0	0.0	2,753	12.8	87.2	29.4	70.6	89.9
112200	172	84	48.8	11	13.1	5	6.9	990	22.0	78.0	40.2	59.8	97.4
112300	231	124	53.7	17	13.7	6	5.7	1,494	25.0	75.0	39.3	60.7	98.4
112400	107	25	23.4	0	0.0	0	0.0	2,687	9.2	90.8	23.5	76.5	91.5
113100	169	50	29.6	0	0.0	0	0.0	1,784	6.7	93.3	46.6	53.4	69.6
113400	76	19	25.0	1	5.3	0	0.0	509	11.4	88.6	49.0	51.0	77.3
113500	154	19	12.3	0	0.0	0	0.0	1,408	7.0	93.0	67.0	33.0	80.9
114100	614	239	38.9	9	3.8	4	1.7	4,925	5.2	94.8	49.3	50.7	83.4
114200	329	62	18.8	0	0.0	0	0.0	2,698	4.8	95.2	62.7	37.3	65.4
114300	538	122	22.7	5	4.1	0	0.0	2,770	4.5	95.5	74.0	26.0	93.8
115100	321	108	33.6	5	4.6	3	2.9	1,962	6.9	93.1	58.2	41.8	94.7
115200	345	134	38.8	5	3.7	2	1.5	1,699	10.3	89.7	37.0	63.0	82.3
115300	566	290	51.2	15	5.2	8	2.9	2,578	14.5	85.5	62.3	37.7	86.7
115400	304	88	28.9	2	2.3	1	1.2	1,413	10.3	89.7	68.2	31.8	90.6
115500	629	242	38.5	20	8.3	7	3.2	2,987	17.2	82.8	45.3	54.7	95.5
115600	475	199	41.9	8	4.0	4	2.1	2,745	15.0	85.0	32.7	67.3	84.7
115700	377	219	58.1	20	9.1	10	5.0	1,890	19.4	80.6	38.3	61.7	90.5

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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	111	37.4	7	6.3	6	5.7	1,768	11.1	88.9	50.5	49.5	83.3
116200	505	135	26.7	11	8.1	5	4.0	2,458	14.2	85.8	51.3	48.7	96.4
116300	521	205	39.3	21	10.2	10	5.3	3,207	15.3	84.7	37.5	62.5	95.8
116400	597	275	46.1	33	12.0	14	5.6	2,483	23.3	76.7	36.6	63.4	95.0
116500	470	157	33.4	18	11.5	9	6.6	2,266	22.0	78.0	39.2	60.8	95.4
117100	112	29	25.9	2	6.9	0	0.0	1,181	15.3	84.7	20.5	79.5	96.4
117200	765	255	33.3	35	13.7	15	6.9	3,155	19.6	80.4	36.1	63.9	98.2
117300	284	107	37.7	6	5.6	4	3.9	1,487	16.9	83.1	36.0	64.0	94.8
117400	437	146	33.4	16	11.0	9	6.8	2,330	16.4	83.6	43.4	56.6	96.0
118100	247	85	34.4	8	9.4	4	5.1	994	33.0	67.0	34.5	65.5	88.2
118400	20	1	5.0	0	0.0	0	0.0	953	17.3	82.7	0.9	99.1	18.4
118500*	97	41	42.3	5	12.2	1	2.7	363	17.4	82.6	56.3	43.7	77.2
118600	217	95	43.8	14	14.7	1	1.2	1,291	20.3	79.7	34.2	65.8	88.9
119100	152	44	28.9	1	2.3	1	2.3	4,483	11.1	88.9	23.3	76.7	74.1
119200*	90	35	38.9	3	8.6	1	3.1	960	22.6	77.4	45.5	54.5	88.7
119300	111	42	37.8	2	4.8	0	0.0	1,324	13.6	86.4	4.5	95.5	63.1
120100*	58	22	37.9	2	9.1	0	0.0	503	30.6	69.4	37.0	63.0	91.9
120200	144	62	43.1	14	22.6	2	4.3	543	21.5	78.5	38.7	61.3	93.2
120300	164	92	56.1	11	12.0	6	7.1	916	34.3	65.7	40.2	59.8	78.0
121100	80	34	42.5	1	2.9	1	3.0	865	10.8	89.2	1.6	98.4	82.5
121200	311	149	47.9	14	9.4	6	4.4	1,477	33.2	66.8	7.6	92.4	77.6
121300	119	50	42.0	0	0.0	0	0.0	613	30.8	69.2	7.3	92.7	91.7
121400	7	2	28.6	0	0.0	0	0.0	143	37.8	62.2	3.4	96.6	70.7
122100	180	60	33.3	1	1.7	1	1.7	864	11.7	88.3	38.5	61.5	63.1
122200*	0	3	-	2	66.7	0	0.0	2	0.0	100.0	50.0	50.0	50.6

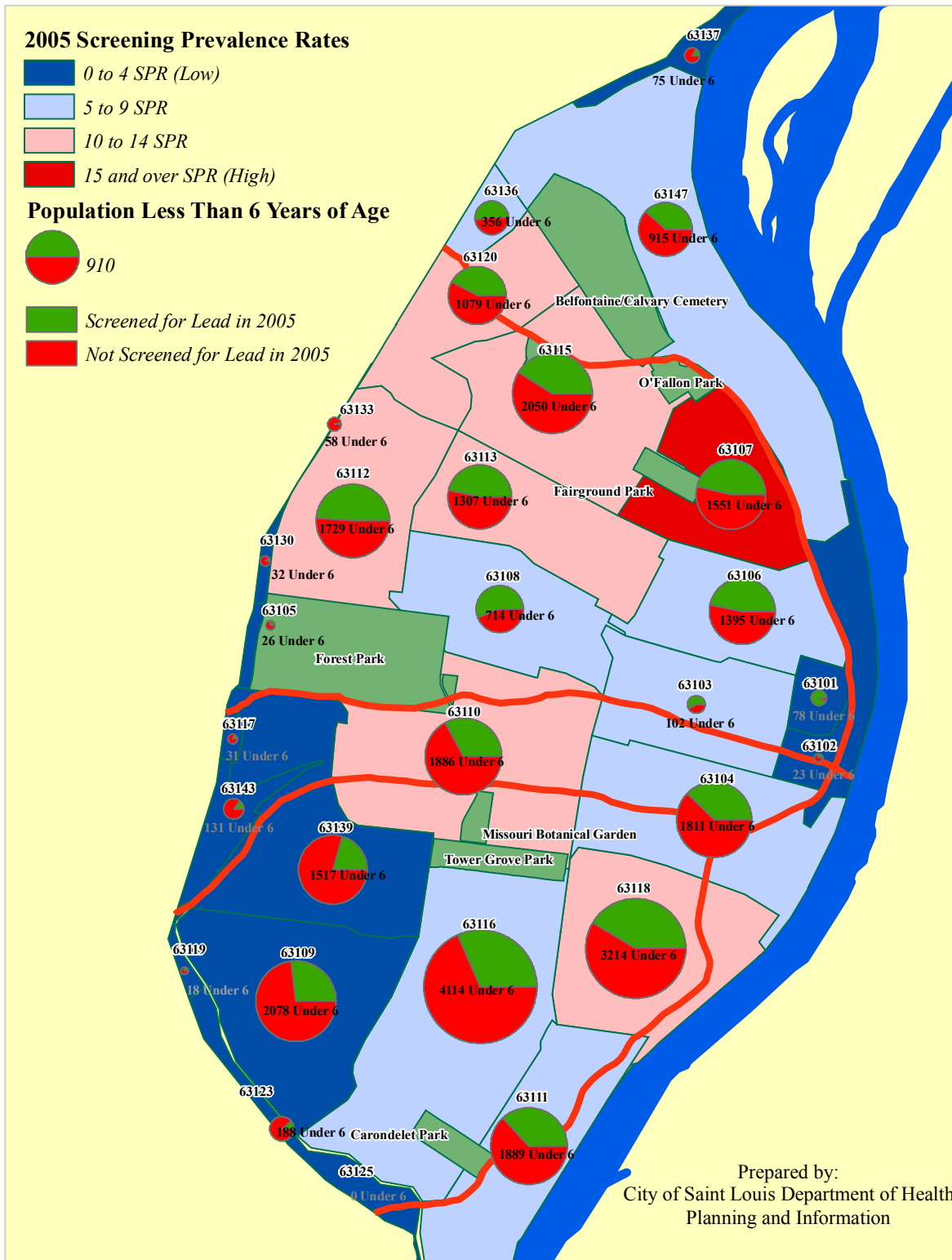
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Census Tract	Population <6 Years	Number Screened	Percent Screened	Number ≥ 10 µg/dl	SPR (%)	New Cases	SIR (%)	Total Housing Units	Percent Vacant	Percent Occupied	Percent Owner Occupied	Percent Renter Occupied	Percent Pre-1950 Housing
122400	433	201	46.4	6	3.0	2	1.0	1,088	17.3	82.7	22.1	77.9	85.8
123100	426	175	41.1	17	9.7	4	2.7	1,973	26.1	73.9	39.5	60.5	87.5
123200	170	50	29.4	2	4.0	1	2.1	1,193	20.2	79.8	36.9	63.1	90.9
123300	288	90	31.3	3	3.3	1	1.2	1,716	20.9	79.1	34.9	65.1	96.0
123400	153	28	18.3	1	3.6	1	3.6	2,070	16.6	83.4	27.1	72.9	87.3
124100	600	251	41.8	47	18.7	14	6.9	2,645	30.2	69.8	35.1	64.9	92.0
124200	477	213	44.7	37	17.4	11	6.3	1,918	28.0	72.0	33.2	66.8	92.5
124300	293	97	33.1	8	8.2	4	4.5	2,145	27.4	72.6	41.5	58.5	95.5
124600	216	76	35.2	5	6.6	1	1.4	1,023	26.6	73.4	41.7	58.3	76.5
125500*	36	23	63.9	2	8.7	1	5.0	1,963	19.1	80.9	1.3	98.7	76.7
125600	52	26	50.0	0	0.0	0	0.0	1,310	29.3	70.7	0.5	99.5	63.1
125700	480	268	55.8	6	2.2	2	0.8	1,795	35.7	64.3	5.1	94.9	32.9
126600	357	137	38.4	16	11.7	6	4.8	1,534	38.9	61.1	28.1	71.9	90.5
126700	214	78	36.4	21	26.9	4	7.3	1,017	30.8	69.2	31.4	68.6	93.1
Not geocoded	-	521	-	1	0.2	1	0.2	-	-	-	-	-	-
City Total	28,369	11,227	39.6	1,025	9.1	406	4.0	176,354	14.7	85.3	46.9	53.1	85.3

* Census tracts with small populations of children under 6 appear to have high screening prevalence rates due to fewer children screened.

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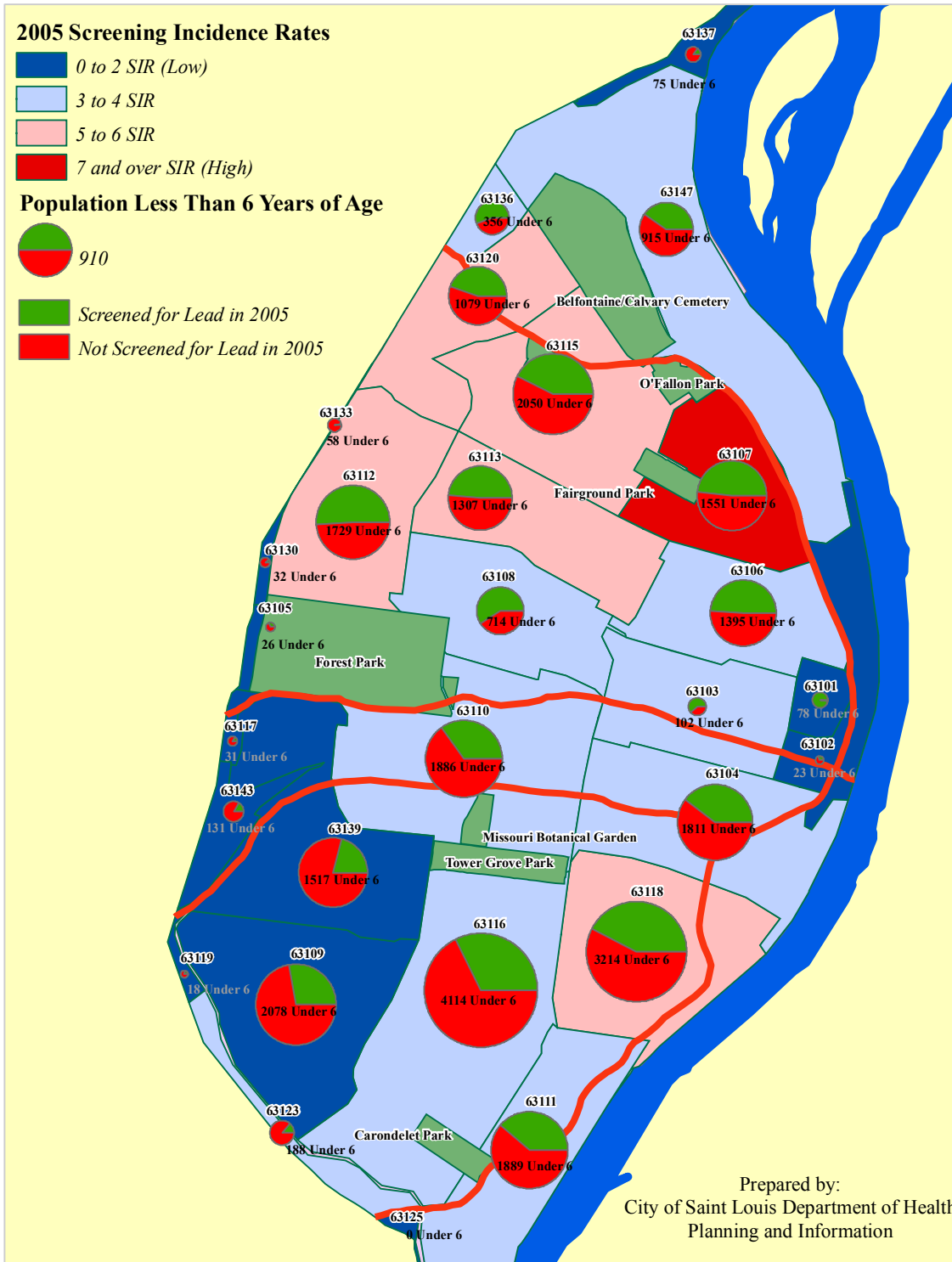
Map B-1
Elevated Blood Lead Level Screening Prevalence Rates by ZIP Code, City of St. Louis 2005



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Map B-2

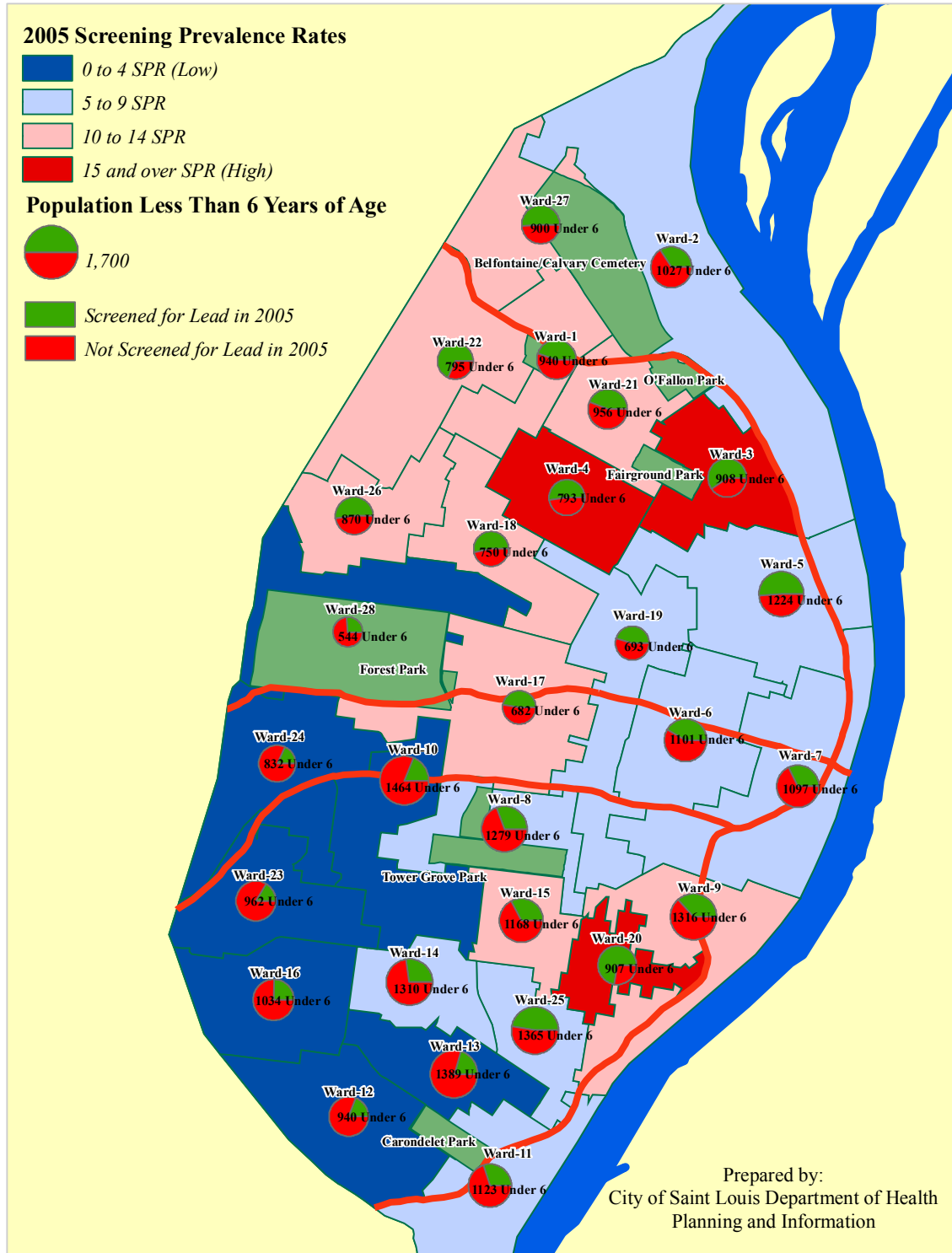
Elevated Blood Lead Level Screening Incidence Rates by ZIP Code, City of St. Louis 2005



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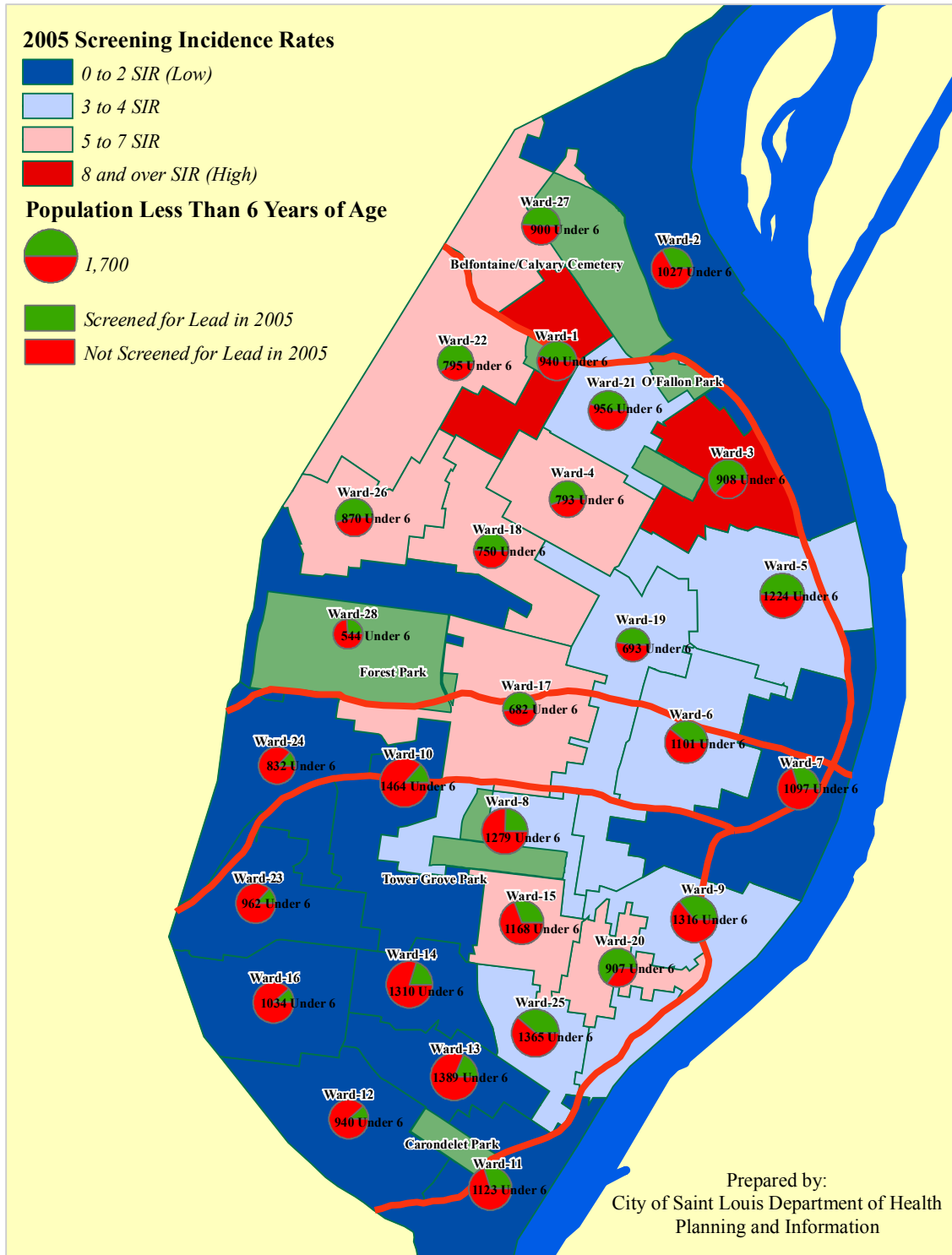
Map B-3

Elevated Blood Lead Level Screening Prevalence Rates by Ward, City of St. Louis 2005



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Map B-4
Elevated Blood Lead Level Screening Incidence Rates by Ward, City of St. Louis 2005



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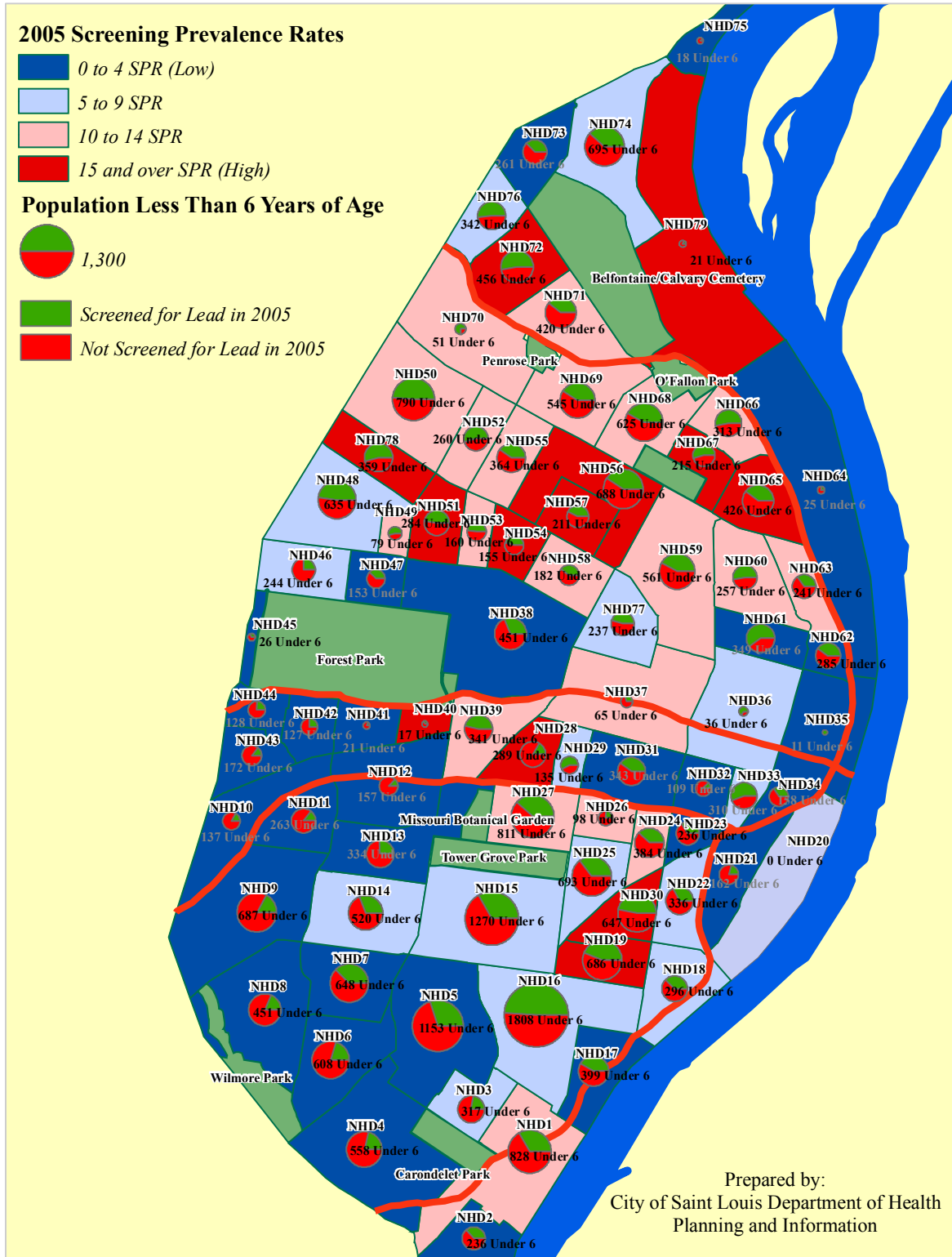
Neighborhood Map Legend
Neighborhood Number and Neighborhood Name

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		

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Map B-5

Elevated Blood Lead Level Screening Prevalence Rates by Neighborhood, City of St. Louis 2005



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Map B-6

Elevated Blood Lead Level Screening Incidence Rates by Neighborhood, City of St. Louis 2005

