

**OKLAHOMA CHILDHOOD LEAD POISONING
PREVENTION PROGRAM**

2009 SURVEILLANCE DATA REPORT

Table of Contents

Surveillance Highlights 2009	1-4
Figure 1: Oklahoma Childhood Blood Lead Surveillance, 2000 – 2009	5
Figure 2: Prevalence and Incidence of Childhood Lead Poisoning in Oklahoma, 2000 – 2009	6
Table 1: Oklahoma Childhood Blood Lead Testing Data, By County – 2009	7
Map 1: EBLL Case Rates in Oklahoma, By County	8
Map 2: High-Risk Target Areas (HRTA) Zip codes for Childhood Lead Poisoning	9
Table 2: Oklahoma Childhood Blood Lead Testing, By High-Risk Target Areas (HRTAs) – 2009	10
Map 3: Case Rates, Garfield County - 2009	11
Map 4: Case Rates, Hughes County - 2009	12
Map 5: Case Rates, Jackson County - 2009	13
Map 6: Case Rates, Kay County - 2009	14
Map 7: Case Rates, Muskogee County - 2009	15
Map 8: Case Rates, Oklahoma County - 2009	16
Map 9: Case Rates, Okmulgee County - 2009	17
Map 10: Case Rates, Ottawa County – 2009	18
Map 11: Case Rates, Tulsa County – 2009	19
Figure 3: Comparison of Childhood EBLL Rates in SoonerCare and Non-SoonerCare Population	20
Figure 4: Distribution of EBLL Cases in Oklahoma, By Selected Characteristics	21-24
Figure 5: Case Management	25-26
Glossary	27-28

Surveillance Highlights 2009

- The number of children less than or equal to (\leq) six years of age receiving a blood lead test in Oklahoma has increased from 9,519 in 2000 to 38,264 in 2009 (**Figure 1**).
- The blood lead testing rate in Oklahoma has increased from 3.4% in 2000 to 13.5% in 2009 (**Figure 1**).
- The case rate or prevalence of children \leq six years of age with elevated blood lead levels (EBLLs) in Oklahoma has decreased from 1.5% in 2000 to 0.5% in 2009 (**Figure 1**), which is a 66.7% decrease.
- According to the most recent data from National Health and Nutrition Examination Survey (NHANES), the prevalence of EBLLs in the United States has decreased from 8.6% in 1988-1991 to 1.4% in 1999-2004, which is an 83.7% decrease.
- There were 176 (0.5%) prevalent (existing) EBLL cases in Oklahoma. Of the total EBLL cases, 137 (0.4%) cases were incident (new) cases (**Figure 2, Table 1**).
- There were 27 (0.1%) children \leq six years of age with EBLLs \geq 20 $\mu\text{g}/\text{dL}$ (**Table 1**).
- There were 149 (0.4%) children \leq six years of age with blood lead levels between 10-19 $\mu\text{g}/\text{dL}$ (**Table 1**).
- The geometric mean blood lead level for children \leq six years of age in Oklahoma was 2.1 $\mu\text{g}/\text{dL}$ (**Table 1**).
- **Map 1** shows the distribution of EBLL cases in different counties throughout the state.
- Twenty-one (21) zip codes within nine Oklahoma counties have been identified as high-risk target area (HRTA) zip codes in which there is a likelihood of a high number of young children at risk for lead exposure and poisoning (**Map 2**).

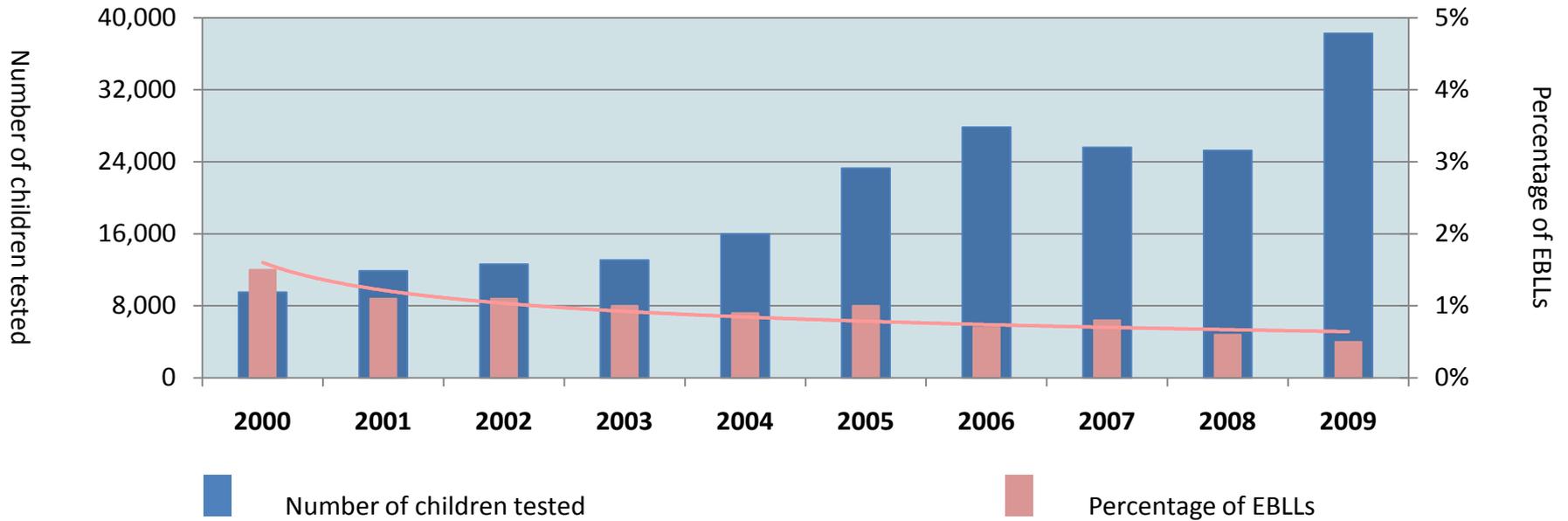
- A high proportion of older housing, particularly houses built prior to 1950, a high proportion of children living in poverty, a high EBLL prevalence rate, and a high proportion of minority populations are the factors used to identify HRTA zip codes. **Table 2** provides data related to these risk factors for all the HRTA zip codes.
- The blood lead testing rate for children \leq six years of age living in HRTA zip codes was 25.2% (**Table 2**).
- There were 72 (1.2%) children \leq six years of age living in HRTA zip codes with an EBLL (**Table 2**).
- There were 13 (0.2%) children \leq six years of age living in HRTA zip codes with blood lead levels ≥ 20 $\mu\text{g}/\text{dL}$ (**Table 2**).
- There were 59 (0.9%) children \leq six years of age living in HRTA zip codes with blood lead levels between 10-19 $\mu\text{g}/\text{dL}$ (**Table 2**).
- The geometric mean blood lead level for children \leq six years of age living in HRTA zip codes was 2.5 $\mu\text{g}/\text{dL}$ (**Table 2**).
- The case rate or prevalence of SoonerCare (Oklahoma Medicaid program) members \leq six years of age living in HRTA zip codes with an EBLL (1.3%) was slightly higher than non-SoonerCare members with an EBLL (0.9%) living in HRTA zip codes (**Table 2**).
- **Maps 3-11** show the distribution of EBLL cases in different zip codes within nine Oklahoma counties.
- During 2000-2009, the case rate or prevalence of children \leq six years of age with EBLs has declined in both the SoonerCare (1.7% to 0.5%) and the non-SoonerCare populations (1.3% to 0.4%). This current trend suggests no significant disparity in EBLL prevalence among the

SoonerCare and Non-SoonerCare populations statewide. Disparities may continue to exist within some high-risk target areas (HRTAs), however (**Figure 3**).

- A similar trend has been observed nationwide as indicated by the NHANES data suggesting that the EBLL disparity which once existed between Medicaid eligible children and non-Medicaid eligible children is diminishing (21.0% for Medicaid eligible children vs. 5.0% for non-Medicaid eligible children during 1988-1991; 8.5% for Medicaid eligible children vs. 2.5% for non-Medicaid eligible children during 1991-1994; and 1.9% for Medicaid eligible children vs. 1.1% for non-Medicaid eligible children during 1999-2004).
- The case rate or prevalence of EBLs among males and females were comparable during 2009 (0.5% for males vs. 0.4% for females – **Figure 4**).
- The case rate or prevalence of EBLs among children < 36 months of age and children ≥ 36 and ≤ 72 months of age were comparable during 2009 (0.5% for children < 36 months of age vs. 0.4% for children ≥ 36 and ≤ 72 months of age – **Figure 4**).
- The case rate or prevalence of EBLs among children enrolled in SoonerCare and children not on SoonerCare were comparable during 2009 (0.5% for children enrolled in SoonerCare vs. 0.4% for children not on SoonerCare – **Figure 4**).
- The case rate or prevalence of EBLs among minority groups cannot be determined because of the missing or incomplete race and ethnicity data in Oklahoma Childhood Lead Poisoning Prevention Program (OCLPPP) surveillance database - **Figure 4**).
- OCLPPP provided limited follow-up for 2,274 children \leq six years of age whose blood lead levels were between 5 and 9 $\mu\text{g}/\text{dL}$ (**Figure 5**).

- Case management was provided to parents of 176 children with an EBLL which also included environmental investigations for 18 children (**Figure 5**).
- Of the 18 EIs performed during 2009, 15 (83.3%) identified lead-based paint hazards as the only source of childhood lead poisoning. Three (16.7%) EIs identified an occupational take home source of lead poisoning along with lead-based paint hazards (**Figure 5**).

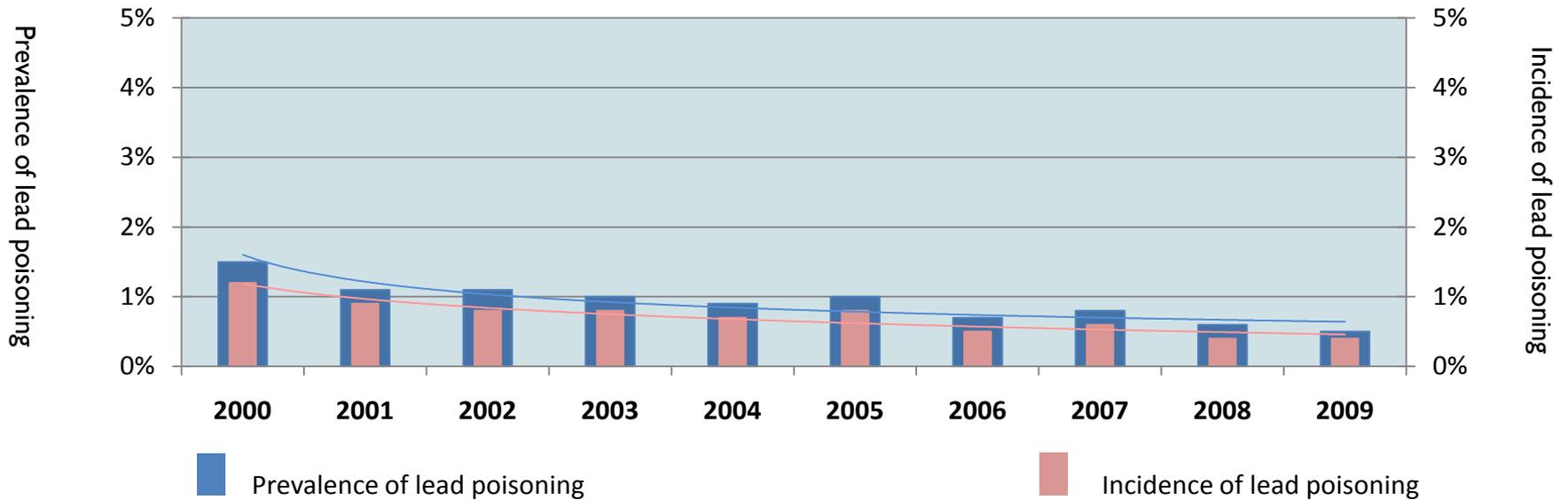
Figure 1: Oklahoma Childhood Blood Lead Surveillance 2000-2009



Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Population of children ≤ 6 years of age	283,208	283,208	283,208	283,208	283,208	283,208	283,208	283,208	283,208	283,208
Number of children tested	9,519 (3.4%)	11,881 (4.2%)	12,623 (4.5%)	13,076 (4.6%)	15,972 (5.6%)	23,279 (8.2%)	27,859 (9.8%)	25,615 (9.0%)	25,253 (8.9%)	38,264 (13.5%)
Prevalence of EBLL	1.5%	1.1%	1.1%	1.0%	0.9%	1.0%	0.7%	0.8%	0.6%	0.5%

Population of children ≤ 6 years of age was calculated from US Census Bureau 2000.

Figure 2: Prevalence and Incidence of Childhood Lead Poisoning in Oklahoma, 2000-2009



Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Prevalent cases	143 (1.5%)	134 (1.1%)	137 (1.1%)	137 (1.0%)	139 (0.9%)	230 (1.0%)	198 (0.7%)	195 (0.8%)	143 (0.6%)	176 (0.5%)
Incident cases	116 (1.2%)	108 (0.9%)	105 (0.8%)	101 (0.8%)	104 (0.7%)	182 (0.8%)	137 (0.5%)	146 (0.6%)	96 (0.4%)	137 (0.4%)

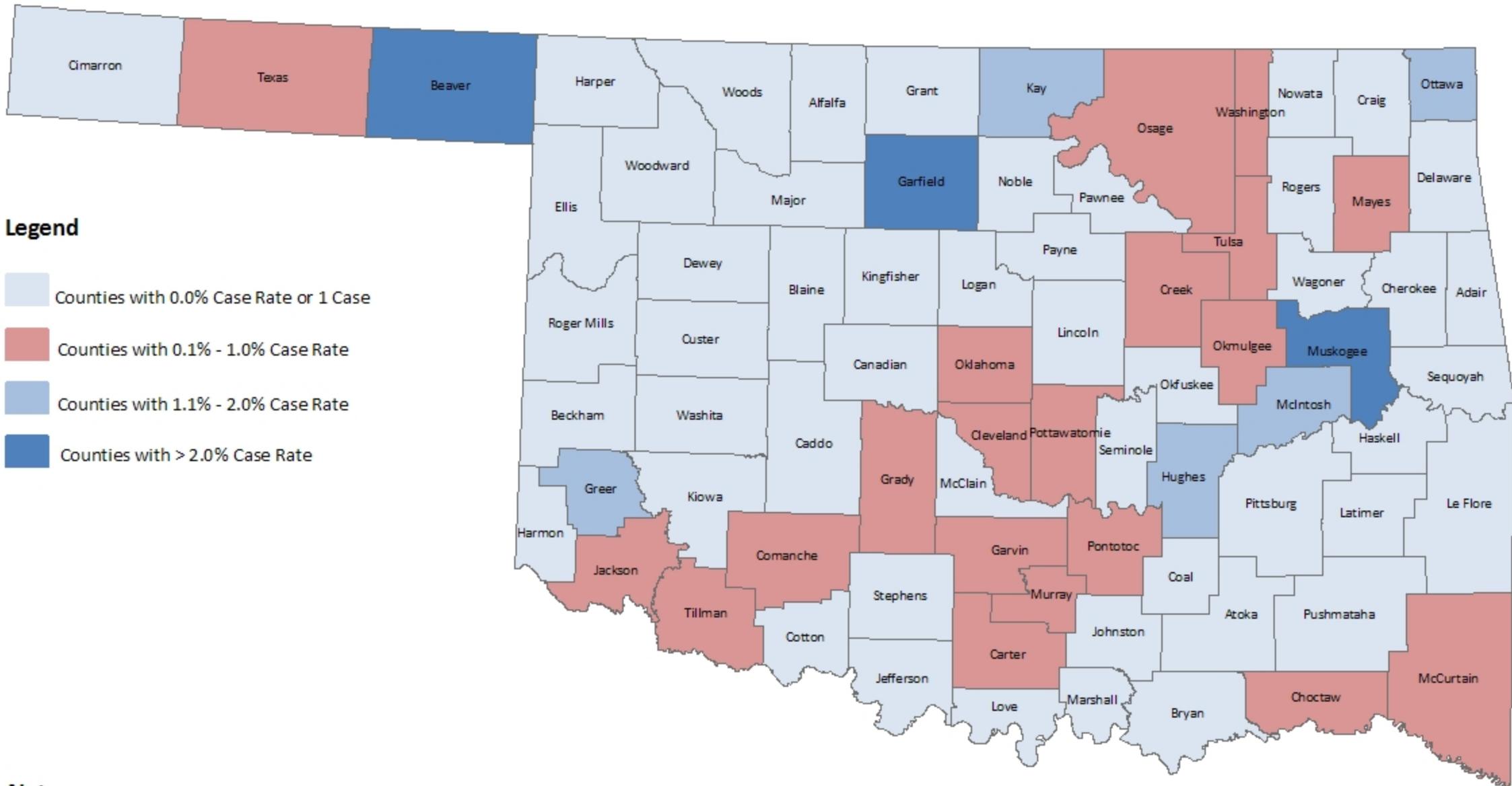
Table 1: Oklahoma Childhood Blood Lead Testing Data, By County - 2009

COUNTY	POPULATION OF CHILDREN ≤ 6 YEARS OF AGE	NUMBER OF CHILDREN TESTED	GEOMETRIC MEAN BLOOD LEAD LEVEL (µg /dL)	EBLL 10-19 µg /dL	EBLL ≥ 20 µg /dL	TOTAL EBLL AND CASE RATE (%)
ADAIR	2,223	336	2.7	0	0	0 (0.0%)
ALFALFA	283	24	2.4	0	0	0 (0.0%)
ATOKA	1,013	163	2.0	0	0	0 (0.0%)
BEAVER	425	61	2.1	2	0	2 (3.4%)
BECKHAM	1,983	487	1.7	0	0	0 (0.0%)
BLAINE	906	45	2.1	0	0	0 (0.0%)
BRYAN	3,369	666	1.8	0	0	0 (0.0%)
CADDO	2,416	531	2.3	1	0	1 (0.2%)
CANADIAN	9,044	594	2.2	1	0	1 (0.2%)
CARTER	4,133	664	2.4	1	3	4 (0.6%)
CHEROKEE	3,760	621	2.3	1	0	1 (0.2%)
CHOCTAW	1,293	365	1.9	3	0	3 (0.8%)
CIMARRON	159	30	1.4	0	0	0 (0.0%)
CLEVELAND	17,598	1,749	1.4	6	0	6 (0.3%)
COAL	423	104	2.0	0	0	0 (0.0%)
COMANCHE	10,950	1,211	1.7	4	0	4 (0.3%)
COTTON	443	108	2.0	1	0	1 (0.9%)
CRAIG	1,094	78	2.7	0	0	0 (0.0%)
CREEK	5,376	551	2.2	3	0	3 (0.5%)
CUSTER	2,391	380	2.0	1	0	1 (0.3%)
DELAWARE	2,802	251	2.3	0	0	0 (0.0%)
DEWEY	356	24	1.4	0	0	0 (0.0%)
ELLIS	324	30	1.7	1	0	1 (3.3%)
GARFIELD	5,548	232	2.6	5	0	5 (2.2%)
GARVIN	2,205	306	2.0	2	0	2 (0.7%)
GRADY	4,120	708	2.2	2	0	2 (0.3%)
GRANT	245	24	3.2	0	0	0 (0.0%)
GREER	394	136	1.8	2	0	2 (1.5%)
HARMON	223	85	2.1	0	0	0 (0.0%)
HARPER	280	97	1.4	0	0	0 (0.0%)
HASKELL	1,007	106	2.1	0	0	0 (0.0%)
HUGHES	1,034	190	2.2	2	1	3 (1.7%)
JACKSON	2,468	654	1.6	4	1	5 (0.8%)
JEFFERSON	484	102	2.0	0	0	0 (0.0%)
JOHNSTON	877	211	1.9	0	0	0 (0.0%)
KAY	4,040	1,130	2.6	12	3	15 (1.4%)
KINGFISHER	1,197	212	1.6	0	0	0 (0.0%)
KIOWA	650	188	2.4	1	0	1 (0.5%)
LATIMER	701	111	2.4	0	0	0 (0.0%)
LE FLORE	4,389	730	1.8	1	0	1 (0.1%)

COUNTY	POPULATION OF CHILDREN ≤ 6 YEARS OF AGE	NUMBER OF CHILDREN TESTED	GEOMETRIC MEAN BLOOD LEAD LEVEL (µg /dL)	EBLL 10-19 µg /dL	EBLL ≥ 20 µg /dL	TOTAL EBLL AND CASE RATE (%)
LINCOLN	2,396	503	2.0	0	0	0 (0.0%)
LOGAN	2,909	386	2.0	0	1	1 (0.3%)
LOVE	727	169	1.9	0	0	0 (0.0%)
MCCLAIN	2,711	344	1.6	1	0	1 (0.3%)
MCCURTAIN	2,837	431	1.9	1	1	2 (0.5%)
MCINTOSH	1,364	228	2.6	3	0	3 (1.4%)
MAJOR	509	21	2.5	0	0	0 (0.0%)
MARSHALL	1,280	356	1.9	0	0	0 (0.0%)
MAYES	3,274	502	2.9	2	0	2 (0.4%)
MURRAY	977	209	2.2	2	0	2 (1.0%)
MUSKOGEE	5,988	876	2.4	15	4	19 (2.2%)
NOBLE	859	121	2.4	0	0	0 (0.0%)
NOWATA	766	44	3.0	1	0	1 (2.4%)
OKFUSKEE	810	163	2.8	1	0	1 (0.6%)
OKLAHOMA	70,835	7,290	2.3	32	4	36 (0.5%)
OKMULGEE	3,192	664	3.4	2	2	4 (0.7%)
OSAGE	2,863	314	2.7	2	0	2 (0.6%)
OTTAWA	2,515	320	2.4	4	1	5 (1.6%)
PAWNEE	1,224	288	2.2	0	0	0 (0.0%)
PAYNE	5,352	607	2.1	1	0	1 (0.2%)
PITTSBURG	3,329	719	2.3	0	0	0 (0.0%)
PONTOTOC	3,149	498	1.9	1	2	3 (0.6%)
POTTAWATOMIE	5,547	908	2.3	4	2	6 (0.7%)
PUSHMATAHA	865	200	1.9	0	0	0 (0.0%)
ROGERS	6,280	390	2.3	1	0	1 (0.3%)
ROGER MILLS	309	39	1.8	0	0	0 (0.0%)
SEMINOLE	2,133	459	2.5	0	0	0 (0.0%)
SEQUOYAH	3,328	479	2.6	1	0	1 (0.2%)
STEPHENS	3,456	531	1.8	0	0	0 (0.0%)
TEXAS	2,299	385	1.3	2	1	3 (0.8%)
TILLMAN	621	201	1.8	2	0	2 (1.0%)
TULSA	57,000	4,190	2.1	12	1	13 (0.3%)
WAGONER	5,512	258	2.0	0	0	0 (0.0%)
WASHINGTON	3,774	384	2.6	2	0	2 (0.5%)
WASHITA	1,029	171	1.9	0	0	0 (0.0%)
WOODS	532	49	1.1	1	0	1 (2.0%)
WOODWARD	1,749	272	1.7	0	0	0 (0.0%)
OKLAHOMA	283,208	38,264	2.1	149	27	176 (0.5%)

- Population of children ≤ 6 years of age was calculated from US Census Bureau 2000.
- Geometric mean was used instead of straight average (arithmetic mean) since there may be a wide variation in the blood lead levels. A geometric mean suppresses the effect of very high or low values and therefore does not bias the mean.
- EBLL (Elevated Blood Lead Level): An EBLL is defined as a confirmed concentration of greater than or equal to (≥) 10 micrograms (µg) of lead per deciliter (dL) of blood measured on a venous sample.
- Case rate is defined as the number of children less than or equal to (≤) 6 years of age with an EBLL divided by the total number of children ≤ 6 years of age who received a blood lead test.

Map 1: EBLL Case Rates in Oklahoma, By County - 2009

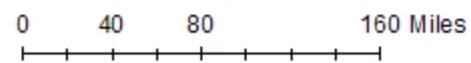


Legend

- Counties with 0.0% Case Rate or 1 Case
- Counties with 0.1% - 1.0% Case Rate
- Counties with 1.1% - 2.0% Case Rate
- Counties with > 2.0% Case Rate

Notes

During 2009, there were 176 EBLL cases in Oklahoma.
 The overall case rate in Oklahoma during 2009 was 0.5%.



Data Source: Oklahoma Childhood Lead Poisoning Prevention Surveillance Data

Map 2: High-Risk Target Areas (HRTA) Zip Codes for Childhood Lead Poisoning

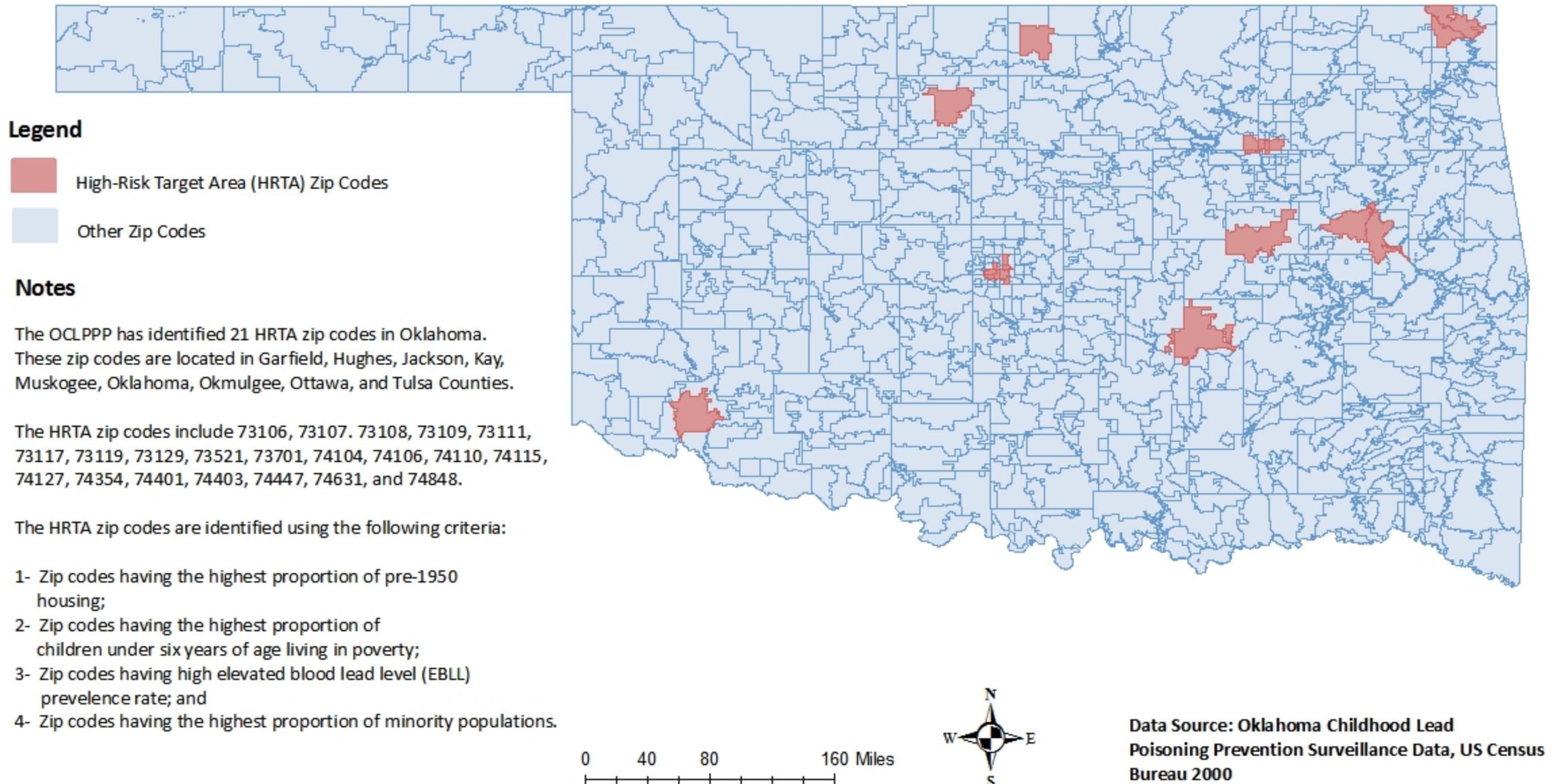
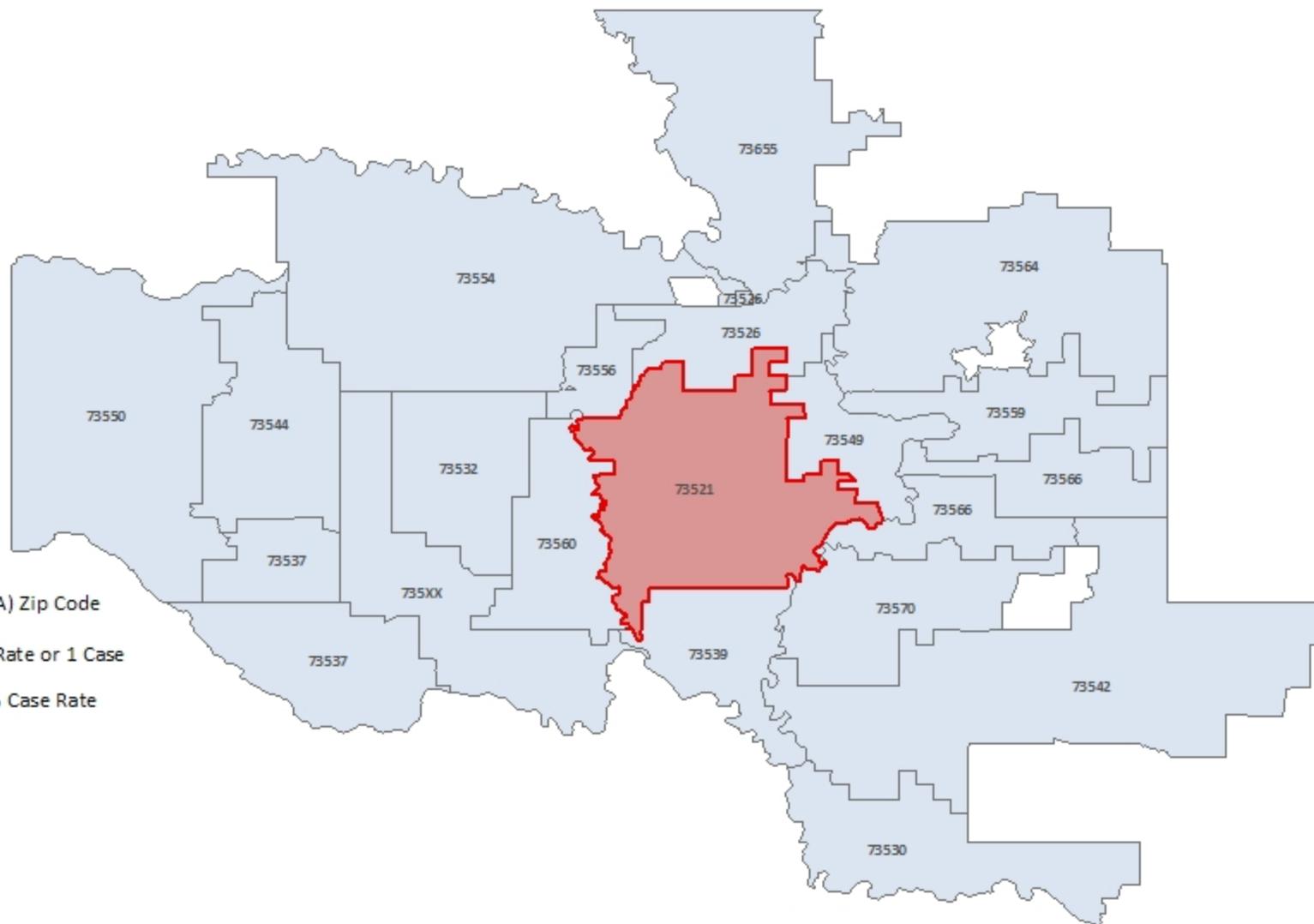


Table 2: Oklahoma Childhood Blood Lead Testing Data, By High-Risk Target Areas (HRTA) - 2009

	TOTAL POPULATION	POPULATION OF CHILDREN ≤ 6 YEARS OF AGE	CHILDREN ≤ 6 YEARS OF AGE LIVING BELOW POVERTY (%)	TOTAL HOUSING UNITS	PRE-1950 HOUSING UNITS (%)	MINORITY POPULATION			NUMBER OF CHILDREN TESTED	GEOMETRIC MEAN BLOOD LEAD LEVEL (µg /dL)	EBLL 10-19 µg /dL	EBLL ≥ 20 µg /dL	EBLL AND CASE RATE (%)	SOONERCARE AND NON-SOONERCARE COMPARISON IN HRTA			
						HISPANICS (%)	AFRICAN AMERICAN (%)	AMERICAN INDIAN AND ALASKAN NATIVE (%)						SOONERCARE		NON-SOONERCARE	
														CHILDREN TESTED	EBLL AND CASE RATE (%)	CHILDREN TESTED	EBLL AND CASE RATE (%)
73106	13,485	1,182	381 (32.2%)	6,359	3,853 (60.6%)	3,497 (25.9%)	1,696 (12.6%)	726 (5.4%)	199	2.8	5	0	5 (2.5%)	108	1 (0.9%)	91	4 (4.4%)
73107	24,832	2,372	463 (19.5%)	12,519	6,548 (52.3%)	3,757 (15.1%)	2,016 (8.1%)	1,112 (4.5%)	414	2.4	3	0	3 (0.7%)	197	2 (1.0%)	217	1 (0.5%)
73108	15,229	1,994	1,081 (54.2%)	5,967	2,324 (39.0%)	6,628 (43.5%)	1,090 (7.2%)	982 (6.4%)	430	2.8	1	0	1 (0.2%)	220	0 (0.0%)	210	1 (0.5%)
73109	19,453	1,999	787 (39.4%)	8,535	3,367 (39.5%)	6,234 (32.0%)	1,000 (5.1%)	1,081 (5.6%)	511	2.9	3	0	3 (0.6%)	270	2 (0.7%)	241	1 (0.4%)
73111	12,658	935	459 (49.1%)	6,038	2,146 (35.5%)	233 (1.8%)	11,319 (89.4%)	130 (1.0%)	170	2.2	0	0	0 (0.0%)	89	0 (0.0%)	81	0 (0.0%)
73117	5,128	662	248 (37.5%)	2,838	1,042 (36.7%)	112 (2.2%)	4,377 (85.4%)	61 (1.2%)	87	2.4	1	1	2 (2.3%)	54	2 (3.7%)	33	0 (0.0%)
73119	28,584	3,184	1,199 (37.7%)	10,940	2,477 (22.6%)	7,337 (25.7%)	1,835 (6.4%)	1,790 (6.3%)	685	2.7	5	0	5 (0.7%)	386	3 (0.8%)	299	2 (0.7%)
73129	19,849	2,318	970 (41.8%)	9,038	2,780 (30.85)	5,036 (25.4%)	2,400 (12.1%)	1,194 (6.0%)	507	2.8	6	1	7 (1.4%)	273	4 (1.5%)	234	3 (1.3%)
74104	14,050	1,012	255 (25.2%)	6,522	4,463 (68.4%)	1,908 (13.6%)	944 (6.7%)	808 (5.8%)	82	2.5	0	0	0 (0.0%)	39	0 (0.0%)	43	0 (0.0%)
74106	18,106	1,888	992 (52.6%)	8,115	2,788 (34.4%)	837 (4.6%)	14,560 (80.4%)	395 (2.2%)	203	2.1	2	0	2 (1.0%)	123	2 (1.6%)	80	0 (0.0%)
74110	15,267	1,619	916 (56.6%)	6,366	2,786 (43.8%)	2,457 (16.1%)	4,064 (26.6%)	1,231 (8.1%)	231	2.2	2	0	2 (0.9%)	140	1 (0.7%)	91	1 (1.1%)
74115	23,687	2,617	727 (27.8%)	9,882	2,560 (25.9%)	2,046 (8.6%)	3,645 (15.4%)	2,012 (8.5%)	312	2.1	2	1	3 (1.0%)	193	2 (1.0%)	119	1 (0.8%)
74127	18,108	1,516	390 (25.7%)	7,974	3,227 (40.5%)	940 (5.2%)	4,568 (25.2%)	1,308 (7.2%)	168	2.2	0	0	0 (0.0%)	103	0 (0.0%)	65	0 (0.0%)
74401	18,018	1,682	665 (39.5%)	8,125	2,566 (31.6%)	431 (2.4%)	6,245 (34.7%)	1,787 (9.9%)	259	2.5	9	2	11 (4.2%)	149	6 (4.0%)	110	5 (4.5%)
74403	30,035	2,506	573 (22.9%)	13,258	3,089 (23.3%)	980 (3.3%)	1,181 (3.9%)	4,598 (15.3%)	342	2.3	2	2	4 (1.2%)	196	1 (0.5%)	146	3 (2.1%)
73521	23,130	2,363	480 (20.3%)	8,554	1,987 (23.2%)	3,836 (16.6%)	2,256 (9.8%)	351 (1.5%)	572	1.7	4	1	5 (0.9%)	271	2 (0.7%)	301	3 (1.0%)
74447	17,997	1,507	504 (33.4%)	8,163	2,763 (33.8%)	333 (1.9%)	3,219 (17.9%)	2,466 (13.7%)	357	3.6	2	2	4 (1.1%)	231	4 (1.7%)	126	0 (0.0%)
74354	17,861	1,371	391 (28.5%)	7,890	2,330 (29.5%)	390 (2.2%)	168 (0.9%)	2,826 (15.8%)	198	2.4	2	1	3 (1.5%)	121	3 (2.5%)	77	0 (0.0%)
74631	8,378	698	189 (27.1%)	3,833	1,879 (49.0%)	455 (5.4%)	10 (0.1%)	348 (4.2%)	246	3.1	6	1	7 (2.8%)	152	6 (3.9%)	94	1 (1.1%)
73701	23,646	2,098	752 (35.8%)	10,809	4,194 (38.8%)	1,630 (6.9%)	1,194 (5.0%)	621 (2.6%)	164	2.6	2	0	2 (1.2%)	108	2 (1.9%)	56	0 (0.0%)
74848	8,228	587	136 (23.2%)	3,379	1,312 (38.8%)	242 (2.9%)	525 (6.4%)	1,186 (14.4%)	116	2.1	2	1	3 (2.6%)	69	3 (4.3%)	47	0 (0.0%)
ALL HRTA ZIP CODES	375,729	24,822	12,558	165,104	60,481 (36.6%)	49,319 (13.1%)	68,312 (18.2%)	27,013 (7.2%)	6,253 (25.2%)	2.5	59	13	72 (1.2%)	3,492	46 (1.3%)	2,761	26 (0.9%)
OKLAHOMA	3,450,654	283,208	63,051 (22.3%)	1,514,400	272,451 (18.0%)	179,304 (5.2%)	260,968 (7.6%)	273,230 (7.9%)	38,264 (13.5%)	2.1	149	27	176 (0.5%)	22,147	108 (0.5%)	16,117	68 (0.4%)
U.S.	281,421,906	23,140,901	4,101,689 (17.7%)	115,904,641	25,815,821 (22.3%)	35,305,818 (12.5%)	34,658,190 (12.3%)	2,475,956 (0.9%)	-	-	-	-	-	-	-	-	-

- Total population, population of children ≤ 6 years of age, children ≤ 6 years of age living below poverty, total housing units, pre-1950 housing units, and minority population calculated from US Census Bureau 2000.
- Geometric mean was used instead of straight average (arithmetic mean) since there may be a wide variation in the blood lead levels. A geometric mean suppresses the effect of very high or low values and therefore does not bias the mean.
- EBLL (Elevated Blood Lead Level): An EBLL is defined as a confirmed concentration of greater than or equal to (≥) 10 micrograms (µg) of lead per deciliter (dL) of blood measured on a venous sample.
- Case rate is defined as the number of children less than or equal to (≤) 6 years of age with an EBLL divided by the total number of children ≤ 6 years of age who received a blood lead test.
- SoonerCare is Oklahoma’s Medicaid program.

Map 5: Case Rates, Jackson County - 2009

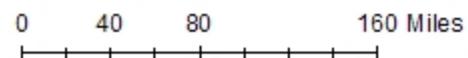


Legend

- High-Risk Target Area (HRTA) Zip Code
- Zip Codes with 0.0% Case Rate or 1 Case
- Zip Codes with 0.1% - 1.0% Case Rate

Notes

The OCLPPP has identified 1 HRTA zip code, 73521, in Jackson County. During 2009, there were 5 EBLL cases in Jackson County and all 5 of them were in the HRTA zip code. The overall case rate in Jackson County during 2009 was 0.8%.

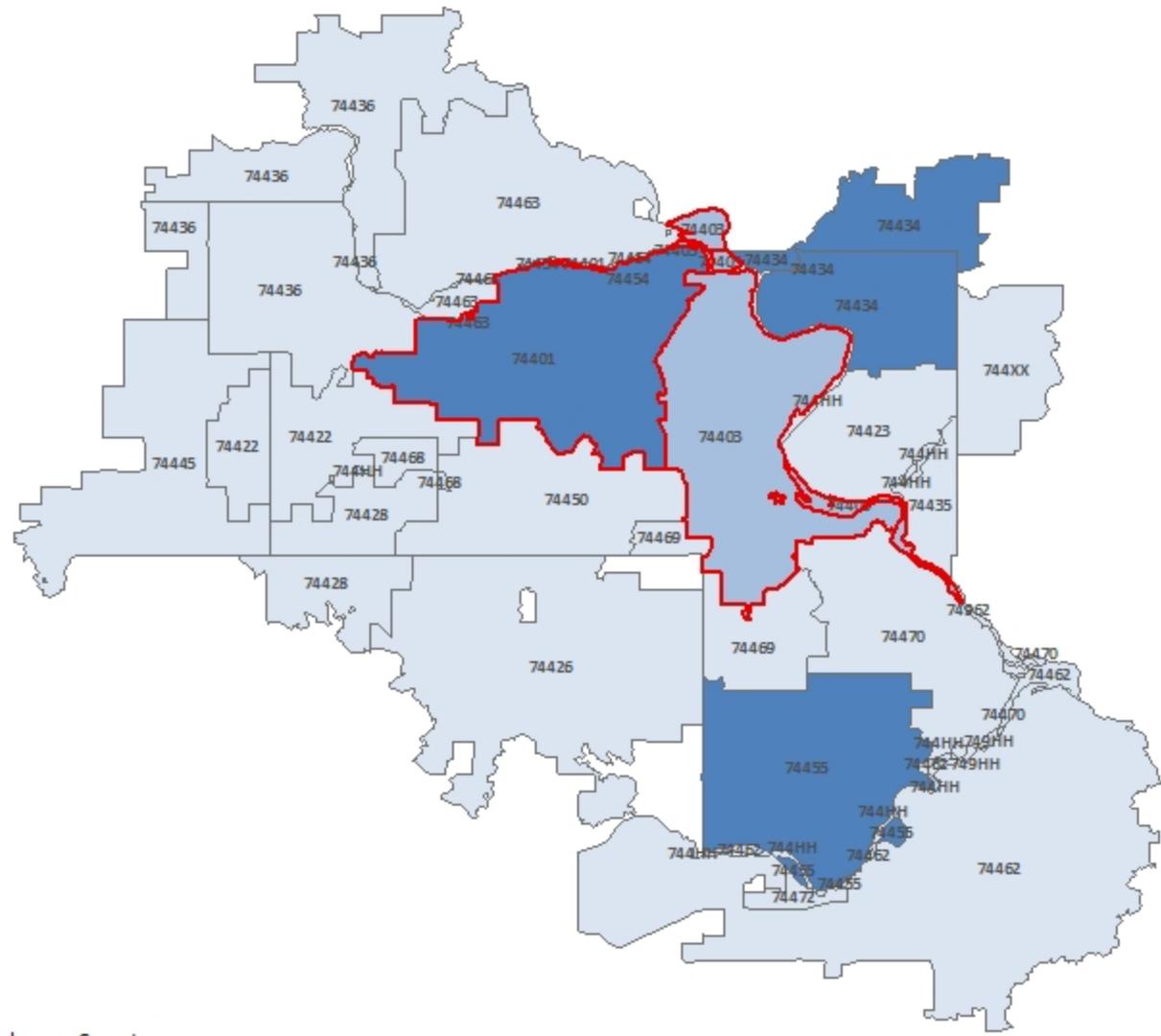


Data Source: Oklahoma Childhood Lead Poisoning Prevention Surveillance Data

Map 7: Case Rates, Muskogee County - 2009

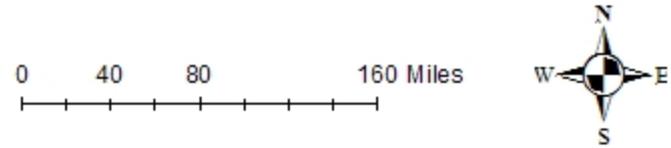
Legend

- High-Risk Target Area (HRTA) Zip Codes
- Zip Codes with 0.0% Case Rate or 1 Case
- Zip Codes with 1.1% - 2.0% Case Rate
- Zip Codes with > 2.0% Case Rate



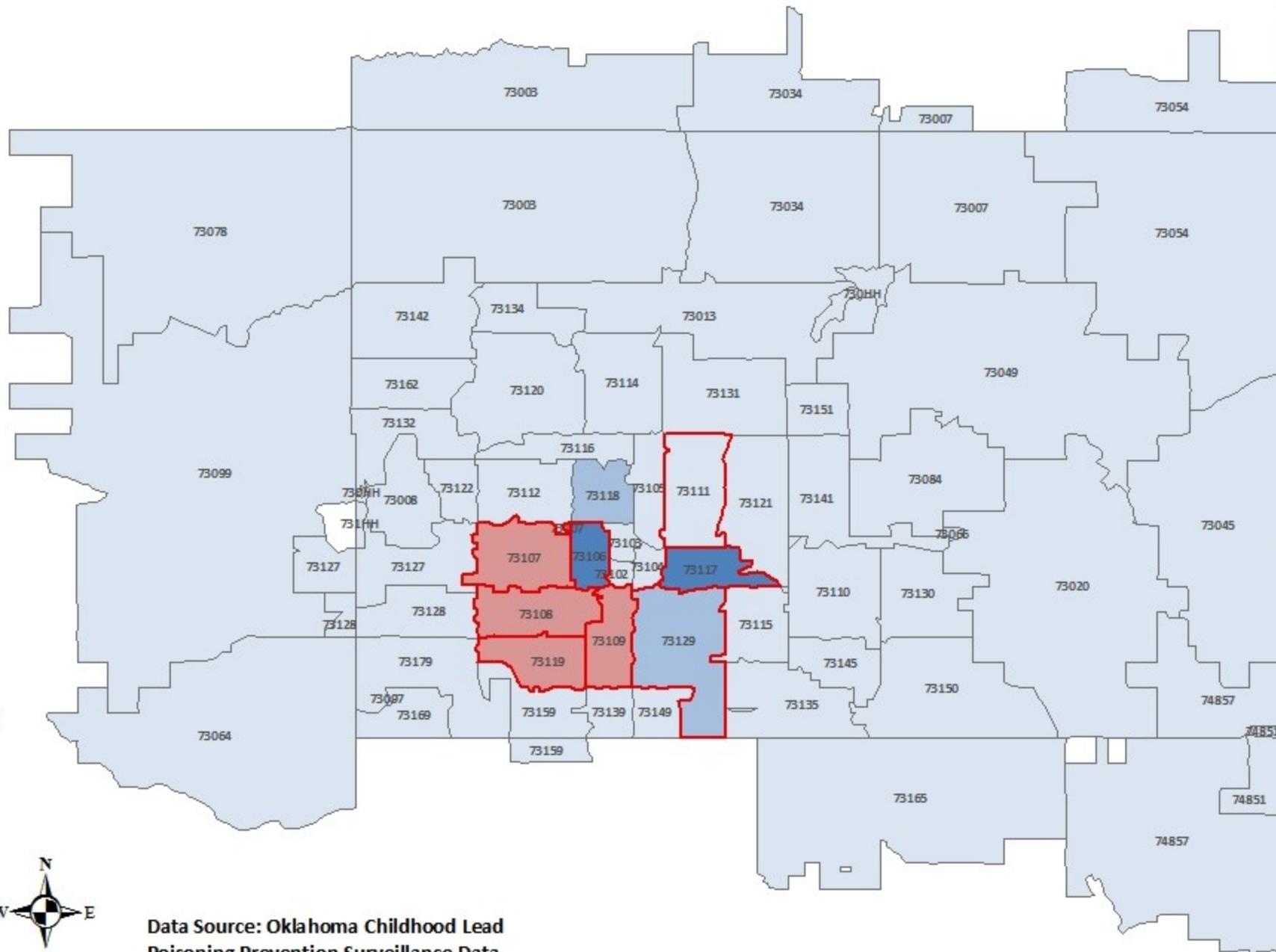
Notes

The OCLPPP has identified 2 HRTA zip codes in Muskogee County. The zip codes are 74401 and 74403. During 2009, there were 19 EBLL cases in Muskogee County and 15 of them were in the HRTA zip codes. The overall case rate in Muskogee County during 2009 was 2.2%.



Data Source: Oklahoma Childhood Lead Poisoning Prevention Surveillance Data

Map 8: Case Rates, Oklahoma County - 2009

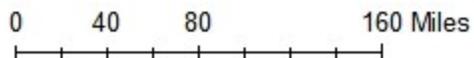


Legend

- High-Risk Target Area (HRTA) Zip Codes
- Zip Codes with 0.0% Case Rate or 1 Case
- Zip Codes with 0.1% - 1.0% Case Rate
- Zip Codes with 1.1% - 2.0% Case Rate
- Zip Codes with > 2.0% Case Rate

Notes

The OCLPPP has identified 8 HRTA zip codes in Oklahoma County. The zip codes are 73106, 73107, 73108, 73109, 73111, 73117, 73119, and 73129. During 2009, there were 36 EBLL cases in Oklahoma County and 26 of them were in the HRTA zip codes. The overall case rate in Oklahoma County during 2009 was 0.5%.

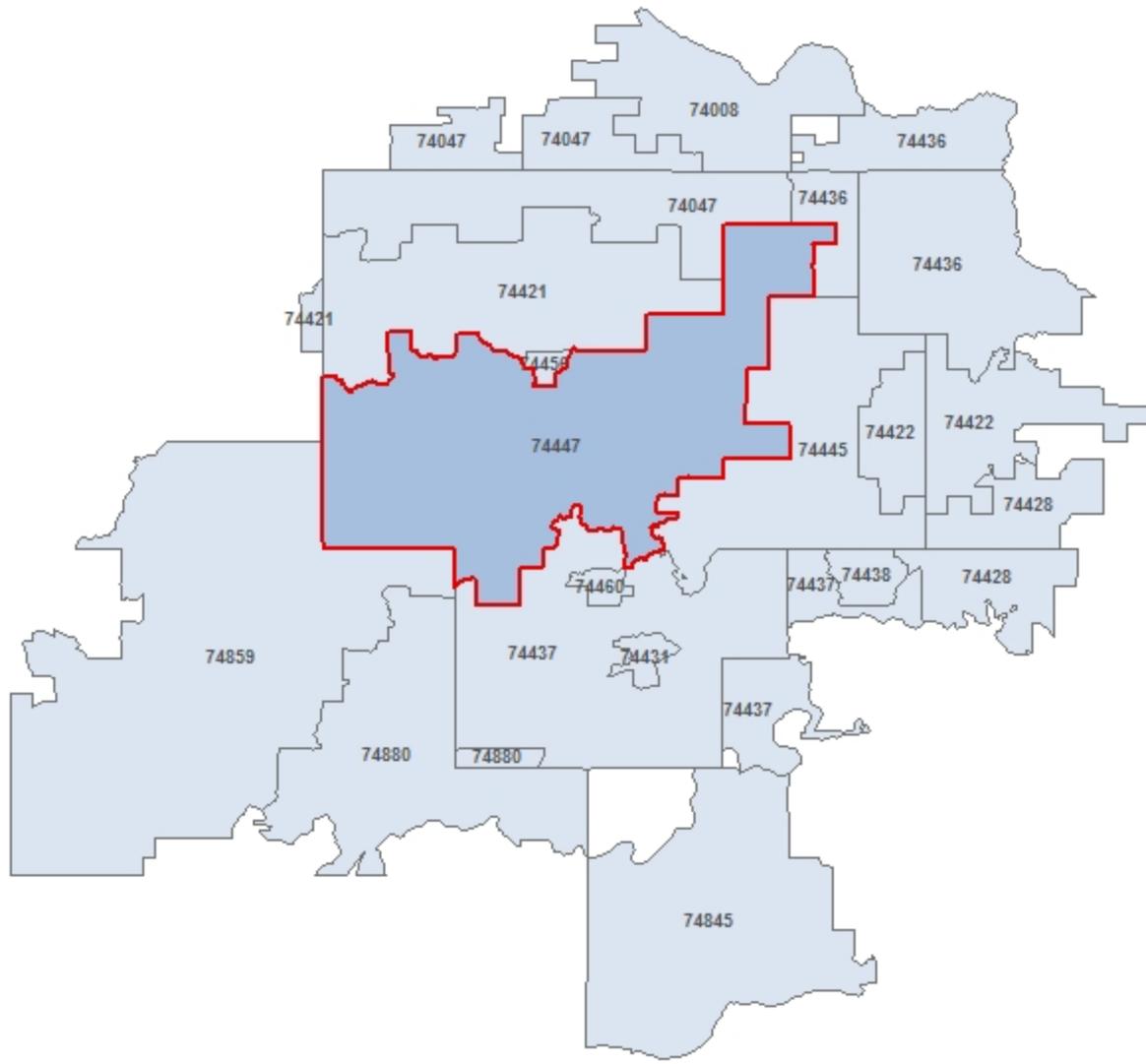


Data Source: Oklahoma Childhood Lead Poisoning Prevention Surveillance Data

Map 9: Case Rates, Okmulgee County - 2009

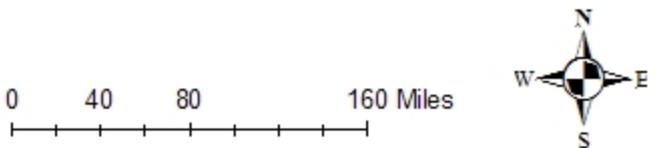
Legend

-  High-Risk Target Area (HRTA) Zip Code
-  Zip Codes with 0.0% Case Rate or 1 Case
-  Zip Codes with 1.1% - 2.0% Case Rate



Notes

The OCLPPP has identified 1 HRTA zip code, 74447, in Okmulgee County. During 2009, there were 4 EBLI cases in Okmulgee County and all 4 of them were in the HRTA zip code. The overall case rate in Okmulgee County during 2009 was 0.7%.

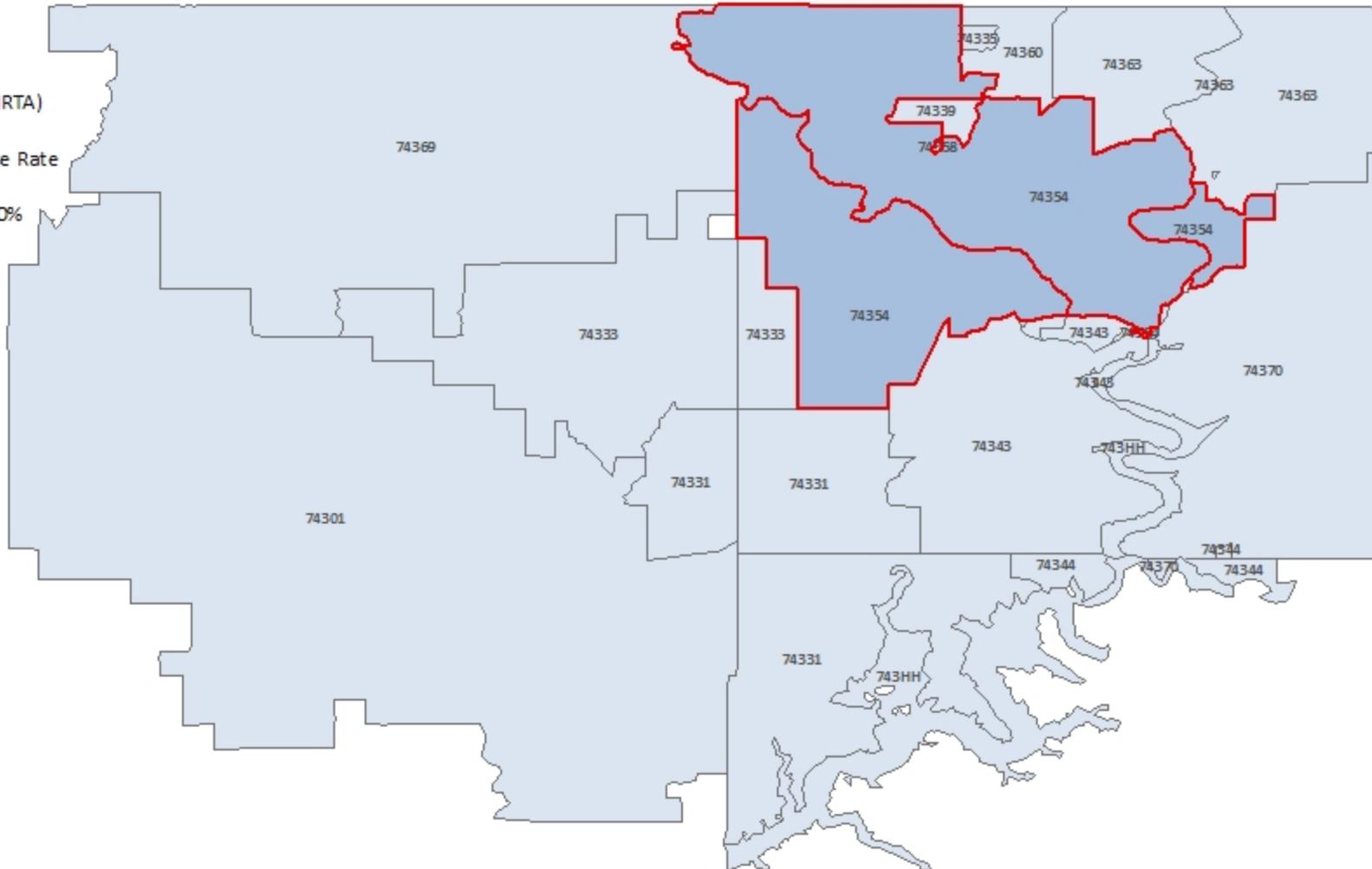


Data Source: Oklahoma Childhood Lead Poisoning Prevention Surveillance Data

Map 10: Case Rates, Ottawa County - 2009

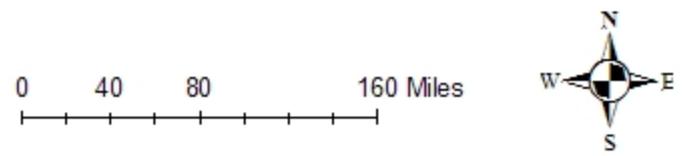
Legend

-  High-Risk Target Area (HRTA) Zip Code
-  Zip Codes with 0.0% Case Rate or 1 Case
-  Zip Codes with 1.1% - 2.0% Case Rate



Notes

The OCLPPP has identified 1 HRTA zip code, 74354, in Ottawa County. During 2009, there were 5 EBLL cases in Ottawa County and 3 of them were in the HRTA zip code. The overall case rate in Ottawa County during 2009 was 1.7%.

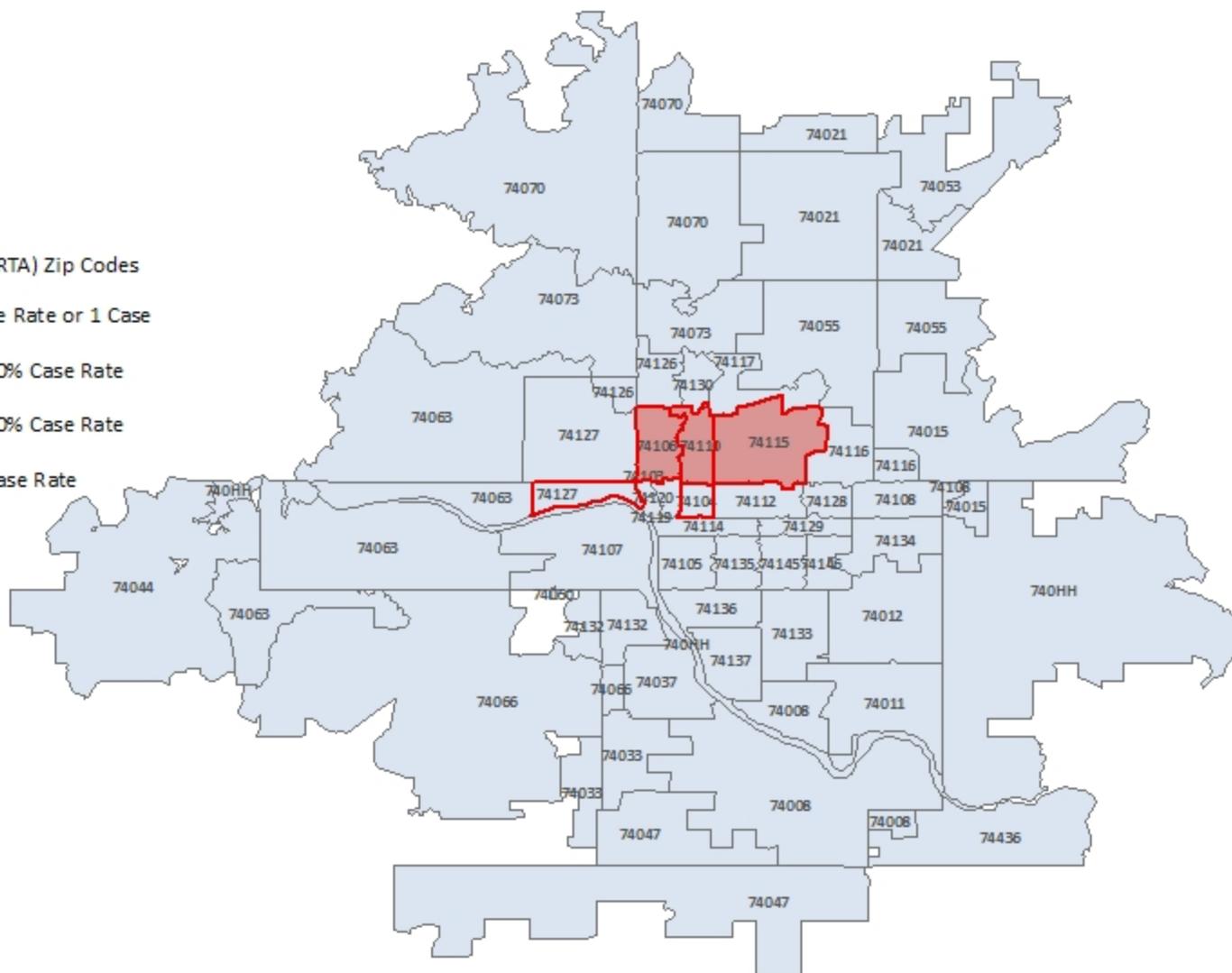


Data Source: Oklahoma Childhood Lead Poisoning Prevention Surveillance Data

Map 11: Case Rates, Tulsa County - 2009

Legend

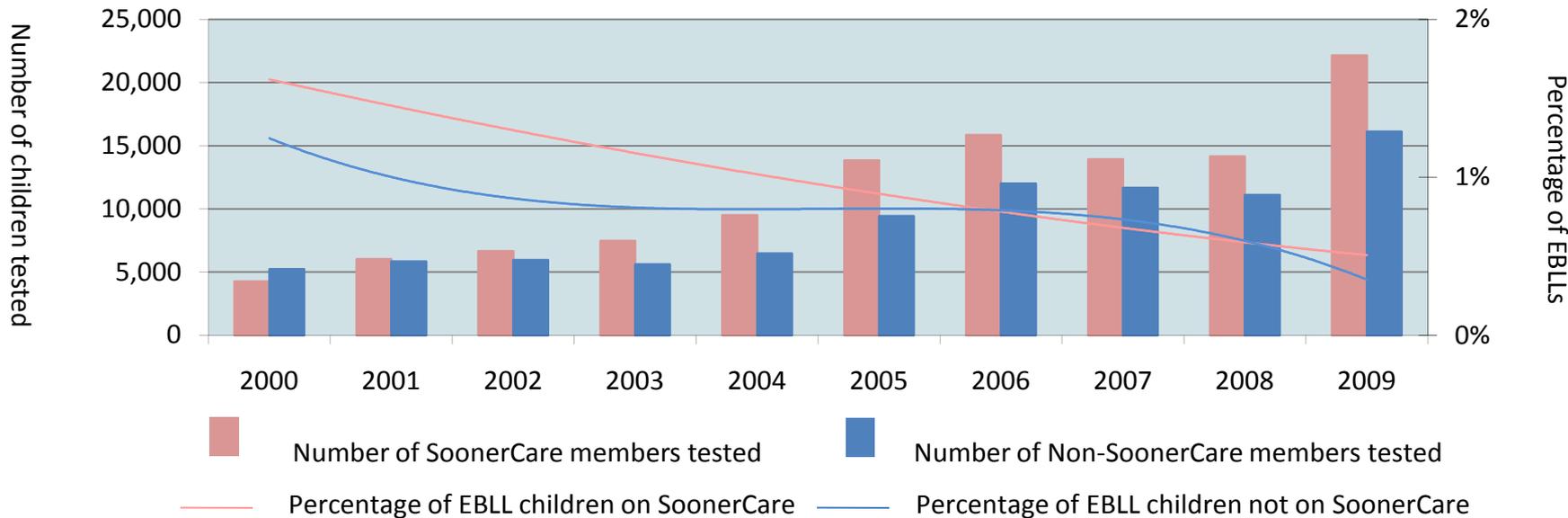
-  High-Risk Target Area (HRTA) Zip Codes
-  Zip Codes with 0.0% Case Rate or 1 Case
-  Zip Codes with 0.1% - 1.0% Case Rate
-  Zip Codes with 1.1% - 2.0% Case Rate
-  Zip Codes with > 2.0% Case Rate



Notes

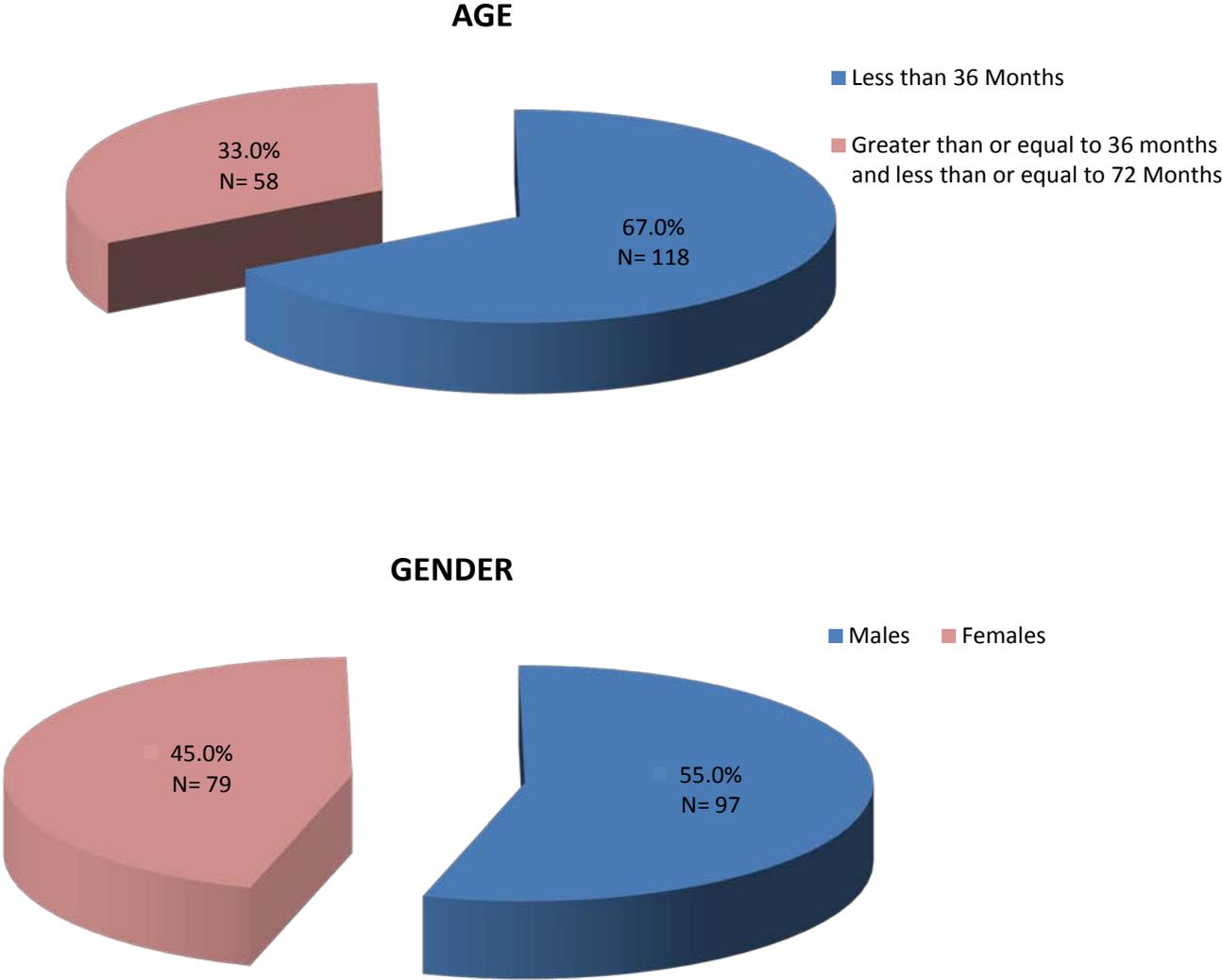
The OCLPPP has identified 5 HRTA zip codes in Tulsa County. The zip codes are 74104, 74106, 74110, 74115, and 74127. During 2009, there were 13 EBL cases in Tulsa County and 7 of them were in the HRTA zip codes. The overall case rate in Tulsa County during 2009 was 0.3%.

Figure 3: Comparison of Childhood EBLL Rates in SoonerCare and Non-SoonerCare Populations, 2000-2009



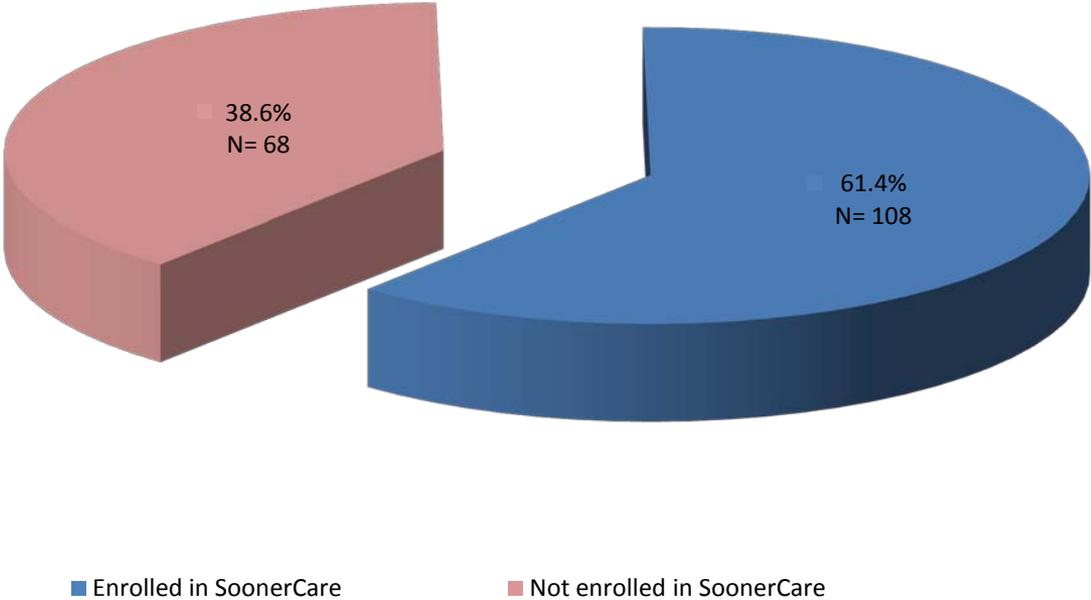
Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of SoonerCare members tested	4,274	6,026	6,656	7,465	9,497	13,848	15,852	13,932	14,149	22,147
Percentage of EBLL children on SoonerCare	1.7%	1.3%	1.3%	1.3%	0.9%	1.0%	0.7%	0.7%	0.6%	0.5%
Number of Non-SoonerCare members tested	5,245	5,855	5,967	5,611	6,475	9,431	12,007	11,683	11,104	16,117
Percentage of EBLL children not on SoonerCare	1.3%	0.9%	0.9%	0.8%	0.8%	0.9%	0.7%	0.8%	0.5%	0.4%

Figure 4: Distribution of EBLL Cases in Oklahoma By Selected Characteristics - 2009

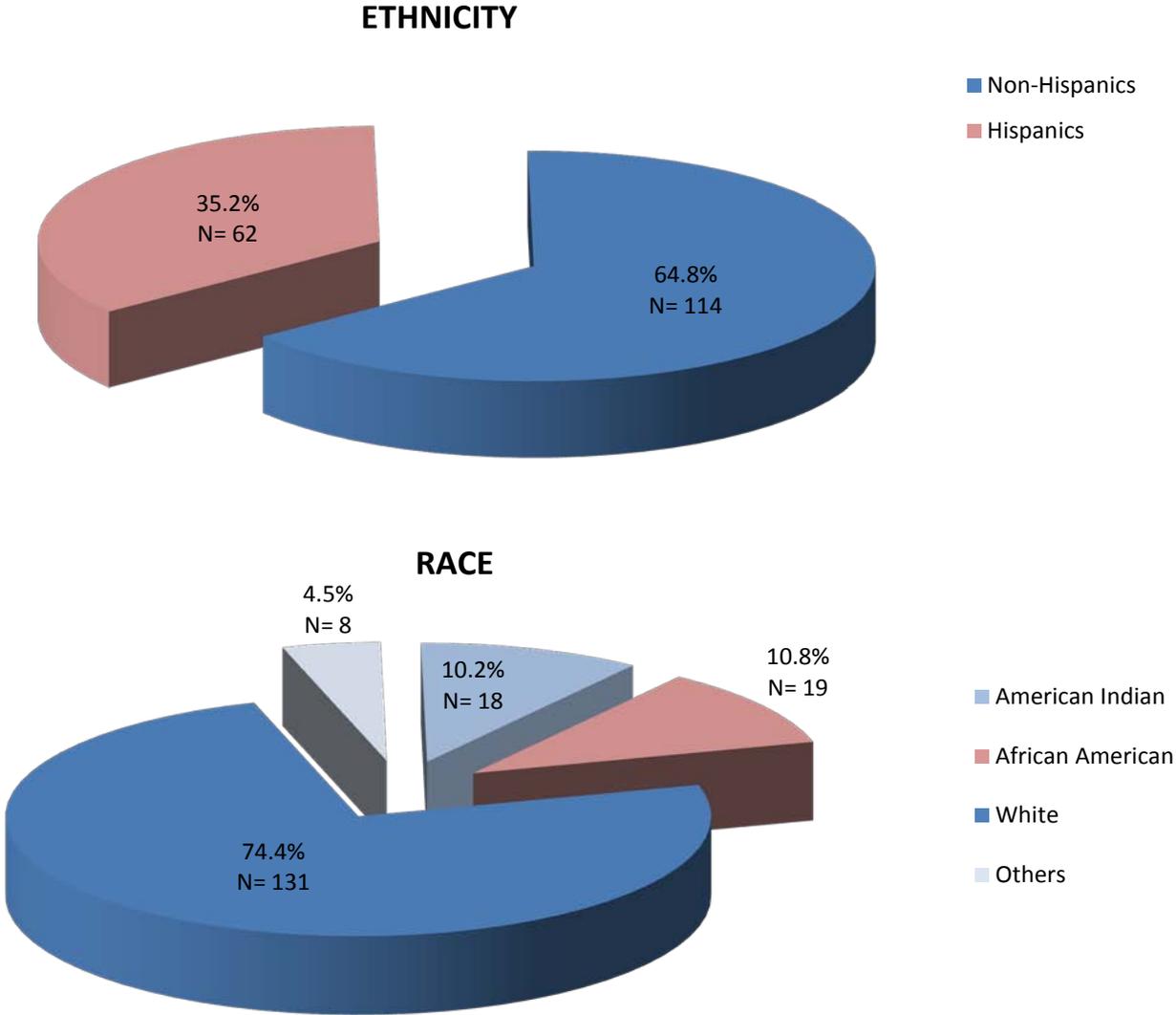


**Figure 4: Distribution of EBLL Cases in Oklahoma
By Selected Characteristics – 2009 (Continued)**

SOONERCARE MEMBERSHIP (OKLAHOMA MEDICAID) STATUS



**Figure 4: Distribution of EBLL Cases in Oklahoma
By Selected Characteristics – 2009 (Continued)**

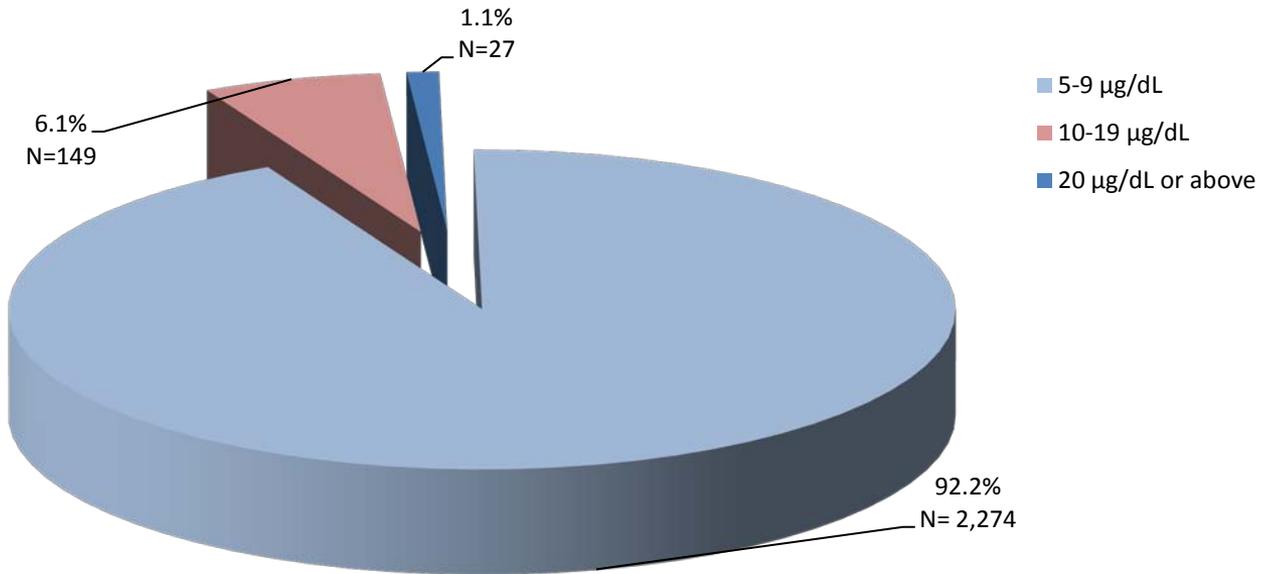


**Figure 4: Distribution of EBLL Cases in Oklahoma
By Selected Characteristics – 2009 (Continued)**

Total EBLL Cases	Age		Gender		SoonerCare Status		Ethnicity		Race			
	< 36 months	≥ 36 and ≤ 72 months	Male	Female	Yes	No	H	N	AI	AA	W	O
176	118 (67.0%)	58 (33.0%)	97 (55.0%)	79 (45.0%)	108 (61.4%)	68 (38.6%)	62 (35.2%)	114 (64.0%)	18 (10.2%)	19 (10.8%)	131 (74.4%)	8 (4.5%)

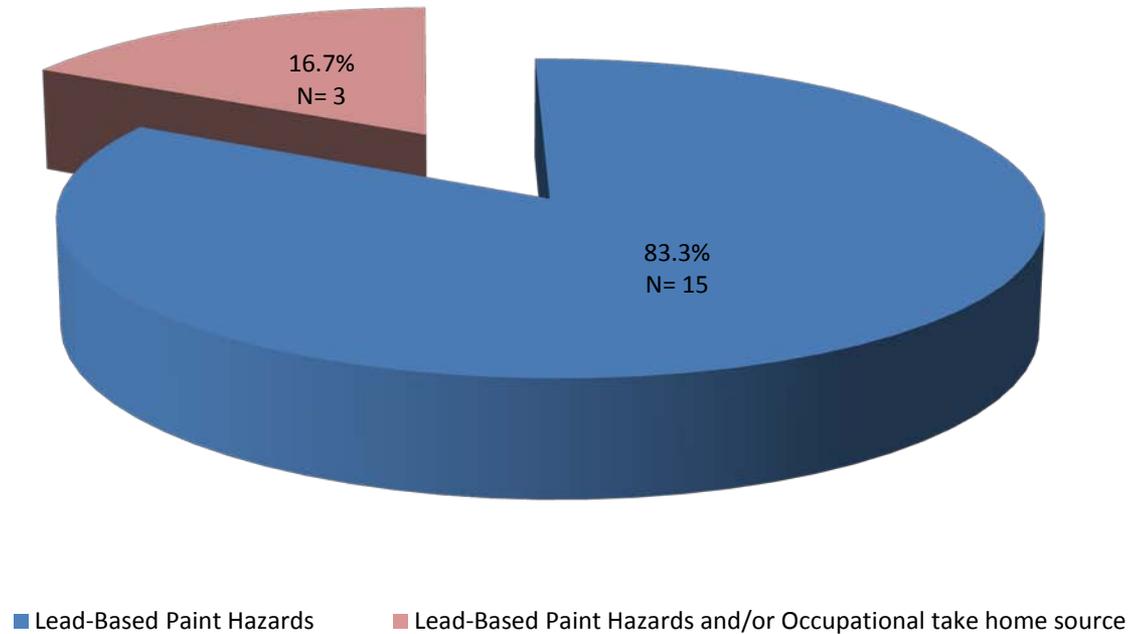
- Among the children identified as EBLL cases during 2009, the percentage of children < 36 months of age was higher as compared to children ≥ 36 and ≤ 72 months of age during 2009 (67.0% vs. 33.0%). This was primarily because a higher percentage of children < 36 months of age were tested as compared to children ≥ 36 and ≤ 72 months of age during 2009 (66.2% for children < 36 months of age vs. 33.8% for children ≥ 36 and ≤ 72 months of age). The prevalence or the case rates among children < 36 months of age and children ≥ 36 and ≤ 72 months of age were comparable during 2009 (0.5% for children < 36 months of age vs. 0.4% for children ≥ 36 and ≤ 72 months of age).
- Among the children identified as EBLL cases during 2009, the percentage of males was slightly higher as compared to females (55.0% vs. 45.0%). This was primarily because a slightly higher percentage of males were tested as compared to females during 2009 (51.5% for males vs. 48.5% for females). The prevalence or the case rates among males and females were comparable during 2009 (0.5% for males vs. 0.4% for females).
- Among the children identified as EBLL cases during 2009, the percentage of children enrolled in SoonerCare (Oklahoma’s Medicaid) was higher as compared to children not on SoonerCare (61.4% vs. 38.6%). This was primarily because a higher percentage of children enrolled in SoonerCare were tested as compared to children not on SoonerCare during 2009 (57.9% for children enrolled in SoonerCare vs. 42.1% for children not on SoonerCare). The prevalence or the case rates among children enrolled in SoonerCare and children not on SoonerCare were comparable during 2009 (0.5% for children enrolled in SoonerCare vs. 0.4% for children not on SoonerCare).
- Among the children identified as EBLL cases during 2009, the percentage of non-Hispanics and white children was higher as compared to other minority groups. However, the prevalence or the case rates among minority groups cannot be determined because of the missing or incomplete race and ethnicity data in OCLPPP surveillance database. Collection and reporting of reliable and valid race and ethnicity data by the providers and the laboratories is a problem which exists nationwide.

Figure 5: Case Management



- The OCLPPP has developed case management guidelines to facilitate the follow-up testing of children ≤ 6 years of age.
- OCLPPP provide limited follow-up for children with blood lead levels between 5 and 9 µg/dL. A letter is generated to the parents alerting them to the child's risk of lead poisoning, recommending follow-up testing and offering educational information to reduce further exposure. During 2009, OCLPPP sent 5-9µg/dL letter and the educational packet to the families of 2,274 children.
- The OCLPPP provides individualized guidance to parents of children with EBLLs between 10 and 19 µg/dL, and consultation to health care providers on appropriate follow-up of children with EBLL. Families are provided with fact sheets, brochures, and pamphlets in order to increase their awareness about lead poisoning, sources of exposure, and how to reduce them. Children are retested (venous) every two months until two consecutive blood lead measurements below 10 µg/dL are achieved. During 2009, OCLPPP provided comprehensive case management services to the families of 149 children with EBLLs between 10 and 19 µg/dL.
- The case management protocol for children with first time EBLL between 15-19 µg/dL is same as for 10-14 µg/dL range. However if the level persists (two venous EBLLs in this range at least 2 months apart), then the child receives an environmental Investigation (EI). An EI is performed in child's home and other sites where significant amount of time is spent. During 2009, OCLPPP conducted three EIs for children with persistent blood lead level of 15-19 µg/dL.
- Of the 27 children with an EBLL of ≥ 20 µg/dL during 2009, 23 cases were eligible for an EI while four existing cases already received an investigation in previous years. OCLPPP conducted EIs inside the homes of 18 children. Families of remaining five children either refused the service or moved to a different location and could not be located.

Figure 5: Case Management (*Continued*)



- Lead-based paint (LBP) hazards including deteriorated lead-based paint, lead contaminated dust, and soil were identified as the biggest source of childhood lead poisoning during the 18 EIs conducted by OCLPPP in 2009.
- Fifteen (15) out of 18 EIs (83.3%) identified LBP hazards as the source of lead poisoning, whereas three EIs (16.7%) identified an occupational take home source of lead poisoning along with LBP hazards.

Glossary

Elevated Blood Lead Level (EBLL): An EBLL means a confirmed concentration of greater than or equal to (\geq) 10 micrograms (μg) of lead per deciliter (dL) of blood measured on a venous sample. The Centers for Disease Control and Prevention (CDC) has set a level of concern for children at 10 $\mu\text{g}/\text{dL}$ at which recommended specific Interventions should be implemented to reduce the blood lead levels

Capillary blood specimen: Blood drawn from the capillary (finger stick) to measure lead. Capillary blood specimens are acceptable for lead screening if appropriate collection procedures are followed to minimize the risk of environmental lead contamination.

Venous blood specimen: Blood drawn from the vein to measure lead. Venous blood specimens are preferred for blood lead analysis and should be used for lead measurement whenever practical.

Screening Rate: Number of children less than or equal to (\leq) 6 years of age who received a blood lead test divided by total number of children less than or equal to (\leq) 6 years of age.

Incidence of EBLL: New EBLL cases less than or equal to (\leq) 6 years of age in a year that have never been lead poisoned before. It is calculated by dividing the total number of new EBLL cases for a year by the total number of children that either were not previously tested or previously had a blood lead level $< 10 \mu\text{g}/\text{dl}$.

Prevalence of EBLL: Existing (old and new) EBLL less than or equal to (\leq) 6 years of age. It is calculated by dividing the total number of EBLL cases by the total number of children that received a blood lead test. The term prevalence is used interchangeably with case rate in this report.

Case Rate: Case rate is defined as the number of children less than or equal to (\leq) 6 years of age with an EBLL divided by the total number of children \leq 6 years of age who received a blood lead test.

Geometric Mean: For the analysis of blood lead levels, geometric mean is often used instead of straight average (arithmetic mean) since there may be a wide variation in the blood lead levels. A geometric mean suppresses the effect of very high or low values and therefore does not bias the mean.

High-Risk Target Area (HRTA) zip codes: Twenty-one (21) zip codes within nine Oklahoma counties have been identified as HRTA zip codes in which there is a likelihood of a high number of young children at risk for lead exposure and poisoning.

SoonerCare: Oklahoma Medicaid program.

Case management: Management of children with EBLLs through coordinating, providing, and overseeing the services required to reduce their blood lead levels below the level of concern.

Environmental Investigation: Investigating the child's environment, which includes the home and other sites where the child spends significant amount of time to identify lead sources.