Lead Poisoning Surveillance Report

2002

City of Saint Louis
Department of Health

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Statistics at a Glance

2002 Saint Louis City Lead Surveillance

Demographics	
2000 Census population, children < 6 years	
Saint Louis City, MO	28,369
Children in Saint Louis City Screened	11,497
Percent eligible screened	40.5
Mean age in years	2.8
Male Female Ratio	1.06
Race (%)	
Asian	92 (0.8 %)
Black	5994 (52.1 %)
Multiracial	14 (.1 %)
Native American	7 (.1 %)
White	748 (6.5 %)
Other	220 (1.9 %)
Not reported	4422 (38.5 %)
Lead Poisoning, Saint Louis City:	
Prevalent cases (Pb ≥ 10 µg/dl)	1683
Screening Prevalence Rate (%)	14.6
Incident Cases (Pb ≥ 10 µg/dl)	915
Screening Incidence Rate (%)	9.7
Case Distribution	
CDC II (Pb = 10-19 µg/dl)	1423(12.4 %)
CDC III (Pb = 20-44 µg/dl)	245 (2.1 %)
CDC IV (Pb = 45-69 µg/dl)	13 (0.1 %)
CDC V (Pb ≥ 70 µg/dl)	2 (<1 %)
Arithmetic mean blood lead (µg/dl)	6.1
Geometric mean blood lead (µg/dl)	2.0
City Screening Prevalence Rate (2002)	14.6%
State Screening Prevalence Rate (2002)	5.0%
U.S. Estimated Prevalence Rate (NHANES 2000)	2.2 %

NOTE: Screening Prevalence and Incidence Rates and are not based on population sampling. They are most likely to be over estimates of population rates.

Introduction

Although rates have dropped in the last few years, childhood lead poisoning (CLP), defined as a blood lead level of ≥10 micrograms per deciliter (µg/dl) in children <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 St Louis City (14.6%) than in the State of Missouri (5.0%) and the rest of the nation (2.2%). In 2002, CLP in the City of St Louis City accounted for 51.6% of all lead poisoned children in the State of Missouri (1684/3264).

Since 1996, the City of St Louis Department of Health has published annual reports on 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 childhood lead poisoning in the City of St Louis so they can take appropriate action 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 2002, screening for CLP in St Louis City followed guidelines contained in the Missouri Lead Testing Plan. These guidelines incorporated recommendations from the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics and the Missouri Medicaid Program and called for the testing of children <72 months of age at least twice between 12 and 24 months of age. Preferably one test would be at 12 months and another test at 24 months. Such testing would permit the early identification of CLP during a child's most vulnerable years. Furthermore, any child between the ages of 12 and 72 months who had never been tested needed to be tested immediately. Routine annual testing between the ages of 24 to 72 months was then based on a risk assessment. The risk assessment is shown in Appendix A.

Table 1: CDC Classifications of CLP and Follow-up Actions

CDC Class	Blood Lead Level (µg/dl)	CDC/State Action
Class I	<9	No action, acceptable risk
Class II	10 - 19	Risk reduction education
Class II repeat	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 as for Class III
Class V	≥70	Two drug chelation and as for Class III

* St Louis City initiates environmental investigation at 12 µg/dl.

The CDC further recommended annual testing in geographic areas where ≥27% of the housing was built before 1950. Of the 113 census tracts in St Louis City, only one census tract has parcels with pre 1950 buildings below 27%. This tract has only 20 children < 72 months of age. Virtually all St Louis City children qualified for annual testing under this recommendation. Then, as now, a child's primary health care provider should offer screening as part of their routine care.

The CDC, the State of Missouri and the Department of Health all recommend follow-up actions when a child is found to be lead poisoned. The Department of Health provided many of these follow up actions. Table 1 lists these actions and how they vary

by blood lead level. In 2002, the Department of Health provided an environmental investigation to determine the possible sources of lead poisoning for the child who tested at a level of $\geq$ 12 μg/dl.

Surveillance of Childhood Lead Poisoning

Surveillance is the collection and analysis of reports made to the Department of Health of blood lead test results. State regulation and local code (State: 19CSR20-20.020, 19CSR20-20.080, City: Chapters 11.22.070 and 11.56.210) require the reporting of all blood lead test reports whether elevated or not to the local health department.

The Department of Health is responsible for the daily entry of lead test results for those children who reside in the City into the **S**ystematic **T**racking of **E**levated **L**ead **L**evels and **R**emediation or STELLAR. The software is provided by the CDC in Atlanta, GA.

Report Preparation Methods

To produce this report, lead test results are exported from STELLAR and then cleaned, coded and analyzed in Microsoft Office 97 (Microsoft, Redmond, WA) and SPSS version 11.5 (SPSS, Chicago, IL). There are often multiple laboratory tests for each child in a calendar year. A feature in STELLAR was used to select each child's most significant test for 2002. The definition of a surveillance significant test is:

1) the highest venous test in the 2002, or
2) the second of two capillary tests within 12 weeks, or
3) the first capillary within 2002 if only capillary tests are recorded.

The Missouri Department of Health and Senior Services provided extensive research in identifying missing addresses for many of the reports.

To determine zip code, ward, neighborhood and census tract for each child with a valid address, data were geocoded using ArcView 3.3 (ESRI, Inc. Redlands, CA) and through a spatial join, the appropriate zip code, census tract, ward or neighborhood was obtained.

Indicators of CLP morbidity are represented as Screening Incidence and Screening Prevalence Rates (SIR and SPR respectively). These rates are based on surveillance data that are not a random sample of the population and therefore can not be generalized to represent the entire population. The SIR is the percent of new cases of lead poisoning among those tested in 2002. These are children who until 2002 have never had an elevated blood lead level (EBLL Pb $\geq$ 10 μg/dl). It is the better measure of risk because it quantifies those children who acquired an EBLL in the most recent time period. The SPR of CLP is the percent of children with blood lead levels $\geq$ 10 μg/dl. It includes <u>all</u> children with an EBLL in 2002. Some of these children are those who had had an elevated test in previous years and have remained elevated into 2002. The SPR takes into consideration that children became poisoned and continue to have an elevated blood lead level for several years. It is the better measure of the magnitude of the CLP problem.

Population and most housing data in the report are from the 2000 US Census. Pre-1950 housing figures are from the City of St Louis Assessor's Office.

2002 Surveillance Results

Screening for Lead Poisoning

Table 2: Percent of Children Screened By Year

Year	Number Tested	Percent Screened
1998	14197	50.0
1999	11676	41.2
2000	11260	39.7
2002	11497	40.5

< 72 Month population (28,369) 2000 Census

Table 2 shows the overall screening rates for the past 4 years. In 2002, 40.5% (11,497/28,369) of city children < 72 months of age of age were screened. It is important to note that data from 1998 and 1999 contain some non-City children shared between St Louis City and St Louis County.

Table 3 shows CLP by age groups. Looking within age groups, the highest screening rate (70.4%) is for children 12-23 months of age. This is the age range for which the first recommended screening should occur. However, a similar peak in screenings should be seen in the 24-35 months range when the second recommended screening test is to occur on all children. Only 44.4% of these children were screened.

Table 3: Percent of Children Screened by Age Group

Age Group	Number Screened	Population <72 months*	Percent Screened
12 to 23 months	3348	4755	70.4
24 to 35 months	2079	4680	44.4
36 to 47 months	204	4605	4.4

*** 2000 Census**

Blood Lead Test Results

As mentioned earlier, the SPR of CLP is the percent of all children tested with blood lead levels ≥ 10 μg/dl. It includes those who tested elevated for the first time (incident cases) and those tested elevated again after having had an EBLL in a previous year. 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 overall SIR for the City of St Louis is 9.7% and the SPR is 14.6%; lower than in previous years. However, this decrease is insufficient evidence upon which to say 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.

Lead Poisoning Within Age Groups

Table 4 gives the SPR and SIR for 2002 by age group and for all children tested. The highest age-specific SIR for 2002 is 14.3% in the 24-35 month old age group. 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.

Table 4: Elevated Blood Lead Levels by Age Group

Age Group	Children Tested	Percent of All	Number ≥10 µg/dl	SPR (%)	Incident Cases	SIR (%)
Under 6 months	63	0.5	1	1.6	1	1.6
6 to 11 months	634	5.5	18	2.8	18	2.9
12 to 23 months	3348	29.1	403	12.0	358	11.0
24 to 35 months	2079	18.1	408	19.6	254	14.3
36 to 47 months	2004	17.4	354	17.7	140	9.4
48 to 59 months	1967	17.1	289	14.7	86	6.3
60 to 72 months	1402	12.2	210	15.0	58	6.5
Total < 72 months	11497	100.0	1683	14.6	915	9.7

The highest SPR (19.6%) by age group is for those children 24–35 months of age. These children are more active in exploring their environments and also have poor handwashing skills. It is alarming that the SPR rate stays relatively high through the rest of the age groups ≥ 36 months. The longer a child remains elevated the greater the risk of long term damage to their development.

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 are higher among persons

Table 5: Elevated Blood Lead by Race

Race	Number Tested	Percent of All Screened	Number ≥10 µg/dl	SPR (%)	Incident Cases	SIR (%)	% of all ≥10 µg/dl
Black	5994	52.1	1257	21.0	608	13.8	74.7
White	748	6.5	113	15.1	73	11.5	6.7
Asian	92	0.8	6	6.5	5	6.3	0.4
Multiracial	14	0.1	2	14.3	2	18.2	0.1
Native American	7	0.1	1	14.3	0	0.0	0.1
Other	220	1.9	21	9.5	17	8.5	1.2
Missing	4422	38.5	283	6.4	210	5.1	16.8
Total	11497	100.0	1683	14.6	915	9.7	100.0

of color and these factors contribute to CLP. Table 5 shows lead screening information by race. In 2002, the majority of children tested and reported to the Department of Health were Black (52.1% or 5,994/11,497) but close to the overall proportion of Blacks in the population. However, Black children account for 74.7% (1,257/1683) of all lead poisoned children. In 2002, the SPR for black children was 1.4 times than for white children. The SIR for Black children is 1.2 times than for White children (13.8% versus 11.5%) and Black children account for 66.4 % of all newly identified CLP in the City in 2002.

Gender and Lead Poisoning

Table 6 shows the number of children tested by gender and age group. Nearly even numbers of males and females were tested for CLP in 2002 and there is no statistical difference in the number of children with CLP by gender in total or within any age group.

Table 6: Elevated Blood Lead by Age Group and Gender

Age Group in Months	Sex	Number Tested	Percent of Group	Number ≥10 µg/dl	SPR (%)	Incident Cases	SIR (%)
Under 6	Female	29	46.0	0	0.0	0	0.0
	Male	31	49.2	1	3.2	1	3.2
	Unknown	3	4.8	0	0.0	0	0.0
	Group Total	63	100.0	1	1.6	1	1.6
6 to 11	Female	328	51.7	12	3.7	12	3.7
	Male	280	44.2	5	1.8	5	1.8
	Unknown	26	4.1	1	3.8	1	3.8
	Group Total	634	100.0	18	2.8	18	2.9
12 to 23	Female	1550	46.3	188	12.1	162	10.9
	Male	1660	49.6	204	12.3	185	11.4
	Unknown	138	4.1	11	8.0	11	8.0
	Group Total	3348	100.0	403	12.0	358	11.0
24 to 35	Female	986	47.4	193	19.6	120	14.3
	Male	1036	49.8	205	19.8	125	14.2
	Unknown	57	2.7	10	17.5	9	17.6
	Group Total	2079	100.0	408	19.6	254	14.3
36 to 47	Female	962	48.0	163	16.9	64	8.9
	Male	993	49.6	185	18.6	71	9.6
	Unknown	49	2.4	6	12.2	5	11.1
	Group Total	2004	100.0	354	17.7	140	9.4
48 to 59	Female	934	47.5	134	14.3	33	5.2
	Male	1001	50.9	150	15.0	50	7.3
	Unknown	32	1.6	5	15.6	3	10.3
	Group Total	1967	100.0	289	14.7	86	6.3
60 to 72	Female	639	45.6	83	13.0	22	5.3
	Male	744	53.1	126	16.9	35	7.6
	Unknown	19	1.4	1	5.3	1	5.6
	Group Total	1402	100.0	210	15.0	58	6.5
All Ages	Female	5428	47.2	773	14.2	413	9.3
	Male	5745	50.0	876	15.2	472	10.1
	Unknown	324	2.8	34	10.5	30	9.7
	Grand Total	11497	100.0	1683	14.6	915	9.7

Severity of Lead Poisoning

Table 7 shows the distribution of 2002 lead tests results by CDC Class. In 2002, 1,683 or 14.6% of all children tested had elevated blood lead levels. Of these, 12.4% were in Class II (10-19 µg/dl); 2.1% in Class III (20-44 µg/dl); .1% in Class IV (45-69 µg/dl) and .02% in Class V (≥70 ug/dl). 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.

Table 7: CDC Classification of Childhood Lead Poisoning by Age Group

Age Group	Class I <10 µg/dl		Class II 10-19 µg/dl		Class III 20-44 µg/dl		Class IV 45-69 µg/dl		Class V >70 µg/dl		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Under 6 months	62	98.4	0	0.0	1	1.6	0	0.0	0	0.0	63	0.5
6 to 11 months	616	97.2	18	2.8	0	0.0	0	0.0	0	0.0	634	5.5
12 to 23 months	2945	88.0	326	9.7	73	2.2	3	0.1	1	0.0	3348	29.1
24 to 35 months	1671	80.4	337	16.2	65	3.1	5	0.2	1	0.0	2079	18.1
36 to 47 months	1650	82.3	305	15.2	47	2.3	2	0.1	0	0.0	2004	17.4
48 to 59 months	1678	85.3	248	12.6	39	2.0	2	0.1	0	0.0	1967	17.1
60 to 72 months	1192	85.0	189	13.5	20	1.4	1	0.1	0	0.0	1402	12.2
All Ages	9814	85.4	1423	12.4	245	2.1	13	0.1	2	0.02	11497	100.0

Table 8 shows 2002 lead testing results by CDC Class and history of lead poisoning. Of those children in 2002 who tested <10 µg/dl, 12.9% or 1,266 had had an elevated blood lead level in the past. Of those children who had a blood lead level ≥10 µg/dl in 2002, 45.6% or 768 had had a previous elevated blood lead level and 54.4% (915/1683) had never had an elevated blood lead level before 2002. These numbers indicate both a problem of chronic lead poisoning in St Louis children and a substantial risk for children to become poisoned from their environments.

Table 8: Elevated Children by CDC Class and Lead Level History

CDC Classes Not Elevated	Never Elevated		Previously Elevated	
	N	%	N	%
Class I <10 µg/dl	8548	87.1	1266	12.9

CDC Classes Elevated	Continuing Elevated		New Elevation	
	N	%	N	%
Class II 10-19 µg/dl	640	45.0	783	55.0
Class III 20-44 µg/dl	125	51.0	120	49.0
Class IV 45-69 µg/dl	2	15.4	11	84.6
Class V >70 µg/dl	1	50.0	1	50.0
Classes II through V	768	45.6	915	54.4

Seasonality and Lead Poisoning

Table 9: Elevated Blood Lead by Month of Year

Month	Total Tested	Percent of All tested	Number ≥10 µg/dl	SPR (%)	Incident Cases	SIR (%)
January	903	7.9	121	13.4	37	5.5
February	841	7.3	65	7.7	26	3.8
March	822	7.1	111	13.5	58	8.7
April	966	8.4	121	12.5	53	6.8
May	1012	8.8	152	15.0	69	8.5
June	987	8.6	128	13.0	75	8.9
July	1096	9.5	197	18.0	120	13.4
August	1097	9.5	194	17.7	92	10.6
September	1145	10.0	226	19.7	131	14.0
October	1149	10.0	187	16.3	122	12.6
November	809	7.0	100	12.4	66	9.2
December	670	5.8	81	12.1	66	10.8
Total	11497	100	1683	14.6	915	9.7

Table 9 shows lead screening information by month of year. Higher SIRs and SPRs are seen in the summer months and into the fall of the year. This pattern is similar to those of previous years. Regardless of increased screening in the summer months, the increase in cases found is due to greater exposure during the summer months to contaminated soil and dust in homes and when playing outdoors.

Health Providers of Lead Screening

In previous years, community providers such as the Federally Qualified Health Centers and ConnectCare performed the majority of lead screening. In 2001 this trend began to change with private physicians and clinics and hospitals providing a major portion of blood lead screening. (Appendix B) For the 11,497 children screened in 2002, the Federally Qualified Health Centers, ConnectCare and local health departments screened 5,283 (45.9%) children. Private Physicians and Practices and Hospitals screened 6,145 (53.4%). The fact that childhood screening is increasing in private medical facilities is encouraging since screening should be a part of comprehensive health services for all children. This increase may be due to enhanced enforcement of contracts with Managed Medicaid plans regarding mandatory lead screenings. In general, those providers serving low income or uninsured clients and those who target high risk children tend to have higher screening prevalence rates than private practices/physicians and hospitals.

Geography and Lead Poisoning

The use of geography in analysis of lead surveillance can assist in developing targeted programs in high prevalence areas. These activities can be aimed at both primary and secondary prevention. In addition, the use of geography describes the CLP problem on a smaller, more local scale. These maps can help local leaders understand the problem as it affects their community and motivate them to develop, promote and participate in prevention activities. A valid address is necessary for geographic analysis. Address information was available for 94.4% of the children reported; considerably higher than the 82.4 % in 2001. However, research of the Medicaid data base by the Missouri Department of Health and Senior Services was responsible for this increase in known addresses. Geocoding, or assignment of an address to a point location on a map was accomplished for 94.1% of the reports; again considerably higher than the 75.4% for 2001. SIR, SPR, case numbers, percent screened, percent vacant housing and percent owner-occupied housing by geographic area are presented in four intervals by natural breaks in the data. The more intense shading on the map indicates those areas having the higher values.

Zip Code

Appendix C shows lead testing and housing data by zip code. Screening rates by zip code ranged from 0% to 191.4%. Screening rates greater than 100% occur due to the use of Census population data which may not be an exact count of the population. Two zip codes, 63119 (population <72 months =18) and 63125 (population <72 months =0) did not show any screening reported in 2002. All zip codes with any appreciable population < 6 years of age had screening rates higher than 15% compared to five last year. The five zip codes with the highest rates of new cases (SIR) in 2002 are: 63107 (18.0%); 63113 (14.4%); 63118 (13.5%); 63115 (12.7%) and 63110 (12.7%). These same zip codes had the highest SIRs in 2001. The 7 zip codes with the highest prevalence rates in 2002 (all greater than 15%) are: 63107 (26.1%); 63113 (21.3%); 63118 (21.2%); 63115 (18.5%); 63110 (17.9%); 63120 (15.9%) and 63112 (15.6%). These same zip codes had the highest SPRs in 2001. Maps 1 through 6 graphically depict lead screening

and housing data by zip code. The 2002 distribution of SIR and SPR by zip code is similar to that for 2001.

Ward

Lead testing and housing data by ward are shown in Appendix D. Screening rates by ward ranged from 11.2% to 73.7% and screening reports came from every ward. Two wards had screening rates over 70% (Wards 22 and 20) and 4 other wards had rates over 60% (Wards 3, 4, 17 and 27). However, 13 wards had screening rates below 40%: 2, 7, 8, 10, 12, 13, 14, 15, 16, 23, 24, 25, and 28). The five wards with the highest rates of new cases in 2002 are: 3 (19.0%; 24.3% in 2001); 17 (15.9%; 15.9% in 2001); 20 (14.4%; 24.2% in 2001); 4 (13.9%; 19.7% in 2001); and 1 (13.1%; 15.9% in 2001). The five wards with the highest SPRs are: 3 (27.0%; 30.7% in 2002); 20 (22.0%; 33.5% in 2001); 4 (22.5%; 26.9% in 2001); 17 (20.9%; 20.7% in 2001) and 9 (20.5%; 27.3% in 2001). The use of ward to target lead prevention and control activities brings with it an active and established local political committee and local alderperson. Dissemination of this information can assist an alderperson in planning development and housing programs within their wards. Additionally, their involvement in lead prevention activities can enhance visibility about the problem within the community. Maps 7 through 12 graphically depict lead screening and housing data by ward.

Census Tract

Screening rates by census tract ranged from 7.6% to 93.8%. Fifty-five census tracts (48.7%) had screening rates <40%. These are shown in Appendix E. The eleven census tracts with the highest rates of new cases identified in 2002 are: 1114 (25.4%); 1122 (21.9%); 1267 (19.5%); 1064 (19.4%); 1105 (18.6%); 1104 (18.5%); 1066 (18.4%); 1115 (17.8%); 1092 (17.7%) and 1181 (17.5%). The eleven census tracts with the highest prevalence rates in 2002 are: 1114 (37.0%); 1122 (29.8%); 1097 (23.3%); 1267 (29.0%); 1066 (27.8%); 1242 (27.2%); 1104 (23.8%); 1241 (23.8%); 1243 (23.5%); 1064 and 1105 (both 23.1%). Data about housing to the census tract level are available from the 2000 Census and City Assessor's Office. Appendix E presents screening and housing data and Maps 13 through 19 graphically display leads screening and housing data by census tract.

Neighborhood

Screening rates by neighborhood ranged from 0.0% to 133.4%. Screening rates greater than 100% occur due to the use of Census population data which may not be an exact count of the population. In 2002 screening reports came from every neighborhood. Forty neighborhoods (50.6%) had screening rates below 40%. These are shown in Appendix F. The neighborhoods with the highest rates of new cases in 2002 are: Cheltenham (25.0%); Hyde Park, Academy, McRee Town (all 20.8%) and Compton Heights (20.0%). The neighborhoods with the highest prevalence rates in 2002 are: Hyde Park (29.6%); Academy (28.7%), College Hill (28.4%), Fox Park (26.6%) and McRee Town (26.1%). As with ward, the use of neighborhood to target lead prevention and control activities brings with it an active and established infrastructure. Dissemination of this information can assist neighborhood groups in planning for prevention activities and helping residents become aware of the problem and the assistance that is available

through local programs. In comparing zip code and neighborhood maps, you can see that the use of neighborhood boundaries identifies smaller areas for prevention and control than zip code. Maps 20 through 24 graphically depict lead screening and housing data by neighborhood.

Interpretation of the 2002 Annual SPR

In 2002, the SPR decreased for the third consecutive year (2000: 31.1%; 2001: 15.2%; 2002 14.6%). A change in case selection for 2001 to the use of a STELLAR automated method tended to select fewer elevated cases for analysis. However, this difference is usually within a percentage point of the previous method used prior to 2001 and would not account for the drop in SPR from 2001 to 2002.

Of interest is the continued change in testing patterns first noted in 2001. Providers who had previously reported a higher percentage of positives test results were underrepresented in testing in 2001 and 2002. The Women's Infant's and Children's Clinics (WIC) are an example of this bias. Previous low yield providers such as private physicians now show increased testing rates but not substantially higher SPRs. This change in testing pattern may be due to increased enforcement of mandatory testing of all children enrolled in Managed Medicaid health plans. It must be remembered though that the SPR is only an indication for children screened in a given year. The screening rate of children by health care providers in St Louis City is well below the 100% recommended screening rate. Until all children are tested, measurement of the lead poisoning problem in the City through use of the SPR is still subject to variations in screening patterns.

Department of Health Screening Activities

During 2002, the Department of Health offered blood lead testing at its offices and organized off site screenings in the community. The Department of Health tested a total of 1127 children or 9.8% of all children tested in 2002. Table 9 shows the SIR and SPR for these events and the Department of Health contribution to finding lead poisoned children. In 2002, the Department of Health identified 183 lead poisoned children; 10.9% of all children found with CLP in 2002. This is remarkable given that the Department of Health is not the designated primary health care provider for any child living in the City of St Louis. Of these screening formats, the mobile van identified the most of the cases (SPR 25.2%). In warm weather months, this van rotates through neighborhoods to offer outreach, education and screening activities.

Table 9: St Louis City Health Department Screenings for Childhood Lead Poisoning

	Number Screened	Percent of All Screened	Number ≥10 µg/dl	Percent of All Elevated	SPR (%)	Incident Cases	SIR (%)
Van	290	2.5	73	4.3	25.2	49	21.4
Fixed Site	566	4.9	53	3.1	9.4	28	6.0
Lead Clinic	271	2.4	57	3.4	21.0	38	16.7
Total	1127	9.8	183	10.9	16.2	115	10.2

Lead Inspection and Hazard Control

The Lead Inspection and Hazard Control Section of the City Department of Health's Division of Environmental Services offers environmental investigations and remediation support. This 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. Table 10 shows the distribution of referrals for 2002. The majority of reports (75.3%) are clinical referrals, which indicate the inspection was 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 new cases. Occasionally, clinical referrals are made for pregnant women but these are very few. Referrals from the other sources (Citizens Service Bureau, Day Care Centers, the Building Division and Section 8 Housing) are not as 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 amount to 24.8% of all referrals.

Table 10: Inspection Referral Sources

Referrals	2002		2001		01-02
	Number	Percent	Number	Percent	Percent Change
Lead Clinic	1113	75.3	971	69.8	14.6
Citizens Service Bureau	286	19.4	300	21.6	-4.7
Day Care Centers	20	1.4	34	2.4	-41.2
Building Division	13	0.9	38	2.7	-65.8
Section 8 Housing	46	3.1	49	3.5	-6.1
Total	1478	100.0	1392	100.0	6.2

* N=1479; One referral source unknown

Table 11 shows inspection and remediation data. In 2002, 60.3% (719/1193) of the units initially inspected proved to have lead hazards. The property owners were cited with violations under Chapter 11.22.120 of the Saint Louis City Revised Code and given a set time for remediation to take place. The volume of reinspections (4,827) was due to monitoring the progress of these properties towards remediation and for follow up clearance testing after remediation is completed. It is disturbing that an inspection was not permitted by the occupant for 156 housing units and is a serious impediment to the reduction or removal of lead from a child's environment. In 2002, a total of 320 properties were remediated so that the identified lead hazards would not be a danger to other children. This appears to be a decrease from 2001. However, remediation data for 2002 is missing work performed from a few sources. For all housing units remediated by any provider in 2002, the mean length of time from initial inspection to remediation was 298.2 days.

Table 11: Lead Inspection Activity and Remediations

Activity	2002	2001	Percent Change
Dwelling Units Inspected	1193	1076	10.9
Units: Hazardous	719	657	9.4
Percent Hazardous	60.3%	61.1%	-1.3
Reinspections	4827	4733	2.0
Attempts to Inspect	1490	1625	-8.3
Inspections not Permitted	156	113	38.1
Owner/Agent Remediations	223	424	-47.4
Health Department Remediations	97	98	-1.0

An important component of the Department of Health's Childhood Lead Poisoning Program was 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 federal poverty

guidelines and have a child in the home that has had an elevated blood lead level (EBLL). In 2002, the Lead Hazard Control team remediated 97 homes – about the same as the 98 homes in 2001.

When lead hazards are not corrected within the specified time, the property is referred to court for legal action. Table 12 summarizes court action for lead complaints during the year. In 2002, 415 cases relating to lead hazards were on the docket. The dispositions indicate that a few cases are dismissed (2) and relatively fewer cases are resolved than are referred. Bench warrants for failure to show were issued on 62 of the cases although these warrants are not served on defendants. In 2002, 24 defendants were assessed fines for the violations on their properties. The total amount of fines collected in 20021 was $4,600. These funds go to the general revenue account of the court and are not dedicated for any lead prevention or control activity. Of the 415 cases on the docket in 2002, only 40 were abated and only 1 of them was abated on the first setting before the judge.

Table 12: Court Activities for Lead Remediation

Cases on docket	2002	2001	Percent Change
First setting	39	124	-68.5
Continued from previous setting	376	389	-3.3
Total cases on docket	*415*	*513*	*-19.1*
Disposition of Cases			
Warrant	62	102	-39.2
Bond judgment	5	7	-28.6
Continued for trial	46	14	228.6
Continued for action by defendant	138	146	-5.5
Continued for prosecution	2	1	100.0
Stayed for payment	124	166	-25.3
Nolle prosse	4	16	-75.0
Dismissed	2	2	0.0
Dismissed on court costs	7	5	40.0
Cases assessed and fines paid	24	52	-53.8
Other (probation, alternative sentencing, etc)	4	2	100.0
Total disposition of cases	*418*	*513*	*-18.5*
Additional Information			
Number of defendants paying fines	24	51	-52.9
Total fines paid	$4,600.00	$ 8,625.00	-46.7
Average fine paid	$ 191.67	$ 169.12	13.3
Total costs paid	$ 566.00	$ 935.00	-39.5
Number defendants appearing at first setting	13	36	-63.9
Number abated first setting	1	8	-87.5
Total cases abated	40	74	-45.9

Summary

Primary prevention –keeping children from ever becoming poisoned – is the preferred method to address the problem of childhood lead poisoning. This entails providing housing and play areas free from lead contamination for our children, education of anyone who cares for children as to the potential sources and hazards of lead, good nutrition for our children to retard the absorption of lead by their bodies and

closer supervision to keep them safe and away from contaminated areas. Secondary prevention – the early detection and treatment of lead poisoned children (including the removal of lead from their environment on a piece meal basis) is second best but still worthwhile. Ideally, homes should be made lead safe before children live in them and are exposed. Early detection and treatment can help health care providers reduce a child's lead body burden and motivate the care givers to remove lead from the child's environment. However, it is obvious from the screening data for 2002 that children residing in the City of St Louis are not receiving the basic annual lead testing from their primary heath care providers. Over half of our children do not receive this simple test.

The City of St Louis has seen a modest decline in screening prevalence and screening incidence rates from 2001 (16.2% SPR to 14.6%; 10.4% SIR to 9.7%) following the substantial decrease between 2000 (31.1% SPR; 22.9% SIR) and 2001. However, SPR and SIR are only the best available means by which to measure the impact of lead on our children. This modest decline in rates may be due to changes in provider testing patterns. Until all City children receive the recommended annual screening from their primary health care provider, we can not rely on surveillance data to reflect a true picture of childhood lead poisoning in our City.

And finally, these modest decreases in SPR and SIR should not be interpreted that the problem of childhood lead poisoning is any less troublesome for the City of St Louis than in the past. Each year the majority of all children found to be lead poisoned in the State of Missouri reside in the City of St Louis-51.6% in 2002. Even more discouraging is the astounding number of our children who continue to carry a lead burden in their bodies from year to year.

Appendices

Maps

Appendix A: Missouri Lead Testing Plan

1. Universal blood lead testing of all children at least twice in the first 24 months of life, e.g, at 12 and 24 months*. Risk assessments may indicate the need for blood lead testing at an earlier age (6 months) and/or more frequently.

a. the choice of a sample-collection method (venipuncture or capillary) should be determined by the availability of trained personnel, the frequency of false-positive capillary results, convenience, and cost. If children's fingers, heels or earlobes are cleaned carefully, capillary sampling can perform well as an initial testing tool.

b. Confirm capillary results with a venous blood draw if the results are:

- 10 ug/dl or greater
- questionable

2. Immediate blood testing of any child 12 to 72 months of age that does not have a documented blood lead test.

3. Reevaluation of all children less than 6 years of age, for risk of lead poisoning at health care visits (at least annually). For this purpose, a lead risk assessment tool is provided. Conduct a blood lead test for those found to be at risk.

Risk Assessment Tool

Does the child...

( ) Have siblings or playmates who have (or did have) lead poisoning?
( ) Live in or frequently visit a house of daycare built before 1950?
( ) Reside in or visit a house built before 1978 with recent or on going renovations or remodeling within the last six months?
( ) Eat *or* mouth non-food items - pica? *(a perversion of appetite with craving for substances not fit for food, such as dirt, starch, clay, ashes, plaster, etc.)*
( ) Play in bare soil *or* reside in a lead smelting area?
( ) Receive unusual medicines *or* folk remedies?

If answer is yes to any of the above, then perform a blood lead test.

- Test immediately at any age >12 months if no previous tests have been performed.

Appendix B: Health Care Providers of Blood Lead Level Tests, 2002

Provider	Number Screened	Percent of All Screened	Number >10ug/dl	Percent of All Elevated	SPR (%)	Incident Cases	SIR (%)
ST LOUIS CITY HEALTH DEPARTMENT							
Van	290	2.5	73	4.3	25.2	49	21.4
Fixed Site	566	4.9	53	3.1	9.4	28	6.0
Lead Clinic	271	2.4	57	3.4	21.0	38	16.7
STCHD Sub total	1127	9.8	183	10.9	16.2	115	10.2
COINNECTCARE							
Homer G Phillips	286	2.5	79	4.7	27.6	37	19.1
Florence Hill	245	2.1	71	4.2	29.0	34	21.0
Lillian Courtney	322	2.8	46	2.7	14.3	27	11.3
Max Starkloft	547	4.8	94	5.6	17.2	43	11.2
Connect Care Sub total	1400	12.2	290	17.2	20.7	141	10.1
COMMUNITY HEALTH CENTERS							
Grace Hill							
South Jefferson	23	0.2	2	0.1	8.7	2	10.0
Neighborhood	97	0.8	21	1.2	21.6	13	16.5
Soulard	42	0.4	5	0.3	11.9	4	10.8
St Stephens	8	0.1	1	0.1	12.5	1	14.3
Water Tower	59	0.5	10	0.6	16.9	8	15.7
Grace Hill Sub total	*229*	*2.0*	*39*	*2.3*	*17.0*	*28*	*14.4*
Family Care							
Carondelet	468	4.1	68	4.0	14.5	51	12.2
Health Center	289	2.5	69	4.1	23.9	31	13.4
Family Care Sub total	*757*	*6.6*	*137*	*8.1*	*18.1*	*82*	*10.8*
Myrtle Hilliard	607	5.3	147	8.7	24.2	75	17.4
Peoples	909	7.9	101	6.0	11.1	46	6.2
La Clinica	0	0.0	0	0.0	-	0	-
CHCs Sub total	2502	21.8	424	25.2	16.9	231	9.2
HOSPITALS							
Barnes	139	1.2	20	1.2	14.4	15	12.4
Cardinal Glennon	778	6.8	109	6.5	14.0	62	9.5
St Louis Childrens Hospital	1912	16.6	322	19.1	16.8	157	10.2
Forest Park Hospital	64	0.6	8	0.5	12.5	5	9.1
St Louis University Hospital	20	0.2	6	0.4	30.0	2	14.3
Southpointe Medical Center	13	0.1	3	0.2	23.1	3	27.3
Other Hospitals	57	0.5	7	0.4	12.3	5	9.4
Hospital sub total	2983	25.9	475	28.2	15.9	249	8.3
OTHER CATEGORIES							
Clinics/Group Practices	2136	18.6	153	9.1	7.2	95	5.0
Private Physicians	1026	8.9	105	6.2	10.2	61	6.6
Women Infants and Childrens	0	0.0	0	0.0	-	0	-
St Louis County Health Department	254	2.2	31	1.8	12.2	20	9.0
All Others	69	0.6	22	1.3	31.9	3	7.3
Other categories sub total*	3485	30.3	311	18.5	8.9	179	5.8
Grand Total	11497	100.0	1683	100.0	14.6	915	9.7

* Includes 29 where provider was unknown

AppendixC: Screening and Childhood Lead Poisoning Rates and Housing Characteristics by Zip Code														
Zip Code	**Population <6 Years**	**Number Tested**	**% Screened**	**Number ≥10 ug/dl**	**SPR (%)**	**Incident Cases**	**SIR (%)**	**Total Housing Units**	**% Vacant**	**% Occupied**	**Total Occupied**	**% Owner Occupied**	**% Renter Occupied**	**% Pre 1950 Housing**
63101	78	34	43.6	2	5.9	2	6.1	730	41.2	58.8	429	7.2	92.8	36.1
63102	23	10	43.5	0	0.0	0	0.0	870	24.8	75.2	654	2.1	97.9	74.4
63103	102	112	109.8	9	8.0	3	3.2	3609	18.6	81.4	2939	1.3	98.7	65.5
63104	1811	676	37.3	89	13.2	44	7.9	9847	18.6	81.4	8016	36.4	63.6	86.4
63105	26	5	19.2	0	0.0	0	0.0	727	9.2	90.8	660	46.1	53.9	98.4
63106	1395	664	47.6	85	12.8	36	6.8	6250	32.0	68.0	4247	13.3	86.7	85.2
63107	1551	794	51.2	207	26.1	104	18.0	7929	28.7	71.3	5655	44.8	55.2	93.2
63108	714	286	40.1	35	12.2	21	8.8	11675	13.2	86.8	10135	26.7	73.3	87.5
63109	2078	321	15.4	9	2.8	5	1.7	15042	4.5	95.5	14358	61.8	38.2	81.8
63110	1886	726	38.5	130	17.9	75	12.7	10179	17.8	82.2	8371	39.3	60.7	88.9
63111	1889	731	38.7	90	12.3	53	8.6	10508	16.3	83.7	8797	44.7	55.3	87.3
63112	1729	757	43.8	118	15.6	72	12.0	12574	20.1	79.9	10045	35.5	64.5	93.6
63113	1307	642	49.1	137	21.3	71	14.4	8540	26.4	73.6	6286	46.9	53.1	95.8
63115	2050	921	44.9	170	18.5	94	12.7	12421	19.5	80.5	9998	55.3	44.7	91.1
63116	4114	1101	26.8	107	9.7	72	7.4	22844	10.3	89.7	20497	57.9	42.1	83.1
63117	31	5	16.1	0	0.0	0	0.0	302	5.3	94.7	286	56.6	43.4	93.5
63118	3214	1408	43.8	299	21.2	142	13.5	15326	25.6	74.4	11409	37.4	62.6	92.4
63119	18	0	0.0	0	-		-	201	3.5	96.5	194	1.5	98.5	44.4
63120	1079	585	54.2	93	15.9	52	11.0	4848	18.5	81.5	3949	58.5	41.5	87.5
63123	188	1	0.5	0	0.0	0	0.0	1246	2.6	97.4	1214	92.8	7.2	11.7
63125	0	0	-	0	-		-	1	0.0	100.0	1	0.0	100.0	20.3
63130	32	2	6.3	0	0.0	0	0.0	154	3.2	96.8	149	59.7	40.3	93.4
63133	58	111	191.4	8	7.2	5	5.2	113	46.0	54.0	61	14.8	85.2	82.6
63136	356	215	60.4	22	10.2	13	7.1	1694	10.5	89.5	1516	70.5	29.5	76.9
63137	75	45	60.0	0	0.0	0	0.0	491	5.9	94.1	462	56.1	43.9	72.6
63138	2	0	0.0	0	-		-	3	33.3	66.7	2	50.0	50.0	75.0
63139	1517	265	17.5	6	2.3	6	2.4	12344	6.3	93.7	11569	61.3	38.7	76.4
63143	131	23	17.6	1	4.3	0	0.0	815	8.6	91.4	745	66.6	33.4	81.3
63147	915	379	41.4	54	14.2	35	10.7	5071	12.6	87.4	4432	66.8	33.2	79.7
Not geocoded	0	678	-	12	1.8	10	1.5	-	-	-	-	-	-	-
Total	28369	11497	40.5	1683	14.6	915	9.7	176354	16.6	83.4	147076	46.9	53.1	85.3

Appendix D: Screening and Childhood Lead Poisoning Rates and Housing Characteristics by Ward														
Ward	**Population**	**Number Screened**	**Percent Screened**	**Number ≥10 ug/dl**	**SPR (%)**	**Incident Cases**	**SIR (%)**	**Total Housing Units**	**% Vacant**	**% Occupied**	**Total Occupied**	**% Owner Occupied**	**% Renter Occupied**	**% Pre 1950 Housing**
1	940	489	52.0	86	17.6	51	13.1	5735	19.4	80.6	4621	58.3	41.7	93.5
2	1027	364	35.4	51	14.0	31	10.0	4863	15.6	84.4	4106	60.1	39.9	78.8
3	908	588	64.8	159	27.0	80	19.0	5670	28.9	71.1	4033	44.3	55.7	93.3
4	793	476	60.0	107	22.5	51	13.9	6321	25.2	74.8	4727	47.2	52.8	94.8
5	1224	678	55.4	99	14.6	42	7.8	6878	32.6	67.4	4635	19.9	80.1	84.7
6	1101	522	47.4	66	12.6	39	9.0	6314	19.8	80.2	5061	37.4	62.6	82.8
7	1097	401	36.6	68	17.0	28	8.8	7926	23.4	77.6	6154	23.6	76.4	87.9
8	1279	338	26.4	52	15.4	26	9.5	6488	15.4	84.6	5492	37.6	63.4	94.9
9	1316	527	40.0	108	20.5	51	12.7	7048	22.7	77.3	5449	36.2	63.8	89.6
10	1464	207	14.1	14	6.8	10	5.3	6996	8.9	91.1	6374	46.9	53.1	77.4
11	1123	319	28.4	29	9.1	19	6.9	6198	14.7	85.3	5290	53.5	46.5	79.9
12	940	124	13.2	6	4.8	5	4.3	6476	4.4	95.6	6193	70.6	29.4	53.7
13	1389	246	17.7	25	10.2	17	7.9	5987	8.4	91.6	5484	65.3	34.7	92.9
14	1310	262	20.0	22	8.4	15	6.4	5874	8.3	91.7	5388	55.6	44.4	92.4
15	1168	350	30.0	34	9.7	24	7.9	6437	13.8	86.2	8846	45.8	54.2	93.4
16	1034	116	11.2	1	0.9	1	0.9	6490	3.0	97.0	6297	69.0	31.0	74.1
17	682	430	63.0	90	20.9	56	15.9	7491	17.3	82.7	6192	25.0	75.0	85.2
18	750	432	57.6	76	17.6	40	11.6	6522	21.5	78.5	5120	38.0	62.0	93.9
19	693	331	47.8	41	12.4	21	8.1	5198	77.5	22.5	4030	16.6	83.4	87.6
20	907	636	70.1	140	22.0	66	14.4	5693	28.4	71.6	4076	37.5	62.5	93.3
21	956	445	46.5	77	17.3	42	11.5	5899	16.8	83.2	4909	54.9	45.1	89.6
22	795	586	73.7	84	14.3	50	10.5	5585	24.5	75.5	4214	46.8	53.2	90.9
23	962	127	13.2	1	0.8	1	0.8	6265	4.0	96.0	6012	76.5	23.5	77.5
24	832	142	17.1	4	2.8	3	2.3	6819	92.7	7.3	6321	58.5	41.5	79.1
25	1365	513	37.6	65	12.7	34	7.9	6348	17.2	82.8	5258	41.6	58.4	91.7
26	870	482	55.4	76	15.8	48	12.7	6361	21.9	78.1	4966	35.6	64.4	91.6
27	900	573	63.7	84	14.7	52	10.7	4669	12.8	87.2	4073	71.6	28.4	82.7
28	544	115	21.1	6	5.2	2	2.0	7803	9.6	90.4	7055	32.5	67.5	93.3
Not geocoded	-	678	-	12	1.8	10	1.5	-	-	-	-	-	-	-
Total	28369	11497	40.5	1683	14.6	915	9.7	176354	14.7	85.3	150376	46.9	53.1	85.3

Appendix E: Screening and Childhood Lead Poisoning Rates and Housing Characteristics by Census Tract													
2000 Census Tract	**Population <6 years**	**Number Tested**	**% Screened**	**Number >10ug/dl**	**SPR (%)**	**Incident Cases**	**SIR (%)**	**Housing Units**	**% Vacant**	**% Occupied**	**% Owner Occupied**	**% Renter Occupied**	**% Pre1950 Housing**
101100	186	20	10.8	0	0.0	0	0.0	1211	3.5	96.5	91.3	8.7	28.5
101200	194	28	14.4	1	3.6	1	3.8	1494	2.6	97.4	83.5	16.5	39.6
101300	377	67	17.8	4	6.0	3	5.1	2207	6.6	93.4	66.4	33.6	91.9
101400	236	57	24.2	4	7.0	4	7.7	1411	10.6	89.4	60.4	39.6	89.0
101500	290	105	36.2	11	10.5	7	7.9	1708	17.2	82.8	45.6	54.4	79.4
101800	259	107	41.3	10	9.3	5	5.6	1658	20.5	79.5	48.6	51.4	84.2
102100	179	29	16.2	3	10.3	2	7.4	1748	5.8	94.2	40.4	59.6	79.9
102200	428	64	15.0	1	1.6	1	1.6	3095	3.7	96.3	80.5	19.5	71.4
102300	111	20	18.0	1	5.0	1	5.3	930	4	96.0	86.3	13.7	33.4
102400	233	39	16.7	3	7.7	3	8.8	1211	7.4	92.6	63.0	37.0	93.5
102500	175	38	21.7	5	13.2	2	6.1	1047	6.5	93.5	70.3	29.7	80.5
103100	203	33	16.3	0	0.0	0	0.0	1819	2.7	97.3	52.0	48.0	77.4
103400	170	13	7.6	0	0.0	0	0.0	971	4.7	95.3	73.7	26.3	86.3
103600	115	13	11.3	1	7.7	1	7.7	702	4.6	95.4	72.1	27.9	57.5
103700	188	34	18.1	0	0.0	0	0.0	1461	8.1	91.9	68.1	31.9	89.3
103800	277	42	15.2	0	0.0	0	0.0	1883	3.9	96.1	81.1	18.9	80.0
103900	90	12	13.3	0	0.0	0	0.0	496	9.5	90.5	75.7	24.3	72.8
104100	191	45	23.6	2	4.4	1	2.6	1453	8.3	91.7	63.8	36.2	77.1
104200	196	31	15.8	1	3.2	1	3.3	2091	5.8	94.2	50.3	49.7	83.9
104500	97	25	25.8	2	8.0	1	4.8	1051	9.2	90.8	53.9	46.1	74.1
105100	155	20	12.9	0	0.0	0	0.0	2054	10	90.0	39.1	60.9	96.1
105200	153	55	35.9	9	16.4	4	9.8	1629	11.7	88.3	34.1	65.9	81.9
105300	219	91	41.6	17	18.7	11	15.1	1362	20.9	79.1	25.0	75.0	89.4
105400	282	175	62.1	15	8.6	11	7.6	1110	27.4	72.6	23.7	76.3	94.0
105500	211	132	62.6	13	9.8	9	8.4	1518	20.9	79.1	48.0	52.0	93.1
106100	273	154	56.4	29	18.8	19	15.2	1390	24.5	75.5	49.5	50.5	98.1
106200	300	134	44.7	15	11.2	7	6.1	1239	30.7	69.3	37.6	62.4	84.9
106300	299	132	44.1	20	15.2	13	12.4	1411	21.5	78.5	46.9	53.1	90.0
106400	232	130	56.0	30	23.1	20	19.4	1715	24.8	75.2	48.7	51.3	90.9
106500	219	135	61.6	23	17.0	12	11.2	1676	20.6	79.4	48.7	51.3	97.7

Appendix E: Continued

2000 Census Tract	Population <6 years	Number Tested	% Screened	Number >10ug/dl	SPR (%)	Incident Cases	SIR (%)	Housing Units	% Vacant	% Occupied	% Owner Occupied	% Renter Occupied	% Pre1950 Housing
106600	211	108	51.2	30	27.8	14	18.4	1208	27.4	72.6	47.8	52.2	97.5
106700	364	139	38.2	23	16.5	11	9.9	2162	19.6	80.4	52.0	48.0	94.8
107100	51	24	47.1	4	16.7	3	13.6	393	7.9	92.1	86.5	13.5	82.9
107200	150	89	59.3	16	18.0	9	12.5	707	19.2	80.8	57.1	42.9	80.2
107300	463	266	57.5	26	9.8	16	7.0	2289	9	91.0	74.8	25.2	78.7
107400	306	203	66.3	41	20.2	25	15.2	1404	18.9	81.1	67.6	32.4	91.1
107500	304	141	46.4	22	15.6	15	12.9	1064	16.3	83.7	68.5	31.5	95.1
107600	165	83	50.3	8	9.6	5	7.8	1222	27.2	72.8	57.3	42.7	93.1
107700	307	144	46.9	22	15.3	8	7.1	2067	13.7	86.3	62.2	37.8	90.3
108100	296	118	39.9	17	14.4	12	11.5	1526	11.4	88.6	73.9	26.1	83.4
108200	181	48	26.5	5	10.4	2	4.8	1240	8.1	91.9	61.1	38.9	77.9
108300	209	112	53.6	12	10.7	11	10.7	1083	9.9	90.1	71.5	28.5	83.9
108400	104	57	54.8	7	12.3	3	6.5	557	14.9	85.1	39.2	60.8	68.3
108500	63	33	52.4	7	21.2	4	16.0	365	27.4	72.6	36.2	63.8	71.7
109600	383	137	35.8	29	21.2	20	17.2	1832	15	85.0	51.7	48.3	89.4
109700	420	181	43.1	53	29.3	23	17.7	1899	32.9	67.1	45.2	54.8	85.0
110100	301	126	41.9	20	15.9	5	5.2	1779	19.5	80.5	58.6	41.4	88.2
110200	306	131	42.8	27	20.6	14	13.0	1592	21.1	78.9	52.1	47.9	92.7
110300	262	133	50.8	26	19.5	13	12.4	1744	23.9	76.1	46.6	53.4	94.2
110400	262	101	38.5	24	23.8	15	18.5	1554	23.9	76.1	49.0	51.0	97.6
110500	181	117	64.6	27	23.1	16	18.6	1038	29.6	70.4	46.9	53.1	92.9
111100	155	75	48.4	12	16.0	7	12.5	962	29.4	70.6	48.9	51.1	91.8
111200	147	70	47.6	13	18.6	8	14.8	1098	34.4	65.6	44.0	56.0	95.7
111300	179	93	52.0	20	21.5	10	13.7	1279	28.1	71.9	36.2	63.8	94.6
111400	151	100	66.2	37	37.0	18	25.4	1129	29.8	70.2	47.7	52.3	94.1
111500	129	61	47.3	13	21.3	8	17.8	670	27	73.0	44.2	55.8	94.1
112100	194	59	30.4	1	1.7	0	0.0	2753	12.8	87.2	29.4	70.6	89.9
112200	172	94	54.7	28	29.8	16	21.9	990	22	78.0	40.2	59.8	97.4
112300	231	119	51.5	24	20.2	12	13.0	1494	25	75.0	39.3	60.7	98.4
112400	107	24	22.4	1	4.2	1	4.5	2687	9.2	90.8	23.5	76.5	91.5
113100	169	43	25.4	2	4.7	2	5.0	1784	6.7	93.3	46.6	53.4	69.6
113400	76	11	14.5	0	0.0	0	0.0	509	11.4	88.6	49.0	51.0	77.3

Appendix E: Continued

2000 Census Tract	Population <6 years	Number Tested	% Screened	Number >10ug/dl	SPR (%)	Incident Cases	SIR (%)	Housing Units	% Vacant	% Occupied	% Owner Occupied	% Renter Occupied	% Pre1950 Housing
113500	154	20	13.0	1	5.0	1	5.9	1408	7	93.0	67.0	33.0	80.9
114100	614	103	16.8	1	1.0	0	0.0	4925	5.2	94.8	49.3	50.7	83.4
114200	329	55	16.7	1	1.8	1	1.9	2698	4.8	95.2	62.7	37.3	65.4
114300	538	71	13.2	4	5.6	2	3.0	2770	4.5	95.5	74.0	26.0	93.8
115100	321	83	25.9	8	9.6	7	9.5	1962	6.9	93.1	58.2	41.8	94.7
115200	345	122	35.4	13	10.7	11	9.7	1699	10.3	89.7	37.0	63.0	82.3
115300	566	204	36.0	13	6.4	5	2.8	2578	14.5	85.5	62.3	37.7	86.7
115400	304	70	23.0	13	18.6	9	14.8	1413	10.3	89.7	68.2	31.8	90.6
115500	629	245	39.0	30	12.2	16	7.7	2987	17.2	82.8	45.3	54.7	95.5
115600	475	226	47.6	38	16.8	23	12.4	2745	15	85.0	32.7	67.3	84.7
115700	377	160	42.4	25	15.6	13	10.4	1890	19.4	80.6	38.3	61.7	90.5
116100	297	91	30.6	10	11.0	8	9.6	1768	11.1	88.9	50.5	49.5	83.3
116200	505	129	25.5	12	9.3	7	6.4	2458	14.2	85.8	51.3	48.7	96.4
116300	521	174	33.4	20	11.5	13	8.6	3207	15.3	84.7	37.5	62.5	95.8
116400	597	239	40.0	44	18.4	23	12.4	2483	23.3	76.7	36.6	63.4	95.0
116500	470	191	40.6	39	20.4	18	12.3	2266	22	78.0	39.2	60.8	95.4
117100	112	26	23.2	4	15.4	2	9.1	1181	15.3	84.7	20.5	79.5	96.4
117200	765	302	39.5	64	21.2	36	15.1	3155	19.6	80.4	36.1	63.9	98.2
117300	284	117	41.2	13	11.1	8	8.1	1487	16.9	83.1	36.0	64.0	94.8
117400	437	135	30.9	22	16.3	11	9.9	2330	16.4	83.6	43.4	56.6	96.0
118100	247	138	55.9	28	20.3	20	17.5	994	33	67.0	34.5	65.5	88.2
118400	20	5	25.0	0	0.0	0	0.0	953	17.3	82.7	0.9	99.1	18.4
118500	97	22	22.7	2	9.1	2	11.1	363	17.4	82.6	56.3	43.7	77.2
118600	217	91	41.9	17	18.7	10	13.0	1291	20.3	79.7	34.2	65.8	88.9
119100	152	52	34.2	1	1.9	0	0.0	4483	11.1	88.9	23.3	76.7	74.1
119200	90	38	42.2	2	5.3	2	6.7	960	22.6	77.4	45.5	54.5	88.7
119300	111	34	30.6	4	11.8	2	7.4	1324	13.6	86.4	4.5	95.5	63.1
120100	58	35	60.3	7	20.0	3	11.5	503	30.6	69.4	37.0	63.0	91.9
120200	144	80	55.6	18	22.5	10	16.7	543	21.5	78.5	38.7	61.3	93.2
120300	164	110	67.1	23	20.9	10	13.2	916	34.3	65.7	40.2	59.8	78.0
121100	80	75	93.8	9	12.0	3	4.7	865	10.8	89.2	1.6	98.4	82.5
121200	311	102	32.8	10	9.8	5	6.4	1477	33.2	66.8	7.6	92.4	77.6

Appendix E: Continued

2000 Census Tract	Population <6 years	Number Tested	% Screened	Number ≥10ug/dl	SPR (%)	Incident Cases	SIR (%)	Housing Units	% Vacant	% Occupied	% Owner Occupied	% Renter Occupied	% Pre1950 Housing
121300	119	68	57.1	5	7.4	5	8.1	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	76	42.2	6	7.9	5	7.7	864	11.7	88.3	38.5	61.5	63.1
122200	0	12	-	1	8.3	1	11.1	2	0	100.0	50.0	50.0	50.6
122400	433	186	43.0	14	7.5	6	4.0	1088	17.3	82.7	22.1	77.9	85.8
123100	426	200	46.9	44	22.0	19	12.8	1973	26.1	73.9	39.5	60.5	87.5
123200	170	59	34.7	2	3.4	2	3.6	1193	20.2	79.8	36.9	63.1	90.9
123300	288	95	33.0	19	20.0	8	10.3	1716	20.9	79.1	34.9	65.1	96.0
123400	153	44	28.8	6	13.6	3	8.1	2070	16.6	83.4	27.1	72.9	87.3
123500	0	1	-	0	0.0	0	0.0	0	0	0	0	0	0.0
124100	600	282	47.0	67	23.8	27	14.4	2645	30.2	69.8	35.1	64.9	92.0
124200	477	217	45.5	59	27.2	28	17.2	1918	28	72.0	33.2	66.8	92.5
124300	293	119	40.6	28	23.5	12	14.0	2145	27.4	72.6	41.5	58.5	95.5
124600	216	99	45.8	13	13.1	6	8.1	1023	26.6	73.4	41.7	58.3	76.5
125500	36	21	58.3	0	0.0	0	0.0	1963	19.1	80.9	1.3	98.7	76.7
125600	52	16	30.8	0	0.0	0	0.0	1310	29.3	70.7	0.5	99.5	63.1
125700	480	235	49.0	13	5.5	4	1.9	1795	35.7	64.3	5.1	94.9	32.9
126600	357	191	53.5	43	22.5	16	11.7	1534	38.9	61.1	28.1	71.9	90.5
126700	214	131	61.2	38	29.0	17	19.5	1017	30.8	69.2	31.4	68.6	93.1
Not geocoded	-	678	-	12	1.8	10	1.5	-	-	-	-	-	
Total	28369	11497	40.5	1683	14.6	915	9.7	25012	16.6	83.4	46.9	53.1	85.3

Appendix F: Screening and Childhood Lead Poisoning Rates by Neighborhood

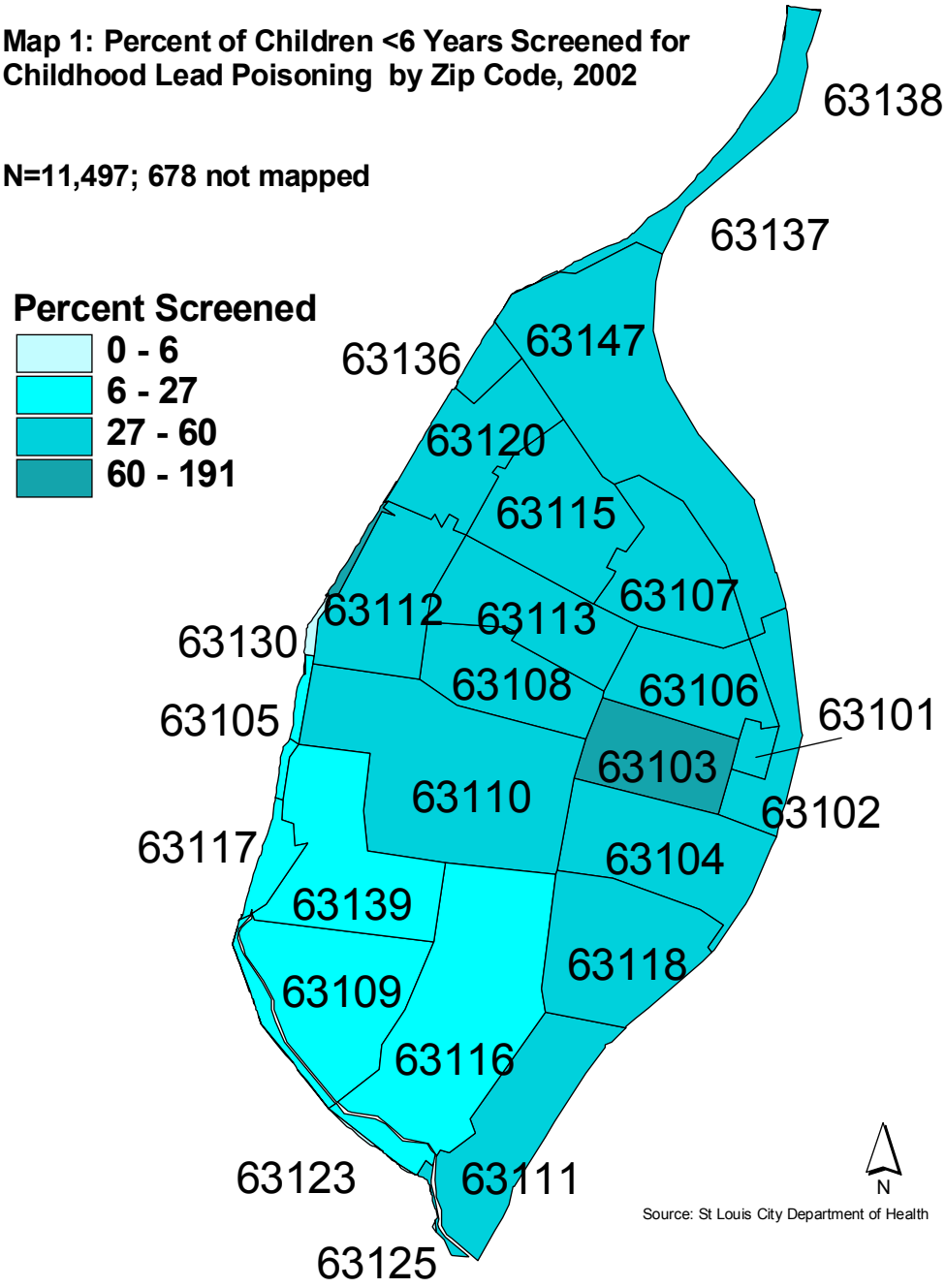
ID Number	Neighborhood	Population <6 Years	Number Tested	% Screened	Number ≥10 ug/dl	SPR (%)	Incident Cases	SIR (%)	Total Housing Units	% Vacant	% Occupied	Total Occupied	% Owner Occupied	% Renter Occupied
51	Academy	284	171	60.2	49	28.7	27	20.8	1729	27.6	72.4	1252	53.8	46.2
74	Baden	695	276	39.7	39	14.1	27	11.3	3697	13.9	86.1	3184	56.6	43.4
22	Benton Park	336	110	32.7	22	20.0	10	11.8	2377	26.2	73.8	1755	42.3	57.7
30	Benton Park West	647	301	46.5	76	25.2	36	15.8	2540	26.7	73.3	1863	73.4	26.6
5	Bevo Mill	1153	303	26.3	32	10.6	22	8.1	5984	7.9	92.1	5513	63.7	36.3
4	Boulevard Heights	558	94	16.8	4	4.3	3	3.5	4093	3.8	92.2	3939	84.5	15.5
1	Carondelet	828	266	32.1	22	8.3	16	6.9	4730	15.4	84.6	4004	51.8	48.2
61	Carr Square	349	198	56.7	6	3.0	3	1.7	1327	25.7	74.3	966	99.4	0.6
38	Central West End	451	141	31.3	6	4.3	3	2.5	9572	11.3	88.7	8488	25.7	74.3
41	Cheltenham	21	5	23.8	1	20.0	1	25.0	262	10.3	89.7	235	54.5	45.5
42	Clayton/Tamm	127	27	21.3	0	0.0	0	0.0	1436	7.2	92.8	1333	52.9	47.1
11	Clifton Heights	263	35	13.3	0	0.0	0	0.0	1642	6.8	93.2	1531	74.9	25.1
66	College Hill	313	116	37.1	33	28.4	14	16.7	1342	31.5	68.5	919	45.6	54.4
62	Columbus Square	285	81	28.4	10	12.3	4	5.6	1236	37.2	62.8	776	7.0	93.0
26	Compton Heights	98	10	10.2	2	20.0	2	20.0	688	11.8	88.2	607	64.7	35.3
77	Covenant Blue/Grand Center	237	93	39.2	14	15.1	4	5.7	1721	27.3	72.7	1252	11.4	88.6
47	DeBaliviere Place	153	46	30.1	1	2.2	0	0.0	2409	14.3	85.7	2064	18.0	82.0
35	Downtown	11	14	127.3	0	0.0	0	0.0	1050	34.9	65.1	684	0.9	99.1
36	Downtown West	36	43	119.4	2	4.7	2	5.6	2073	20.2	79.8	1654	1.4	98.6
16	Dutchtown	1808	683	37.8	96	14.1	47	8.6	8445	18.8	81.2	6856	41.3	58.7
10	Ellendale	137	21	15.3	2	9.5	1	5.6	756	9.0	91.0	688	68.6	31.4
67	Fairground Neighborhood	215	133	61.9	31	23.3	18	18.4	1216	28.8	71.2	866	47.7	52.3
39	Forest Park Southeast	341	188	55.1	39	20.7	25	15.7	1831	23.0	77.0	1409	34.3	65.7
53	Fountain Park	160	68	42.5	15	22.1	8	15.4	1010	25.2	74.8	756	32.0	68.0
24	Fox Park	384	173	45.1	46	26.6	20	16.5	1549	29.8	71.1	1101	36.7	63.3
43	Franz Park	172	39	22.7	1	2.6	1	2.9	1318	7.7	92.3	1216	66.6	33.4
19	Gravois Park	686	304	44.3	66	21.7	28	12.9	2818	28.2	71.8	2024	65.7	34.3
78	Hamilton Heights	359	200	55.7	39	19.5	24	15.0	1852	26.0	74.0	1371	49.5	50.5
44	Hi-Point	128	19	14.8	1	5.3	1	5.6	1331	5.6	94.4	1256	48.8	51.2
3	Holly Hills	317	53	16.7	4	7.5	2	4.4	1887	8.1	91.9	1734	58.4	41.6
65	Hyde Park	426	247	58.0	73	29.6	35	20.8	1767	29.2	70.8	1252	35.2	64.8
59	JeffVanderLou	561	291	51.9	53	18.2	31	14.0	3463	28.0	72	1492	34.5	65.5
40	Kings Oak	17	5	29.4	1	20.0	0	0.0	113	11.5	86.5	100	59.0	41.0
55	Kingsway East	364	139	38.2	23	16.5	11	9.9	2162	19.6	80.4	1739	52.0	48.0
52	Kingsway West	260	149	57.3	24	16.1	17	13.4	1978	18.7	81.3	1609	45.9	54.1
20	Kosciusko	0	4	-	0	0.0	0	0.0	0	0.0	0	0	0.0	0.0
32	Lafayette Square	109	23	21.1	2	8.7	1	4.8	1007	11.8	86.2	888	34.7	65.3
34	Lasalle	158	62	39.2	2	3.2	1	1.8	650	6.8	93.2	606	28.0	72.0
54	Lewis Place	155	98	63.2	19	19.4	12	16.0	1045	27.6	72.4	757	46.6	53.4
9	Lindenwood Park	687	97	14.1	1	1.0	1	1.1	5032	4.2	95.8	4819	29.3	70.7
18	Marine Villa	296	135	45.6	23	17.0	10	10.1	1576	25.4	74.6	1175	39.5	60.5
71	Mark Twain	420	187	44.5	27	14.4	18	11.9	2281	22.2	77.8	1775	35.9	64.1
70	Mark Twain/I-70 Indus	51	24	47.1	4	16.7	3	13.6	393	7.9	92.1	362	86.5	13.5
23	McKinley/Fox	236	90	38.1	15	16.7	6	8.2	1101	23.5	76.5	842	26.7	73.3
28	McRee Town	289	138	47.8	36	26.1	22	20.8	824	34.6	65.4	539	21.7	78.3
37	Midtown	65	35	53.8	3	8.6	1	3.2	1532	18.9	81.1	1442	1.2	98.8
17	Mount Pleasant	399	206	51.6	34	16.5	21	12.4	2281	14.9	85.1	1941	30.5	69.5
64	Near North Riverfront	25	11	44.0	2	18.2	1	11.1	157	52.2	47.8	75	36.0	64.0

Appendix F: Continued

ID Number	Neighborhood	Population <6 Years	Number Tested	% Screened	Number ≥10 ug/dl	SPR (%)	Incident Cases	SIR (%)	Total Housing Units	% Vacant	% Occupied	Total Occupied	% Owner Occupied	% Renter Occupied
14	**North Hampton**	520	111	21.3	2	1.8	1	0.9	4524	5.4	94.6	4279	47.5	52.5
73	**North Point**	261	113	43.3	12	10.6	7	6.9	1648	3.4	96.6	1592	83.7	16.3
79	**North Riverfront**	21	8	38.1	2	25.0	1	16.7	107	27.1	72.9	78	52.6	47.4
68	**O'Fallon**	625	275	44.0	55	20.0	33	14.3	3269	18.5	81.5	2666	52.3	47.7
63	**Old North St. Louis**	241	122	50.6	23	18.9	10	11.0	1036	41.5	58.5	606	21.1	78.9
2	**Patch**	236	92	39.0	11	12.0	6	8.1	1513	18.8	81.2	1228	50.7	49.3
33	**Peabody, Darst, Webbe**	310	163	52.6	13	8.0	7	5.3	779	28.1	71.9	560	3.4	96.6
69	**Penrose**	545	242	44.4	36	14.9	14	7.4	3565	15.1	84.9	3028	61.0	39.0
6	**Princeton Heights**	608	108	17.8	7	6.5	6	6.1	4033	5.4	94.6	3817	68.7	31.3
75	**Riverview**	18	24	133.3	0	0.0	0	0.0	96	8.2	91.8	90	78.9	21.1
27	**Shaw**	811	268	33.0	43	16.0	21	9.9	3802	17.9	82.1	3120	38.9	61.1
46	**Skinker/DeBaliviere**	244	68	27.9	9	13.2	4	7.4	2348	10.3	89.7	2106	58.5	41.5
21	**Soulard**	162	36	22.2	6	16.7	3	10.3	2216	17.6	82.4	1825	27.7	72.3
7	**South Hampton**	648	94	14.5	4	4.3	2	2.3	3675	5.3	94.7	3482	66.3	33.7
13	**Southwest Garden**	334	76	22.8	5	6.6	3	4.4	3188	10.4	89.6	2856	42.8	57.2
8	**St. Louis Hills**	451	42	9.3	0	0.0	0	0.0	4077	3.3	96.7	3941	57.1	42.9
60	**St. Louis Place**	257	170	66.1	40	23.5	14	12.3	1395	33.3	66.7	931	39.9	60.1
31	**The Gate District**	343	146	42.6	12	8.2	8	6.6	1636	17.2	82.8	1354	35.7	64.3
56	**The Greater Ville**	688	313	45.5	67	21.4	32	13.3	4221	23.7	76.3	3220	48.8	51.2
12	**The Hill**	157	23	14.6	1	4.3	1	5.0	1486	6.8	93.2	1385	66.2	33.8
57	**The Ville**	211	124	58.8	32	25.8	16	16.5	1492	26.9	73.1	1091	35.7	64.3
29	**Tiffany**	135	63	46.7	5	7.9	3	5.5	571	12.3	87.7	501	25.2	74.8
25	**Tower Grove East**	693	270	39.0	49	18.1	28	12.7	3485	20.6	79.4	2766	38.5	61.5
15	**Tower Grove South**	1270	376	29.6	45	12.0	31	9.4	7308	13.6	86.4	6316	47.7	52.3
58	**Vandeventer**	182	72	39.6	6	8.3	4	6.5	1183	28.8	71.2	842	50.1	49.9
49	**Visitation Park**	79	32	40.5	5	15.6	1	4.5	576	15.3	84.3	488	22.1	77.9
72	**Walnut Park East**	456	298	65.4	59	19.8	36	14.8	2111	19.0	81.0	1710	64.1	35.9
76	**Walnut Park West**	342	213	62.3	21	9.9	12	6.7	1592	11.2	88.8	1414	72.2	27.8
50	**Wells/Goodfellow**	790	382	48.4	64	16.8	35	11.6	4063	26.7	73.3	2978	46.3	53.7
48	**West End**	635	338	53.2	36	10.7	26	9.4	3347	21.8	72.8	2317	29.9	70.1
45	**Wyoming/Skinker**	26	5	19.2	0	0.0	0	0.0	727	9.2	90.8	660	46.1	53.9
	Not geocoded		678	-	12	1.8	10	1.5	-	-	-	-	-	-
	Total	28369	11497	40.5	1683	14.6	915	9.7	176354	16.6	83.4	147076	46.9	53.1

Map 1: Percent of Children <6 Years Screened for Childhood Lead Poisoning by Zip Code, 2002

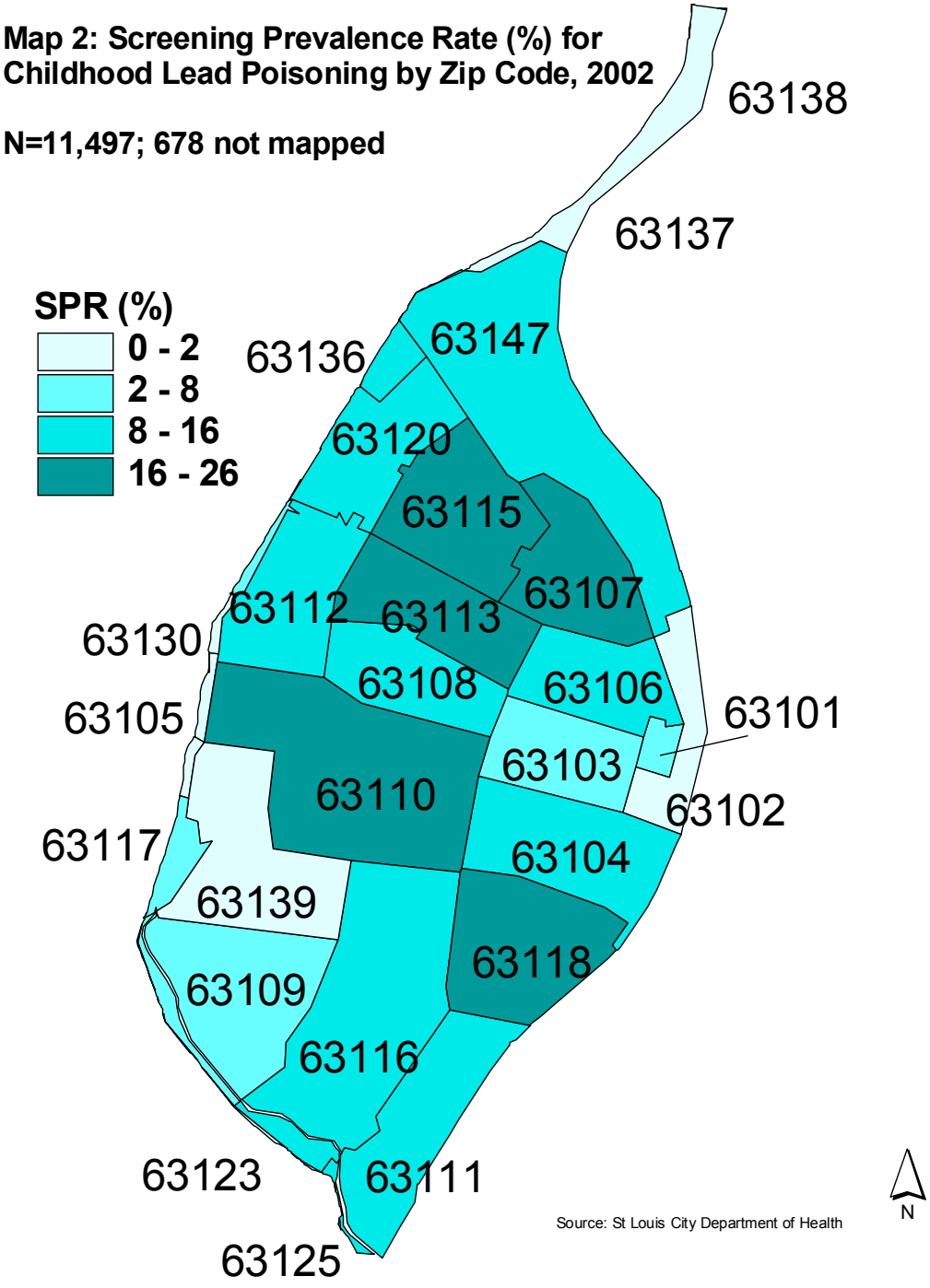
N=11,497; 678 not mapped



Source: St Louis City Department of Health

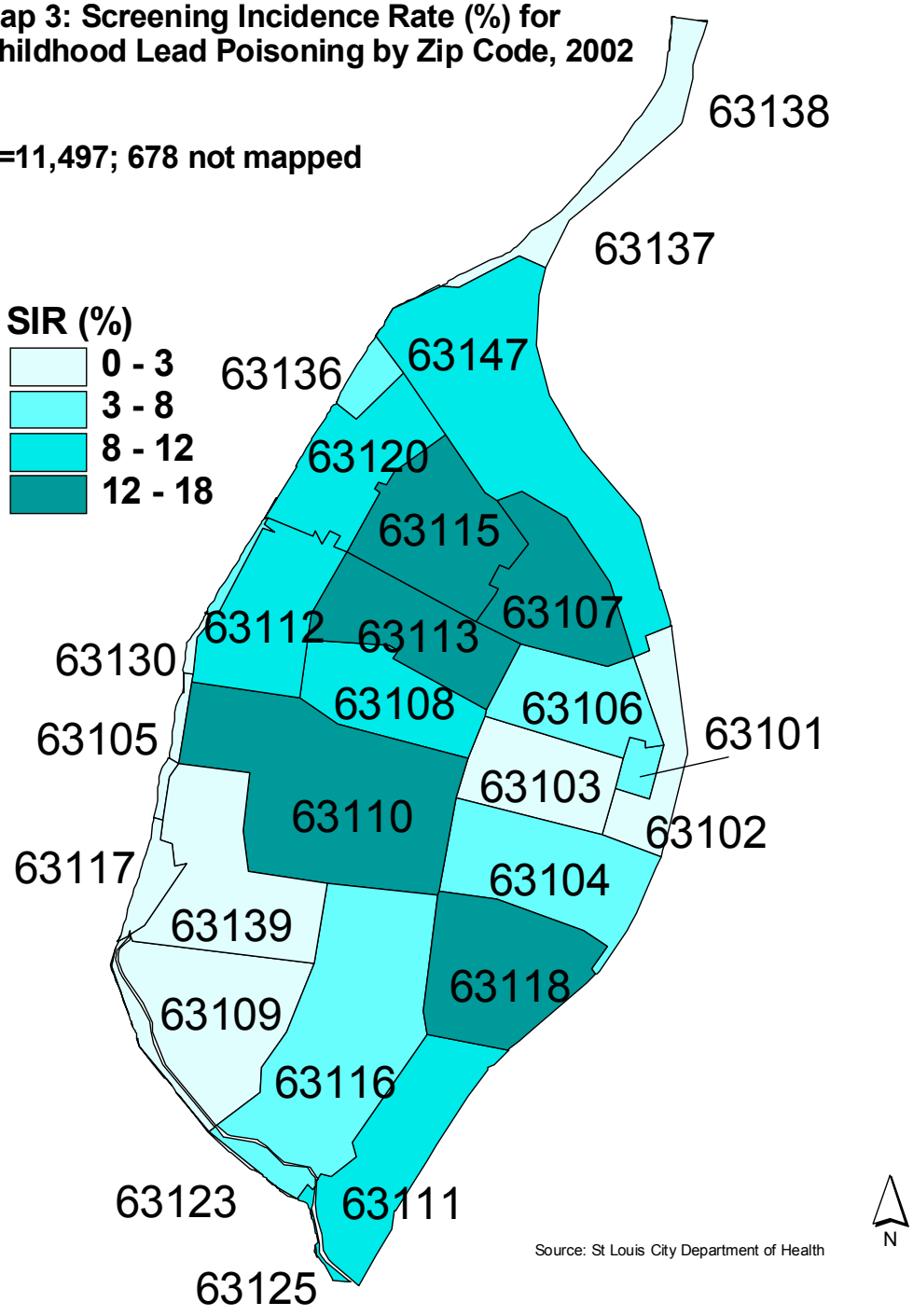
Map 2: Screening Prevalence Rate (%) for Childhood Lead Poisoning by Zip Code, 2002

N=11,497; 678 not mapped

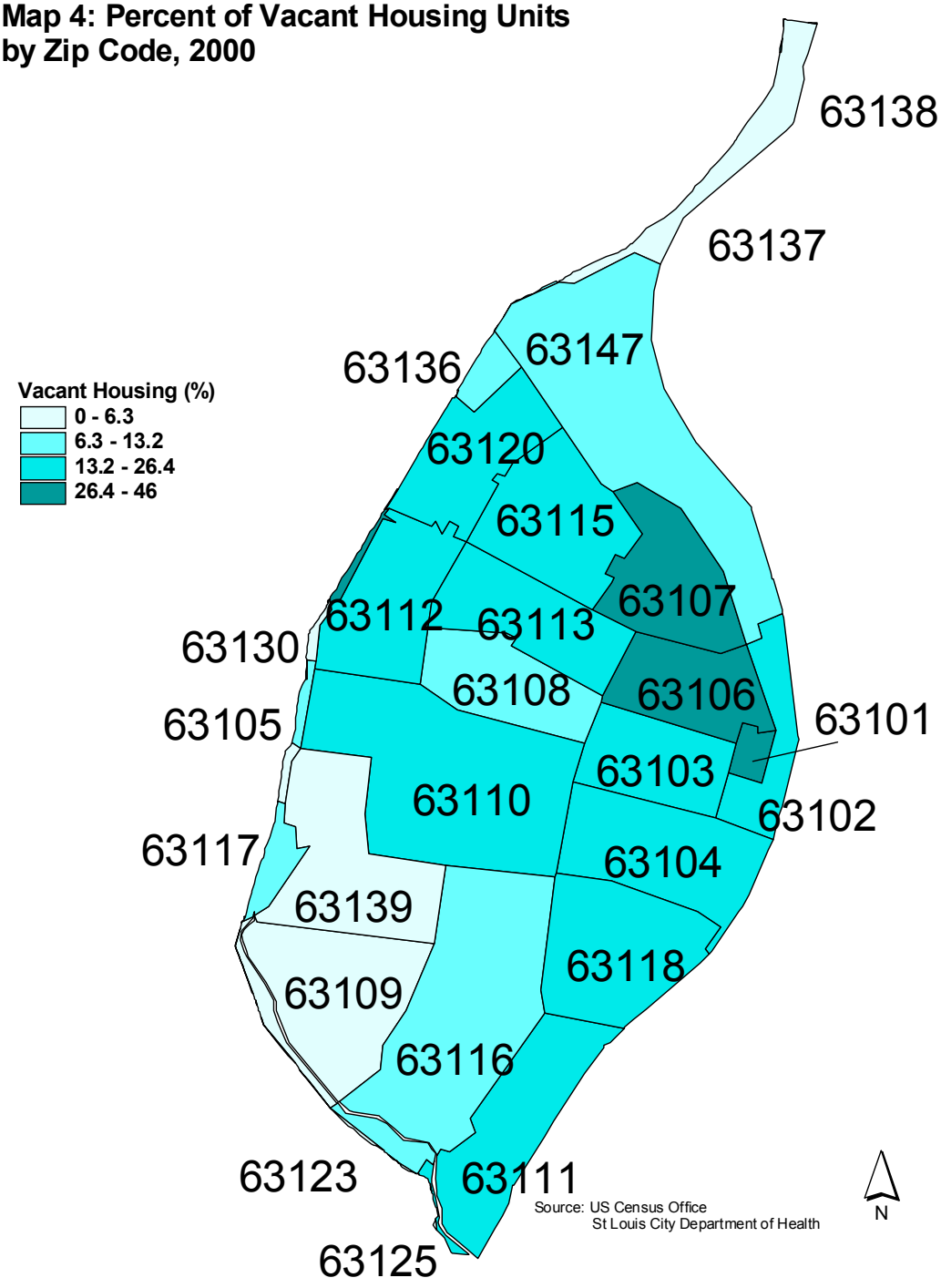


Map 3: Screening Incidence Rate (%) for Childhood Lead Poisoning by Zip Code, 2002

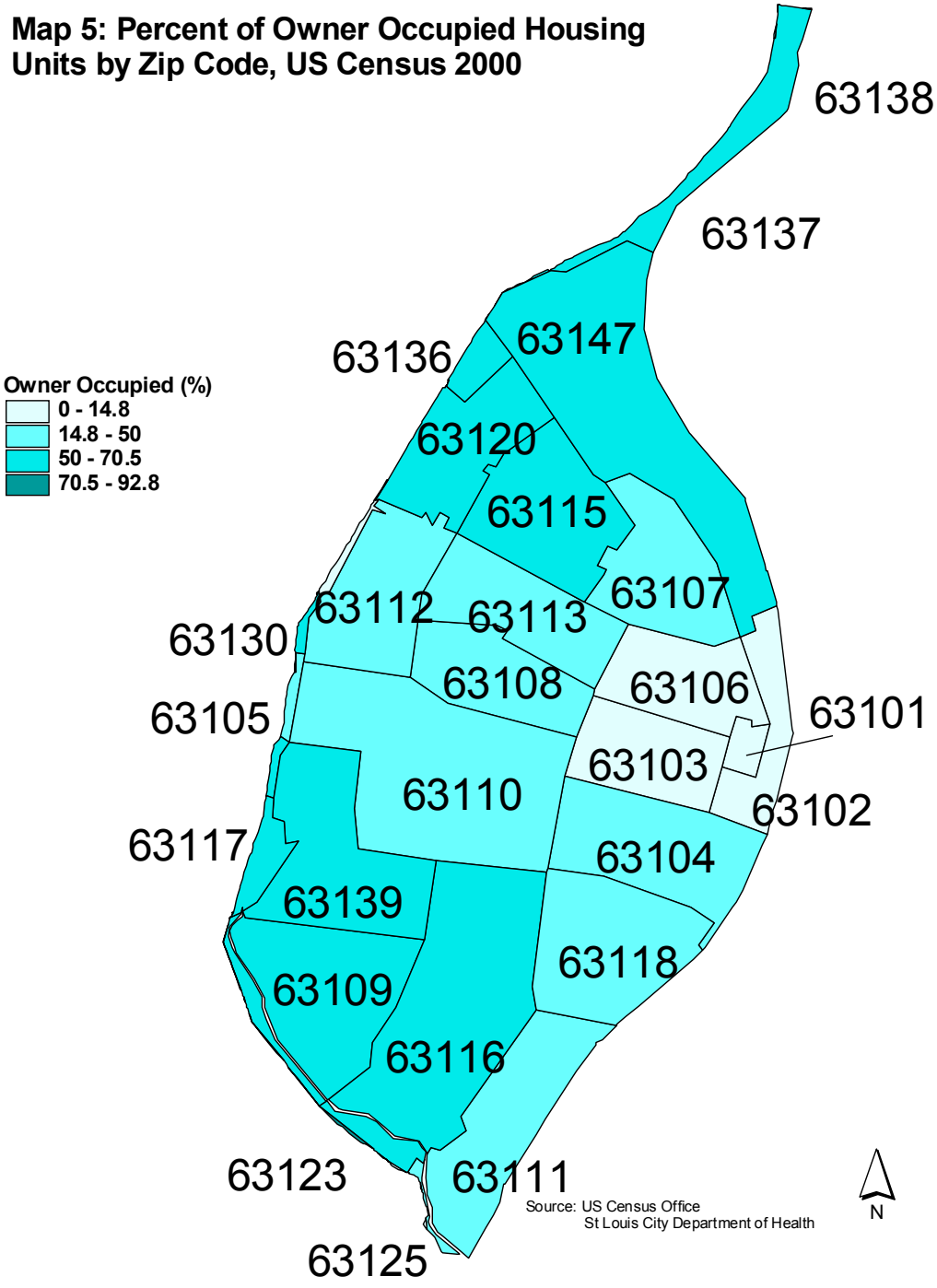
N=11,497; 678 not mapped



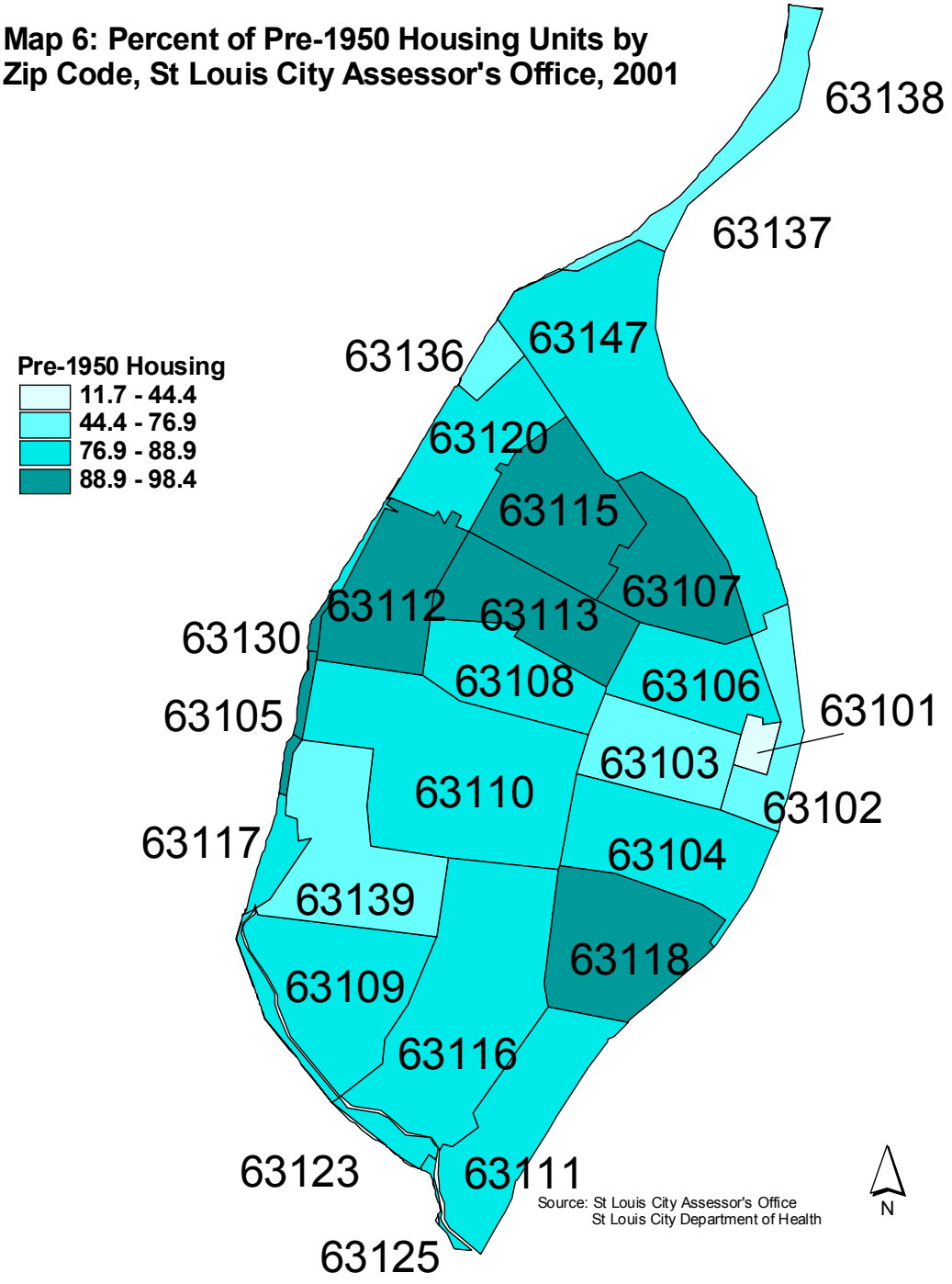
Map 4: Percent of Vacant Housing Units by Zip Code, 2000



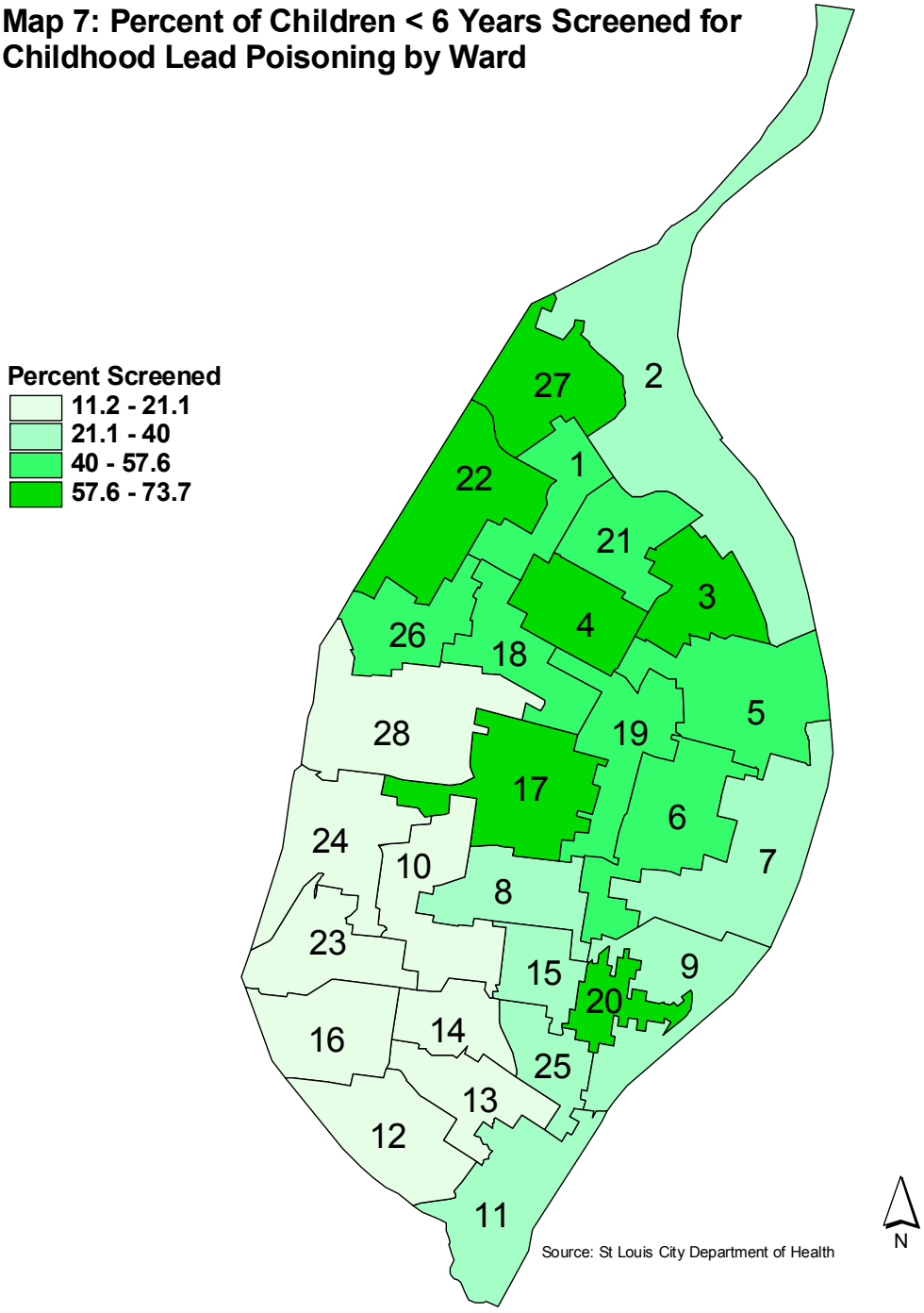
Map 5: Percent of Owner Occupied Housing Units by Zip Code, US Census 2000



Map 6: Percent of Pre-1950 Housing Units by Zip Code, St Louis City Assessor's Office, 2001

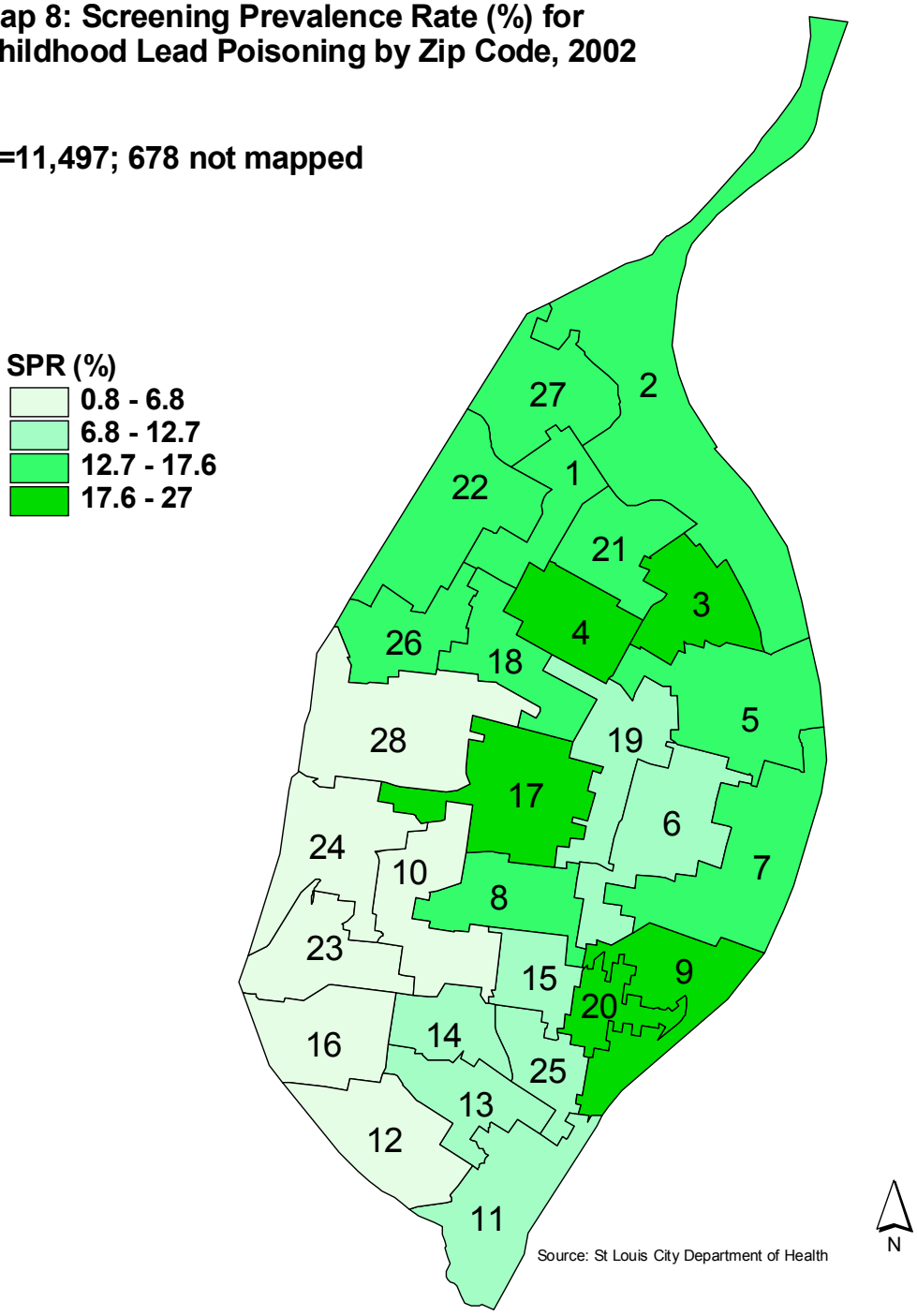


Map 7: Percent of Children < 6 Years Screened for Childhood Lead Poisoning by Ward



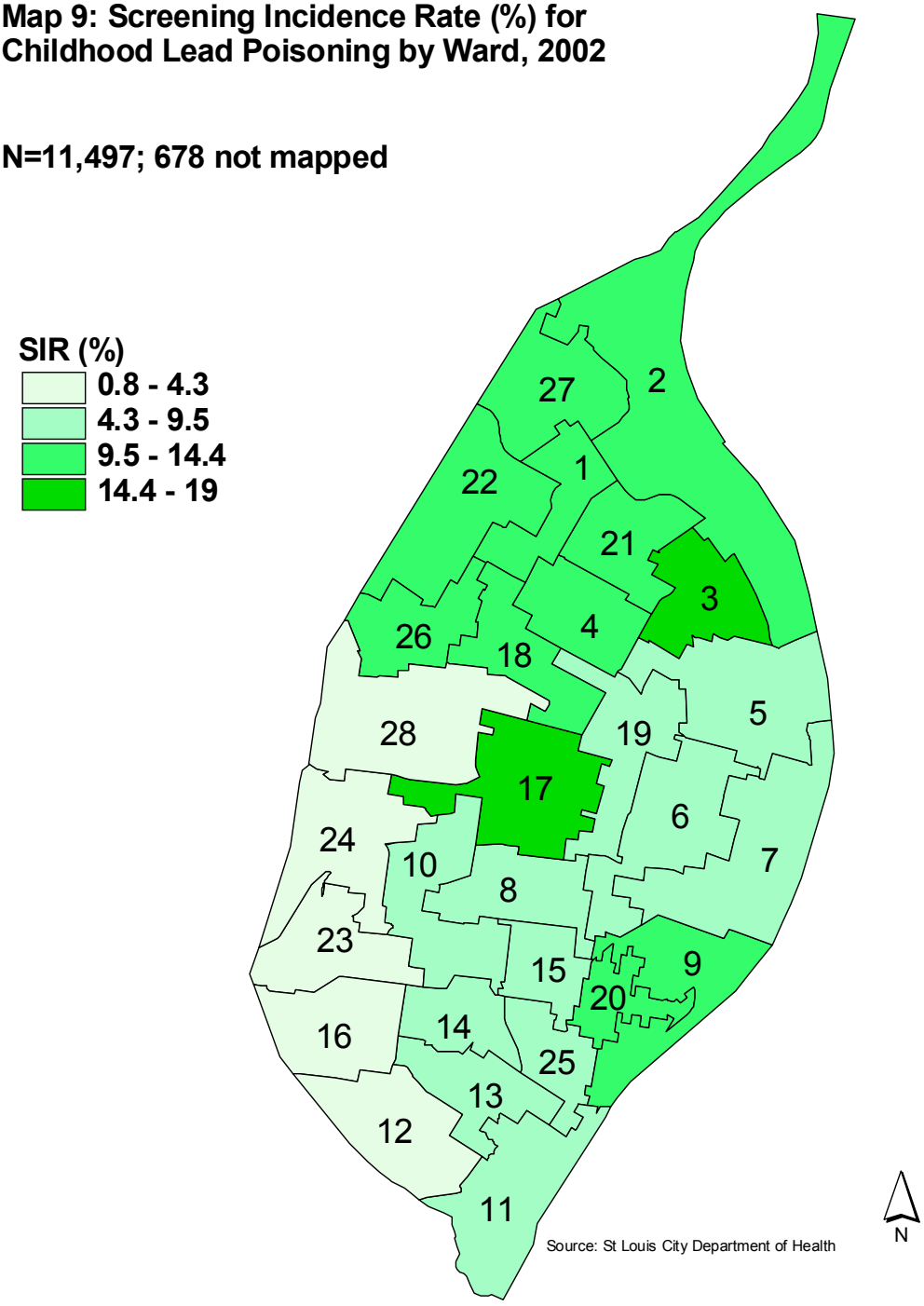
Map 8: Screening Prevalence Rate (%) for Childhood Lead Poisoning by Zip Code, 2002

N=11,497; 678 not mapped

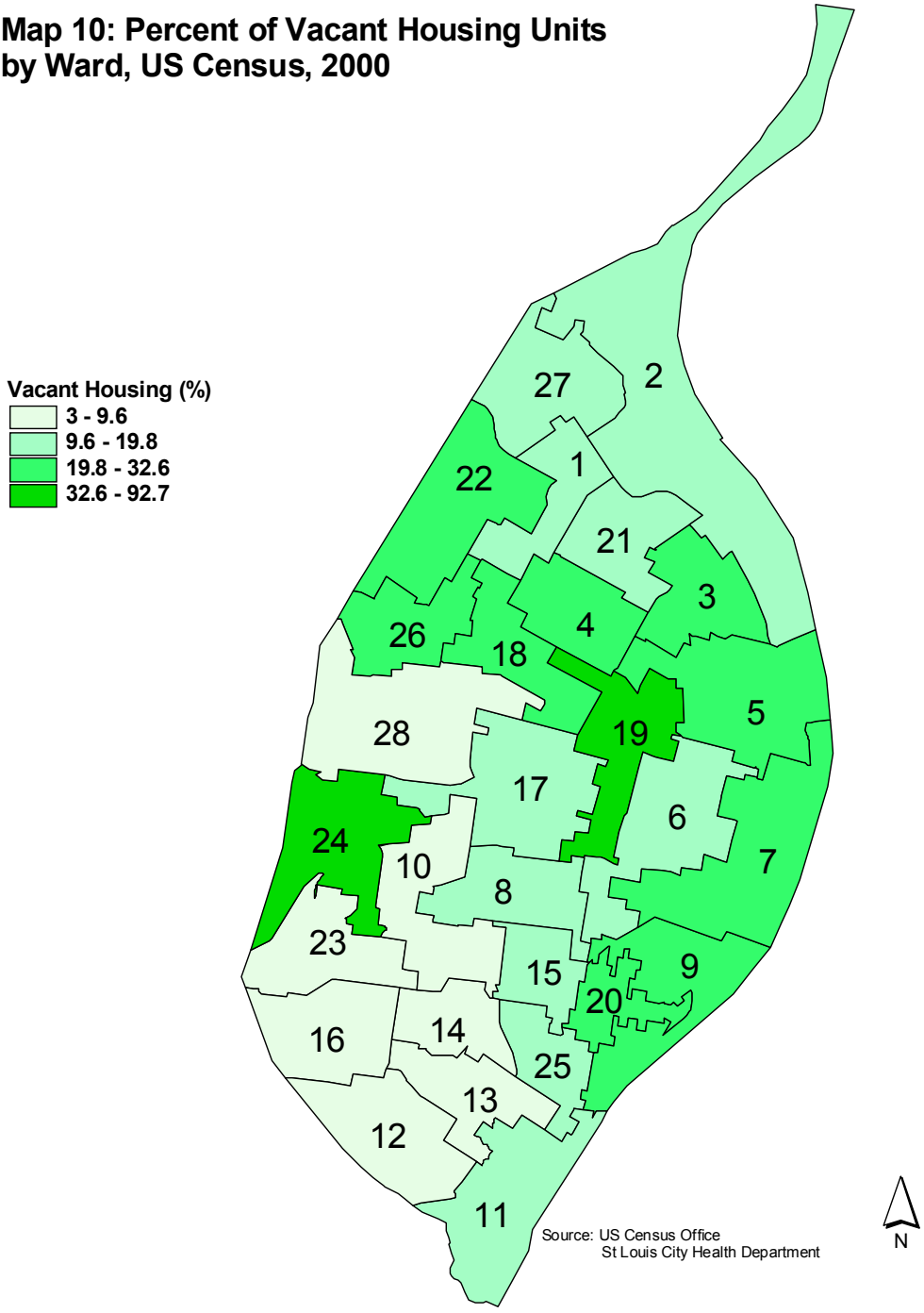


Map 9: Screening Incidence Rate (%) for Childhood Lead Poisoning by Ward, 2002

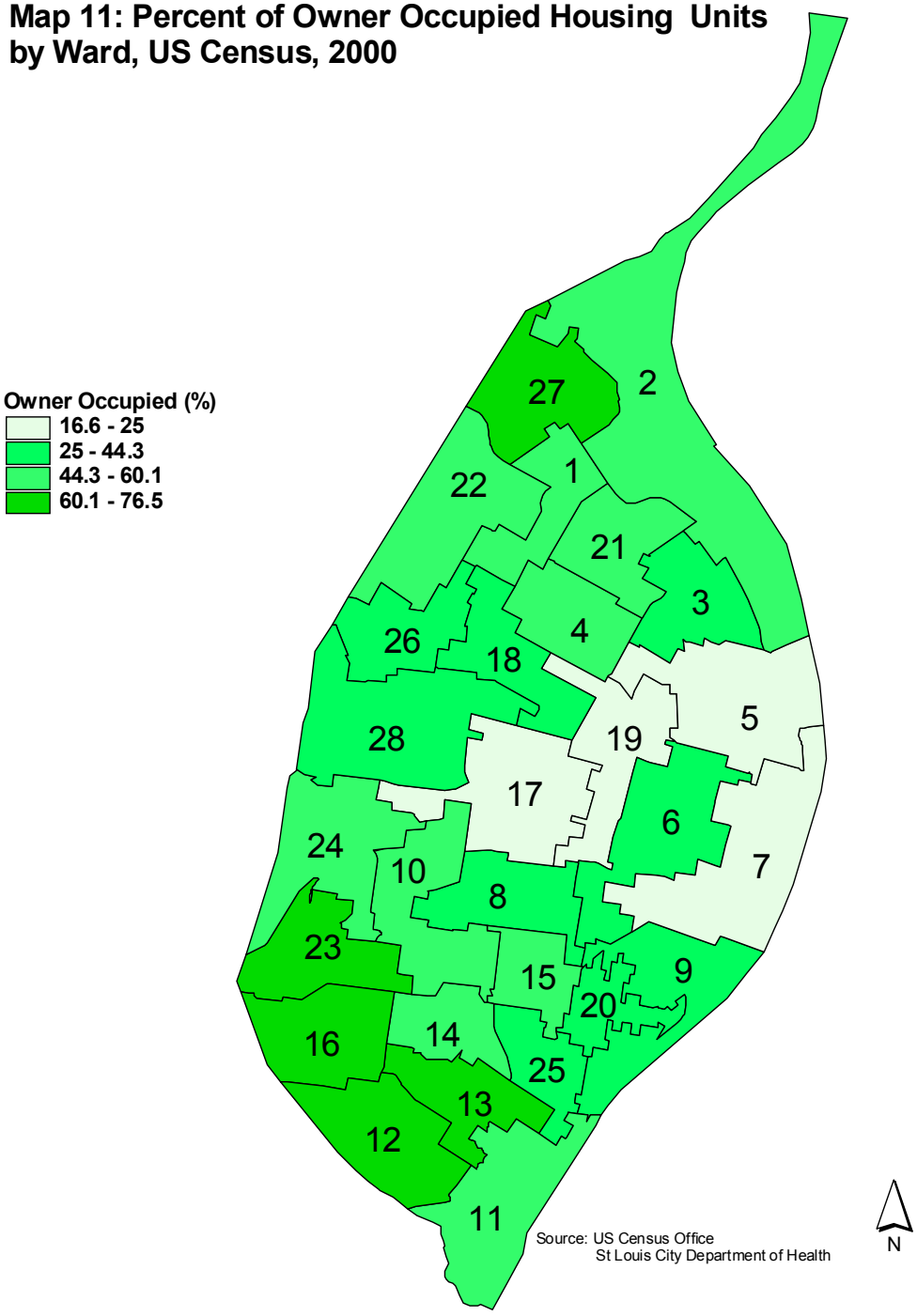
N=11,497; 678 not mapped



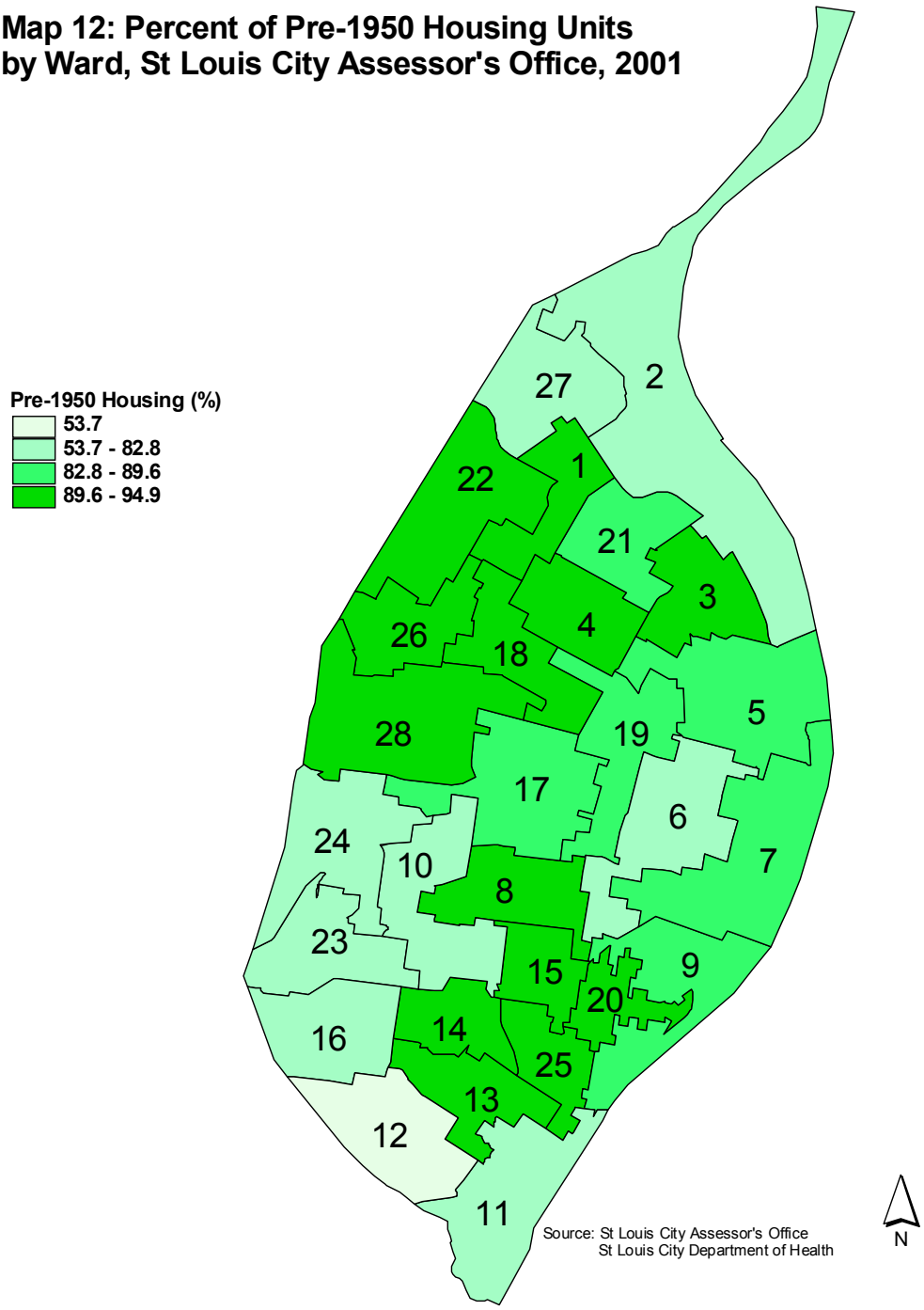
Map 10: Percent of Vacant Housing Units by Ward, US Census, 2000



Map 11: Percent of Owner Occupied Housing Units by Ward, US Census, 2000

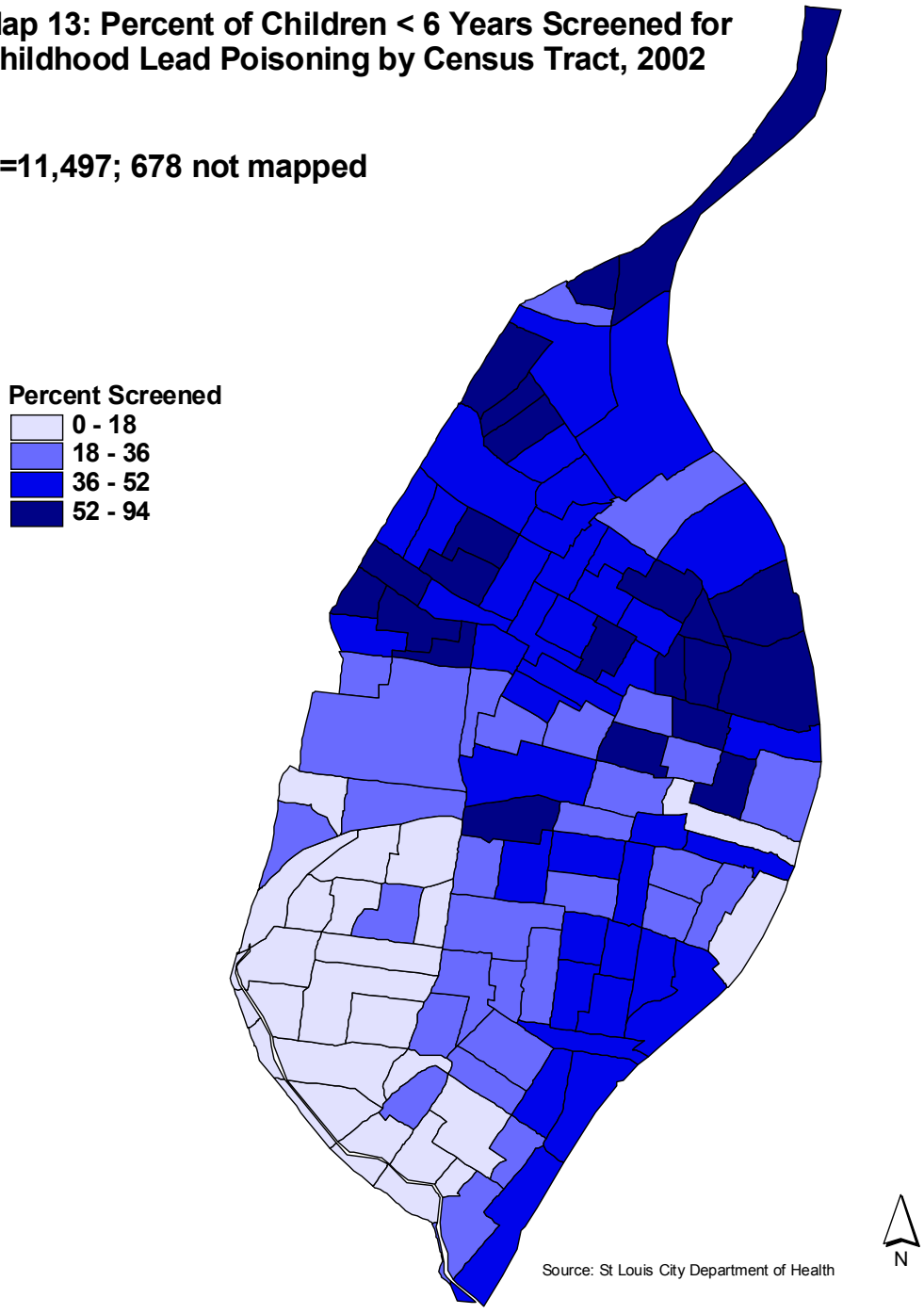


Map 12: Percent of Pre-1950 Housing Units by Ward, St Louis City Assessor's Office, 2001



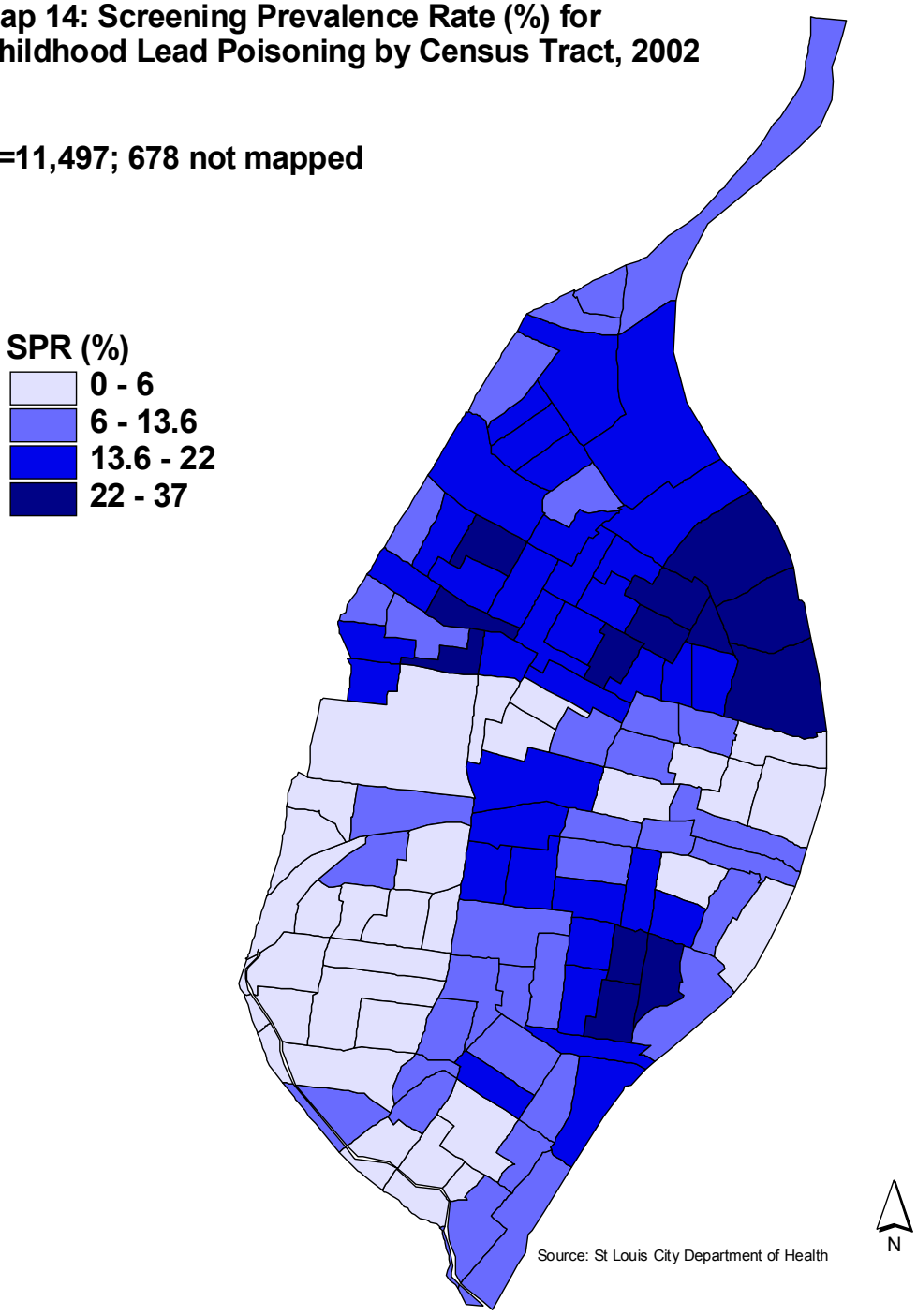
Map 13: Percent of Children < 6 Years Screened for Childhood Lead Poisoning by Census Tract, 2002

N=11,497; 678 not mapped



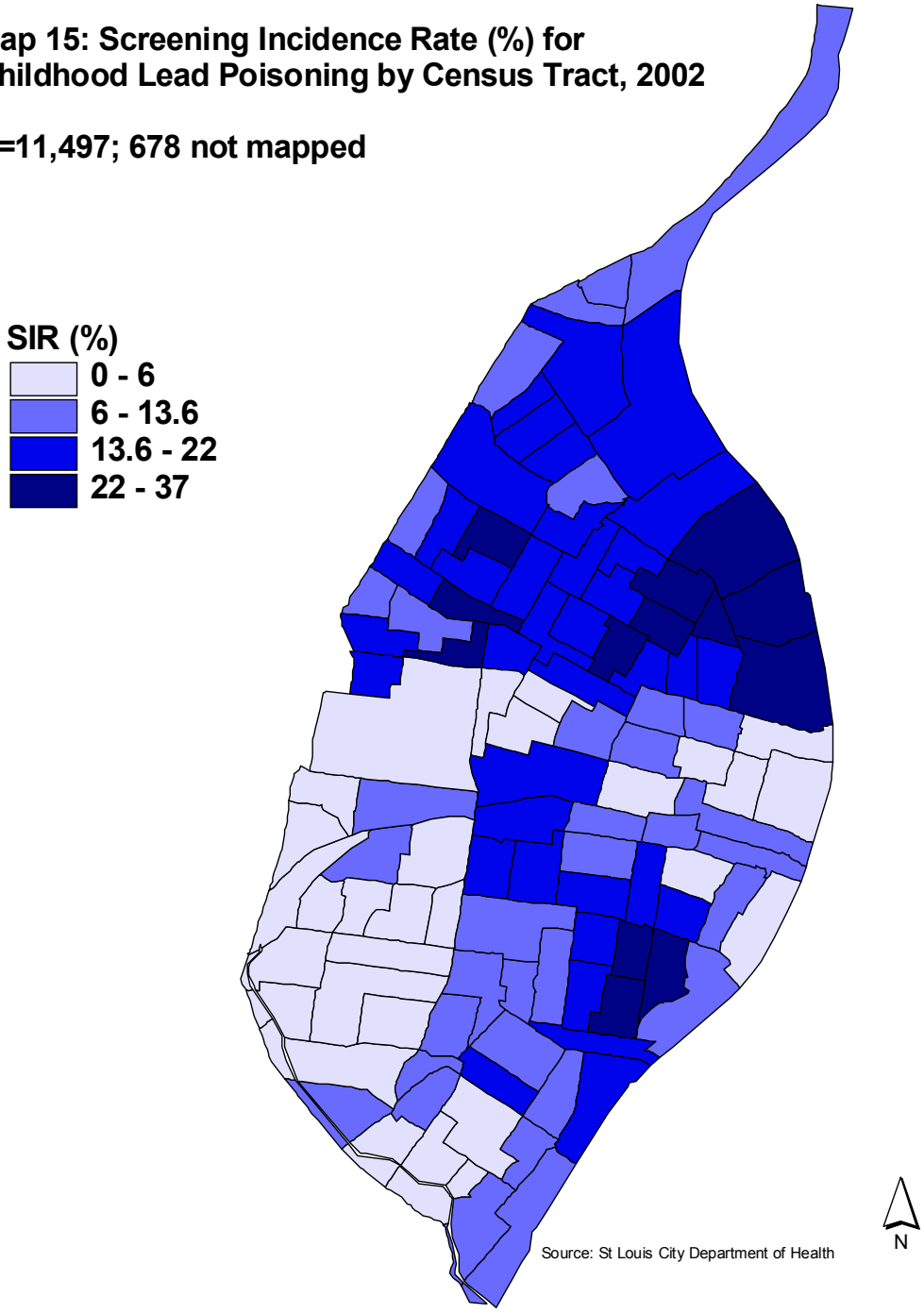
Map 14: Screening Prevalence Rate (%) for Childhood Lead Poisoning by Census Tract, 2002

N=11,497; 678 not mapped

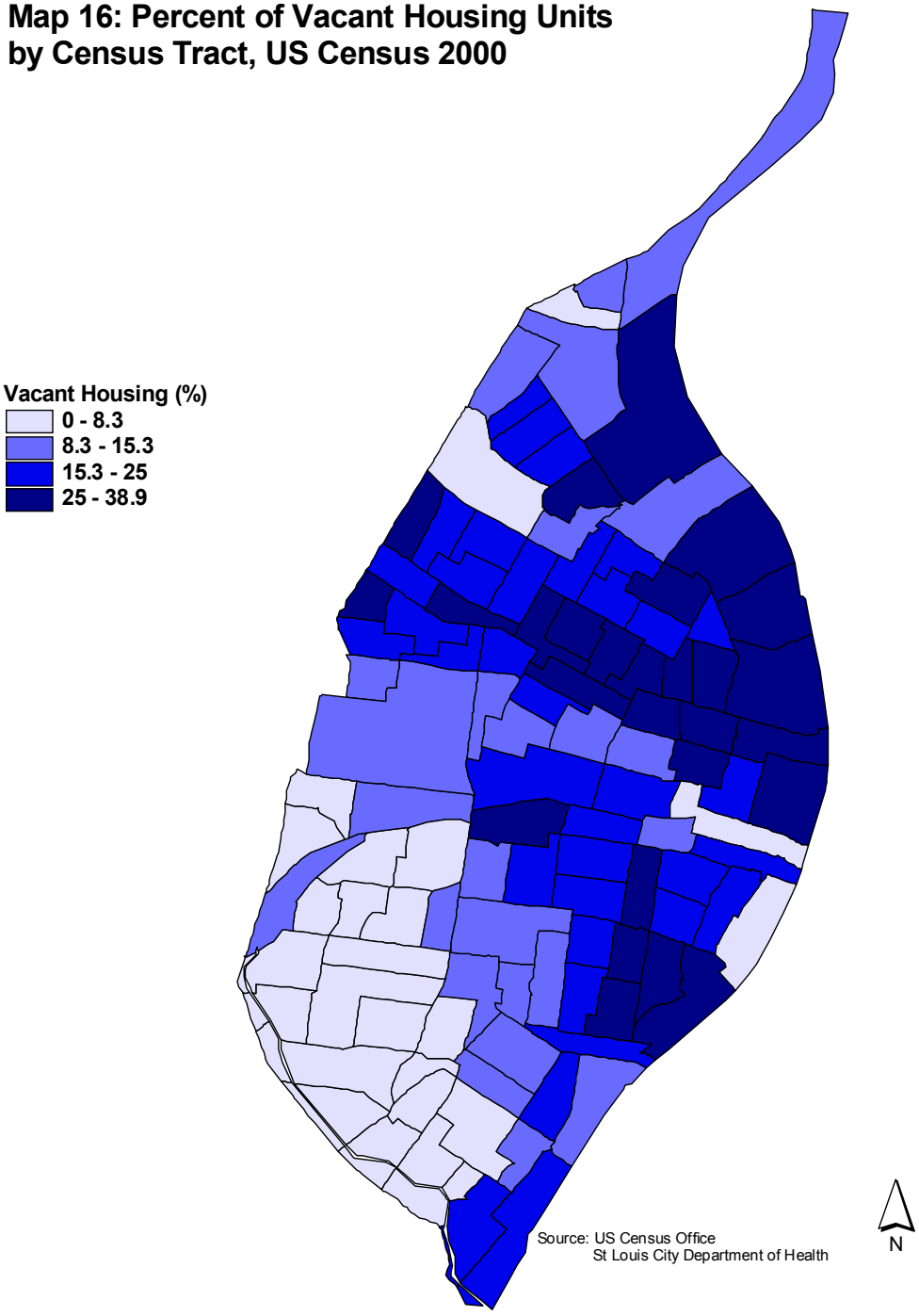


Map 15: Screening Incidence Rate (%) for Childhood Lead Poisoning by Census Tract, 2002

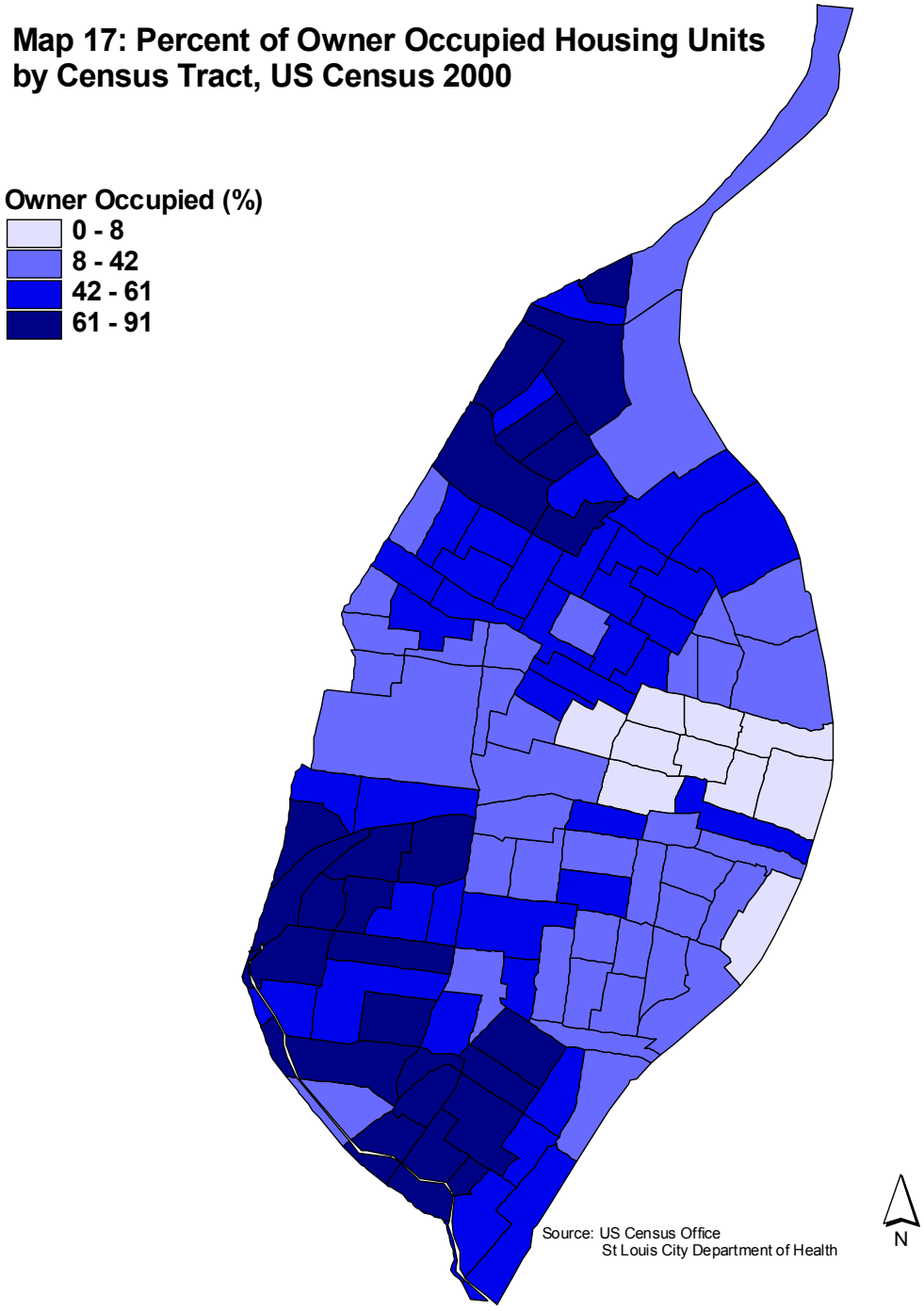
N=11,497; 678 not mapped



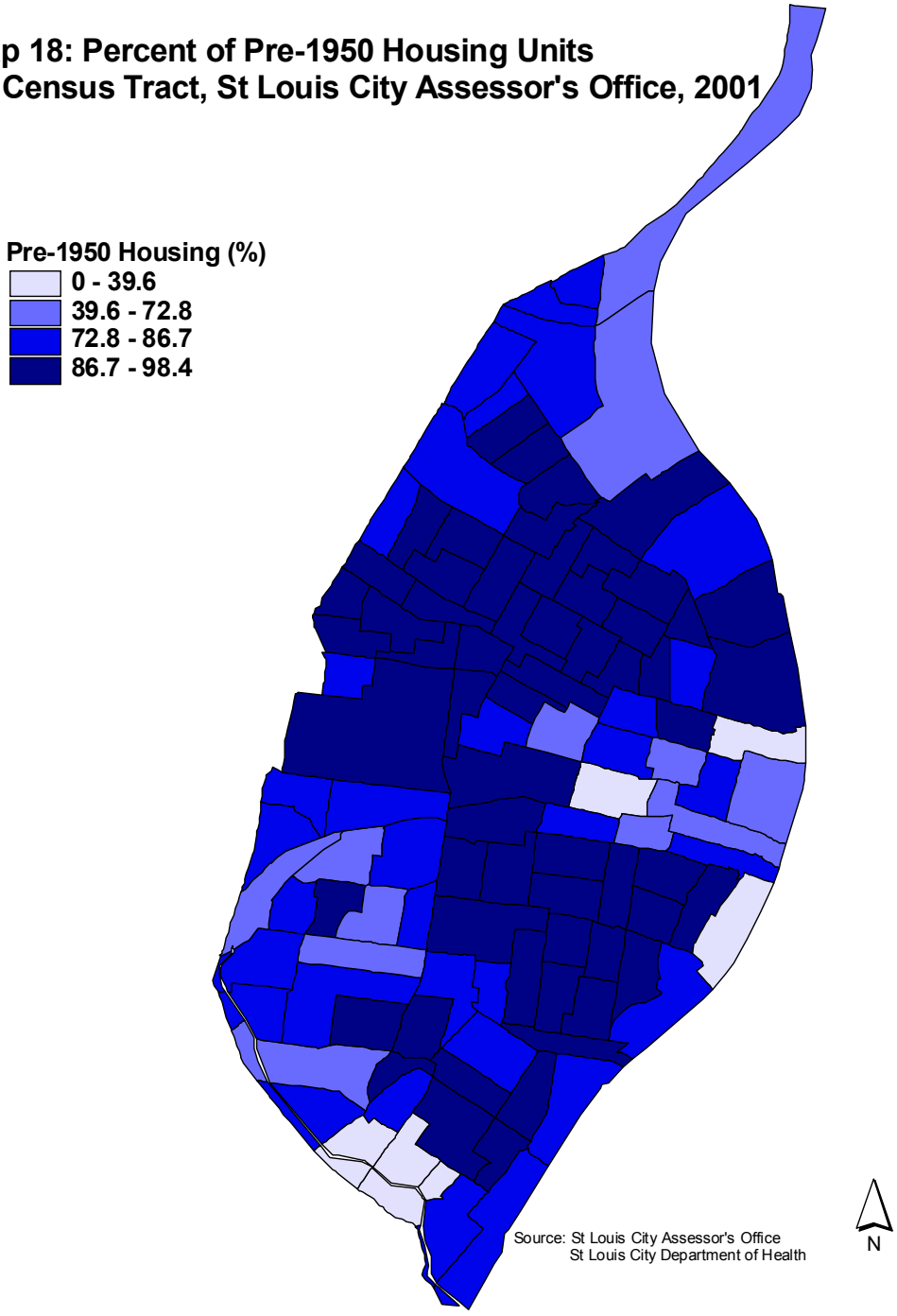
Map 16: Percent of Vacant Housing Units by Census Tract, US Census 2000



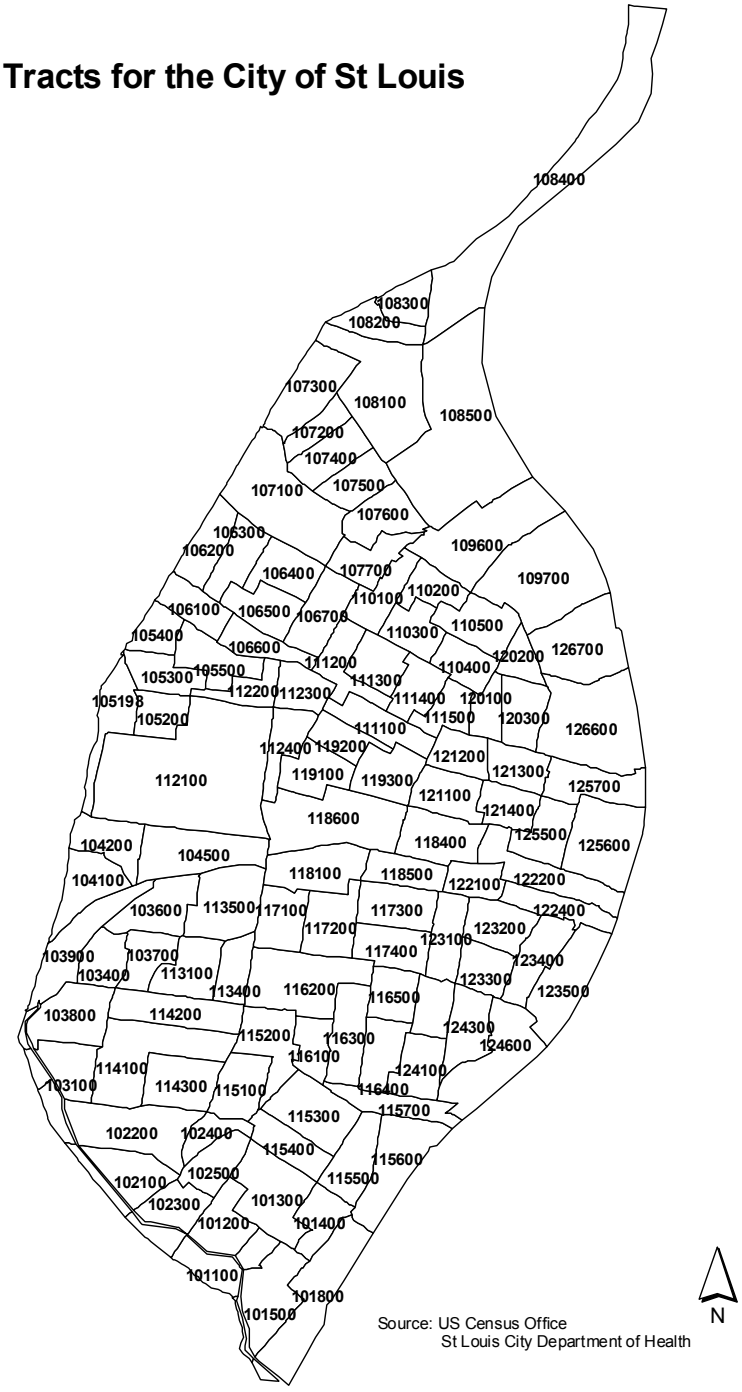
Map 17: Percent of Owner Occupied Housing Units by Census Tract, US Census 2000



Map 18: Percent of Pre-1950 Housing Units by Census Tract, St Louis City Assessor's Office, 2001



Map 19: Census Tracts for the City of St Louis
2000 US Census



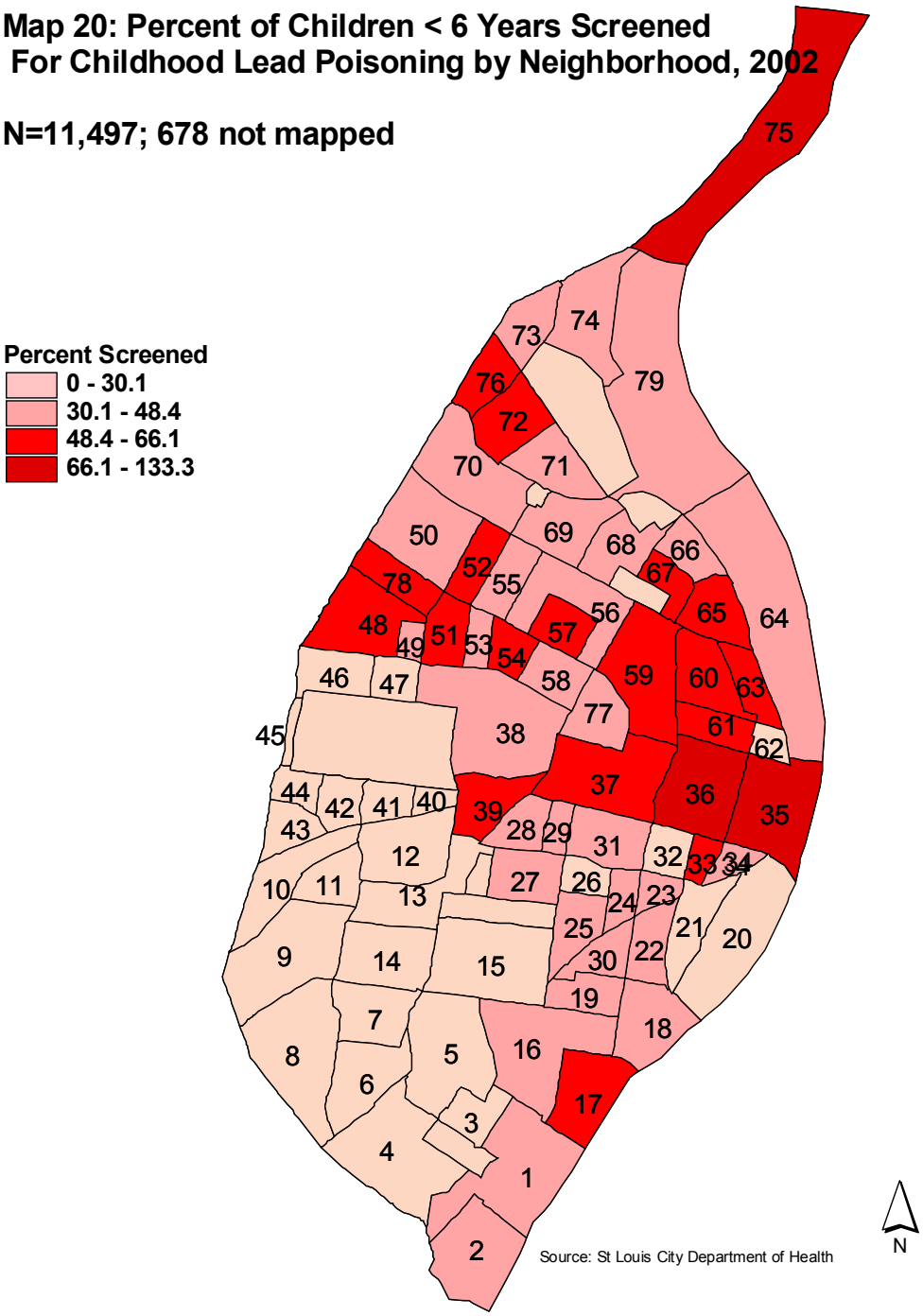
Legend: Neighborhood Identification Numbers and Neighborhood Name

Neighborhood Number	Neighhorhood Name
1	Carondelet
2	Patch
3	Holly Hills
4	Boulevard Heights
5	Bevo Mill
6	Princeton Heights
7	South Hampton
8	St. Louis Hills
9	Lindenwood Park
10	Ellendale
11	Clifton Heights
12	The Hill
13	Southwest Garden
14	North Hampton
15	Tower Grove South
16	Dutchtown
17	Mount Pleasant
18	Marine Villa
19	Gravois Park
20	Kosciusko
21	Soulard
22	Benton Park
23	McKinley/Fox
24	Fox Park
25	Tower Grove East
26	Compton Heights
27	Shaw
28	McRee Town
29	Tiffany
30	Benton Park West
31	The Gate District
32	Lafayette Square
33	Peabody, Darst, Webbe
34	Lasalle
35	Downtown
36	Downtown West
37	Midtown
38	Central West End
39	Forest Park Southeast
40	Kings Oak
41	Cheltenham
42	Clayton/Tamm
43	Franz Park
44	Hi-Point
45	Wyoming/Skinker
46	Skinker/DeBaliviere
47	DeBaliviere Place
48	West End
49	Visitation Park
50	Wells/Goodfellow

Neighborhood Number	Neighhorhood Name
51	Academy
52	Kingsway West
53	Fountain Park
54	Lewis Place
55	Kingsway East
56	The Greater Ville
57	The Ville
58	Vandeventer
59	JeffVanderLou
60	St. Louis Place
61	Carr Square
62	Columbus Square
63	Old North St. Louis
64	Near North Riverfront
65	Hyde Park
66	College Hill
67	Fairground Neighborhood
68	O'Fallon
69	Penrose
70	Mark Twain/I-70 Industrial
71	Mark Twain
72	Walnut Park East
73	North Point
74	Baden
75	Riverview
76	Walnut Park West
77	Covenant Blue/Grand Center
78	Hamilton Heights
79	North Riverfront

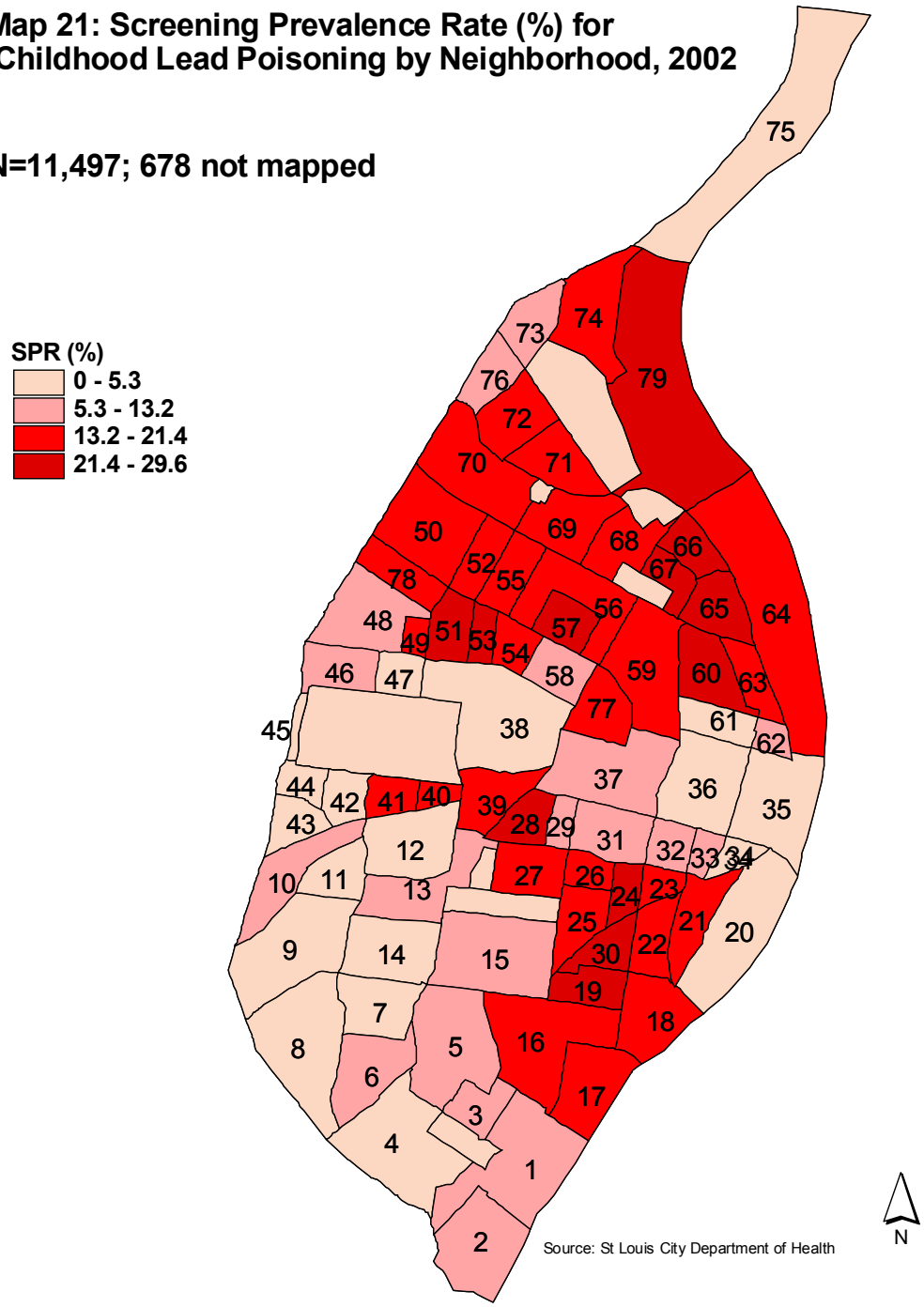
Map 20: Percent of Children < 6 Years Screened For Childhood Lead Poisoning by Neighborhood, 2002

N=11,497; 678 not mapped



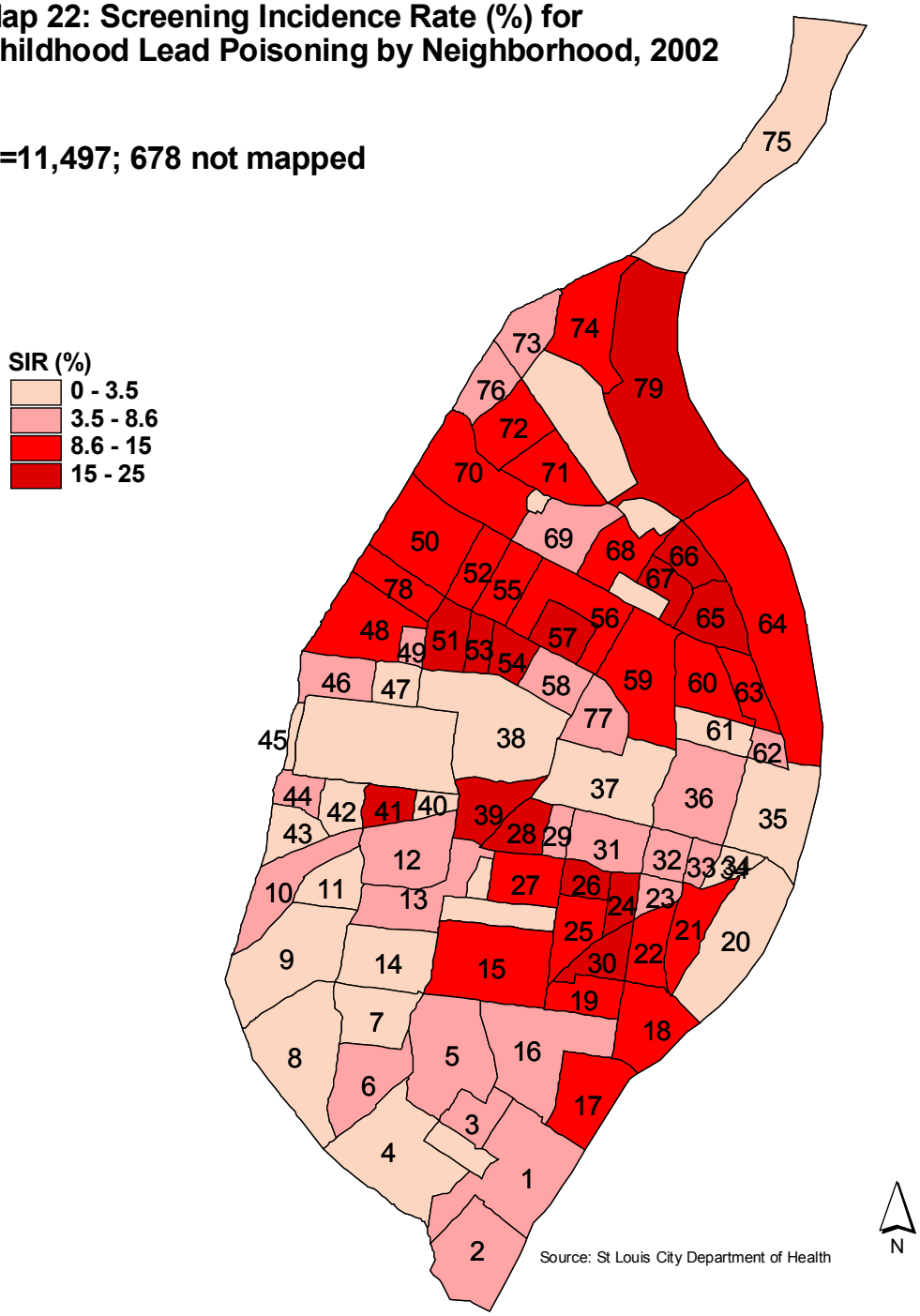
Map 21: Screening Prevalence Rate (%) for Childhood Lead Poisoning by Neighborhood, 2002

N=11,497; 678 not mapped

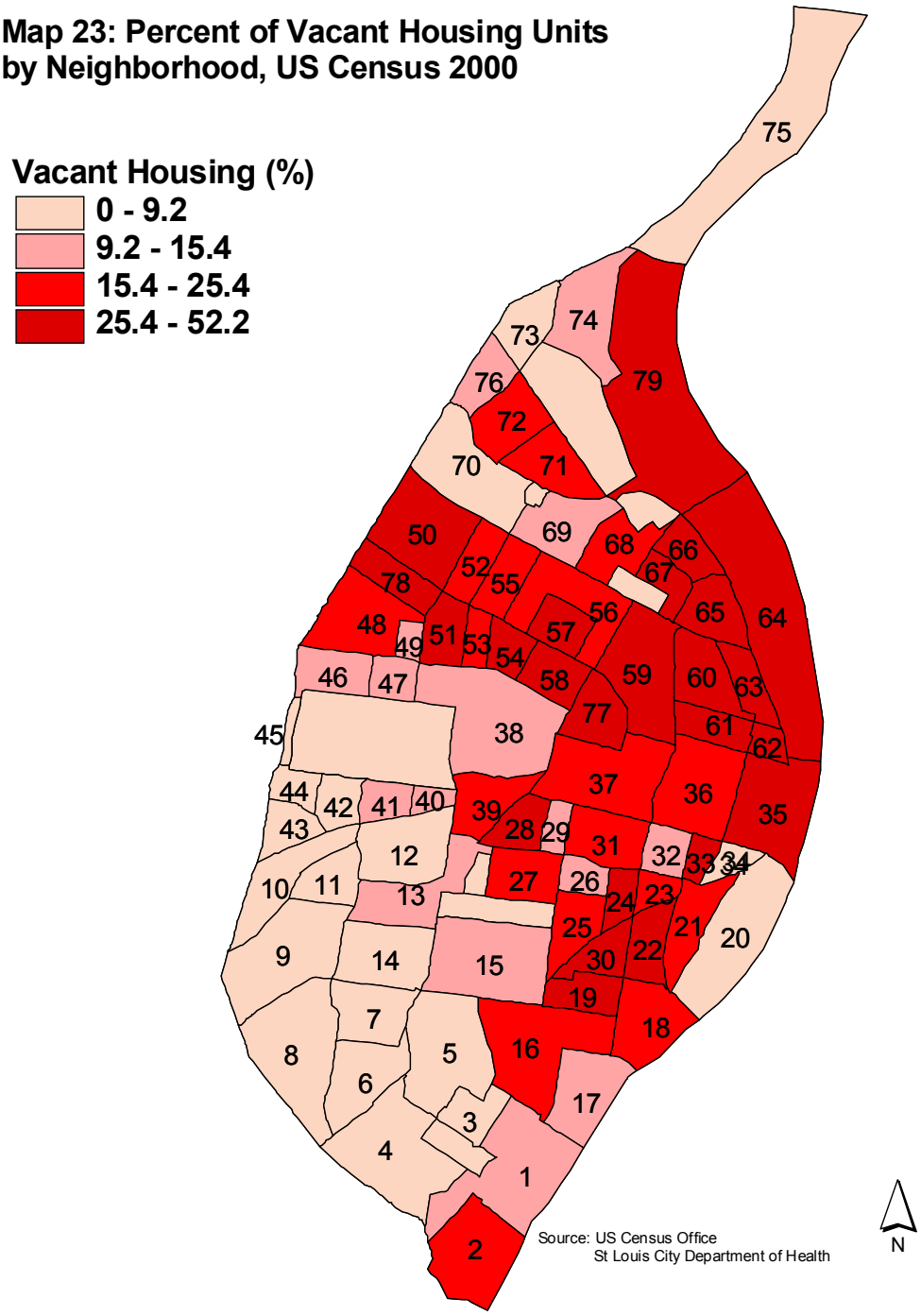


Map 22: Screening Incidence Rate (%) for Childhood Lead Poisoning by Neighborhood, 2002

N=11,497; 678 not mapped



Map 23: Percent of Vacant Housing Units by Neighborhood, US Census 2000



Map 24: Percent of Owner Occupied Housing Units by Neighborhood, US Census, 2000