



Lead Poisoning In Miami-Dade County: The Last Five Years 1999-2003

Maria Bustamante, MPH

Background

In order to reduce the number of lead poisoned children in the United States the CDC "provides funding to state and local health departments to determine the extent of childhood lead poisoning, screen children for elevated blood lead levels (BLL), help ensure that lead poisoned infants and children receive medical and environmental follow-up, and develop neighborhood based efforts to prevent childhood lead poisoning"¹. The Miami-Dade County Health Department Childhood Lead Poisoning Prevention Program (CLPPP) was created in 1999 with funding from the CDC. Over the past five years CLPPP has received funding for the following core activities: screening, surveillance, case management services, and environmental inspections. Lead poisoning is defined as a BLL ≥ 10 $\mu\text{g}/\text{dL}$ of whole blood and is a reportable disease in both children and adults². Although the CLPP Program targets children less than 72 months of age, we provide services to all cases reported to our program. Approximately 20% of all cases reported were greater than or equal to 72 months of age at the time

of their first elevated blood lead test. In accordance with the Healthy People 2010 goals, the CDC has challenged state and local health departments with the development and implementation of a strategic plan for the elimination of lead poisoning by 2010.

Methods

Only children less than 72 months of age, who resided in Miami-Dade County, with elevated BLLs reported to our program from 1999-2003 were included in the following analysis. Incidence rates were estimated using the population of children less than 72 months of age from the Census 2000. An effort was made to analyze our lead poisoning data by commonly known geographic areas in Miami-Dade County (Figure 4). Since our data contains zip code information, the United States Postal Service website was used to determine the cities/towns in a particular zip code³. Many areas such as North Miami and Miami Shores share the same zip code, however for the purpose of this analysis the zip codes were only assigned to one particular area (See appendix for zip codes assignments).

Inside this issue:

Lead Poisoning In
Miami-Dade County:
The Last Five Years
1999-2003 1

Selected Notifiable
Disease reports,
Miami-Dade County,
Comparison with
Historical Data,
April 2004 4

Selected Reportable
Diseases/Conditions
in Miami-Dade
County,
April 2004 5



Fermin Leguen MD, MPH

Director

Office of Epidemiology and
Disease Control

1350 NW 14 Street Bldg 7
Miami, Florida 33125

Tel: 305-324-2413

Fax: 305-547-5572

fermin_leguen@doh.state.fl.us

Website: www.dadehealth.org

As the boundaries of municipal areas typically do not match zip code boundaries, this geographic analysis is not intended to be representative of discrete municipal areas.

Results

Childhood Lead Poisoning by Race/Ethnicity

The program's inception brought about improved surveillance, marked by a sizable increase in the number of cases observed in 2000 (Figure 1). Over the last five years, Hispanics and Haitians have accounted for over 60% of all the cases reported to CLPPP. Throughout the first four years of the CLPPP Program's existence, Hispanics accounted for the majority of the cases reported to the health department until 2003, where for the first time Haitians became the majority (Figure 1). However when examining incidence rates of childhood lead poisoning in the population, the most affected ethnic group was Haitians, followed by Non-Hispanic Blacks, and Hispanics (Figure 2). Compared to 2000, the incidence of childhood lead poisoning among Haitians has increased, whereas the rates among the other groups have decreased or remained constant. When analyzing those children with BLLs $\geq 20 \mu\text{g/dL}$ (Figure 3) the incidence of Haitian, Non-Hispanic Black, and Non-Hispanic White follow a general downward trend. However, after decreasing in 2002 the rate of Hispanic children with BLLs $\geq 20 \mu\text{g/dL}$ in 2003 appears to be on the rise.

Over 60% of all childhood lead poisoning cases reported to CLPPP are residents of the Liberty City, North Miami, Hialeah/Miami Lakes, Little Havana, and Little Haiti areas. As seen in Figure 4, six areas (the Liberty City, North Miami, Little Havana, Little Haiti, Overtown, and Downtown Miami areas) represent a disproportionately higher percentage of children with elevated BLLs in Miami-Dade County. Liberty City, for example, accounted for approximately 23% of all childhood lead poisoning cases reported to CLPPP, however Liberty City represents only 8% of children less than 72 months of age in the county. Fourteen percent of all children less than 72 months of age in Miami-Dade County reside in the Kendall area, whereas only 2% of all lead poisoned children reported lived in Kendall.

Figure 1.

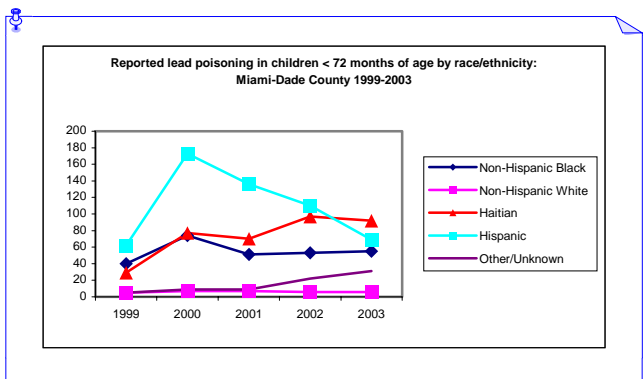


Figure 2.

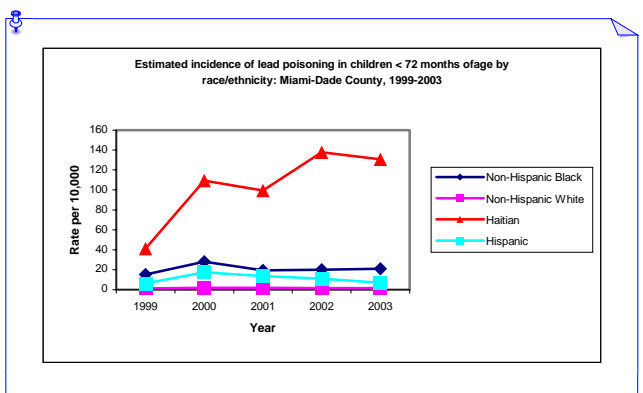


Figure 3.

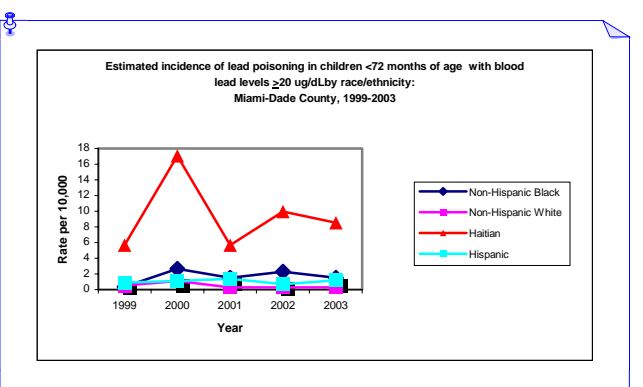
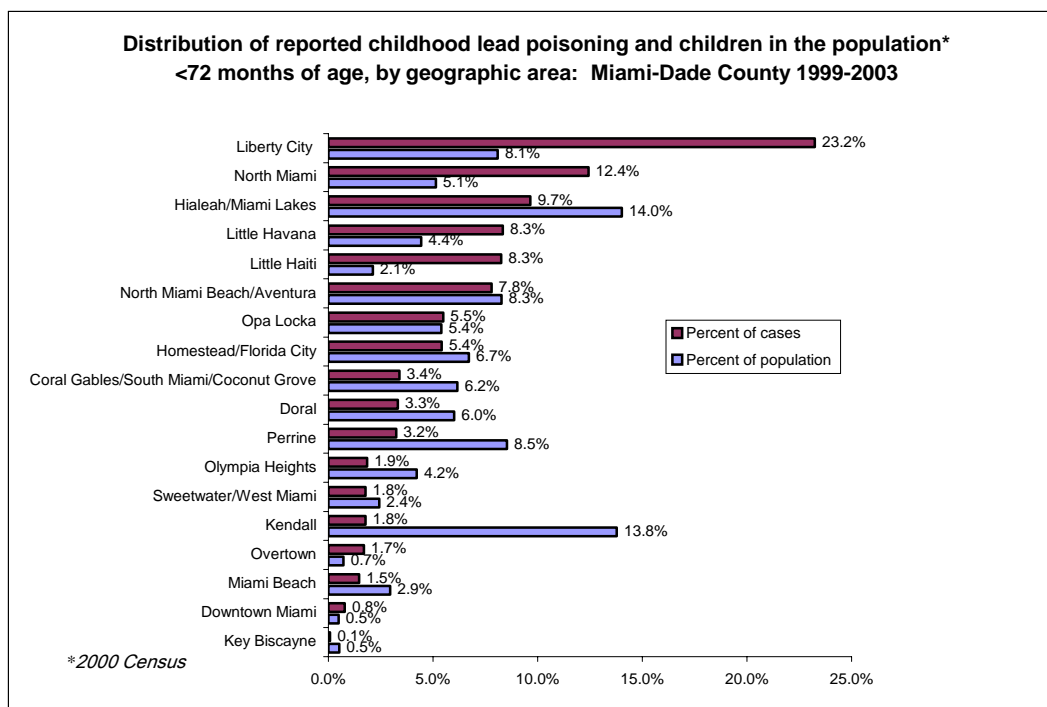


Figure 4.



Discussion

Miami-Dade County serves as a port of entry to many immigrants and refugees, mostly from Cuba and Haiti, contributing to the large number of Hispanic and Haitian lead poisoning cases observed in our community. In Miami-Dade County, more than fifty percent of the population is foreign born, due to its unique location. Approximately 22% of all cases reported to CLPPP were screened at the Refugee Health Assessment Center (RHAC). It is important to note that only legal immigrants are processed at the RHAC, while illegal immigrants seek medical care elsewhere, if at all. Despite the forthcoming elimination of lead poisoning by 2010, imported cases will continue to be an issue for health officials in Miami-Dade County. A need for culturally sensitive education concerning lead poisoning will remain a necessity in Miami-Dade County for many years to come.

An examination of childhood lead poisoning cases by geographic area in Miami-Dade County indicates the presence of health disparities in our community.

Liberty City, North Miami, Little Havana, Little Haiti, Overtown, and Downtown Miami represent a disproportionate share of the percentage of lead poisoned children less than 72 months of age when compared to the distribution of children of the same age in the population. The areas of Liberty City, Little Havana, Little Haiti, Overtown, and Downtown Miami are located in the CLPP Program targeted screening areas, where at least 20% of the housing was built before 1950. Houses built before 1950 pose the greatest hazard to children because they are much more likely to contain lead-based paint than newer houses, particularly, the houses that are in poor or deteriorated condition⁴. These houses and related primary prevention issues have been addressed in Florida's strategic plan for the elimination of lead poisoning by 2010, which is currently under review by the CDC.

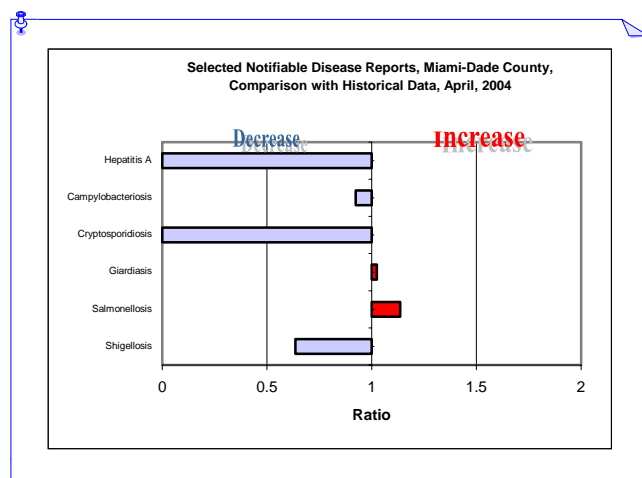


Appendix.

Geographic Area	Zip Code
Coral Gables / South Miami / Coconut Grove	33133, 33134, 33143, 33145, 33146, 33155
Doral	33126, 33166, 33172, 33178, 33182
Hialeah/Miami Lakes	33010, 33012, 33013, 33014, 33015, 33016, 33018
Homestead / Florida City	33030, 33031, 33032, 33033, 33034, 33035
Kendall	33156, 33158, 33173, 33176, 33183, 33186, 33193, 33196
Key Biscayne	33149
Liberty City	33127, 33142, 33147, 33150
Little Haiti	33137, 33138
Little Havana	33125, 33128, 33130, 33135
Downtown Miami	33129, 33131, 33132
Miami Beach	33109, 33139, 33140, 33141, 33154
North Miami	33161, 33167, 33168
North Miami Beach / Aventura	33160, 33162, 33169, 33179, 33180, 33181
Olympia Heights	33165, 33175, 33185
Opa Locka	33054, 33055, 33056
Overtown	33136
Perrine	33157, 33170, 33177, 33187, 33189, 33190
Sweetwater / West Miami	33144, 33174, 33184

References

- 1) <http://www.cdc.gov/nceh/lead/lead.htm>
- 2) http://www.doh.state.fl.us/disease_ctrl/epi/surv/case_defs.pdf
- 3) <http://www.usps.com>
- 4) Centers for Disease Control And Prevention. Screening Young Children for lead poisoning: Guidance for State and Local Public Health Officials. Atlanta: CDC, 1997.



*Ratio of current month total to mean of 15 month totals (from previous, comparable, and subsequent month periods for the past 5 years).

To report diseases or for information:

Office of Epidemiology and Disease Control
 Childhood Lead Poisoning
 Prevention Program (305) 623-3565
 Hepatitis (305) 324-2490
 Other diseases and outbreaks
 (305) 324-2413

HIV/AIDS Program (305) 324-2459
 STD Program (305) 325-3242
 Tuberculosis Program (305) 324-2470
 Special Immunization Program
 (786) 845-0550

Nights, weekends, and holidays
(305) 377-6751



Volume 5. Issue 5
May 2004
Page-4

Monthly Report

Selected Reportable Diseases/Conditions in Miami-Dade County, April 2004

Diseases/Conditions	2004 this Month	2004 Year to Date	2003 Year to Date	2002 Year to Date	2001 Year to Date	2000 Year to Date
AIDS ^{Provisional}	70	490	367	409	471	536
Animal Rabies	0	0	0	0	0	0
Campylobacteriosis	12	39	37	29	31	20
<i>Chlamydia trachomatis</i>	183	1254	1367	1504	1026	1105
Ciguatera Poisoning	0	0	0	0	0	0
Cryptosporidiosis	0	2	4	1	7	1
Cyclosporiasis	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0
<i>E. coli</i> , O157:H7	1	1	0	0	0	1
<i>E. coli</i> , Non-O157	0	0	0	0	0	0
<i>E. coli</i> , Other	0	0	0	0	0	0
Encephalitis (except WNV)	0	0	0	1	0	0
Encephalitis, West Nile Virus	0	0	0	0	0	0
Giardiasis, Acute	22	89	40	52	62	4
Gonorrhea	60	454	602	698	538	751
Granuloma Inguinale	0	0	0	0	0	0
Hepatitis A	0	6	10	28	45	24
Hepatitis B	4	16	15	4	13	21
HIV ^{Provisional}	100	571	573	668	553	639
Lead Poisoning	38	83	51	62	61	142
Legionnaire's Disease	1	1	0	0	0	0
Leptospirosis	0	0	0	0	0	0
Lyme disease	1	1	0	0	0	2
Lymphogranuloma Venereum	0	0	0	0	0	0
Malaria	1	5	5	4	8	2
Measles	0	0	0	0	0	0
Meningitis (except aseptic)	1	1	1	2	1	4
Meningococcal Disease	1	8	3	6	5	7
Mumps	0	0	0	0	0	1
Pertussis	2	2	0	1	1	3
Polio	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Rubella, Congenital	0	0	0	0	0	0
Salmonellosis	34	89	108	75	52	36
Shigellosis	14	70	101	61	28	26
<i>Streptococcus pneumoniae</i> , Drug Resistant	18	25	40	35	57	67
Syphilis, Infectious	11	67	62	60	62	48
Syphilis, Other	91	315	376	356	178	273
Tetanus	0	0	0	0	1	0
Toxoplasmosis	0	1	3	7	4	0
Tuberculosis ^{Provisional}	34	72	80	73	39	80
Typhoid Fever	0	1	1	1	0	0
<i>Vibrio cholera</i> Type O1	0	0	0	0	0	0
<i>Vibrio cholera</i> Non-O1	0	0	0	0	0	0
<i>Vibrio</i> , Other	0	0	1	0	0	0

* Data on AIDS are provisional at the county level and are subject to edit checks by state and federal agencies.

** Data on tuberculosis are provisional at the county level.

