Florida Department of Health
Healthy Homes and Lead Poisoning Prevention Program

2010 Annual Childhood Lead Poisoning Surveillance Report

DIVISION OF Environmental Health

Published: April 2012

FL Lead Poisoning Prevention & Healthy Homes Program
2010 Annual Childhood Surveillance Report

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Florida's Healthy Homes Lead Poisoning Prevention and Program

INTRODUCTION

The surveillance findings presented in the 2010 Childhood Lead Poisoning Surveillance Annual Report are based on reported blood lead test data for children less than six years old in Florida. Statewide analyses were conducted over a five year period to determine trends in screening and case rates among children tested for lead poisoning. For the last five years (2006 to 2010), the screening rate increased by 16 percent. Although the number of new cases declined consistently from 2006 to 2009, there was an increase (34%) in the number of newly identified lead poisoned cases from 2009 to 2010 (190 and 254 respectively). This may be due to an increase in the identification of cases in high-risk zip codes and among high-risk populations. For example, 54% more children (less than 6 years old) were reported with elevated blood levels in high-risk zip codes in 2010 (231 children) than in 2009 (150 children)

Refugee and Medicaid-eligible children are two of the high-risk populations targeted for lead testing in Florida. Data matching of refugee health data with childhood blood lead test data for 2008 to 2010 indicated that a large percent of refugee children are being missed for lead testing. Among the identified refugee children 0 to 16 years of age who arrived in Florida during this time period (*3,431* children), 60% were tested for lead (2,052 children). The absence of Medicaid eligibility data at the time of publication of this report prevented assessment of this group of children. Matching of the Medicaid-eligibility and lead screening data is a program priority and is expected to be conducted and analyzed in 2012. The Florida Healthy Homes and Lead Poisoning Prevention Program (FHHLPPP) will use the findings from surveillance data analyses to inform the appropriate state agencies of screening and lead poisoning rates among high-risk groups of children.

In January 2010, new case management screens were released in Merlin, the State's surveillance database, and became accessible to all CHDs case managers. Also, in February 2010, FHHLPPP initiated a robust lead poisoning case review process in Merlin. This activity was to ensure accurate documentation of the lead poisoning surveillance data, to monitor efforts made towards providing adequate case management/investigation of lead poisoned children, and to assure that lead poisoned children are being referred for appropriate medical care and management. These changes facilitated capturing of electronic data on risk factors such as Medicaid eligibility, refugee status and year housing was built. Reporting of these risk factors will allow the program to determine the most frequently reported lead sources among affected children in high risk areas. The program also used geographic information systems (GIS) techniques to identify geographic areas where children at-risk for lead poisoning reside. The program to develop and improve interventions to those affected areas and pinpoint areas where lead poisoning screening efforts should be enhanced.

Florida's Healthy Homes & Lead Poisoning Prevention Program

HEALTH EFFECTS OF CHILDHOOD LEAD EXPOSURE
There is no safe level of lead in the blood. Research suggests that even blood lead levels below the current level of concern, 10 µg/dL, can have harmful effects (Canfield et al., 2003).The higher the blood lead level the greater the impact on the health and cognitive development of a child. Very high levels of blood lead concentrations may result in seizures, coma, and death.

MISSION
The mission of FHHLPPP is to protect the health and cognitive development of all children living in Florida by eliminating childhood exposure to all lead hazards.

ELIMINATING CHILDHOOD LEAD POISONING IN FLORIDA
The United States Department of Health and Human Services' Healthy People 2010 strategy for improving the Nation's health includes an objective to eliminate elevated blood lead levels in children less than 72 months of age. The FHHLPPP formed an advisory committee and created a strategic "elimination plan" to meet this objective in Florida. The committee, now called the Partnership for Lead Poisoning Prevention and Healthy Homes, meets annually.

ABOUT THE FL HHLPP
FHHLPP was established in 1992. The program currently undertakes the activities described below with support from the Centers for Disease Control and Prevention (CDC), the Environmental Protection Agency (EPA), and the Florida Legislature. Program activities are implemented in partnership with the 67 counties in Florida. FHHLPPP provides funding to six county health departments (CHDs) that serve high-risk areas to conduct screening and case management services. In 2009, the program changed its name to FLHHLPP based on expansion of program activities to include multiple housing-related health hazards.

- **Surveillance:** The FHHLPPP works closely with laboratories and health care providers to collect the results of all blood lead tests. Data are used for statewide surveillance of lead screening and poisoning. Surveillance data are also used to evaluate the impact of lead screening promotion and lead poisoning prevention initiatives at the state and local levels.

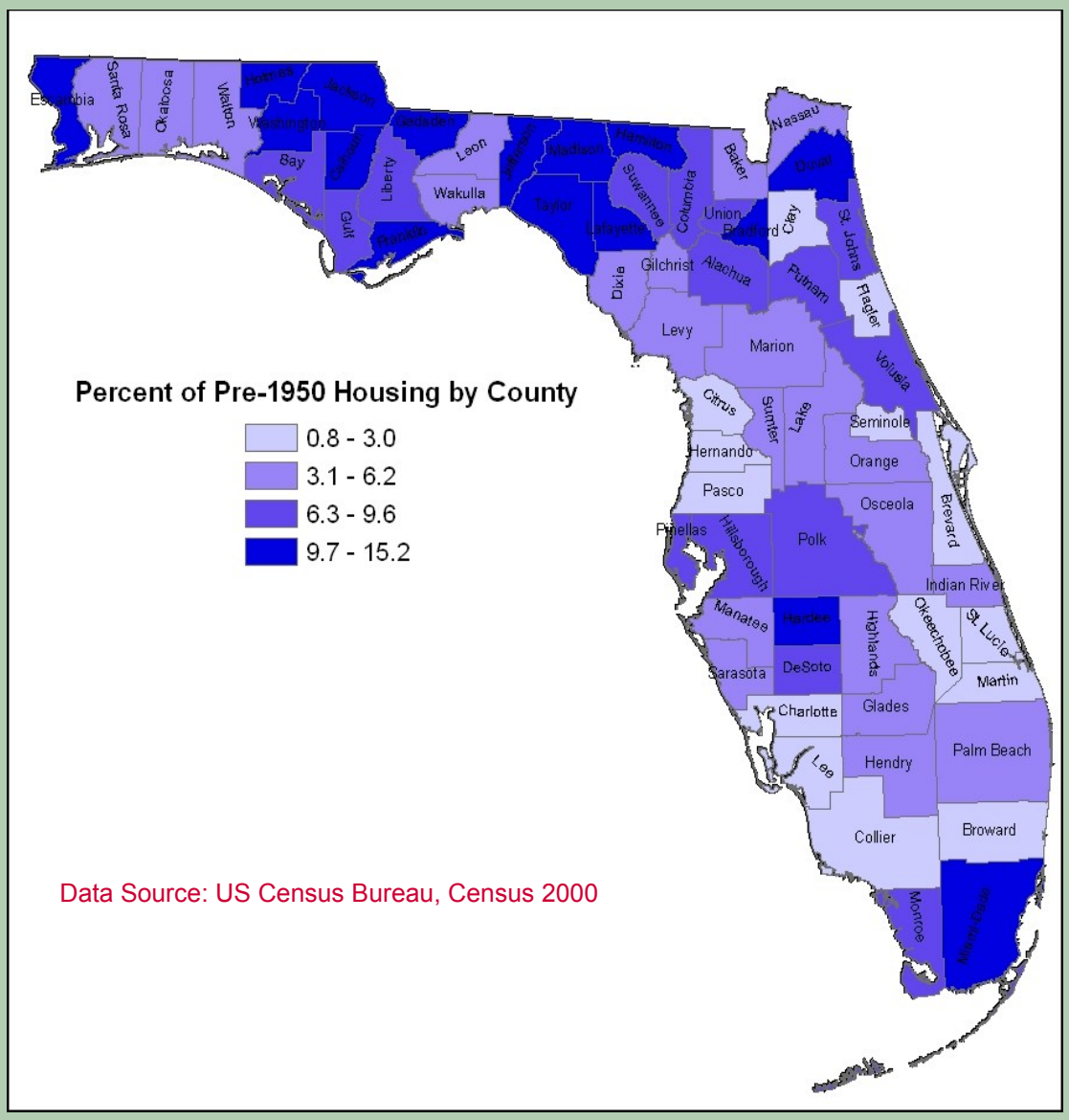
- **Screening & Case Management:** The FHHLPPP establishes blood lead screening guidelines and standard of care for lead poisoned children. The program provides education to health care providers across the state to ensure all children receive a blood lead test. The FHHLPPP is also establishing monitoring systems to ensure children diagnosed with lead poisoning receive timely and comprehensive case management including proper medical monitoring and services that effectively protect the child from repeated lead exposure.

- **Primary Prevention / Community Outreach and Education:** The FHHLPPP works to ensure families, communities, and professionals have the knowledge and tools needed to protect children from lead poisoning. The Lead Alert Network is one important primary prevention initiative. The FHHLPPP uses the network to distribute e-mail alerts to families when consumer products are recalled due to lead content. Individuals can sign up by visiting: http://www.doh.state.fl.us/environment/community/lead/The_Lead_Alert_Network.htm.
  The Healthy Homes Project is another important primary prevention activity. Families with identified lead poisoning risk factors are offered enrollment into the project. Participants receive a comprehensive visual assessment of their homes by trained environmental health specialists.

- **Protective Policy:** The FHHLPPP receives funding from the EPA and the CDC to explore the options for local oversight of federal regulations and policies at the state and local levels to support the primary prevention of lead poisoning and to prioritize and ensure care for children identified as lead poisoned.

Risk Factors: Percent of Pre-1950 Housing by County

Figure 1. Percent of Pre-1950 Housing by County

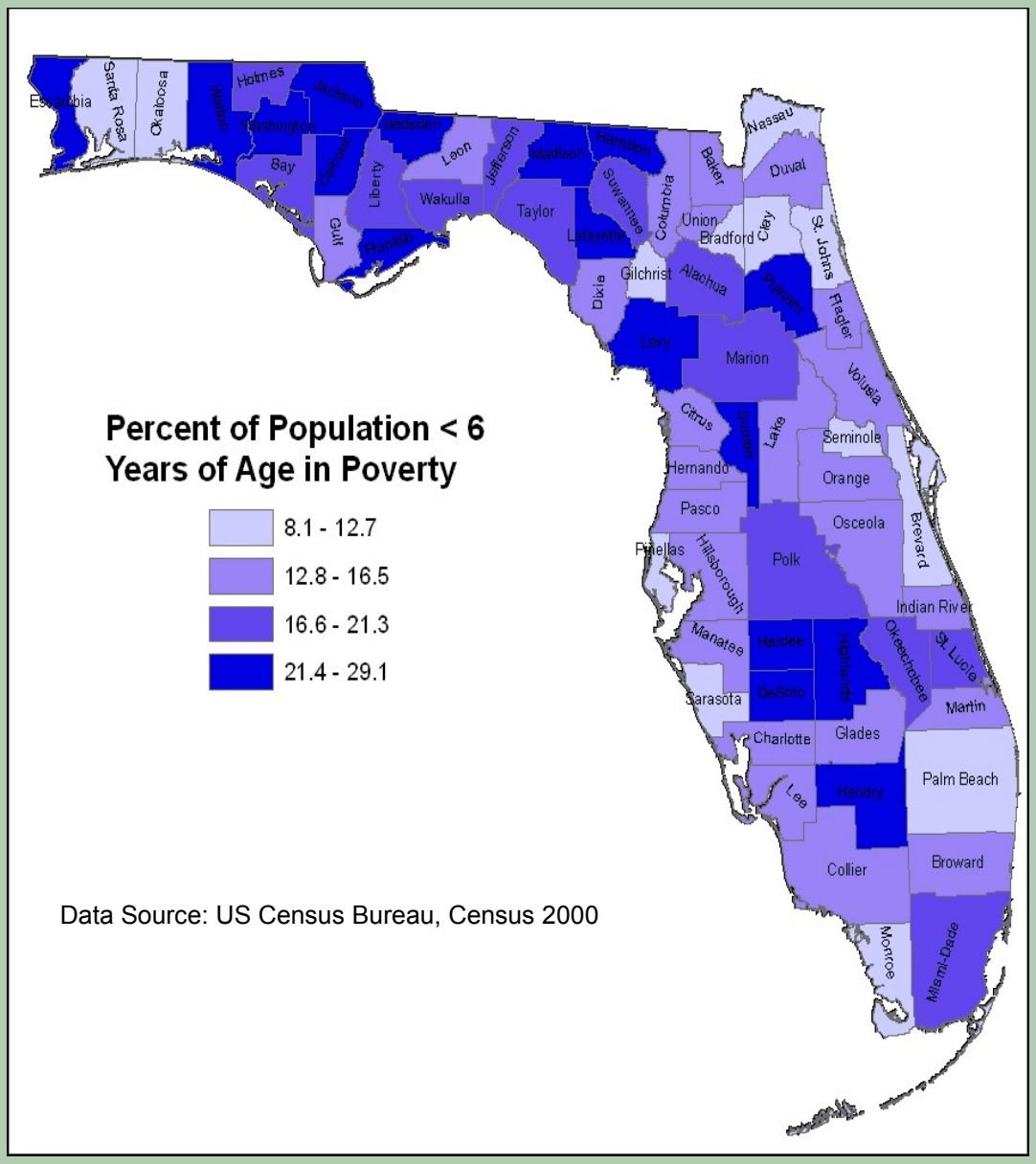


Lead-based paint is a primary source of lead exposure for children. Despite the ban on lead in residential paint in 1978, extensive use of leaded paint prior to 1978 has left many homes with lead-based hazards. Homes built prior to 1950 pose the greatest risk to children since the amount of lead in paints from that time is generally greater and the structural condition of these aging homes often facilitates greater risk of exposure to lead-based paint hazards. Exposures generally occur by ingestion of paint chips and/or inhalation of dust particles from deteriorating lead-based paint surfaces in older buildings.

As shown in figure 1, there is a substantial variation in the percent of pre-1950 homes in Florida. The proportion of pre-1950 housing varies by county from a low of less than 6 percent to over 15 percent. Funding is provided through FHHLPPP to counties with a high number of pre-1950 housing to facilitate targeted screening, case management and educational outreach to areas with the greatest number of high-risk children.

Risk Factors: Percent of Children less than 72 months in Poverty by County

Figure 2. Percent of Child Population in Poverty by County



Individuals from all socioeconomic levels can be affected by lead poisoning. However, children in low income families are more likely to reside in older and substandard homes with flaking lead paint and lead-contaminated dust. Children living in poverty are also more likely to suffer from poor nutrition. Diets deficient in calcium, iron, protein and/or zinc increase the absorption of lead and increase the vulnerability to the adverse effect of lead.

Medicaid eligibility serves as a proxy for poverty. Children that are Medicaid eligible may be at increased risk for lead poisoning because they are more likely to live in older, poorly maintained housing which is more likely to contain lead paint hazards.

Figure 2 shows that there is large variation in the level of childhood poverty by county, ranging from less than 8 percent to 29 percent of the population in some Florida counties. Funding is provided through FHHLPPP to specific counties for lead testing of uninsured children.

Potential Sources of Lead Exposure

Lead-based paint (pre-1978)
Homes built before 1950 are most likely to contain lead-based paint. Homes built before 1978 may have lead-based paint on the exterior and/or the interior of the dwelling. Children can easily come into contact with paint chips or lead dust created through wear and tear of windows, woodwork, walls, doors, railings or other surfaces covered with lead paint. Children are also susceptible to the extremely high levels of lead dust created in a home undergoing renovation and/or repair.

Lead-contaminated soil
Lead may be found in the soil, especially near busy roadways or factories. The lead from gasoline used in vehicles before the 1980s has settled into the soil and is difficult to remove. Children may come into contact with lead contaminated soil while playing outside. This soil may also be tracked inside on shoes and clothing and increase the risk for lead exposure.

Take-home lead
"Take-home lead" is lead dust carried home on items such as clothes and shoes of individuals whose hobbies or occupations involve lead. Some common jobs and hobbies that use lead include: battery manufacturing, radiator repair, construction, renovation, soldering, recycling, painting, demolition, scrap metal recycling, working with stained glass, pottery making, and target shooting.

Imported or handmade pottery with leaded glaze
Lead in ceramic glaze can leach into stored food and beverages, especially food and beverages that are acidic.

Imported food or drinks in cans that are sealed with lead solder
Some countries other than the United States still allow lead solder in food and drink cans.

Imported home remedies and imported cosmetics
Lead has been found in some home remedies and cosmetics often imported from the Middle East, Southeast Asia, India, the Dominican Republic, or Mexico. The remedies are usually bright yellow or orange in color. Examples include: Alarcon, Alkohl, Azarcon, Bali goli, Bint al zahab, Coral, Greta, Farouk, Ghasard, Kandu, Kohl, Liga, Litargirio, Lozeena, Pay-loo-ah, Sindoor, and Surma. There are many others.

Imported candies or foods
Lead has been found in candy, wrappers, and in certain ethnic foods, such as chapulines (dried grasshoppers) and tamarind.

Jewelry and toys
Adult and children's jewelry has been found to have lead. Some toys and other consumer products have also been found to contain lead. For more information please refer to the Consumer Product Safety Commission website at http://www.cpsc.gov/.

Florida Blood Lead Screening Guidelines

FLORIDA'S BLOOD LEAD SCREENING GUIDELINES 2006:
The FHHLPPP recommends that the following children receive a blood lead test:

- Children living in high-risk zip codes (defined as a census block-group with greater than or equal to 27 percent pre-1950 housing, or greater than or equal to 74 percent pre-1978 housing). (http://www.myfloridaeh.com/medicine/lead/CountyMap.html)
- Children less than 72 months of age who do not have a documented blood lead screening by age two and live in high-risk zip codes.
- Children who are Medicaid eligible.
- Immigrant and refugee children.
- Children adopted from outside the U.S.
- Children in foster care.
- Children with risk factors listed on the Florida Department of Health Lead Poisoning Risk Assessment Questionnaire (Screening & Case Management Guide, 2008: http://www.myfloridaeh.com/medicine/lead/education.htm)

Florida Medicaid guidelines, in accordance with federal requirements, stipulate that all children enrolled in Medicaid must receive a blood lead screening test at 12 and 24 months of age. The guidelines also specify that a blood test for children 36 to 72 months if they have not been previously screened for lead poisoning (Florida Medicaid Child Health Check-Up Coverage and Limitations Handbook).

FLORIDA'S CASE DEFINITION OF CHILDHOOD LEAD POISONING
Florida defines lead poisoning as a blood lead level of 10 µg/dL or greater of whole blood measured from a venous specimen or blood lead levels of 10 µg/dL or greater measured from two capillary draws taken within 12 weeks of one another. The population of greatest concern for lead poisoning is children less than 72 months of age. A confirmed case is considered a "new case" if it was not previously reported. A persistent case is a case confirmed during a previous year and whose blood lead level (BLL) remains elevated (≥10 µg/dL) in subsequent years.

Blood Lead Surveillance in Florida: Understanding Lead Surveillance Data

HISTORY OF BLOOD LEAD SURVEILLANCE IN FLORIDA

Blood lead data collection in Florida dates back to 1992 when lead poisoning became a notifiable disease. Only blood lead levels greater than or equal to 10µg/dL were required to be reported by laboratories and physicians up to 2005. During this time period, some laboratories provided results less than 10 µg/dL voluntarily. On November 20, 2006 laboratory reporting requirements were expanded. State regulations (shown below) now require laboratories to report blood lead levels (BLLs) of ALL blood lead tests. This includes users of portable blood lead testing devices.

LABORATORY REPORTING REQUIREMENTS

The Florida Statutes, Chapter 381, stipulates that practitioners and laboratory personnel should report diseases of Public Health Significance to the Department of Health. Chapter 64D-3 of the Florida Administrative Code states that laboratories are responsible for providing all of the following information with each blood lead record:

(a) The Patient's:

1. first and last name, including middle initial
2. address, including city, state and zip code
3. phone number, including area code
4. date of birth
5. sex
6. race
7. ethnicity (specify if of Hispanic descent or not of Hispanic descent)
8. pregnancy status
9. Social Security number

(b) The Laboratory/Entity Using Portable Lead Testing Devices:

1. name
2. address
3. telephone number of laboratory performing blood lead test
4. type of specimen (for example, venous vs. capillary specimen)
5. date of specimen collection
6. date of report
7. type of test (s) performed
8. all available results

(**c) The Submitting Provider's:**

1. name
2. address
3. telephone number, including area code

A NOTE ON DATA LIMITATIONS

There are several limitations inherent in surveillance data. The data collected by the FHHLPPP are no exception. Several caveats are bulleted below.

- In late 2006, the FHHLPPP conducted active outreach to laboratories to educate them about the new reporting regulations. Laboratories that had not previously reported lead test results began reporting at this time. This enhanced reporting may have increased the screening and case numbers reported when compared to previous years.
- Generally, race and ethnicity are underreported. The information reported on race does not reflect the true racial composition of lead poisoned children in Florida.
- Data presented in this report may vary from data reported by other agencies or from other sources due to variation in the data sources, methods of analysis, and/or data linkage.
- It is important to note that not all children receive a blood lead test in Florida. FL DOH recommends that all at-risk children are screened for lead poisoning, however many of these children are not cared for by traditional health care systems and may not receive an initial blood lead test. As a result, some cases of lead poisoning may never be identified or reported.

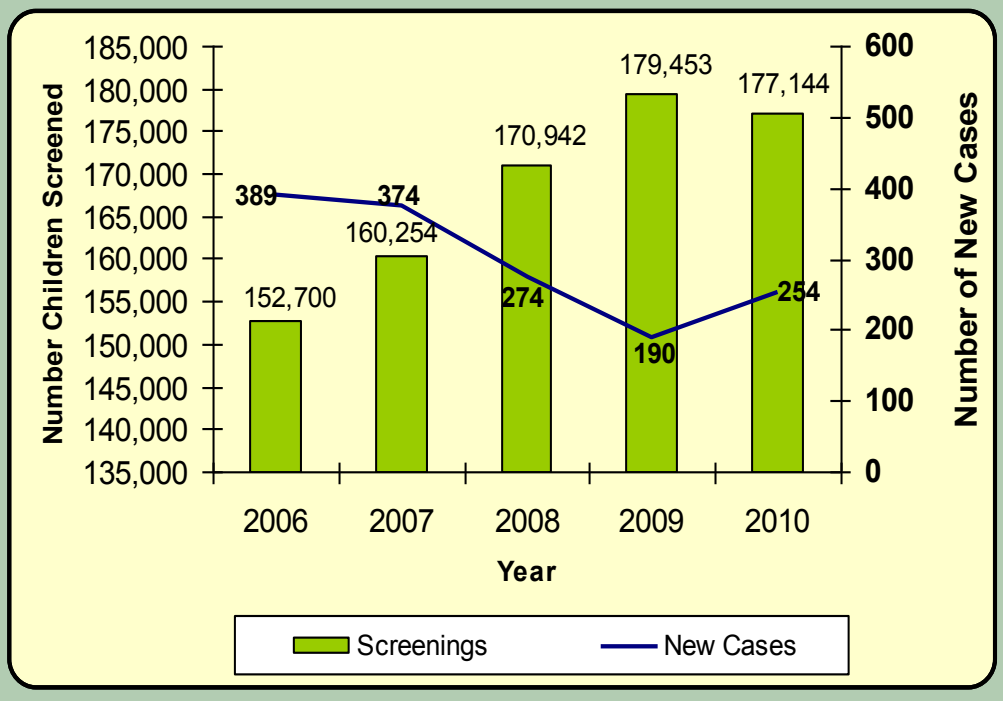
5-Year Statewide Trends: Number of Children Screened and Reported New Cases

The FHHLPPP monitors reported blood lead levels in children under 72 months of age. From the lead test data received, FHHLPPP determines annually the reported number of children who were lead poisoned and the reported number of children screened. Although some children are tested multiple times in a single year, only the first test per year is considered a screening. All subsequent tests are considered follow up tests.

Figure 3 shows the trend in reported screenings and reported new cases for five years. There was a 16 percent increase in the number of children screened from 2006 to 2010. A small decrease (1 percent) in screening numbers was noticeable between 2009 and 2010. Overall, the 5-year increase in screening may be partially accounted for by healthcare providers and community-based organizations such as Head Start that are now promoting lead screening. An increase in the number of testing facilities may have also contributed to the increase.

As shown in figure 3, the number of reported lead poisoning cases in Florida declined by 35 percent from 389 in 2006 to 254 in 2010. The difference in the number of cases (135 cases) reported in from 2006 to 2010 may not be accredited to a decline in lead poisoning among Florida children less than 72 months old. The population screened each year is not homogenous and cannot be exactly compared. The CDC recommended in 1997 that lead poisoning screening should be targeted at high risk children. However, further investigation is needed to determine the rate of screening among high-risk groups in Florida. High-risk zip code and refugee lead poisoning screening analyses were also performed. The findings from these analyses will be released in separate documents.

Figure 3. Reported blood lead screenings and new cases of lead poisoning, Florida, 2006 to 2010



5-Year Statewide Trends: Reported New and Persistent Cases

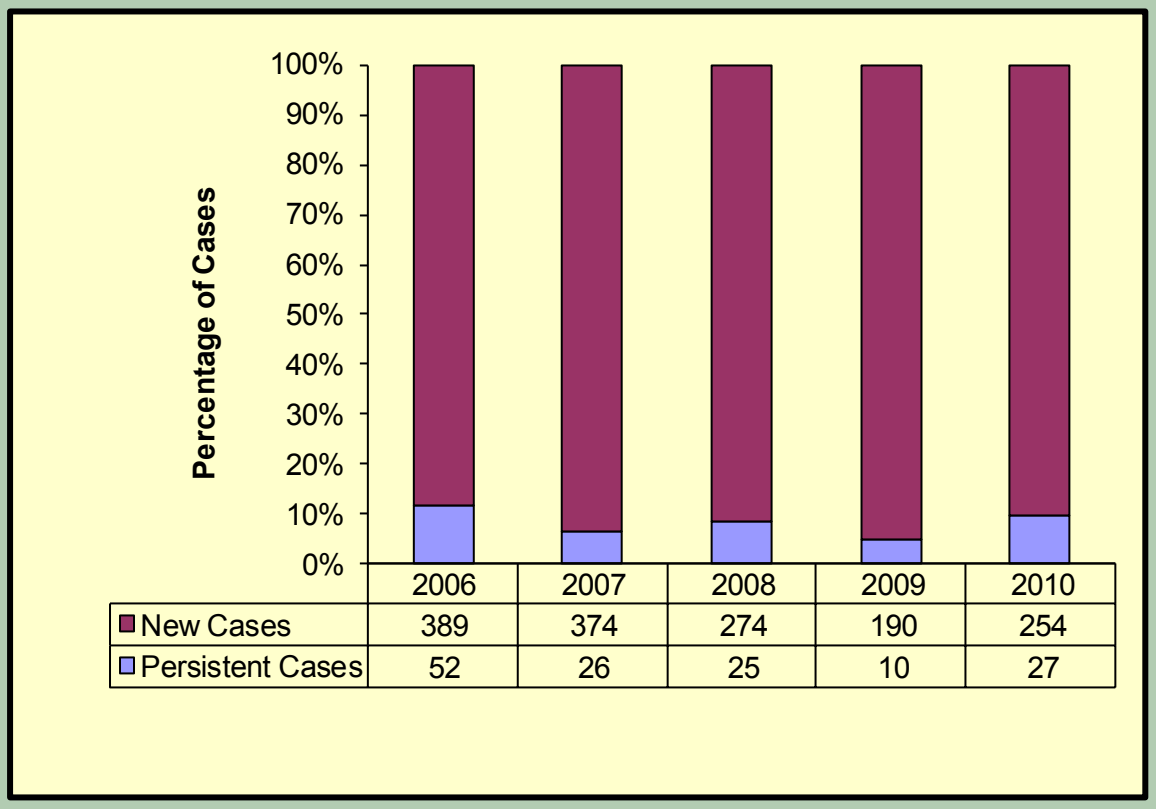
LEAD POISONING CASE MANAGEMENT

The FHHLPPP recommends that all children (less than 72 months of age) that are lead poisoned receive case management. The child's BLL determines the follow-up testing schedule and the type of case management needed. For instance, children with confirmed BLLs of 10-14µg/dL should receive follow-up testing within three months of the confirmatory test but an environmental health investigation of the home is optional. Children with BLLs 20-44µg/dL should be re-tested within a month of the confirmatory test and an environmental health investigation of the home should be conducted.

The goal of case management is to reduce the child's BLL to below the level of concern (10µg/dL) by preventing continued exposure and improving nutrition. The child should be monitored by the physician and the case manager until the BLLs returns to below 10µg/dL.

Figure 4 shows the number of reported new and persistent cases per year. The total number of reported lead poisoning cases decreased by 36 percent from 441 in 2006 to 281 in 2010. For 2009 to 2010, the number of all reported cases increase by 41 percent. There was also a substantial decline (48 percent) in the number of persistent cases from 52 in 2006 to 27 in 2010. This decline in new cases may be due to enhanced case management activities in identifying and recommending services for the elimination of lead hazards. Another possible reason for a decrease in new cases could be that some children were "lost to follow up" and did not receive a confirmatory blood lead tests. Tracking cases over time, through the Department's statewide reportable disease surveillance system (Merlin), will allow disease investigators at county health departments to identify cases that did not receive follow-up tests. Coordinating care through the health care providers is essential for assuring re-testing of at-risk children.

Figure 4. Reported new and persistent cases of lead poisoning by year, Florida, 2006 to 2010



	2006	2007	2008	2009	2010
New Cases	389	374	274	190	254
Persistent Cases	52	26	25	10	27

Sources of Lead Exposure

The FLHHLPP obtained disease investigation information from 216 of the 254 newly reported lead poisoning cases. In 2010, figure 5 reflects the top five self-reported sources of lead exposure. Please note that a variety of sources may contribute to a child becoming lead poisoned. Due to this fact, more than one source of exposure may be reported by a case.

Of the top five reported sources of exposure, vinyl mini-blinds was found to be the highest reported source of exposure (58 of the 216 cases). Occupation of household member was found to be the least reported source of the top five (48 of the 216 cases). The information on potential lead sources is valuable in that it can help FLHHLPP effectively target primary prevention activities, that can reduce the burden of childhood lead poisoning in Florida.

Figure 5. Sources of Lead Exposure, Florida, 2010.
Top Five Self-Reported Sources

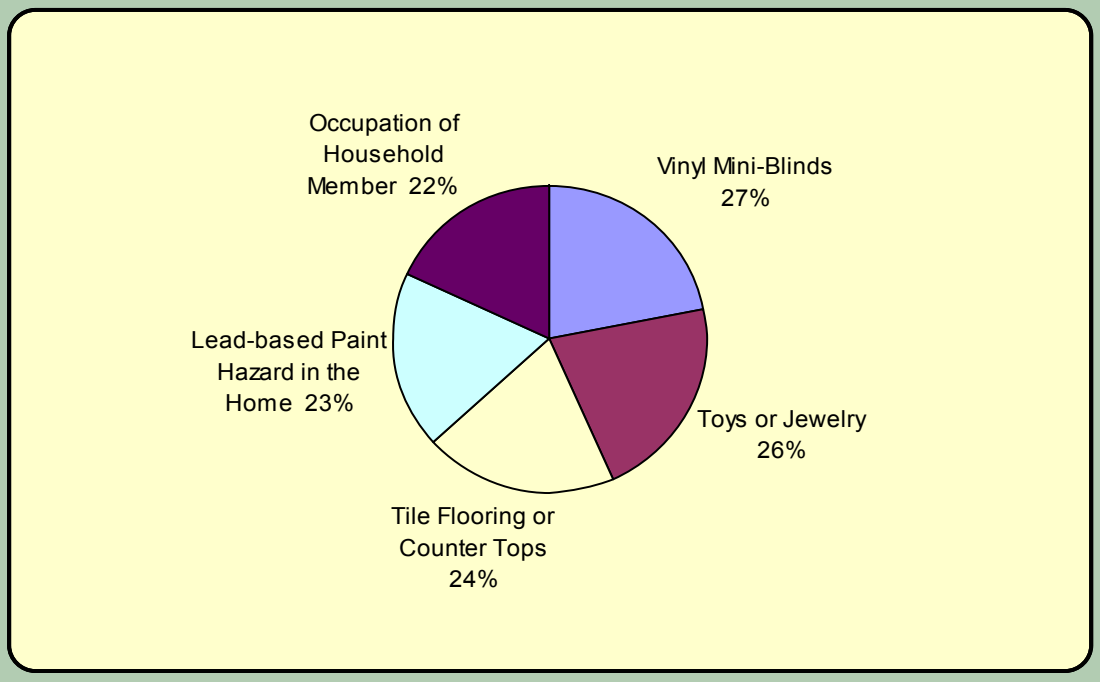


Figure 5. Shows sources of lead exposures for newly identified cases in 2010. Please note that sources of lead exposure were not collected for 38 of the 254 newly identified cases. Therefore, these cases were excluded from this analysis. The Information reflected in this figure was obtained from Merlin (Florida Department of Health reportable disease surveillance system).

5-Year Statewide Trends: Rate of Reported New Cases per 1,000 Children Screened

Figure 6. Rate of reported new cases of lead poisoning per 1,000 children screened, Florida, 2006 to 2010.

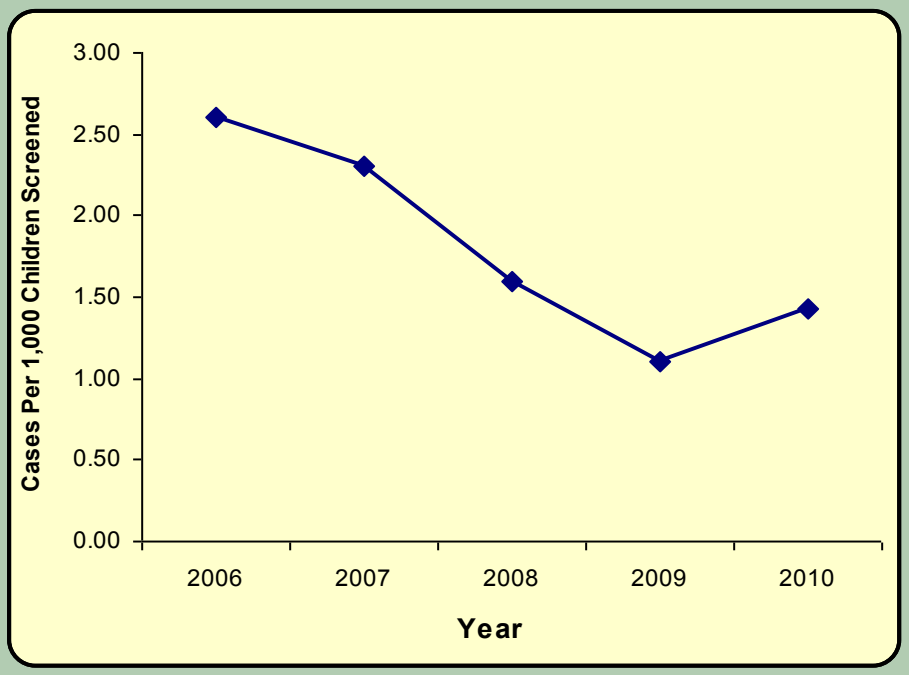


Figure 6 illustrates the statewide rate of reported new cases per 1,000 children screened. Over the five year period, a 46 percent decline in the rate of new cases per children screened was observed between 2006 (2.6 cases per 1,000 children screened) and 2010 (1.4 cases per 1,000 children screened). The decline in the statewide lead poisoning rate was most noticeable between 2007 and 2008 (30 percent) and 2008 and 2009 (31 percent). Compared to previous years, there was an increase (30 percent) in the case rate from 2009 to 2010.

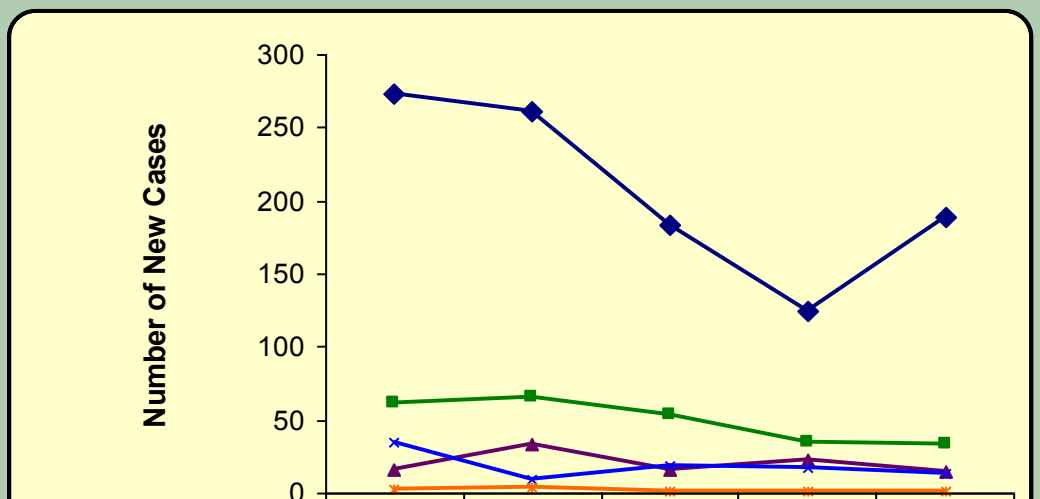
5-Year Statewide Trends: Number of Reported New Cases by Blood Lead Level

The effect of lead on the human body is dependent on the level and length of lead exposure. Higher lead levels have a greater impact on the health and cognitive development of a child. Lead poisoning can result in lowered IQ, behavior problems, hearing loss, and neurological impairments. For this reason, one of the objectives of the FHHLPPP is to reduce the BLLs of the children to levels where its effect is minimal.

Figures 7 illustrates the number of reported new cases categorized by BLL at confirmation from 2006 through 2010. In 2010, compared to 2006, there was a significant decline in the number of reported new cases for most BLL categories.

The downward trend in the number of reported new cases with BLLs 10-14 µg/dL occurred from 2006 to 2009. The most notable decline (30 percent) in the number of reported new cases with BLLs 10-14 µg/dL occurred between 2007 and 2008. In 2010, the number of reported new cases for BLLs 10-14 µg/dL increased by 52 percent in comparison to 2009.

Figure 7. Reported new cases by confirmation blood lead level categories, Florida, 2006 to 2010.



	2006	2007	2008	2009	2010
10-14 µg/dL	273	261	184	124	189
15-19 µg/dL	62	66	53	35	34
20-24 µg/dL	16	33	16	23	15
25-44 µg/dL	35	10	19	17	14
>44 µg/dL	3	4	2	1	2

Select County Trends: Rate of Reported New Cases per 1,000 Screenings

In 2010, FLHHLPP supported the lead poisoning prevention activities at CHDs through two funding sources. Miami-Dade, Duval, Hillsborough, and Palm Beach CHDs were funded through the FLHHLPP cooperative agreement with CDC and operated comprehensive programs that focus on lead poisoning prevention. Since 2006, the Lead Poisoning Prevention Screening and Education Act (Section 381.985, F.S.) appropriate recurring general revenue to support lead screening among uninsured and underserved children. In 2010, funds were distributed to six of the original eight CHDs. The funded CHDs were: Miami-Dade, Duval, Orange, Palm Beach, Hillsborough, and Broward.

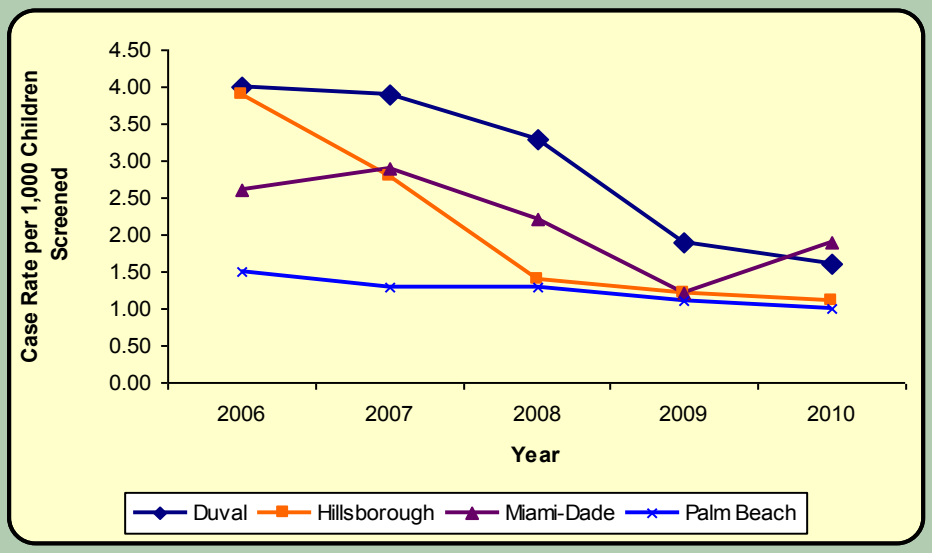
These six funded counties have the largest number of at-risk children. As a result they have typically demonstrated the highest rates of cases per 1,000 children screened. Nonetheless, from 2006 to 2010, all six counties observed notable reductions in the rates of reported cases per 1,000 children screened (Table 1).

Table 1. Rate of reported cases per 1,000 screened for funded counties, Florida, 2006-2010

County	2006	2007	2008	2009	2010
Broward	1.2	2.2	0.9	0.5	1.1
Duval	4	3.9	3.3	1.9	1.6
Hillsborough	3.9	2.8	1.4	1.2	1.1
Miami-Dade	2.6	2.9	2.2	1.2	1.9
Orange	2.7	3.1	1.2	0.9	1.0
Palm Beach	1.5	1.3	1.3	1.1	1.0

Figure 8 shows the rates of new cases per 1,000 children screened for the four CDC funded counties. As observed in Table 1 (above), case rates have declined in all counties over time. Conversely, there was a notable increase in Miami-Dade and Broward CHDs from 2009 to 2010.

Figure 8. Rate of reported new cases per 1,000 children screened for per year in CDC funded counties, Florida, 2006 to 2010.



Statewide: Number of Reported New Cases by Age and Blood Lead Level

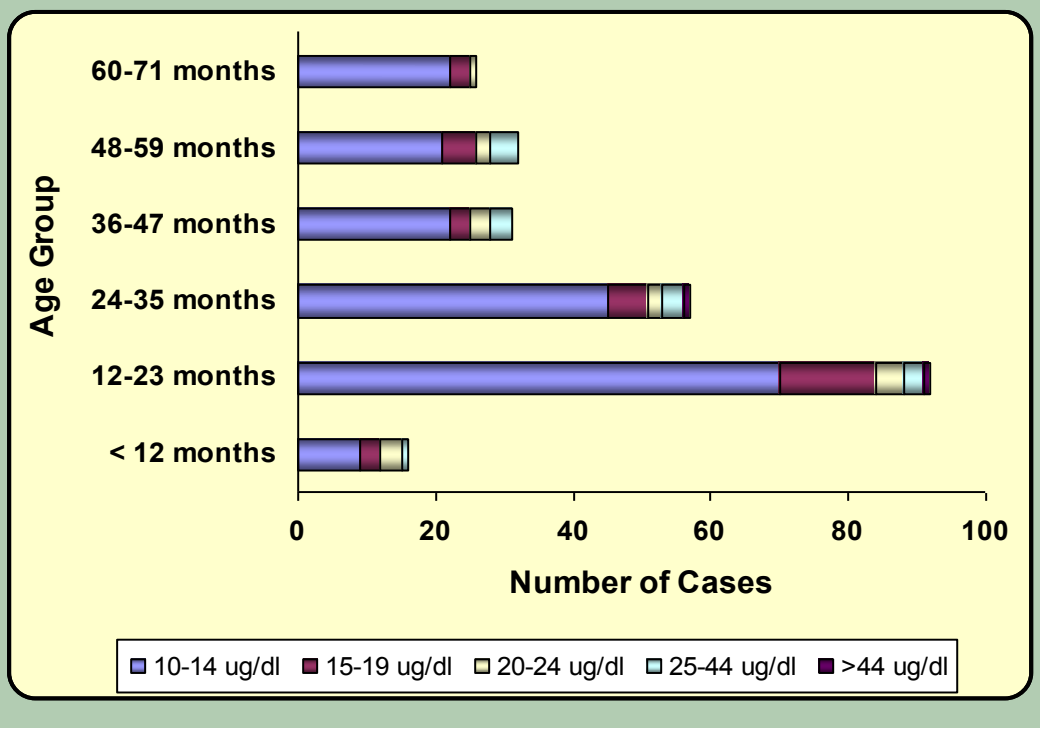
Table 2 and Figure 9 display the number of new cases that were reported for 2010 by age group and BLLs. The information presented here highlights the age group at which children are most likely to be tested for lead poisoning and the highest BLLs of children tested.

For 2010, the age group category with the largest percent (36 percent) of new cases was 12-23 months of age. This age group is highly recommended for initial blood lead testing by the CDC and the Florida Medicaid. Which is consistent with the overall screening data for the past five years (data not shown). Over the past five years, most reported new cases have BLLs ranging from 10 to 14 µg/dL (not shown). In 2010, 76 percent (70 cases) of reported new cases (92 cases), 12-23 months of age, had BLLs within the 10 to14 µg/dL range.

Table 2. Number of reported new cases by age and blood lead level Florida, 2010

	Blood Lead Level (µg/dL)					
Age (Months)	10-14 ug/dL	15-19 ug/dL	20-24 ug/dL	25-44 ug/dL	>44 ug/dL	Total
< 12	9	3	3	1	0	16
12-23	70	14	4	3	1	92
24-35	45	6	2	3	1	57
36-47	22	3	3	3	0	31
48-59	21	5	2	4	0	32
60-71	22	3	1	0	0	26
Total	189	34	15	14	2	254

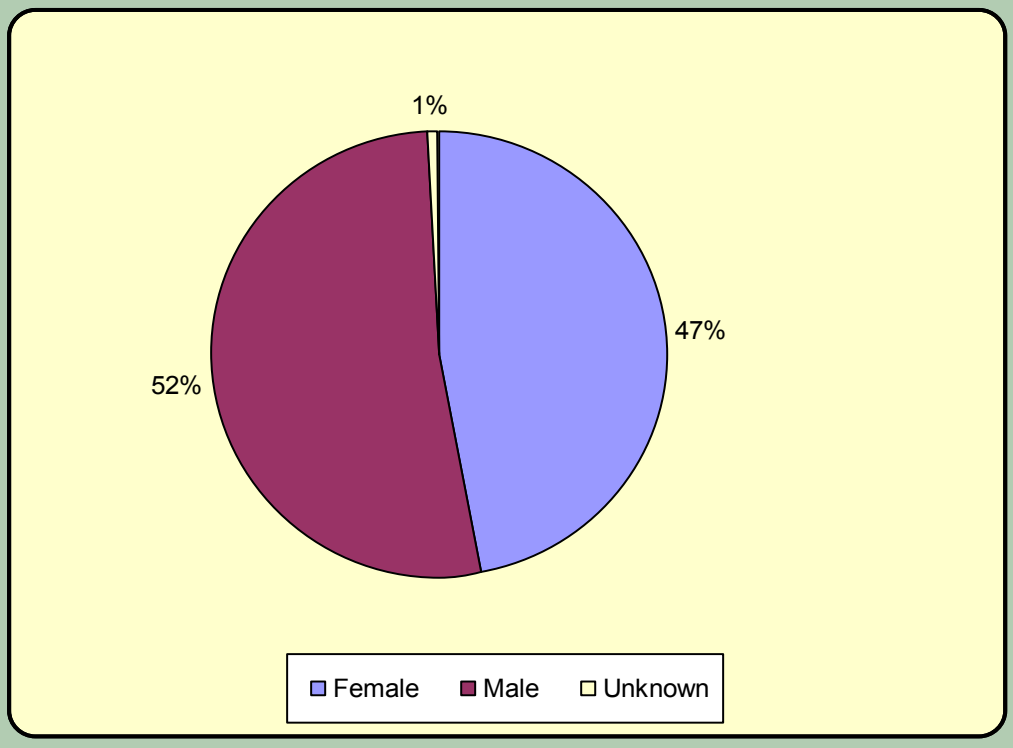
Figure 9. Number of reported new cases by age and blood lead level Florida, 2010



Statewide Trends: Number of Reported New Cases by Gender

National data have shown that for children less than 72 months, the difference in BLLs between males and females is usually very small (CDC, 2005). Figure 10 illustrates the number of reported new cases in Florida by gender for 2010. For 2010, 52 percent (132 cases) of all new cases were males, 47 percent (120 cases) were females and for 1 percent (2 cases) the gender was unknown. The percentage difference in elevated BLLs (≥10 µg/dL) between males and females was 5 percent.

Figure 10. Number of reported new cases by gender Florida, 2010.



Reported Screenings by County

Table 3. Number of reported screenings among children under 72 months of age by year and county of residence, Florida 2006 to 2010

Overall, the number of screenings for children less than 72 months increased from 2006 to 2010. The highest yearly increase (7 percent) was observed between 2007 and 2008. However, a slight decrease in reported screenings (1 percent) was observed between 2009 and 2010. There no clear explanation for the slight decrease in screening rate in 2010.

The number of children screened in two (Duval and Hillsborough) of the six funded CHDs increased in 2010. Other counties such as Alachua and Baker also had small increases in screening numbers.

County	2006	2007	2008	2009	2010
Alachua	2,127	2,297	2,175	1,705	2,569
Baker	162	199	130	126	176
Bay	593	728	700	1,033	983
Bradford	300	248	360	440	338
Brevard	1,165	1,569	2,049	2,460	2,183
Broward	22,425	23,394	23,481	25,479	24,293
Calhoun	32	42	49	67	70
Charlotte	555	552	696	645	694
Citrus	244	258	399	484	552
Clay	877	1,017	953	762	781
Collier	1,697	1,975	1,609	1,797	1,470
Columbia	481	487	592	532	470
Miami-Dade	38,476	37,599	40,918	41,518	41,354
Desoto	286	210	277	384	291
Dixie	234	270	258	208	185
Duval	6,175	7,496	6,940	5,745	6,210
Escambia	909	1,676	1,962	2,152	2,239
Flagler	443	584	526	421	354
Franklin	148	166	132	135	184
Gadsden	244	292	270	232	315
Gilchrist	239	190	206	188	191
Glades	23	38	53	30	32
Gulf	104	119	151	237	155
Hamilton	149	107	99	83	85
Hardee	234	286	674	798	740
Hendry	599	638	846	742	713
Hernando	394	539	768	883	738
Highlands	572	998	1,226	1,452	1,550
Hillsborough	10,224	11,586	11,989	13,797	13,871
Holmes	193	262	252	198	174
Indian River	1,480	1,403	1,552	1,745	1,412
Jackson	203	254	29	235	58
Jefferson	58	66	71	72	69
Lafayette	42	13	17	31	19
Lake	1,895	2,056	2,160	2,041	2,116
Lee	2,979	3,122	4,012	5,440	5,140
Leon	1,544	1,570	1,303	1,068	798
Levy	368	353	444	397	410
Liberty	23	20	27	45	27
Madison	80	36	58	95	124
Manatee	2,637	2,882	2,830	2,605	2,630
Marion	1,577	1,410	1,845	1,905	1,856
Martin	981	1,420	1,294	1,306	1,376
Monroe	92	161	141	92	242
Nassau	87	116	141	164	200
Okaloosa	706	664	732	910	847
Okeechobee	399	481	509	416	452
Orange	7,658	7,688	8,813	9,697	8,987
Osceola	1,954	2,482	2,452	2,135	1,877
Palm Beach	12,910	13,633	14,738	17,006	16,802
Pasco	1,920	2,848	3,493	3,163	3,010
Pinellas	3,246	3,789	4,658	4,752	5,194
Polk	6,853	7,065	7,389	7,015	7,207
Putnam	410	509	679	454	986
Saint Johns	615	624	325	360	490
Saint Lucie	1,975	2,786	3,375	3,653	3,204
Santa Rosa	185	603	330	748	635
Sarasota	1,510	1,584	1,966	2,104	2,008
Seminole	1,020	998	842	945	846
Sumter	568	643	440	400	409
Suwannee	164	224	226	203	254
Taylor	91	105	227	365	352
Union	66	111	95	114	83
Volusia	1,463	1,396	1,874	1,653	1,841
Wakulla	89	105	111	66	112
Walton	109	186	216	241	357
Washington	100	113	165	129	97
Unknown	4,339	913	623	950	657
Total	152,700	160,254	170,942	179,453	177,144

Lead Poisoning Screening Rate by County

Figure 11: Screening Rate by County, Florida 2010

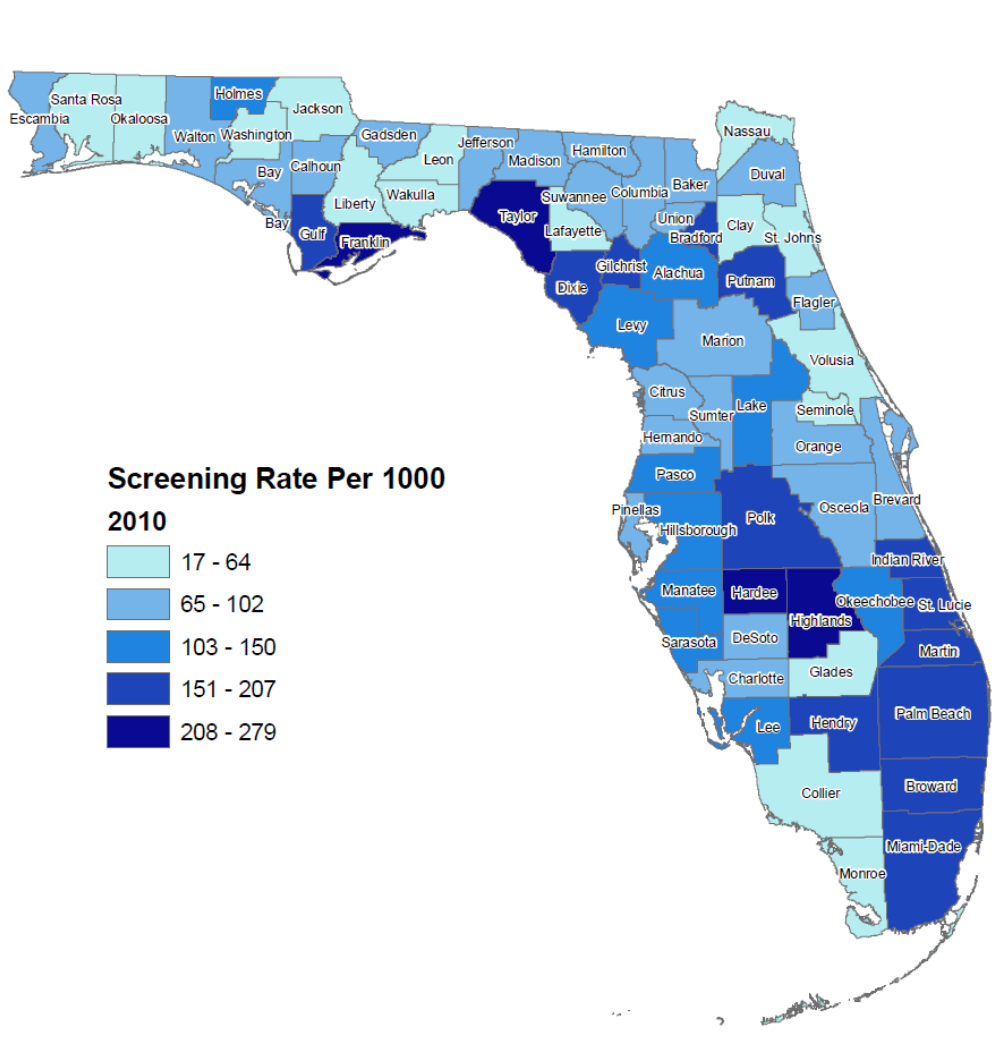


Figure 11 shows the 2010 screening rate by county for children less than six years old. The screening rate for each county was determined by dividing the number of children less than 72 months of age who received a blood lead test with the total number of children less than 72 months of age expressed per 1000 population of children (< 72 months old). The population estimates were obtained from the Florida Legislature's Office of Economic Demographic Research data.

There are limitations when using population estimates to calculate the screening rates by county. The estimated population includes the at-risk groups for lead poisoning in addition to the general population and therefore does not accurately characterize lead screening rates in the targeted population. Use of Medicaid eligibility, refugee status and/or at-risk zip code information would allow for a more accurate assessment of the screening rates among at-risk groups. Data at this level of detail was not available at the time of publication of this report and therefore the rates could not be determined for these high risk groups. It should be noted that the screening rate among the six funded counties ranged from 80 to 207 per 1,000 children screened in Duval County and Miami-Dade County, respectively.

Reported New Cases by County

Table 4. Reported new cases of lead poisoning among children under 72 months of age by year and county of residence, Florida 2006 to 2010.

Overall, there was a significant decline in the number of new cases from 2006 to 2010. A more dramatic decline in the number of reported new cases was observed among four (Hillsborough, Miami-Dade, Duval, and Orange) of the six funded counties. It should be noted that despite this decline, Miami-Dade reported the largest number of new cases for each of the five years. Also, in Miami-Dade County, the number of newly reported cases increased by 29 cases from 2009 to 2010.

For 2010, 61 percent (154 cases) of all new cases were reported by the six funded counties. Miami-Dade reported 51 percent (78 cases) of these new cases. However, when compared to 2009, there was a 30 percent increase in the total number of reported new cases from the six funded CHDs for 2010.

County	2006	2007	2008	2009	2010
Alachua	3	1	2	1	1
Baker	0	0	1	1	1
Bay	4	1	1	2	1
Bradford	0	0	0	0	0
Brevard	0	3	0	3	1
Broward	28	51	21	14	26
Calhoun	0	0	0	0	0
Charlotte	0	1	0	0	0
Citrus	0	1	2	0	0
Clay	0	1	1	1	3
Collier	9	1	3	1	2
Columbia	1	1	1	0	0
Miami-Dade	100	108	89	49	78
Desoto	0	1	2	0	0
Dixie	0	0	0	0	0
Duval	25	29	22	11	10
Escambia	2	4	2	3	6
Flagler	2	0	0	0	4
Franklin	1	0	0	0	0
Gadsden	0	1	1	0	0
Gilchrist	0	0	0	0	0
Glades	0	1	0	0	0
Gulf	0	0	0	1	0
Hamilton	0	0	0	0	1
Hardee	1	1	2	1	4
Hendry	0	2	3	0	5
Hernando	1	0	1	3	1
Highlands	9	3	2	1	5
Hillsborough	40	33	17	17	15
Holmes	0	0	1	1	1
Indian River	0	1	2	1	1
Jackson	0	2	1	1	1
Jefferson	0	1	0	1	0
Lafayette	0	0	0	0	0
Lake	5	1	3	4	1
Lee	11	6	5	4	7
Leon	7	4	0	0	0
Levy	0	0	1	0	0
Liberty	0	0	0	0	0
Madison	1	0	0	0	0
Manatee	11	5	3	3	2
Marion	3	2	1	0	2
Martin	5	2	2	3	3
Monroe	0	1	1	0	0
Nassau	1	0	1	2	0
Okaloosa	2	0	0	1	1
Okeechobee	2	1	1	0	1
Orange	21	24	11	9	9
Osceola	5	0	1	3	1
Palm Beach	19	18	19	19	16
Pasco	2	4	2	4	2
Pinellas	8	6	7	3	2
Polk	23	19	14	3	17
Putnam	1	0	4	3	4
Saint Johns	1	0	1	0	2
Saint Lucie	11	11	3	5	3
Santa Rosa	1	5	1	1	3
Sarasota	6	3	2	1	2
Seminole	5	1	2	0	2
Sumter	0	2	0	1	1
Suwannee	0	0	0	0	1
Taylor	0	0	0	0	0
Union	0	0	0	1	0
Volusia	3	5	7	2	4
Wakulla	0	1	0	0	0
Walton	0	0	1	4	1
Washington	0	0	1	0	0
Unknown	9	5	2	1	0
Total	389	374	274	190	254

Case Rate per 1,000 Children Screened by County

Figure 12: Case Rate per 1,000 by County Florida, 2010

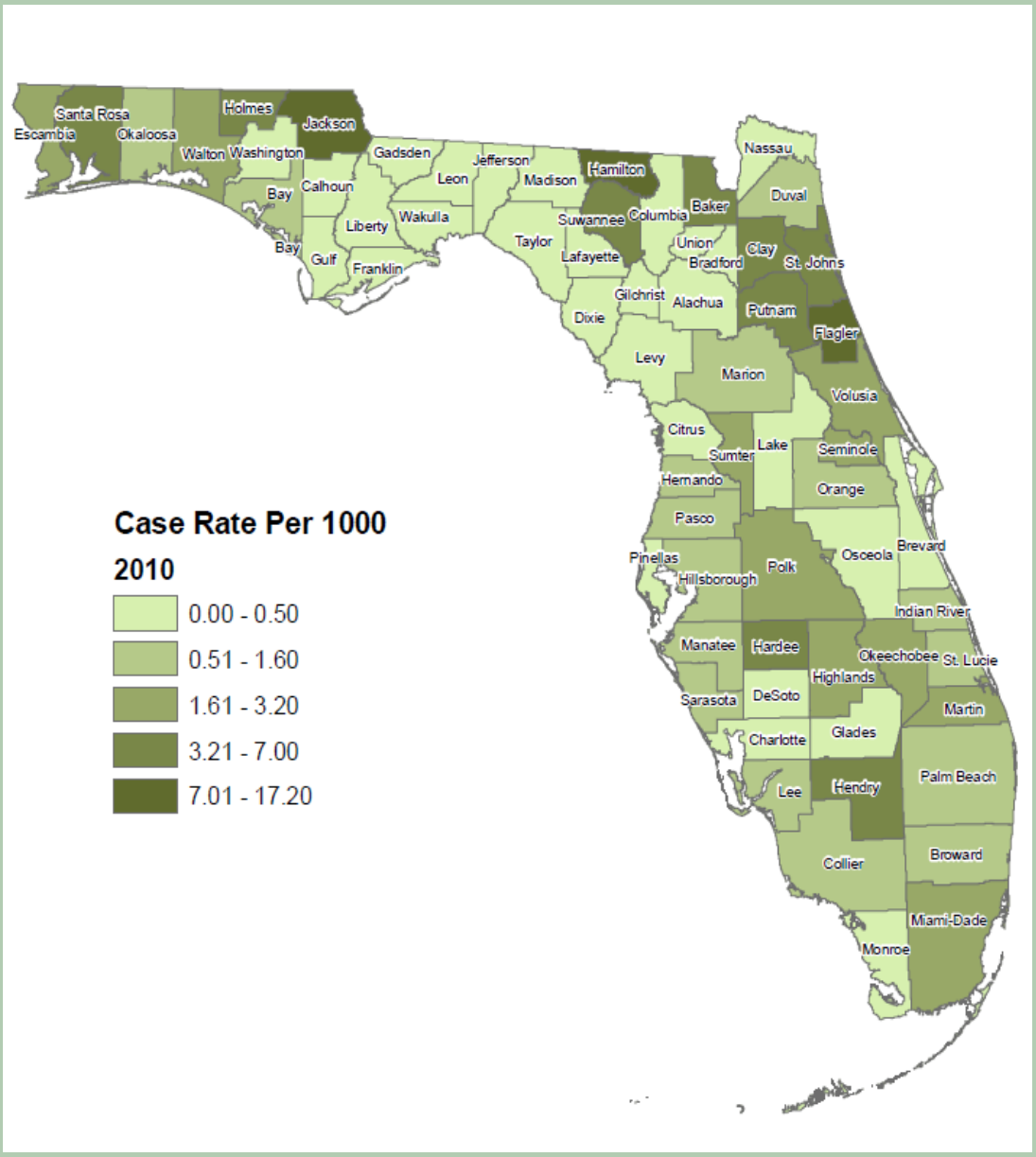


Figure 12 shows the 2011 case rate by county for children less than six years old. The case rate was determined by dividing the number of new reported cases by the number of children screened per year for each county per 1000 of children population screened. Comparing the case rate between counties may be misleading since it is a crude rate and is affected by the case and screening numbers reported from each county. Smaller counties tend to have lower numbers of at-risk children compared to larger counties, therefore a small increase in cases may result in a higher case rate if there is little or no change in the screening numbers. The case rates for the six funded counties for 2010, ranged from 1.0 (Orange and Palm Beach Counties) to 1.9 (Miami-Dade County) per 1000 screened children. See page 15 for more details.

Reported New and Persistent Cases by County

Table 5. Number of reported new and persistent cases combined among children under 72 months of age by year and county, Florida 2006 to 2010.

There was a decline in the total number of cases from 2006 to 2010. In 2010, the six funded counties reported 62 percent (173 cases) of cases with 38 percent (108 cases) reported for all other counties combined.

The number of reported cases declined from 2006 to 2010 for five of the six funded CHDs. The largest decrease in total cases was observed for Hillsborough County with a decline of 62 percent.

County	2006	2007	2008	2009	2010
Alachua	3	1	2	1	1
Baker	0	0	1	1	1
Bay	4	1	1	2	1
Bradford	1	0	0	0	0
Brevard	3	3	0	3	1
Broward	28	51	25	15	27
Calhoun	0	0	0	0	0
Charlotte	0	1	0	0	0
Citrus	1	1	2	0	0
Clay	15	1	1	1	3
Collier	9	1	3	1	2
Columbia	7	1	1	0	0
Miami-Dade	100	115	94	50	86
Desoto	0	1	2	0	0
Dixie	0	0	0	0	0
Duval	25	31	25	11	10
Escambia	2	4	2	3	6
Flagler	2	0	0	0	4
Franklin	1	0	0	0	0
Gadsden	0	1	1	0	0
Gilchrist	0	0	0	0	0
Glades	0	1	0	0	0
Gulf	5	0	0	1	0
Hamilton	0	0	0	0	1
Hardee	1	1	2	1	4
Hendry	0	2	3	0	5
Hernando	1	0	1	3	1
Highlands	9	3	2	1	5
Hillsborough	42	35	21	19	16
Holmes	0	0	1	1	1
Indian River	0	1	2	1	1
Jackson	0	2	1	1	1
Jefferson	1	1	0	1	0
Lafayette	0	0	0	0	0
Lake	10	1	3	4	3
Lee	11	7	5	5	7
Leon	12	5	0	0	0
Levy	3	0	1	0	0
Liberty	1	0	0	0	0
Madison	3	0	0	0	0
Manatee	11	5	3	3	2
Marion	3	2	1	0	2
Martin	7	2	2	0	6
Monroe	0	1	1	4	0
Nassau	1	0	1	2	0
Okaloosa	2	0	0	1	1
Okeechobee	2	1	1	0	1
Orange	21	27	12	9	12
Osceola	5	1	1	3	1
Palm Beach	19	21	22	21	22
Pasco	2	4	3	5	3
Pinellas	8	7	8	3	3
Polk	23	19	15	3	17
Putnam	1	1	4	3	4
Saint Johns	1	0	1	0	2
Saint Lucie	11	14	5	5	3
Santa Rosa	1	5	1	1	3
Sarasota	6	3	2	1	2
Seminole	5	2	2	1	2
Sumter	0	2	0	1	1
Suwannee	0	0	0	0	1
Taylor	0	0	0	0	0
Union	0	0	0	1	0
Volusia	3	5	7	2	5
Wakulla	0	1	0	0	0
Walton	0	0	1	4	1
Washington	0	0	1	0	0
Unknown	9	5	3	1	0
Total	441	400	299	200	281

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Florida Chapter of the American Academy of Pediatrics
http://www.medicalhomeinfo.org/states/state/florida.html

The United States Centers for Disease Control and Prevention. http://www.cdc.gov/lead/

Glossary and Acknowledgements

ACKNOWLEDGEMENTS
The FHHLPPP extends a special thanks to the dedicated laboratory personnel, health care providers, and public health professionals who conduct lead screenings and provide care to children exposed to lead.

GLOSSARY

Children: For the purposes of this report, children are defined as those less than 72 months of age.

CHD: County Health Department.

Reported: For the purposes of this report, reported refers to all blood lead test results received by the FHHLPPP.

LeadCare II Analyzer: A portable device that is waived under the Clinical Laboratory Improvement Amendment (CLIA) to perform blood lead testing based on a capillary blood draw.

***µ*g/dL:** Micrograms per deciliter, the standard unit of measure for blood lead levels.

Test: Any blood lead sample type (i.e. capillary, venous, or unknown) that produces a quantifiable result and is analyzed by a Clinical Laboratory Improvement Amendments (CLIA) certified facility or an approved portable device. Blood for a lead test can be collected for a screening, confirmation, or follow up.

Screening: The initial blood lead test occurring within one year. Any subsequent blood lead draws are defined as follow-up tests.

Follow-up Test: Any blood lead test that occurs subsequent to a confirmation test and any test that occurs subsequent to a screening in a calendar year.

Confirmed Case: A case with a blood lead concentration greater than or equal to 10µg/dL that was drawn from a single venous specimen or from two capillary specimens drawn within 12 weeks (84 days) of each other.

New Case: A confirmed case (see “confirmed case” above) that has never been previously identified as a confirmed case.

Persistent Case: A case confirmed during a previous year and whose blood lead level remains at 10 µg/dL or greater in a subsequent year.

Case Rate: The number of children less than 72 months old with a confirmed BLL ≥ 10µg/dL divided by the number of children less than 72 months old screened for lead poisoning in a particular year.

Screening Rate: The number of children less than 72 months old without a previous confirmed BLL who were screened for blood lead level in a particular year divided by the number of children less than 72 months old in Florida for that year (based on Florida Legislature’s Office of Economic Demographic Research).

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This information was supported by the FL Lead Poisoning Prevention Program Cooperative Agreement #H64 000133-02 with the Centers for Disease Control and Prevention.