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PREVENTING CHILDHOOD LEAD POISONING

CDC LOWERS THE BLOOD LEAD POISONING LEVEL

Childhood lead poisoning is one of the most important public health problems in the United States. It is also one of the most preventable.

In October 1991, the Centers for Disease Control (CDC) released the fourth revision of the statement "Preventing Lead Poisoning in Young Children." The CDC statement lowers the 1985 threshold for action of blood lead poisoning from 25 to 10 micrograms of lead per deciliter (ug/dL) of whole blood and recommends a multitier approach for intervention activities, depending on the blood lead level.

The recommendations are based on epidemiologic studies that have identified adverse health effects in children at blood lead levels in the range of 10-15 ug/dL and perhaps lower. At these levels, the studies indicate harmful health effects to the neurologic development of fetuses and young children that can result in deficits in intelligence that are probably irreversible. Lead has no biologic value, and no levels of lead in the blood have been determined to be safe. Thus, the long-term goal of lead poisoning prevention activities is to reduce children's blood lead levels below 10 ug/dL.

To lower blood lead levels, the emphasis must be on primary prevention. Primary prevention activities focus on eliminating lead hazards before children become poisoned. In addition,

medical management (i.e., screening, medical treatment, and follow-up) of lead poisoned children and secondary prevention are critical until environmental sources are eliminated.

CDC MEDICAL MANAGEMENT RECOMMENDATIONS

A MULTITIER APPROACH TO FOLLOW-UP ACTIVITIES

Screening

Because all children are at risk for lead poisoning, CDC recommends universal blood lead screening. Children at highest risk should be given top priority for screening. Screening should be done using a blood lead measurement test. The erythrocyte protoporphyrin (FEP) test is no longer recommended for screening because it is not sensitive enough to detect lead poisoning. CDC recommends confirming capillary blood lead results with a venous blood lead measurement for all children with capillary blood lead levels ≥ 15 ug/dL.

Screening data can be used to target interventions by identifying places where children are at high risk for lead poisoning. The abatement of lead sources for poisoned children results in prevention of lead poisoning for children who would have been exposed to those lead sources in the future. Screening data are also needed to define the magnitude of the lead poisoning problem in Connecticut.

The Multitier Approach

CDC's "multitier" approach defines follow-up activities for different blood lead levels. The urgency and type of follow-up are based on the following risk categories:

- * Community wide prevention activities should occur when many children in the community have blood lead levels ≥ 10 ug/dL. Children should also be rescreened according to the CDC screening schedule, which is based on assessment of risk (1).
- * Children with blood lead levels from 15 to 19 ug/dL should receive individual case management to include nutritional and educational interventions. They should be rescreened every 3 or 4 months. In addition, environmental investigation and lead hazard abatement should be considered if elevated levels persist.
- * For all children with blood lead levels between 20 and 44 ug/dL, a complete medical evaluation is to be conducted and the environmental lead sources should be identified and eliminated.
- * Children with blood lead levels from 45 to 69 ug/dL should begin medical treatment and environmental assessment and remediation within 48 hours.
- * Children with blood lead levels of ≥ 70 ug/dL should be medically treated and environmental assessment and remediation should occur IMMEDIATELY.

Medical Provider Guidelines to Assess a Child's Risk of Lead Poisoning

Pediatricians should consider lead poisoning in the diagnosis of a number of conditions, including growth failure, developmental delays, hyperactivity, behavior disorders, hearing loss, and anemia.

The following is a simple list of questions to ask parents or guardians in order to assess the child's risk of lead exposure:

1. Does your child live in or regularly visit a house with peeling or chipping paint built before 1960? This could include a day care center, preschool, or the home of a baby sitter or a relative.
2. Does your child live in or regularly visit a house built before 1960 with recent, ongoing or planned renovation or remodeling?
3. Has a brother, sister, housemate or playmate been followed or treated for lead poisoning (blood lead ≥ 15 ug/dL)?
4. Does the child live with an adult whose job or hobby involves exposure to lead (e.g. bridge-workers, construction workers, persons who cast ammunition or fishing weights, or persons who make stained glass)?

If the answer to any of these questions is yes, then the child is at high risk for lead poisoning and should be screened starting at 6 months of age. Children who do not appear to be at high risk should be screened at 12 months of age, and, if resources permit, screened again at 24 months of age. When exposure to lead has occurred or has increased, the medical provider should follow-up with a blood lead test.

For more detailed recommendations on childhood lead poisoning prevention and assessment, refer to Chapter 6 of the CDC guidelines (1).

Environmental Case Management

To prevent childhood lead poisoning, lead hazards must be abated. Primary lead-poisoning prevention activities must include abatement of lead-based paint, lead contaminated soils and lead-containing dust in homes, daycare centers,

schools, and other places where children live or play. Environmental intervention should focus on those children aged 6 months to 6 years with the highest blood lead levels (≥ 20 ug/dL). Medical practitioners should contact the local health director to assure environmental intervention.

CDC recommends educating parents and/or guardians about the various sources of lead hazards, the effects of lead poisoning, and the emergency measures that should be taken to reduce the lead exposure. Parents or guardians should not attempt abatement themselves but seek professional help. Improper abatement will increase lead dust levels in the home creating additional exposure and increasing the child's blood lead levels (2,3). Parents should stabilize the exposure by damp dusting, wet mopping floors, wet-cleaning window sills and window wells, steam cleaning carpeting, and cleaning upholstery.

References

1. CDC. Preventing lead poisoning in young children, 1991. Atlanta: US Department of Health and Human Services, Public Health Service, 1991.
2. Alvarez-Rey S, Menke-Hargrave T. The deleading dilemma: Pitfall in management of childhood lead poisoning. *Pediatrics* 1987;79: 214-217.
3. HUD (U.S. Department of Household Urban Development). Comprehensive and workable plan for abatement of lead-based paint in privately owned housing: Report to Congress. Wash. (D.C.) HUD 1990.

for
PUBLIC HEALTH EMERGENCIES
after 4:30 p.m. and on weekends
call the
Department of Health Services
at
566-4800

FOR ADDITIONAL INFORMATION

Copies of the statement, *Preventing Lead Poisoning in Young Children, 1991*, are available free of charge from Publication Activities, Office of the Director, National Center for Environmental Health and Injury Control, Mailstop F-29, CDC, 1600 Clifton Road, NE, Atlanta, GA 30333.

In Connecticut, questions concerning childhood lead poisoning can be directed to local health departments or to the Environmental Epidemiology and Occupational Health Division of the Department of Health Services (566-8167).

Patients can be referred to the UCONN Extension Service for general, non-medical information on lead poisoning prevention activities (242-4940).

STATE LEAD REGULATIONS

Connecticut has several statutes (Sections 19a110-19a111d) that address lead poisoning. By law, each medical practitioner, institution, and private clinical laboratory is required to report within 48 hours to the Department of Health Services (DOHS) the name, address, and date of birth of those persons found or suspected to have blood lead levels ≥ 25 ug/dL.

DOHS anticipates lowering the reporting level to ≥ 10 ug/dL. In addition, environmental intervention activities will be required for a blood lead level ≥ 20 ug/dL.

DOHS is finalizing lead abatement regulations. These regulations are necessary to establish proper environmental abatement/remediation procedures and requirements for materials containing toxic lead levels that pose a public health hazard.

RABIES UPDATE

As of December 31, 1991, the state's animal rabies count for 1991 was 200 (181 raccoons, 10 skunks, 7 bats and 2 woodchucks). By town, the case breakdown was as follows:

TOWN	COUNTY	BAT	RACCOON	SKUNK	WOODCHUCK	TOTAL
Bethel	F	0	12	0	0	12
Bridgeport	F	0	1	0	0	1
Bridgewater	L	0	1	0	0	1
Canterbury	W	1	0	0	0	1
Danbury	F	1	15	2	0	18
Darien	F	0	1	0	0	1
Easton	F	0	4	0	0	4
Fairfield	F	0	13	1	0	13
Greenwich	F	0	6	0	0	6
Mansfield	T	1	0	0	0	1
New Canaan	F	0	12	0	1	13
New Fairfield	F	0	12	0	0	12
Newington	H	1	0	0	0	1
Newtown	F	1	2	0	0	3
Norwalk	F	0	5	1	0	6
Norwich	NL	1	0	0	0	1
Redding	F	0	17	2	0	19
Ridgefield	F	0	24	1	1	26
Shelton	F	0	1	0	0	1
Sherman	F	0	6	0	0	6
Stamford	F	0	7	0	0	7
Trumbull	F	0	1	0	0	1
Weston	F	0	12	1	0	13
Westport	F	0	3	1	0	4
Wethersfield	H	1	0	0	0	1
Wilton	F	0	24	1	0	25
Unknown	F	0	2	0	0	2
Total		7	181	10	2	200

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