

State of Wisconsin
Department of Health Services

Division of Public Health

Bureau of Environmental and Occupational Health

Lead and Asbestos Section



Report on the Review of the
City of Milwaukee Health Department
Childhood Lead Poisoning Prevention Program
May 2018

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Acronyms

BLL – Blood lead level

DHS – Wisconsin Department of Health Services

EBLL – Elevated blood lead level as defined in Wis. Stat. ch. 254 (one venous blood test of ≥ 20 mcg/dL, or two venous blood tests of ≥ 15 mcg/dL taken at least 90 days apart)

HHLPPS – Healthy Homes and Lead Poisoning Surveillance System, the CDC database that will replace STELLAR (see below) for all health departments

HSA – Health Services Assistant, a MHD paraprofessional outreach worker who conducts home visits and provides limited education and cleaning in children's homes.

LHD – Local Health Department

mcg/dL – Micrograms per deciliter, units used to measure the amount of lead in blood

MHD – City of Milwaukee Health Department

MHD CLPP Program – City of Milwaukee Health Department Childhood Lead Poisoning Prevention Program

PHN – Public Health Nurse

STELLAR – Systematic Tracking of Elevated Lead Levels and Remediation, the electronic database that houses blood lead test results, nursing case management, and environmental investigation activities

WCLPP Program – Wisconsin Childhood Lead Poisoning Prevention Program

WCLPP Program Handbook – The Wisconsin Childhood Lead Poisoning Prevention and Control Handbook for Local Public Health Department, P-00660 (2014 edition)

Background

On January 29, 2018, the City of Milwaukee Health Department (MHD) published a self-assessment of its Childhood Lead Poisoning Prevention (CLPP) Program. This assessment reviewed various aspects of its operations, including its primary and secondary prevention programs, and operational policies and procedures. MHD discovered inadequacies in program capacity, operations, staff training and policies. The Wisconsin Department of Health Services (DHS) and MHD determined these self-identified deficiencies were systemic enough to warrant additional review of the MHD Lead Program by DHS. The following section provides an overview of DHS and MHD responsibilities for lead investigations and describes the objectives, scope, and approach of the review.

Department of Health Services

DHS administers and enforces the provisions of Wis. Stat. ch. 254, Environmental Health, statewide for childhood lead poisoning prevention and intervention. Wis. Stat. § 254.152 allows DHS to designate local health departments (LHDs) as its agents in administering and enforcing §§ 254.11 to 254.178. DHS annually provides funding to LHDs to carry out the responsibilities as an agent.

The Wisconsin Childhood Lead Poisoning Prevention (WCLPP) Program provides guidance to LHDs to carry out the statutorily required responsibilities to support the elimination of childhood lead poisoning and the early detection and treatment of children with lead poisoning. Services provided by LHDs must be in compliance with Wis. Stat. ch. 254 and Wis. Admin. Code chs. DHS 163 and 181.

The WCLPP Program provides the standards of practice for LHD agents to follow for nursing and environmental case management of lead poisoned children, including criteria for opening and closing cases and environmental interventions. These standards are clearly delineated in the Wisconsin Childhood Lead Poisoning Prevention and Control Handbook for Local Public Health Department, P-00660 (2014 edition) (WCLPP Program Handbook).

Milwaukee Health Department

The MHD CLPP Program administers a full-service lead poisoning prevention program that serves residents in the City of Milwaukee. As a full-service program, MHD maintains and updates its own STELLAR database that houses blood lead test results, nursing case management, and environmental investigation activities. MHD CLPP Program divides services into primary prevention and secondary prevention programs. The primary prevention program offers window replacements to eligible properties in zip codes with the highest reported numbers of lead poisoned children in an effort to make houses safer *before* children are lead poisoned. Services may also be offered to owners of homes with a child already identified with lead poisoning in an effort to protect that child and future children from being exposed to lead in the dwelling. MHD secondary program activities include tracking and surveillance of blood

lead test results, nursing case management, and environmental interventions for children identified with lead poisoning. MHD services begin at blood lead levels (BLLs) of 5 mcg/dL or more. Services are based on a child's BLL and may include mailing letters to parents and guardians, home visits by a health services assistant (HSA), nursing case management, environmental investigation to identify lead hazards, and orders to remediate or abate identified lead hazards.

Objectives of DHS Review

The objectives of this review are to:

- Provide an objective review of the MHD CLPP Program policies, procedures, and practices.
- Determine compliance with the DHS program quality criteria.
- Determine if program documentation supports nursing case management compliance.
- Determine if program documentation supports environmental investigation compliance.
- Outline corrective actions and program improvements needed.

Scope and Approach

The DHS review of the MHD CLPP Program began after meeting with MHD leaders and CLPP Program staff on February 22, 2018.

DHS staff reviewed the MHD self-assessment report and identified several areas of concern that were used to help focus the state's review. Intervention information provided in the MHD report indicated that the policy for intervention was not following statutory requirements and that some children may not have received required intervention services. Therefore, DHS focused on two main areas of concern in the review:

1. Milwaukee CLPPP secondary prevention program responses to children with elevated blood lead levels, including nursing case management and environmental investigations.
2. Program operational policies and procedures for the MHD CLPP Program.

DHS reviewers chose the period from January 1, 2012, through December 31, 2017, for review. This timeframe was determined based on the MHD "Intervention Levels for Children by Blood Lead Level, 2015-2017" chart found in Table 4.1 of the MHD self-assessment report and on the MHD website. Because this intervention protocol was not consistent with statutory requirements, DHS wanted to review cases of children with elevated blood lead levels (EBLL) from both before and after this protocol was adopted to determine if and how the protocol may have affected these children.

DHS began its program review by requesting records for Milwaukee children who met the statutory definition of EBLL, which is one venous blood test of ≥ 20 mcg/dL, or two venous blood tests of ≥ 15 mcg/dL taken at least 90 days apart, from January 1, 2012, through December 31, 2017. There were 491 children identified as meeting the statutory definition of EBLL during this time period.

Of the 491 Milwaukee children, 37 met the EBLL definition of two venous blood lead test results ≥ 15 mcg/dL at least 90 days apart during this timeframe. All 37 of these targeted EBLL cases were reviewed.

A second Milwaukee STELLAR query identified 454 children who first met the definition of an EBLL based on a single venous blood lead test result of ≥ 20 mcg/dL. An initial group of 25 records of these children first identified with an EBLL between May and December of 2017 was selected for review. 50 additional records were selected using random number generation from the entire list of 454 child records. These records were selected to be representative of the broader time range back to 2012. Of these, four were determined to be duplicates of records already selected and were removed, leaving 46 records in this last group. A total of 108 EBLL records were thus selected for in-depth review.

Findings and Program Requirements

This section provides findings of the DHS review team and required actions for correction. It provides the description of the conditions and practices found based on a review of the MHD CLPP Program STELLAR database and program files along with a review of other documents. These documents included the MHD self-assessment report published on January 29, 2018, titled "MHD Childhood Lead Poisoning Prevention Program: Assessment of Operations and Recommendations for Corrective Actions," the 2017 Program Quality Criteria, Wis. Stat. ch. 254, the WCLPP Program Handbook, and other relevant documents.

Program Administration (PA) Findings

- Finding PA1: Existing program policies and procedures could not be provided to DHS reviewers by the MHD.
- Finding PA2: Annual program objectives with outcome measurements could not be provided to the reviewers by the MHD.
- Finding PA3: The MHD protocol provided for EBLL intervention (from the MHD website and Table 4.1 in the MHD self-assessment) does not comply with Wis. Stat. ch. 254 requirements, 2017 Program Quality Criteria, or the WCLPP Program Handbook policies for interventions for children with two venous BLLs ≥ 15 mcg/dL at least 90 days apart. This MHD protocol for nursing case management and environmental investigations for EBLL cases with repeat BLLs ≥ 15 mcg/dL appears to have changed in mid-2016.
- Finding PA4: Nursing case opening and closing criteria were not provided and a review of child records found inconsistent and noncompliant practices used by PHNs.
- Finding PA5: Environmental investigation opening and closing criteria could not be provided.

Finding PA6: Files for nursing cases and environmental investigations were not available upon request.

Finding PA7: Data entry into the STELLAR database was often inconsistent, unclear, and in conflict with information in the paper file for both environmental investigations and nursing follow up.

Program Administration Corrective Actions

1. Develop and implement written policies, procedures, and protocols or standards of practice to guide the daily work of all aspects of the program. [PA1]
2. Develop and maintain annual program objectives with outcomes measurements documented. [PA2]
3. Remove or revise the MHD Intervention Levels for Children by Blood Lead Level, 2015-2017 protocol posted on the MHD website. This protocol does not comply with Wis. Stat. ch. 254 requirements, 2017 Program Quality Criteria and the WCLPP Program Handbook. [PA3]
4. Develop or adopt criteria for opening and closing nursing case management files for children and environmental investigation files for addresses that meet or exceed EBLL requirements. [PA4 and PA5]
5. Develop and maintain a central filing system for nursing case management files, environmental investigation files, and other key records of the program. [PA6, NC1, EI1]
6. Develop and implement written protocols for entering nursing and environmental investigation information into the childhood lead database that ensures consistency between information in the paper file and in the database. [PA7]
7. Develop and implement written protocols for record-keeping that include required documents for environmental investigation files (including the risk assessment report, written orders with work specifications, and clearance report as required). [EI5]

Nursing Case Management (NC) Findings

Of the 108 records selected for review by DHS that were created by MHD between January 1, , and December 31, 2017, the following was discovered:

Finding NC1: Nursing case files were missing.

- Only 46% of the nursing files requested (50 of 108) could be provided for review.

- 6% of the nursing cases (7 of 108) had neither a paper file **nor** a nursing case record opened in STELLAR.
- The paper case files that were reviewed provided comprehensive documentation of the nurses' findings and interventions.

Finding NC2: Public health nurse (PHN) case management was not initiated for all EBLL cases.

- 94% of cases (101 of 108) had nursing case records opened in STELLAR.
- Before June 1, 2016, PHN case management was often initiated before the child had reached the statutory definition of an EBLL, e.g. after the first venous ≥ 15 mcg/dL .
- Before June 1, 2016, PHN case management was initiated for all 25 children with repeat BLLs of 15-19.9 mcg/dL.
- After June 1, 2016, PHN case management was not initiated for the 12 cases identified with repeat BLLs of 15-19.9 mcg/dL. One child's case was not opened until the child's BLL exceeded 20 mcg/dL, three received HSA home visits, and one refused an HSA visit. The remaining seven had no case opened.

Finding NC3: PHN home visits were not conducted for all EBLL cases.

- 81% of cases (87 of 108) received a PHN home visit.
- 16% of cases (14 of 87) received the PHN home visit before the child's BLL had reached the statutory definition of an EBLL, e.g. after the first venous ≥ 15 mcg/dL, but no home visit was conducted after the child reached the EBLL definition.
- 5% of cases (5 of 108) had a home visit by an HSA, and not a PHN.
- 15% of EBLL cases (16 of 108) had no home visit recorded (PHN or HSA), although several unsuccessful home visits and telephone attempts were documented in the STELLAR records.

Finding NC4: Nursing case closure is inconsistent and not in compliance with state program minimum EBLL case closure criteria.

- 70% of case records (70 of 101 opened cases) had documentation in the case events that PHN case management was completed and closed.
 - 91% of cases closed to PHN case management (64 of 70) did not meet the state minimum BLL criteria for case closure, i.e. 2 venous BLLs < 15 mcg/dL at least 6 months apart. In most cases the PHN closed the case when the BLL started to decline from previous levels.
 - In 16% of closed cases (11 of 70), the child's BLL increased to ≥ 15 mcg/dL after case closure and the PHN did not reopen the case.
 - 43% of cases were closed to PHN case management (30 of 70) even though BLLs were ≥ 15 mcg/dL at closure (ranged from 15 mcg/dL to 36.3 mcg/dL).
- 38% of STELLAR case records (38 of 101) were closed.

- 79% of closed STELLAR case records (30 of 38) had the reason of “closure criteria met” but the criteria were not provided.
- 83% of these records (25 of 30) did not meet the state minimum case closure BLL criteria.

Nursing Case Management Corrective Actions

1. Review the 491 EBLL cases identified in MHD between January 1, 2012, and December 31, 2017, to identify and ensure nursing case management is provided for all children who should have had these interventions but who (1) did not receive them, (2) did not receive all required interventions, or (3) had their cases closed before meeting minimum closure criteria. These include the 37 EBLL cases based on two venous BLLs ≥ 15 mcg/dL and the 454 EBLL cases based on one venous BLL ≥ 20 mcg/dL. [NC1, NC2 and NC3]
2. At a minimum, initiate nursing case management for all children with two venous BLLs ≥ 15 mcg/dL that were drawn at least 90 days apart or one venous BLL ≥ 20 mcg/dL per the WCLPP Program Handbook and the 2017 Program Quality Criteria . [NC2]
3. Conduct nursing home visits for all children identified with an EBLL as specified in the WCLPP Program Handbook. [NC3]
4. Develop and implement nursing case closure criteria that meet or exceed state program minimum case closure criteria as specified in the WCLPP Program Handbook.[NC4]
5. Develop and implement protocols to reopen closed nursing cases when the child has another EBLL. [NC4]

Environmental Investigation (EI) Findings

Of the 108 records selected for review by DHS that were created by MHD between January 1, 2012, and December 31, 2017, the following was discovered:

Finding EI1: Environmental investigation files were missing.

- 45% of primary address files (72 of 161) were able to be provided to the reviewers.
- 22% of the primary addresses (35 of 161) had neither STELLAR notes nor a paper file.

Finding EI2: Environmental investigations were not conducted for all EBLL cases.

- 24% of children’s initial primary addresses (26 of 108) had no record of an environmental investigation being conducted.
- 51% of new primary and supplemental addresses (30 of 59) had no record of an environmental investigation being conducted.

Finding EI3: Files had no documentation that a full lead risk assessment was conducted.

- None (0%) of the 108 reviewed records had a completed risk assessment report filed.

Finding EI4: Environmental investigators did not provide a lead clearance report.

- None (0%) of the 108 reviewed records had a completed clearance report filed.
- 19% of environmental investigations that included ordered lead abatement (11 of 58) were closed before clearance wipe results were received.
- 26% of environmental investigations that included ordered lead abatement (15 of 58) were closed indicating remediation completed with no evidence in the file that clearance had been conducted (i.e., no paper file or no dust wipe results).

Finding EI5: Paper records had incomplete supporting documentation of the investigation.

- 12.5% of the reviewed paper records (9 of 72) noted samples were taken but there were no lab results in the file.
- 51% of reviewed paper records (37 of 72) had lab results with no sample location or reason provided for sample collection.
- 25% of reviewed paper records (18 of 72) had no lab results and no documentation of samples being taken.
- None (0%) of the reviewed paper records (0 of 72) included a completed risk assessment or clearance report.
- None (0%) of the reviewed paper records (0 of 72) included XRF results, although one file indicated an inspector had used an XRF analyzer.
- Reviewers found that many files did not have enough documentation to determine if hazards were found by the environmental investigator. Conclusions could not be drawn about the status of a property.

Finding EI6: Orders were not always written when hazards were found or did not include remediation of all identified hazards.

- 18% of address files reviewed (13 of 72) had hazards but no orders were issued.

Environmental Investigation Corrective Actions

1. Review the 491 EBLL cases identified in MHD between January 1, 2012, and December 31, 2017, to identify and ensure environmental investigations are provided for any of the EBLL cases that did not receive required services. These include the 37 EBLL cases based on two BLLs ≥ 15 mcg/dL and the 454 EBLL cases based on one BLL ≥ 20 mcg/dL. [EI2, EI3, EI4]
2. Develop and implement program criteria that require conducting a complete lead risk assessment and provision of a full lead risk assessment report for each address associated

with an EBL case, as referenced in the 2017 Program Quality Criteria and described in the WCLPP Program Handbook. [EI2, EI3]

3. Develop and implement program criteria that require conducting a complete lead clearance and provision of a full lead clearance report for each completed lead hazard remediation, as required under Wis. Admin. Code ch. DHS 163, for each lead clearance conducted. [EI4]
4. Develop and implement program criteria that require written orders for each property where a lead hazard is identified as required under Wis. Stat. ch. 254. [EI6]

Other Observations and Concerns

DHS believes the issues described below are also indicative of program deficiencies and should be further reviewed and addressed by the MHD.

1. Environmental investigators allowed an owner to do work to correct identified hazards with or without writing orders. No documentation of training and certification of the owner was provided in the record.
2. Many orders only included window work and sometimes porches. In several instances, no other work was ordered even when photos showed deteriorated paint in other areas of the property or dust wipe samples indicated the presence of lead hazards. It is impossible to determine if properties received the appropriate lead hazard remediation to make the properties lead-safe.
3. An environmental investigator did not complete an environmental investigation when referring a property into the primary prevention program. The program then provided no information back to the investigator about the status or outcome of that property in the primary prevention program. Investigations were closed with no follow up of whether the property was ever remediated and cleared.
4. An environmental investigation was not conducted for a child referred to Child Protective Services.
5. An environmental investigation was administratively closed when a new owner didn't comply with existing orders.
6. There were instances when PHNs provided referrals to the environmental investigators to initiate the environmental investigation; however, there was no documentation that an environmental investigation was ever conducted.
7. HSA interventions appeared to be ineffective in some cases and may have even delayed decline in a child's BLL. DHS reviewers believe a more in-depth review of the effectiveness of the HSA program by MHD is needed.

Summary

This review focused on the performance of the MHD CLPP Secondary Prevention Program and cannot draw conclusions about other aspects of the MHD Lead Program or its overall capacity to meet statutory requirements and standards of practice. DHS substantiated many of the findings of the MHD's self-assessment, including insufficient policies and procedures to assure appropriate program administration, lack of integration between the primary and secondary prevention programs, insufficient documentation and record-keeping, and failure to provide required interventions for all children identified with EBLLs.

DHS also found program deficiencies not discussed in MHD's self-assessment report, including case management policies that are not in compliance with the requirements of Wis. Stat. ch. 254, the 2017 Program Quality Criteria, and the WCLPP Program Handbook.

Documentation of environmental investigations and nursing case management was poor or missing. This resulted in poor or no documented support for decisions made regarding many EBLL cases. This was evident in three areas: (1) PHN case openings and closures did not follow minimum state criteria, (2) environmental investigations did not have supported decisions for issuing or not issuing orders for a property, and (3) investigations were closed without clear documentation of the reason. Consequently, DHS found a number of children who did not receive required case management and follow-up and properties that did not receive the environmental investigations and remediation needed to ensure a lead-safe environment.

No single environmental investigation file reviewed by DHS was complete and able to fully support the actions and decisions of the MHD investigators. Lead risk assessment reports and clearance reports were not present in the records. STELLAR entries for environmental investigations were incomplete and provided little or no detail. When there were entries, they were inconsistent indicating a lack of protocols or a failure to follow them.

PHN case management files, where provided, were generally complete and informative about the progress of cases. However, PHN case management was sometimes closed for further PHN intervention and not reopened when a child's BLL climbed back into EBLL range, or PHN cases were closed before the child met minimum state case closure criteria.

Most notable was the finding that MHD CLPP Program policies and procedures appear to have changed significantly in mid-2016. The new policies did not adhere to state statute that requires environmental investigations for children who have two venous BLLs of ≥ 15 mcg/dL taken at least 90 days apart. The DHS review found that these children, beginning around June 1, 2016, were no longer being provided the environmental investigations and PHN case management required for a child with an identified EBLL.

These observations indicate the overall lack of consistent program policies, procedures, and standards of practice needed to ensure program compliance and interventions for all children

who require it. The inability to provide program files is also an indication of a program lacking standard systems of operation necessary to meet program administration requirements.

MHD Plan of Correction

The MHD shall provide a comprehensive plan of correction addressing each of the findings to DHS for review and approval by June 30, 2018. DHS recommends that the MHD plan of correction also takes into consideration the observations and concerns identified by the DHS reviewers and address them in the plan. Once received, DHS will review and provide feedback and any assistance needed to correct or improve the plan for final approval.

Wis. Stat. ch. 254 and the WCLPP Program Handbook may be of assistance to the MHD in developing and preparing its plan of correction. At a minimum, MHD policies, protocols, and criteria must meet Wisconsin statutory requirements. The resources provided below may assist MHD in developing its plan of correction.

Resources

1. **Medicaid reimbursement:** DHS recommends that MHD pursue the appropriate billing of Medicaid-eligible activities as a means of supporting program resources.
2. **Training for MHD CLPP Program staff:** The DHS WCLPP Program can assist with specialized training for MHD program staff, especially in environmental investigation expectations, lead risk assessment, and lead clearance protocols.
3. **Consultation:** DHS can provide assistance with plan development and consultation on program implementation.
4. **MHD/DHS joint inspections and investigations:** DHS has found great value in conducting joint inspections, risk assessments, and clearances with LHD partners and would like to see this continue with MHD.

DHS will monitor and review MHD's implementation of its approved plan of correction and provide ongoing feedback and support, as needed. DHS will also provide ongoing monitoring of MHD CLPP Program interventions and case management. This includes working with the program to ensure all EBLL cases and addresses have been appropriately opened, managed, investigated, and remediated; and that cases and investigations meet the closing criteria before being closed.