

# 2 A Comprehensive Approach to Childhood Lead Poisoning Prevention

Although lead poisoning among children is a bigger problem in some places than in others, there is potential for lead exposure in nearly all jurisdictions. Public health agencies should develop a comprehensive approach to preventing childhood lead poisoning that is based on the three functions defined in *The Future of Public Health*: assessment, policy development, and assurance (National Academy of Sciences, 1988).

## 1. Assessing Children's Exposure to Lead

Sources of data for assessment of children's exposure to lead are summarized in Table 2.1. Sources include childhood blood lead surveillance systems (complete data are currently unavailable in most places, but many such systems are being developed); the U.S. Census (widely available data on older housing and young children living in poverty); the Toxic Release Inventory (TRI) from the EPA (widely available data on local industrial sources of lead exposure); and local surveys. Local surveys may be conducted to gather data on industrial sources not included in the TRI; on drinking water that might be contaminated by lead; and on households where lead may be present in traditional remedies, ceramicware, cosmetics, or materials used in hobbies.

**Table 2.1.** Assessing children's exposure to lead

<b>Exposure Source or Risk Factor</b>	<b>Examples of Sources of Data for Assessment</b>
Pre-1950 housing	Census data, tax-assessor data
Demographic factors (e.g., poverty)	Census data, blood lead surveillance data
Industrial sources, parental occupation (take-home exposure)	Toxic Release Inventory, local surveys, blood lead surveillance data
Drinking water	Local surveys, EPA, local utility companies
Hobbies, traditional remedies, ceramicware, cosmetics	Local surveys, blood lead surveillance data

## 2. Developing Policies for Childhood Lead Poisoning Prevention

Policies and activities are necessary in three major areas: primary prevention, secondary prevention, and monitoring (surveillance). Activities and associated policies are summarized in Table 2.2.

*Primary prevention activities* prevent children from being exposed to lead. Especially significant are actions to reduce residential lead hazards before children are born, are sufficiently mobile to be at increased risk for exposure to household lead, or before children move into a home with lead hazards. (Alliance to End Childhood Lead Poisoning, 1994.)

*Secondary prevention activities* reduce the harmful effects of elevated BLLs after elevations have occurred. Activities include BLL screening and follow-up care.

“Universal” screening is the BLL screening of all children in an area; “targeted” screening is the BLL screening of children who are selected on the basis of: 1) environmental assessment to determine where children are being exposed to lead hazards, or 2) individual risk assessment to identify children who meet certain criteria, which may include place of residence, membership in a high-risk group, or “yes” answers to a personal-risk questionnaire. (See Chapter 3 for more detail on secondary prevention activities.)

*Monitoring (surveillance) activities* provide information that forms the basis for planning, evaluation, and public support of policies and programs. Activities include development of systems to monitor children’s BLLs, sources of exposure,

reduction of lead hazards, and availability of lead-safe housing.

Of particular importance are childhood blood lead surveillance systems containing information on elevated and non-elevated BLL results, demographics, results of environmental investigations, probable sources of exposure, and prescribed medical treatments.

**Table 2.2.** Childhood lead poisoning prevention activities and associated policies

Activity	Examples of Associated Policies
<i>Primary Prevention</i>	
Evaluation and control of residential lead-based paint hazards	Protective housing codes or statutes
Public lead education	State- or area-wide plan calling for community-wide lead education
Professional lead education and training	State certification for lead-abatement workers
Anticipatory guidance by child health-care providers	State Medicaid policies requiring anticipatory guidance
Identification and control of sources of lead exposure other than lead-based paint	State- or area-wide plan to reduce exposures from industry and drinking water
<i>Secondary Prevention</i>	
Childhood blood lead screening	State- or area-wide screening plan; state Medicaid policies and contracts calling for screening; protocols and policies for providers and managed-care organizations
Follow-up care for children with elevated BLLs	Local policies to establish a follow-up care team; protocols for care coordination, and for medical and environmental management; Medicaid policies and contracts calling for follow-up care
<i>Monitoring (Surveillance)</i>	
Monitoring of children's BLLs	State policy requiring laboratories to report all BLL test results of resident children
Monitoring of targeted (older, deteriorating) housing stock, hazard-reduction activities, and lead-safe housing	State certification and licensing procedures for monitoring safety of lead-hazard reduction activities and occurrence of such activities in areas with targeted housing; procedures for tracking lead-safe housing

### 3. Assuring the Performance of Activities to Prevent Childhood Lead Poisoning

Health departments should, at a minimum, support, oversee, and monitor the activities necessary to prevent childhood lead poisoning.

In a comprehensive approach, there are roles for many different collaborators in both the public and the private sector. (See, for example, Alliance to End Childhood Lead Poisoning, 1996; and Lead-Based Paint Hazard Reduction and Financing Task Force, 1995.) Examples of activities, collaborating groups, and health department roles are shown in Table 2.3.

**Table 2.3.** Examples of childhood lead poisoning prevention activities and collaboration

Activity	Collaborators	Roles of public health departments
<i>Primary prevention</i>		
Anticipatory guidance	Health-care providers, medical groups, managed-care organizations	Provide educational materials; publicize, disseminate, and market prevention information
Public education	Health-care providers, medical groups, managed-care organizations, community-based organizations, realtors, contractors, home remodelers, home inspectors, the press	Assess community needs; provide educational materials; convene planning groups; oversee, carry out, or evaluate campaigns; respond to consumer inquiries
Maintenance or improvement of older housing	Property owners, realtors, bankers, community-based organizations, remodelers, housing maintenance staff	Convene policy-development groups; maintain system for monitoring targeted (older, deteriorating) housing; provide training for maintenance staff and remodelers; provide contractor training and certification
Lead hazard evaluation and control	Lead inspectors, risk assessors, lead abatement contractors, trainers, community-based organizations, and licensing agencies	Accredit training providers, certify lead professionals, provide advice and referrals to property owners

**Table 2.3.** Examples of childhood lead poisoning prevention activities and collaboration (continued)

Activity	Collaborators	Roles of public health departments
<i>Secondary prevention</i>		
Screening	Health-care providers, medical groups, managed-care organizations	Provide patient-education materials and screening protocols; conduct screening
Follow-up care: medical management	Health-care providers, medical groups, managed-care organizations	Provide referrals, protocols, and care coordination; provide medical management.
Follow-up care: environmental investigation	Public and private-sector environmental health specialists	Provide referrals; investigation services; training, licensing, and certification of investigators; laboratory quality controls
Follow-up care: family lead education, home visiting	Visiting nurse associations, community-based organizations	Provide referrals, training, and home-visiting services
Follow-up care: lead-hazard control	Property-owners, bankers, realtors, policy makers, enforcement agencies	Convene policy-making groups; provide referrals, training, licensing, and certification; provide hazard-reduction services



**Table 2.3.** Examples of childhood lead poisoning prevention activities and collaboration (continued)

Activity	Collaborators	Roles of public health departments
<i>Monitoring (surveillance)</i>		
Using BLL information for program development	Health-care providers, medical groups, managed-care organizations, clinical laboratories	Conduct outreach and policy development to encourage BLL reporting; provide systems to collect, manage, analyze, and disseminate results
Using information on lead-hazard control activities to monitor safety of these activities and lead-safe housing	Environmental sanitarians, lead hazard-reduction contractors	Encourage reporting as part of training, licensing, and certification programs; provide systems to collect, manage, analyze, and disseminate results

### *References*

Alliance to End Childhood Lead Poisoning (AECLP). Childhood lead poisoning: developing prevention programs and mobilizing resources. Primary Prevention Strategies Handbook. Vol 2. Washington, D.C.: AECLP, 1994.

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