



Screening for Lead Poisoning in Miami-Dade County

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Lead poisoning is a serious, yet preventable, public health problem that is particularly damaging to young children. The vast majority of cases remain undiagnosed and untreated, because low blood lead levels are not typically associated with overt symptoms. However, blood lead levels (BLLs) as low as 10 µg/dL can adversely affect intelligence, learning, behavior, and development. At extremely high levels (45 µg/dL or higher), lead poisoning can cause seizures, comas, and even death in children.

Great advances have been made in reducing lead exposure during the past twenty years. Lead is no longer present in gasoline, new supplies of house paint, or food and beverage cans. As a result, there has been a decline of more than 80 percent in children's average BLLs since the mid-1970s. The Healthy People 2010 goal is to eliminate childhood lead poisoning as a public health problem by 2010. Even as the incidence rate of lead poisoning and the average BLL of children in this country continues to decline, lead poisoning among Medicaid-eligible children, minorities, and low-income families remains a concern.¹⁻⁴

These children remain at risk for lead poisoning primarily due to deteriorated lead paint in poorly maintained older housing units, house dust, and soil contaminated by lead paint. Young children, 9 months to 2 years of age, are at highest risk of lead poisoning due to their hand-to-mouth activity, higher susceptibility of their nervous systems to toxic effects of lead, and increased absorption of ingested lead.

Lead poisoning is a reportable condition and is defined as a blood lead level (BLL) ≥ 10 µg/dL of whole blood. A confirmed case must meet the following laboratory criteria for diagnosis: BLL of ≥ 10 µg/dL of whole blood measured from a venous specimen, or BLL of ≥ 10 µg/dL measured from two capillary draws taken within 12 weeks of one another. A BLL ≥ 10 µg/dL measured from a single capillary draw or unknown test type is classified as a suspect case.⁵ The Miami-Dade County Health Department (MDCHD) has received about 400 reports of confirmed elevated blood lead levels annually since 1999. One of the most important objectives of the Miami-Dade County Childhood Lead Poisoning Prevention

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Program (CLPPP) since its inception in 1999 has been to increase lead screening among children at high risk of lead poisoning. The Program has provided screening guidelines for primary care physicians and pediatricians (Figure 1). These guidelines, based on CDC screening recommendations, are reviewed regularly to capture at least 95% of cases reported to CLPPP, and distributed bi-annually to family physicians and pediatricians practicing in Miami-Dade County. Our surveillance data since 1999 indicated that prevalence rates of lead poisoning among refugee children were consistently higher than the national average, and consequently in 2001 we modified our screening recommendations to include recent immigration to the United States as a screening criterion.

Screening in Miami-Dade County

For the fourth straight year in a row the number of lead screenings in Miami-Dade County has increased from around 2,000 in 1999 to over 14,000 in 2002 (Figure 2). Thirty percent of persons screened in 2002 lived in one of the 22 target zip codes. The majority of persons tested (75.5%) were 6 years old or younger. The average screening rate among children less than 6 years of age in Miami-Dade County was 7.3%. Screening rates in our target zip codes ranged from 3% to 17%.

Screening in the Refugee Health Assessment Center

Since October 1999, children 6 months to 6 years of age have been routinely screened for lead poisoning at the MDCHD Refugee Health Assessment Center (RHAC). During fiscal year 2002-03, 95% of all children ages 6 months to 6 years of age processed at the RHAC were screened for lead poisoning. The prevalence rate in the RHAC is 7% (Table 1). While the prevalence of childhood lead poisoning among refugee children has decreased each fiscal year (Table 1), this year's rate is still 3 times higher than the prevalence found in the United States of 2.2%.⁶ This exemplifies the importance of continued screening of this high-risk refugee population. Maintaining a 95% screening rate for lead poisoning of all children ages 6 months to 6 years processed at the RHAC will ensure that these children receive necessary case management services where appropriate.

Screening of Children Enrolled in Medicaid

Since 1989 Federal Law has required routine screening of 1 and 2 year old children for lead poisoning as part of Medicaid's services. However, the U.S. General Accounting Office reported that only 17% of Florida's children enrolled in the non-HMO Medicaid received a blood lead test in 1994-1996.⁴ To assess screening of children enrolled in Medicaid and living in target zip-codes, as they were defined at the inception of the program in 1999, CLPPP obtained Medicaid data indicating the number of lead screenings by Medicaid providers in these areas. According to Medicaid lead screening data, the proportion of 1 and 2 year-old Medicaid recipients living in target zip codes who were screened for lead poisoning has increased from 22% in the 1999-2000 to 24% in the year 2000-2001. A complete report was published in the August 2002 issue of Epi Monthly Report.

Program Activities to Increase Screening: July 2002-June 2003

CLPPP has initiated various activities to increase screening in Miami-Dade County. To encourage screening of Medicaid-eligible children, the program coordinators conducted monthly lead in-service training to new Medi-pass providers during orientation sessions at the offices of Agency for Health Care Administration in Miami. The program Principle Investigator also conducted in-service training to those providers who had failed to screen the majority of their Medicaid clients in the previous year. Through these efforts a total of 107 physicians were educated about lead poisoning in 2002-03. In addition to meeting personally with providers, the Office of Epidemiology and Disease Control and the CLPPP have mailed risk assessment questionnaire, information on reporting cases of lead poisoning, screening guide, and rolodex card of CLPPP to over 6,500 physicians in this fiscal year.

In order to reach the residents of Miami-Dade County, CLPPP staff members participated in 11 health fairs, 17 community outreach events, and went door-to-door to provide education and to offer



Figure 1.

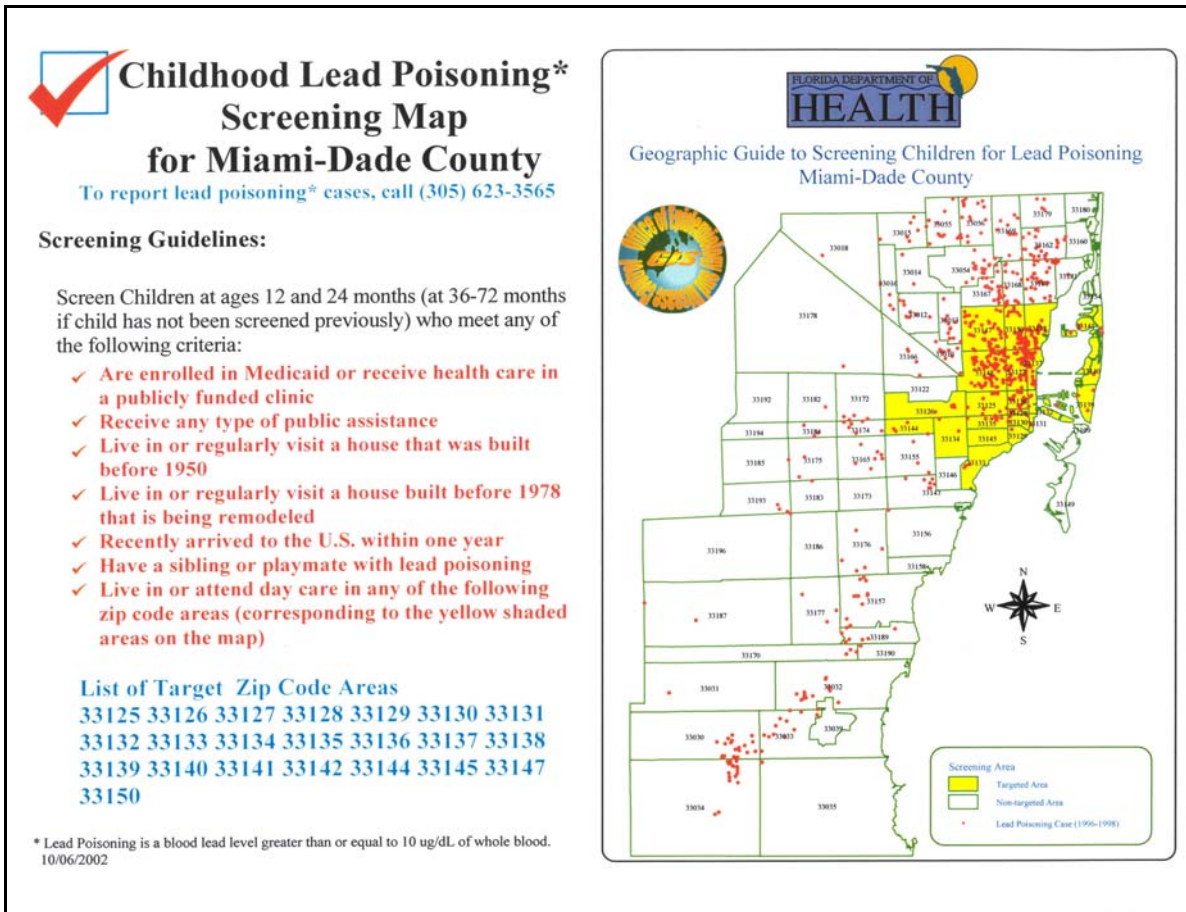
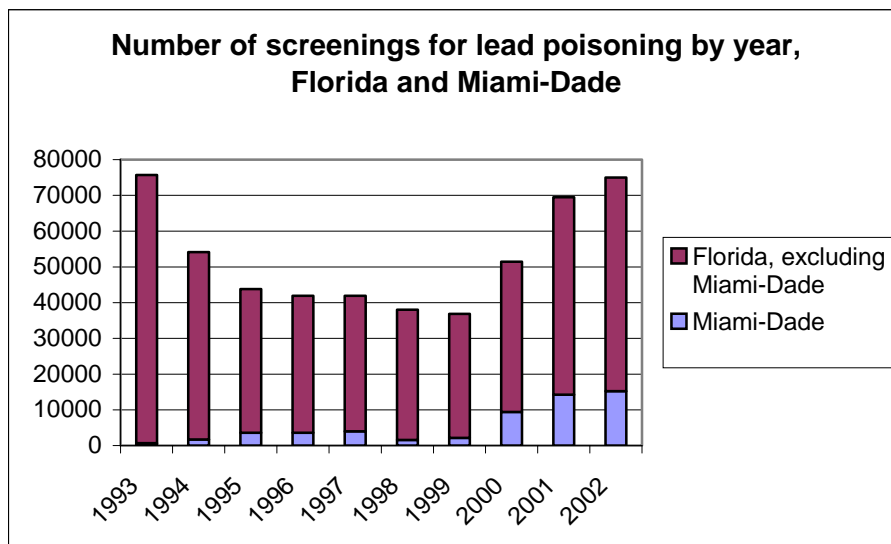


Figure 2.



Source: Florida DOH, Bureau of Community Environmental Health, Childhood and Adult Lead Poisoning Prevention Programs.



screening/referrals to at-risk children throughout this fiscal year. As a result of these outreach efforts CLPPP staff directly provided education to approximately 1,450 persons in Miami-Dade County and screened 137 children for lead poisoning.

Table 1. Lead poisoning prevalence for children screened at the RHAC from July 1999 to June 2003: Miami-Dade County.

Fiscal Year	Total Screened	Total Positive	Prevalence
1999-2000*	1027	138	13%
2000-2001	1050	111	11%
2001-2002	992	85	9%
2002-2003	662	48	7%

*Screening began in October 1999

October 19-25, 2003 is the National Lead Poisoning Prevention Week. One of the themes of the week is "Partnering for Prevention". The Miami-Dade County Health Department CLPPP will join forces with Miami-Dade Weed and Seed, Florida International University, Florida Children's Environmental Health Alliance, the Environmental Protection Agency and Miami-Dade County Water and Sewer to celebrate Lead Prevention Week by educating the public and screening children for lead poisoning. Screening locations will be announced in an upcoming press release.

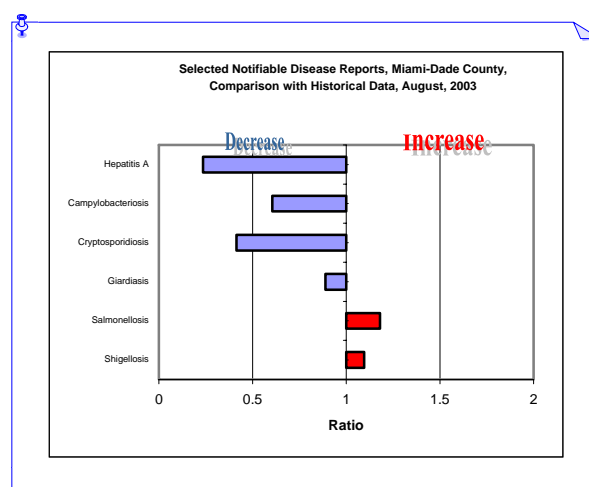
Regular screening of children at risk for lead poisoning in Miami Dade County, providing the appropriate medical and environmental follow-up for children with elevated BLLs, and primary prevention can significantly contribute to achieving the Healthy People 2010 goal of eliminating lead poisoning as a major public health problem in Florida by 2010.

References

1. Centers for Disease Control and Prevention. *Blood Lead Levels in Young Children ---United States and Selected States, 1996--1999* MMWR 2000; 49(50):1133-7.
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3. Florida Department of Health, Bureau of Environmental

Epidemiology, 2000. Childhood lead poisoning screening guidelines.

4. US General Accounting Office. *Medicaid: Elevated Blood Lead Levels in Children.* GAO/HEHS-98-78, February 1998.
5. Florida Department of Health, Bureau of Epidemiology, June 2003. *Florida Department of Health Bureau of Epidemiology Surveillance Case Definitions for Select Reportable Diseases in Florida.*
6. Centers for Disease Control and Prevention, January 2003. *Second National Report on Human Exposure to Environmental Chemicals.*
7. Pekovic V, Sandoval L, Trepka MJ: *Some Miami-Dade physicians still not following the federally mandated guidelines for screening children enrolled in Medicaid.* Epi Monthly Report 20002; 3(8):1-3. ♦



*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 (305) 376-1976

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



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Monthly Report

Selected Reportable Diseases/Conditions in Miami-Dade County, August 2003

Diseases/Conditions	2003 this Month	2003 Year to Date	2002 Year to Date	2001 Year to Date	2000 Year to Date	1999 Year to Date
AIDS ^{Provisional}	64	696	808	933	926	1014
Animal Rabies	0	0	0	1	0	0
Campylobacteriosis	10	88	69	86	104	96
<i>Chlamydia trachomatis</i>	270	2713	3218	2369	2056	3009
Ciguatera Poisoning	0	0	0	0	0	0
Cryptosporidiosis	2	9	4	10	10	10
Cyclosporiasis	0	1	1	0	0	0
Diphtheria	0	0	0	0	0	0
<i>E. coli</i> , O157:H7	0	0	0	0	1	1
<i>E. coli</i> , Non-O157	3	3	1	1	0	0
<i>E. coli</i> , Other	0	0	0	0	0	0
Encephalitis (except WNV)	0	0	1	0	0	0
Encephalitis, West Nile Virus	1	1	0	0	0	0
Giardiasis, Acute	20	117	143	171	143	96
Gonorrhea	117	1175	1395	1223	1422	2057
Granuloma Inguinale	0	0	0	0	0	0
Hepatitis A	4	29	96	99	54	57
Hepatitis B	6	39	21	42	67	19
HIV ^{Provisional}	144	1154	1384	1194	1201	1359
Lead Poisoning	32	174	186	156	282	190
Legionnaire's Disease	0	4	0	1	0	0
Leptospirosis	0	0	0	0	0	0
Lyme disease	1	3	1	5	3	0
Lymphogranuloma Venereum	0	0	0	0	0	0
Malaria	3	8	8	12	18	14
Measles	0	0	0	0	0	0
Meningitis (except aseptic)	4	6	4	7	11	9
Meningococcal Disease	0	3	10	13	19	11
Mumps	0	0	0	0	1	2
Pertussis	3	7	4	1	7	10
Polio	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Rubella, Congenital	0	0	0	0	1	0
Salmonellosis	45	299	197	167	173	183
Shigellosis	26	213	164	85	147	112
<i>Streptococcus pneumoniae</i> , Drug Resistant	16	83	73	126	138	69
Syphilis, Infectious	15	114	139	143	88	46
Syphilis, Other	67	696	715	549	500	540
Tetanus	0	0	0	0	0	0
Toxoplasmosis	1	6	14	10	0	2
Tuberculosis ^{Provisional}	15	143	147	139	160	176
Typhoid Fever	1	3	2	0	1	16
<i>Vibrio cholera</i> Type O1	0	0	0	0	0	0
<i>Vibrio cholera</i> Non-O1	0	0	1	0	0	0
<i>Vibrio</i> , Other	0	1	0	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.



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