Preface

This guidance on childhood lead screening was developed by CDC in consultation with the members and consultants of the Advisory Committee on Childhood Lead Poisoning Prevention. The committee comprises non-Federal experts drawn from health departments, pediatric practices, managed-care organizations, academia, and non-governmental agencies working on affordable housing and public lead poisoning prevention education. The guidance was also reviewed by childhood lead poisoning prevention program managers and was available during a 6-week period for public comment. The final document is from CDC and does not necessarily reflect the views of all members of the advisory committee.

In 1991, the U.S. Public Health Service (PHS) called for a society-wide effort to eliminate childhood lead poisoning in 20 years (CDC, 1991), and in 1997, PHS remains committed to this goal. Childhood lead screening should be part of a comprehensive program to reach this goal. Chapter 3 of this document discusses the development of statewide plans for childhood blood lead screening. The purpose of these plans is to increase the screening and follow-up care of children who most need these services and to ensure that screening is appropriate for local conditions.

The main intended audience for this guidance is state and local health officials; however, it may also be used by

child health-care providers, managed-care organizations, and others.

Several topics are not covered or are considered only briefly in this document. Some of these topics have been recently considered by other groups:

- Health effects and sources and pathways of exposure (National Research Council, 1993).

- Chelation therapy (American Academy of Pediatrics, 1995).

- Controlling lead hazards in the home (U.S. Department of Housing and Urban Development, 1995).

- National policy for controlling lead hazards in housing (Lead-Based Paint Hazard Reduction and Financing Task Force, 1995).

The continued expansion of knowledge about childhood lead poisoning prevention will be reflected in future changes in CDC guidance.

References

American Academy of Pediatrics Committee on Drugs. Treatment guidelines for lead exposure in children. Pediatrics 1995;96:155-60.

Centers for Disease Control. Strategic plan for the elimination of childhood lead poisoning. Atlanta: Department of Health and Human Services, 1991.

Lead-Based Paint Hazard Reduction and Financing Task Force. Putting the pieces together: controlling lead hazards in the nation's housing. Washington, D.C.: U.S. Department of Housing and Urban Development, 1995.

National Research Council. Measuring lead exposure in infants, children, and other sensitive populations. Washington, D.C.: National Academy Press, 1993.

U.S. Department of Housing and Urban Development (HUD). Guidelines for the evaluation and control of lead-based paint hazards in housing. Washington, D.C.: HUD, 1995.

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Executive Summary

Childhood lead poisoning is a major, preventable environmental health problem. Blood lead levels (BLLs) as low as 10 μg/dL are associated with harmful effects on children's learning and behavior. Very high BLLs (≥70 μg/dL) cause devastating health consequences, including seizures, coma, and death. It is currently estimated that some 890,000 U.S. children have BLLs ≥10 μg/dL (CDC, 1997). Since the virtual elimination of lead from gasoline, lead-based paint hazards in homes are the most important remaining source of lead exposure in U.S. children.

In 1991, the U.S. Department of Health and Human Services called for elimination of childhood lead poisoning and in 1997 retains its commitment to see this effort through. Blood lead screening is an important element of a comprehensive program to eliminate childhood lead poisoning. The goal of such screening is to identify children who need individual interventions to reduce their BLLs. The 1991 edition of *Preventing Lead Poisoning in Young Children* called for virtually universal screening of children 12–72 months of age. Nonetheless, a 1994 national survey showed that *only about one-fourth of young children had been screened and only about one-third of poor children, who are at higher risk of lead exposure than other children, had been screened.*

Some populations of children are heavily exposed to lead while others are not. A recent national estimate

(CDC, 1997) showed that 21.9% of black children living in housing built before 1946 had elevated BLLs (≥10 μg/dL). Studies of other groups of children have shown quite low prevalence of elevated BLLs. For example, a 1994 survey of 967 poor children in Alaska found that none had a BLL above 11 μg/dL (Robin et al., 1997).

Many children, especially those living in older housing or who are poor, need screening and, if necessary, appropriate interventions to lower their BLLs. At the same time, children living where risk for lead exposure has been demonstrated to be extremely low do not all need to be screened. The task for public health agencies, parents, and health-care providers is to identify those children who will benefit from screening and to ensure that they receive the services they need.

CDC Recommendations - Statewide Plan

State health officials should develop a statewide plan for childhood lead screening and convene an inclusive planning committee composed of child health-care providers as well as representatives from local health departments, managed-care organizations, Medicaid, private insurance organizations, and the community.

The plan should address:

- **Division of the state, if necessary, into areas with different recommendations for screening.**
- **Screening recommendations for each area. (A basic targeted-screening recommendation is provided below as an example.)**
- **Dissemination of screening recommendations for each area.**
- **Evaluation.**

A Basic Targeted-Screening Recommendation

State health officials should use this basic recommendation only as an interim measure. A recommendation that is based on assessment of local data and an inclusive planning process is preferred.

Within the state or locale for which this recommendation is made, child health-care providers should use a blood lead test to screen children at ages 1 and 2, and children 36-72 months of age who have not previously been screened, if they meet one of the following criteria:

- Child resides in one of these zip codes: *[place here a list of all zip codes in the state or jurisdiction that have ≥27% of housing built before 1950. This information is available from the U.S. Census Bureau.]*
- Child receives services from public assistance programs for the poor, such as Medicaid or the Supplemental Food Program for Women, Infants, and Children (WIC).
- Child's parent or guardian answers "yes" or "don't know" to any question in a basic personal-risk questionnaire consisting of these three questions:

  -Does your child live in or regularly visit a house that was built before 1950? This question could apply to a facility such as a home day-care center or the home of a babysitter or relative.
  -Does your child live in or regularly visit a house built before 1978 with recent or ongoing renovations or remodeling (within the last 6 months)?
  -Does your child have a sibling or playmate who has or did have lead poisoning?

In the absence of a statewide plan or other formal guidance from health officials, universal screening for virtually all young children, as called for in the 1991 edition of *Preventing Lead Poisoning in Young Children* (CDC, 1991), should be carried out.

CDC provides funding and technical advice to assist states and locales in all activities that are called for in this guidance document.

In this document, CDC also provides general guidelines about the roles and responsibilities of child health-care providers in preventing childhood lead poisoning, including anticipatory guidance, screening and follow-up testing, clinical management, chelation therapy, family education about elevated BLLs, and participation in a follow-up team.

References

Centers for Disease Control and Prevention. Update: blood lead levels–United States, 1991-1994. MMWR 1997;46:141-6.

Centers for Disease Control and Prevention. Erratum: vol. 46, no.7. MMWR 1997;46:607

Robin LF, Beller M, Middaugh JP. Statewide assessment of lead poisoning and exposure risk among children receiving Medicaid services in Alaska. Pediatrics 1997;99:E91-E96.