Chapter 4
Nursing Case Management

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Introduction

The purpose of case management for lead poisoning is to eliminate the source of lead exposure for the child as quickly as possible and provide optimal benefit for the child's long-term success. This is done by ensuring children receive appropriate diagnostic and treatment services (including medical, environmental, and other services).

Case management involves assessment, problem identification, planning, monitoring, evaluation, referral, advocacy, and coordination of efforts among multiple service providers. Coordinated care should include the help of the public health nurse (PHN), the child's caregivers, the medical provider, a lead risk assessor (RA) or lead hazard investigator (LHI), educators, social workers, housing agency staff, and possibly others. Effective case management includes ongoing communication in order to coordinate solving any problems that may arise during efforts to decrease a child's blood lead level (BLL) and eliminate lead hazards in the child's environment.

View the Childhood Blood Lead Level Case Management Guidelines for a reference document of Wisconsin-specific nursing and environmental actions for local health departments, based on a child's blood lead level. See the Chapter 6: Environmental Assessment for additional information on environmental investigations.

Assessing the child

Assessment of the child with lead poisoning is a vital component of nursing case management. It guides interventions to reduce lead exposure and the appropriate referrals to make. The assessment includes the child's health and development status, nutrition, and risk factors for lead exposure. Another important part of this assessment is to determine the family's primary concerns and identify anything else that may influence the child's BLL.

Assess health status

An assessment of the child's overall health with lead poisoning provides a baseline. The assessment includes a thorough health history from the parent or caregiver and a limited physical assessment. The PHN should determine if the child has a history of lead exposure or poisoning and if there are any other concurrent medical conditions that may influence the child's response and resiliency to lead poisoning. Blood lead results can be viewed in HHLPSS, the Wisconsin Blood Lead Registry or can be obtained by contacting the CLPPP.

Assessing the lead-poisoned child in the home environment is best practice as it allows observation of possible sources of lead exposure and the child's access to any deteriorated painted or varnished surfaces.

Asses developmental and behavioral milestones

Primary toxicity of lead poisoning in young children is to the brain and central nervous system. The role of the PHN is to ensure the child receives a developmental screening test (such as Ages and Stages Questionnaires ASQ_3 and ASQ:SE-2) either during the home visit or by the child's provider. This assessment will determine a baseline by which future changes can be weighed. If delays are identified from the screening test, a referral should be made to the child's physician, Birth to Three Program, or another early childhood program for a thorough developmental assessment as soon as possible. In addition, any child with a BLL $\geq$10 µg/dL is eligible for Birth to Three Program services because of the high risk of developmental delays occurring as a result of the lead exposure. The child does not need to have an actual or suspected delay to be enrolled in the program. If no delays are detected on the initial Birth to Three evaluation, the program will continue to monitor the child.

Contact the CLPPP for more information on developmental screening training.

Assess nutritional intake

Nutrition is an important factor in managing lead poisoning. Certain nutrients, such as iron and calcium, may reduce the child's absorption of lead. Children with elevated blood lead levels are often at risk for poor nutrition. The PHN's role is to ensure caregivers receive nutritional counseling to help ensure their children eat a well-balanced and age-appropriate diet. (See Chapter 7: Nutrition for more information.)

Assess other risk factors for lead exposure

The PHN should assess the child's environment for potential sources of lead exposure. Lead-based paint and lead-contaminated dust are the primary sources of exposure for children. If the PHN visits the child's home before the lead risk assessor or hazard investigator conducts the property investigation, the PHN should walk through the interior and exterior of the residence with the parent or caregiver to look for potential sources of lead.
Other risk factors for lead exposure may include, but are not limited to:

- Iron deficiency (which can increase gastrointestinal absorption of lead).
- A history of pica (eating non-food items), accidental ingestion of any non-edible substance, persistent chewing on varnished or painted surfaces, or evidence of frequent hand-to-mouth activity (such as thumb sucking).
- Not washing hands after playing outside or in dusty areas and before eating or napping.
- Use of imported cosmetics, spices or home or traditional remedies that may contain lead.

- Parents or other household members engaging in a lead-related occupation or hobby.
- Vinyl mini or vertical blinds in the home that may contain lead.

For more information, consult "Sources of Lead Exposure" handout.

Interventions for caregivers

Caregiver education is a vital intervention to prevent or limit children's exposure to lead. Many caregivers have little understanding of the sources of lead, the impact of lead toxicity on young children, and how to prevent lead exposure. Visit the DHS Tools for Outreach webpage for fact sheets to help with outreach.

Public health professionals are often the most knowledgeable people within a community regarding childhood lead poisoning. Therefore, public health staff may be the primary source of information for families of lead-poisoned children. Education for families should include:

- Child's BLL, what it means, and how caregivers can protect their children.
- Sources of lead exposure.
- Role of the risk assessor and what to expect during or after the environmental investigation.
- Temporary measures the parent can take to decrease lead exposure, including blocking access to lead hazards; wet wiping; handwashing before naps, meals, and after play; using only cold tap water for food and formula preparation; and flushing pipes each morning.
- Follow-up blood lead testing schedule (see Chapter 5: Medical Management).
- Medical examination.
- Developmental assessment and the potential for the child to develop learning or behavior problems at a later age.
- Nutritional information to ensure adequate intake of certain nutrients, such as iron and calcium.
- Testing of siblings less than 6 years of age.
- Testing pregnant women who live with someone with an elevated blood lead level.
- Chelation protocols, if applicable.

Developing a plan of care

Based on the information above, the nurse case manager should develop a plan of care with the family that describes steps needed to lower the BLL, prevent re-exposure and identify any services needed related to lead poisoning. The plan should include:

1. Reduction or elimination of environmental hazards:
    - Environmental investigation
    - Temporary or short-term hazard reduction (relocation if necessary)
    - Long-term hazard elimination (relocation if necessary)
    - Identification and removal of non-residential exposures
2. Nutritional recommendations:
    - Caregiver counseling on proper nutrition
    - Referral to WIC or other community food resources
3. Caregiver lead education:
   Counseling on lead, exposure risks, decreasing identified risks, and importance of follow-up blood lead tests
4. Medical follow-up care:
    - Follow-up tests and other recommended interventions
    - Testing and/or monitoring of siblings or other at-risk children living in home
5. Follow-up for other areas of concern:
   Counseling or referral for medical services, early intervention, developmental assessment, housing or social services, Head Start, and/or parent support.

The case manager may not directly provide all follow-up care, but they are responsible for ensuring it is offered. This includes medical follow-up and any referrals made for other identified problems. Ongoing review and revision of the plan of care should be done with the family. When the plan of care is developed, the PHN must complete the Nursing Case Management Report (F-44771A; see Appendix A) and upload it into HHLPSS.

Referrals to community resources

An important aspect of the case manager's role is making referrals. The case manager is responsible for connecting the family of a child with lead poisoning to services and resources that are available in the local community, or at the state or national level. The need for the following referrals should be considered:

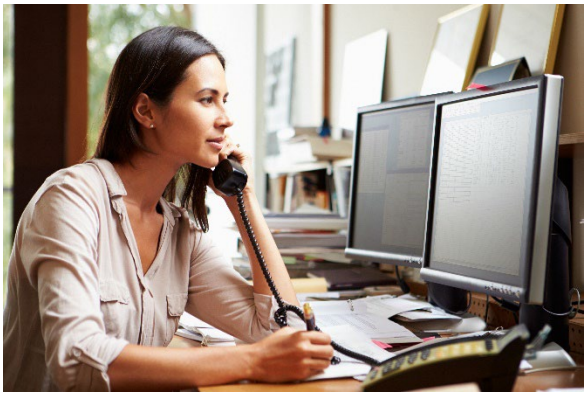
- Primary care provider referrals for children in need of ongoing health care, including additional testing for pregnant women and other children under 6 years of age who live in a home with lead hazards.
- Early childhood education agencies that can provide a thorough developmental evaluation or treatment if delays are identified. This may include Birth to Three, Head Start/Early Head Start or other early childhood programs. Children with a BLL ≥10 µg/dL can be referred to Birth to Three, even if developmental delays are not identified.
- Nutrition counseling or WIC.
- Financial assistance from local housing or weatherization agencies, for lead hazard reduction work on the property. The Lead Safe Homes Program is one example of a program that helps make homes safe for kids or pregnant women who are on Medicaid or BadgerCare Plus in Wisconsin.
- Wisconsin Poison Center (1-800-222-1222) for additional information for local health departments, providers, and families working with children with lead poisoning.

The case manager's role is not limited to assisting with lead exposure prevention. It may also include helping families gain access to resources to address other issues.

Coordinating services

Children with lead poisoning require comprehensive services to address a range of needs. This is best accomplished with a team of professionals. Public health staff typically coordinate the follow-up care provided to the child and family.

Communication among multi-disciplinary team members



The local health department (LHD) provides case management services and environmental investigation of the child's home through their consolidated contract (refer to Chapter 1: Consolidated Contracts, Standards, and Definitions) with the Department of Health Services (DHS). When lead hazards are identified in the home, the property owner is responsible for ensuring the remediation of all identified lead hazards. The physician provides ongoing assessment through age-appropriate physical exams, follow-up venous blood lead tests, chelation therapy if appropriate, and long-term

monitoring for the development of cognitive, learning, and behavioral deficits. The LHD, together with DHS, must ensure corrective action is taken to prevent ongoing exposure to lead hazards and to ensure the child receives appropriate supportive services as necessary. Important strategies the case manager should remember:

- Exchange information regularly with the child's primary health care provider. Make sure they are aware that public health services are being provided to the child and family, and what those services include. Request information from the physician, such as the results of the physical assessment of the child.
- Convene case conferences on lead-poisoned children being served by the LHD. Include the risk assessor, WIC nutritionist, early childhood program staff, social services, and any others that are providing services to the child and/or family. Discussion and problem solving should revolve around the outcomes defined by the plan of care, (medical, environmental, nursing, nutritional, developmental, educational, etc.), and any ongoing issues and concerns.

Supporting the family

Families may need ongoing reassurance and support to help them meet the needs of their child with lead poisoning. Parents may feel guilt about having caused the lead poisoning because they were not aware of the dangers of lead before their child was exposed. They may also be uncertain as to what they can do to help their child.

The case manager should:

- Assess whether the family understands the diagnosis of lead poisoning and the effects that lead exposure may have on the child's learning abilities and behavior over time.
- Provide support to the parent or caretaker as they implement medical, environmental, and other interventions to treat the lead poisoning.
- Empower the family to assume responsibility for actions within their control to lower the child's BLL and enhance learning opportunities for the child.

Evaluation of care

The PHN should evaluate the plan of care frequently and modify the plan as needed to ensure progress toward the desired outcomes. This evaluation includes monitoring the child's health status and assuring that environmental interventions are completed in the shortest time possible to limit the child's exposure to lead.

Specific measures that can be used to evaluate progress include, but are not limited to:

- The child's blood lead level is decreasing.
- The child is living in a lead-safe environment.
- The child is receiving supportive services for other identified medical conditions, developmental delays, or behavior problems.

- The parent or caregiver has adequate knowledge of prevention and management of lead toxicity.

Case closure

It often takes an extended period to achieve all elements of case management for lead poisoning. The child's case follow-up and the property investigation follow-up are two primary components. The child's case record should not be closed until it is determined that the child meets all closure criteria as stated below. The determination of a lead-safe environment is made by the risk assessor or lead hazard investigator through a visual assessment and clearance testing (see Chapter 6: Environmental Assessment chapter). In some instances, the family may have moved out of the home where the initial lead exposure occurred and into a home where no lead hazards exist.

The WCLPPP has adopted the following *minimum* case closure criteria for an EBLL case:

- The child's BLL has remained <15 µg/dL for at least six months.
- The child is living in a lead-safe environment:
    - Lead hazard remediation work is complete, property met final visual clearance investigation, and dust wipe samples met clearance standards.
    - The source of lead poisoning was not lead-based paint, and the child is no longer exposed.
    - Child moved to a new property identified as lead safe.
    - No hazards were identified (further explanation required)

The PHN can also administratively close the child's case record when:

- The parent or caregiver refuses further public health intervention.
- The family moves and cannot be located.
- The family moves out of state.

If the child moves before meeting closure criteria:

- Do not close the case in HHLPSS.
- Obtain the family's new address.
- Use the HHLPSS job aids and FAQ page to update the address and transfer the case.
- Contact the CLPPP if the family moves out of state for assistance with making a referral to the new state CLPPP.
- Contact the CLPPP with questions or for help.

After closing the child's case record, the PHN must complete the Nursing Case Closure Report (F-44771B; see Appendix A) and upload it into HHLPSS.