MARYLAND
Department of the Environment

LEAD POISONING PREVENTION COMMISSION

SUBMITTED ON BEHALF OF
THE LEAD POISONING PREVENTION COMMISSION

BY THE
MARYLAND DEPARTMENT OF THE ENVIRONMENT

Prepared for:
Lawrence J. Hogan, Jr., Governor
State of Maryland

Boyd K. Rutherford, Lt. Governor
State of Maryland

2014 ANNUAL REPORT

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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Lawrence J. Hogan, Jr., Governor | Boyd K. Rutherford, Lt. Governor | Ben Grumbles, Secretary

MDE

2014
ANNUAL REPORT
LEAD POISONING PREVENTION COMMISSION

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MARYLAND DEPARTMENT OF THE ENVIRONMENT

LEAD POISONING PREVENTION COMMISSION OVERVIEW

The Lead Poisoning Prevention Commission, established under Environment Article 6, Subtitle 8, advises the Department of the Environment, the Legislature, and the Governor regarding lead poisoning prevention in Maryland.

COMMISSION MEMBERSHIP

The Lead Poisoning Prevention Commission consists of 19 members. Of the 19 members:

(i) One shall be a member of the Senate of Maryland, appointed by the President of the Senate;
(ii) One shall be a member of the Maryland House of Delegates, appointed by the Speaker of the House; and
(iii) 17 shall be appointed by the Governor as follows:

1. The Secretary or the Secretary's designee;

2. The Secretary of Health and Mental Hygiene or the Secretary's designee;

3. The Secretary of Housing and Community Development or the Secretary's designee;

4. The Maryland Insurance Commissioner or the Commissioner's designee;

5. The Director of the Early Childhood Development Division, State Department of Education, or the Director's designee;

6. A representative of local government;

7. A representative from an insurer that offers premises liability coverage in the State;

8. A representative of a financial institution that makes loans secured by a rental property;

9. A representative of owners of rental property located in Baltimore City built before 1950;

10. A representative of owners of rental property located outside Baltimore City built before 1950;

11. A representative of owners of rental property built after 1949;

12. A representative of child health or youth advocacy group;

13. A health care provider;

14. A child advocate;

15. A parent of a lead poisoned child;

16. A lead hazard identification professional; and

17. A representative of child care providers.

In appointing members to the Commission, the Governor shall give due consideration to appointing members representing geographically diverse jurisdictions across the State.

The term of a member appointed by the Governor is 4 years. A member appointed by the President and Speaker serves at the pleasure of the appointing officer. The terms of members are staggered as required by the terms provided for the members of the Commission on October 1, 1994. At the end of a term, a member continues to serve until a successor is appointed and qualifies. A member who is appointed after a term has begun serves only for the remainder of the term and until a successor is appointed and qualifies. (1994, ch.114, § 1; 1995, ch. 3, § 1; 2001, ch. 707; 2006, ch.44.)

COMMISSION RESPONSIBILITIES

1. The Commission shall study and collect information on:

    - The effectiveness of legislation and regulations protecting children from lead poisoning and lessening risks to responsible property owners;

    - The effectiveness of the full and modified lead risk reduction standards, including recommendations for changes;

    - Availability and adequacy of third-party insurance covering lead liability, including lead hazard exclusion and coverage for qualified offers;

    - The ability of state and local officials to respond to lead poisoning cases;

    - The availability of affordable housing;

    - The adequacy of the qualified offer caps;

    - The need to expand the scope of this subtitle to other property serving persons at risk, including child care centers, family day care homes, and preschool facilities.

2. The Commission may appoint subcommittees to study subjects relating to lead and lead poisoning.

3. The Commission shall give consultation to the Department in developing regulations to implement Environment Article 26.16 (House Bill 760).

4. The Commission will prepare or participate in the preparation of the following reports:

    - Assist MDE and HCD to study and report on methods for pooling insurance risks, with recommendations for legislation as appropriate by January 1, 1995;

    - Develop recommendations in consultation with the Department of Housing and Community Development (HCD) by January 1, 1996, for a financial incentive or assistance program for window replacement in affected properties;

    - Provide an annual review of the implementation and operation of the Lead Poisoning Prevention Program under HB 760, beginning January 1, 1996.

COMMISSION MEETINGS

Frequency, times and places. - The Commission shall meet at least quarterly at the times and places it determines.

Chairman. – From among the members, the Governor shall appoint the Chairman of the Commission.

Quorum. – A majority of the members then serving on the Commission constitutes a quorum.

The Commission may act upon a majority vote of the quorum.

Compensation; expenses. A member of the Commission:
(1) May not receive compensation; but
(2) Is entitled to reimbursement from the Fund for reasonable travel expenses related to attending meetings and other Commission events in accordance with the Standard State Travel Regulations. (1994, ch. 114, § 1.)

LEAD POISONING PREVENTION COMMISSION MEMBERS

NAME	MEMBER CATEGORY
Nancy Egan	The Maryland Insurance Commissioner or the Commissioner's designee
Melbourne E. Jenkins, Jr.	A representative of owners of rental property located in Baltimore City built before 1950
Susan DiGaetano-Kleinhammer	Lead Hazard Identification Professional
Ed Landon	Designee for the Secretary of the Department of Housing and Community Development
Patricia McLaine, RN, MPH	Representative of Child Health/Youth Advocate Group
Clifford Mitchell, M.D.	Designee for the Secretary of the Department of Health and Mental Hygiene
Paula Montgomery	The Secretary's or the Secretary's Designee for MDE
Barbara Moore, MSN, RN, CPNP	Health Care Provider
Nathaniel Oaks	House of Delegates
Christina Peusch	A representative of child care providers
Linda Roberts, Vice President	Representative of owners of rental property built after 1949
John Scott	A representative from an insurer that offers premises liability coverage in the State
Mary Snyder-Vogel	Child Advocate
Ken Strong	A representative of owners of rental property located outside Baltimore City built before 1950
Tameka Witherspoon	Parent of a Lead Poisoned Child
VACANT	The Director of the Early Childhood Development Division, State Department of Education, or the Director's designee

VACANT	A representative of Local Government
VACANT	A representative of a financial institution that makes loans secured by a rental property
LEGISLATIVE REPRESENTATIVES	
VACANT	Senate of Maryland
DEPARTMENT OF THE ENVIRONMENT STAFF	
Tracy Smith, Administrative Officer Maryland Department of the Environment Land Management Administration Lead Poisoning Prevention Division 1800 Washington Boulevard Baltimore, MD 21230-1719	Tel: (410) 537-3304 Fax: (410) 537-3002 email: tracy.smith@maryland.gov

ATTENDANCE RECORD 2014: GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

MEMBER NAME	1/9/14	2/6/14	3/6/14	4/3/14	5/1/14	6/5/14	7/10/14	8/7/14	9/4/14	10/2/14	11/6/14	12/4/14	ATTENDANCE AVERAGE
CONNOR, Patrick	A*	P	P	P	P	A*	A*	A*	P	P/replaced			50%
EGAN, Nancy (appointed Oct)										Pnew appt	P	P	100%
HALL, Cheryl	P	P	P	P	P	P	P	P	retired				67%
HORNIG, Karen Stakem	A*	P	P	P	P(via phone)	P	P	P	relocated				88%
JENKINS, Melbourne	A*	P	P	A*	P	P	A*	P	P	P	P	A*	67%
KLEINHAMMER, Susan (new appointment October)										A*	A*	P	33%
LANDON, Edward	P	P	P	P	P	P	A*	P	P	P	A*	P	83%
MCLAINE, Patricia	P	A*	P	P	P	P	P	P	P	P	P	P	92%
MITCHELL, Clifford (new appointment October)										Pnew appt	P	A*	67%
MONTGOMERY, Paula (new appointment October)										Pnew appt	P	P	100%
MOORE, Barbara	P	P	P	P	A*	P	A	P	via phone	P	P	P	83%
OAKS, Nathaniel (Delegate)	A*	A*	A*	A*	P	P	A*	A*	A*	A*	P	P	33%
PEUSCH, Christina (new appointment October)										P-new appt	A	P	67%
ROBERTS, Linda	P	P	P	A*	P	P	P	P	A	P	A	P	75%
SCOTT, John (new appointment October)									P	Pnew appt	A	P	75%
SNYDER-VOGEL, Mary	A*	P	P	A*	P(via phone)	P	A*	A*	A*	A*	A*	A*	33%
STRONG, Kenneth (new appointment October)										Pnew appt	A	A*	33%
WITHERSPOON, Tameka (new appointment October)									Pnew appt	P	A*	P	75%
VACANT - Financial Institution													
VACANT - Office of Child Care/MSDE													
VACANT - Property Owner Pre-1950 Outside Balto City													
VACANT - Maryland Senate													

P - Present A - Absent A* - excused

Delegate absences are due to Legislative Session

Mary Snyder-Vogel absences due to health issues

JANUARY 9, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

January 9, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

	Name/Signature	Representing	Telephone/Email
X	CONNOR, Patrick	Hazard ID Professional	
✓	HALL, Cheryl	Office of Child Care	410-332-0815
X	HORNIG, Karen	Maryland Insurance Administration	
X	JENKINS, Melbourne	Property Owner Pre 1950	
✓	LANDON, Edward	Dept. Housing and Community Dev.	410-514-7499
✓	McLAINE, Patricia	Child Health/Youth Advocate	
✓	MOORE, Barbara	Health Care Provider	
X	OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
✓	ROBERTS, Linda Lee	Property Owner Post 1949	same
X	SNYDER-VOGEL, Mary	Child Advocate	
	VACANT	Secretary of the Environment or Designee	
	VACANT	Local Government	
	VACANT	Parent of a Lead Poisoned Child	
	VACANT	Financial Institution	
	VACANT	Child Care Providers	
	VACANT	Insurer	
	VACANT	Property Owner Pre 1950 Outside Baltimore City	
	VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

January 9, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

	Name	Representing	Address/Telephone/Email
✓	Annalyn O'Grady	Connor	aogrady@connorsolutions.com
✓	Shakétta Denson	GHHI	sdenson@ghhi.org 443 842 5724
✓	Jennifer Pomales	GHHI	jpomales@ghhi.org 443 842 7~~58~~341
✓	Andrew Bonic	MHH	abonic@mahaonline.org 443-322-1104
✓	Paula T. Montgomery	MDE	
✓	Christine Peusch	MSCCA	msccal@comcast.net
✓	TRACY SMITH		

LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230
Thursday, January 9, 2014
9:30 a.m. - 11:30 a.m.
AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business
   - Point of Care Testing Task Force – final Report
   - Priorities for 2014

3. New Business
   - DHMH Targeting Plan

4. Future Meeting Dates: The next Lead Commission Meeting is scheduled for Thursday, February 6, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

6. Public Comment

Governor's Lead Commission Meeting
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD21230

APPROVED (2/6/14)

AERIS Conference Room
January 9, 2014

Members In Attendance
Cheryl Hall, Ed Landon, Pat McLaine, Barbara Moore, and Linda Roberts.

Members Not In Attendance
Patrick Connor, Karen Hornig, Melbourne Jenkins, Delegate Nathaniel Oaks, and Mary Snyder-Vogel.

Guests In Attendance
Shaketta Denson – CECLP, Christina Peusch – MSCCA, Annalyn O'Grady – Connor, Andrew Bonic – MMHA, Jennifer Pomales – GHHI, Paula Montgomery – MDE Staff, and Tracy Smith – MDE staff.

Introductions
Pat McLaine called to order at 9:42 AM with introductions.

Future Meeting Dates
The next Lead Commission meeting is scheduled for Thursday, February 6, 2014 at MDE in the AERIS conference room. The Commission will meet from 9:30 to 11:30 AM.

Approval of Minutes
Approval of the minutes from December 2013 meeting was deferred to February 2014 because a quorum was not present.

Old Business
Commissioners Appointments – Pat McLaine requested that all members send paperwork to Nadine Jackson-Bey and cc Tracy Smith. Everyone must complete the Ethics Form. Pat McLaine and Tracy Smith will re-check on paperwork later this week. There are 19 Commissioners plus a representative of the Senate and the House. Vacant positions are: an Insurer; a representative of a Financial Institution that makes secured loans; a pre-1950 Rental Property Owner with properties outside Baltimore City; and a Parent of a Lead Poisoned Child.

Andrew Bonic will check for names from Kathy Howard and MMHA. Barbara Moore will recommend a Parent of a Lead Poisoned Child. Christine Peusch may have a Banker representative to recommend.

MDE's goal is to submit all applications today. If applications are not submitted February 2014, the Governor may not be able to approve appointments.

Schedule and Priorities for 2014

Pat McLaine reviewed the list compiled from the December 2013 meeting, which was distributed. Cheryl Hall asked what the conflict was with WIC and point-of-care lead testing. Pat McLaine indicated that point of care testing has been added to WIC testing programs in other States (e.g. Ohio) but additional discussion about Maryland priorities would be needed.

Regarding Healthy Housing statutory mandates, Shaketta Denson indicated that additional language is needed to cover mold, rodents, and pests. Ed Landon noted that his office receives many calls about mold and very little is done about it except to refer callers to the EPA guidelines. It is not a local enforcement issue. Several attendees noted that they thought that mold was an important problem in rental housing, especially since Hurricane Sandy. Pat McLaine explained that the term "PCP" referred to Primary care provider.

The Commission will want to review a number of reports on Regular Basis, including the following:

1. Baltimore City Housing - Status of Green &Healthy Housing Initiative
2. Baltimore City Public Housing = 24 CFR 35 update from Mr. Tamborino's shop.
3. Baltimore City Housing - RRP –opportunity for improved oversight using permitting process.
4. MDE - report on rental registration and compliance
5. MDE - report on BLL screening
6. MDE - status of program targeting properties built between 1950-1978
7. MDE - Case Management: report on outcomes of case management and environmental investigation follow-up of children with BLLs of 10µg/dL and higher
8. Baltimore City Health Department – status of Reimbursement for EI

Ed Landon noted there are issues with foreclosure properties and lack of local housing staff to make the state programs work. Paula Montgomery indicated she thought this problem could be addressed, and probably has to do with new owners and vacant properties not registered.

Another category – lead prevention in owner-occupied property – was added to the list or priorities which will be sent out to Commissioners to identify top priorities for 2014.

New Business –DHMH Targeting Plan

No representative from DHMH was present to talk about the new Targeting Plan. This will be rescheduled to March or April 2014.

Agency Updates

MDE – Paula Montgomery indicated that MDE is gearing up for the interviewing process to hire 2-3 more inspectors, 1 attorney and 1 or 2 administrative staff for the 50-78 Program. MDE will also hire staff for RRP enforcement. Regarding RRP, MDE trying to merge f abatement (which must be done by abatement contractors), risk reduction and RRP to be one program. Paula indicated that the regulations will be finished by July 2014. This will be on the agenda for Commissioners to review in July or August.

DHCD – Ed Landon asked attendees to let him know about any new legislation addressing lead.

DHMH – No representative present

Baltimore City – No representative present

Office of Childcare - Cheryl Hall raised the issue of compliance in child care properties with ID lead problem (non-compliant). Childcare has inspectors, but they are not sure if work done is sufficient. Paula Montgomery commented that the staff person doing this work must be RRP and EPA certified.

Mt. Washington Pediatric Hospital – Barbara Moore reported that United Health Care finally paid Mt. Washington for the hospital care of lead poisoned child.

Green & Healthy Homes – Shaketta Denson noted that the next Partnership meeting is January 30, 2014 from 12 – 2pm, location to be determined. The meeting will focus on any lead legislation proposed; as of now, there is none.

There being no further business, Ed Landon made a motion to adjourn, seconded by Cheryl Hall, all in favor. The meeting was adjourned at 11:08 AM.

FEBRUARY 6, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

February 6, 2013

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick PTC	Hazard ID Professional	443.695.3824
HALL, Cheryl	Office of Child Care	
HORNIG, Karen kh/tas	Maryland Insurance Administration	
JENKINS, Melbourne	Property Owner Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	410-514-7449
McLAINE, Patricia	Child Health/Youth Advocate	
MOORE, Barbara BaMoore	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
ROBERTS, Linda Lee	Property Owner Post 1949	same
SNYDER-VOGEL, Mary	Child Advocate	443-927-2582
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Parent of a Lead Poisoned Child	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Insurer	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

February 6, 2013

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
Clifford [illegible]	DHMH	
Shakah Kirling	GHHI	
Shaketta Denson	GHHI	sdenson@gmail.com 1443.842.5724
~~Josephine~~ Johnson	Cultivarate	johnsonjody05@gmail.com
Connie Taylor	RM1/NMHA	
Horacio Tablada	MDE	
[illegible]	BCHD	myra.knowlton@baltimorecity.gov
Paula Montgomery	MDE	
Christa Reusch	MSCCA	msccale comcast.net 4108209196
Ken Strong	Baltimore City HCD	

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230
Thursday, February 6, 2014
9:30 a.m. - 11:30 a.m.
AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business
   - Point of Care Testing Task Force – Final Report

3. New Business
   - 2014 Legislation

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, March 6, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

6. Public Comment

Governor's Lead Commission Meeting
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD21230

Approved Minutes (3-6-14)

AERIS Conference Room
February 6, 2014

Members In Attendance
Patrick Connor, Cheryl Hall, Karen Hornig, Melbourne Jenkins, Ed Landon, Barbara Moore, Linda Roberts and Mary Snyder-Vogel.

Members Not In Attendance
Pat McLaine and Delegate Nathaniel Oaks.

Guests In Attendance
Clifford Mitchell – DHMH, Sarah Kinling – GHHI, Shaketta Denson, GHHI/CECLP, Josephine Johnson – Cullzborak, Connie Taylor – RMI/MMHA, HoracioTablada – MDE, Christina Peusch – MSCCA, Paula Montgomery – MDE staff, Ken Strong – BCHCD, Myra Knowlton – BCHD, and Tracy Smith – MDE staff.

Introductions
Ed Landon called to order at 9:42 AM with introductions.

Future Meeting Dates
The next Lead Commission meeting is scheduled for Thursday, March 6, 2014 at MDE in the AERIS conference room. The Commission will meet from 9:30 to 11:30 AM.

Approval of Minutes
The December, 2013 and January, 2014 meeting minutes were approved with no changes.

Old Business
Commissioners Appointments – In January, Pat McLaine requested that all members send paperwork to Nadine Jackson-Bey and cc Tracy Smith including the Ethics Form. It was determined in January that there are 19 Commissioners plus a representative of the Senate and the House. Vacant positions are: an Insurer; a representative of a Financial Institution that makes secured loans; a pre-1950 Rental Property Owner with properties outside Baltimore City; and a Parent of a Lead Poisoned Child.

Andrew Bonic sent an email identifying two potential members: Adam Skolnik for an owner of pre-50 outside of Baltimore City and John J. Scott Jr. for a representative for a premises liability insurer. Barbara Moore recommended a Parent of a Lead Poisoned Child, Tameka Jones.

MDE submitted all applications and required forms in January.

Point of Care Testing Task Force

Cliff Mitchell summarized the report and the report is incorporated by reference in its entirety to the minutes. He discussed in depth the potential benefits of point of care testing, page 7,CLIA waiver, the task force members, page 14, the recommendations, pages 13 -15 and the costs associated for testing, pages 12 -13.

Mary Snyder-Vogel stated that follow up was needed from the providers. Barbara Moore commented on building tool boxes and emphasized the need for guidance. Cliff Mitchell said a checklist was being developed and agreed to report back to the commission.

Barbara Moore stated that the goal is to have point of care testing in place in as many providers as possible through education and outreach.

Questions/discussion items: How to address children with special needs? Cliff Mitchell stated that it was a separate issue and a subcommittee would be created to address it. How to address the insurance reimbursement issue? Cliff Mitchell responded that the contract with each provider determines payment. It was stated that the results from testing at private offices are not always reported. Horacio Tablada said that the law requires all tests to be reported. Patrick Connor asked if blood lead is elevated, what do we do to identify the hazard? Who pays for the assessment of the child's environment? It was determined that a subcommittee would address these issues. Cliff Mitchell indicated that the Laboratory Advisory Committee would be discussing point of care testing issues in April and the Commission could send a letter of support if so desired.

New Business

Legislation

Ed Landon reported on the following bills:

HB 431, formerly HB 389, is an income tax credit bill introduced years ago. A hearing is set for 2/14/14 in the Ways and Means committee. A fiscal note was attached.

HB 888 seeks to amend registration requirements and require properties built from 1966 – 1978 to pay fees only; no need to follow other requirements. HB 924 similar bill introduced last year.

Agency Updates

MDE – Paula Montgomery reported that MDE sent letters to 400 inspection contractors using Survey Monkey to determine if the contractors are able to submit certifications for compliance as

well as any required attachments to MDE on line. Results of the survey will be available end of April. Tracy Smith asked all commissioners to review the 2013 rooster and report back to her whether they agree with the attendance report or not; 50 % attendance is required for Commissioners.

DHCD – Ed Landon - Nothing new to report

DHMH – Cliff Mitchell - Nothing new to report

Baltimore City – Ken Strong reported that Dr. Barbot (Baltimore City Health Department) has authorized the sharing of information with Baltimore Department of Housing and Community Development about children/families and their blood lead level test results which improves the effectiveness of their collaboration. The agencies meet monthly.

A total of 26 homes were completed during the last quarter (9/1/13 to 12/31/13). Lead hazards were reduced in all properties.

Office of Child Care - Cheryl Hall reported that there were compliance report issues and asked for assistance in reviewing lead reports and guidance on how to proceed if there are lead issues. Paula Montgomery agreed to assist by reviewing the reports and options. A discussion took place regarding child care facilities and the lead requirements. Patrick Connor stated that all pre-1978 child care facilities must comply with the lead regulations and that laws have been on the books for years. Paula Montgomery stated that guidance is in the regulations. Cheryl Hall agreed to report back on the following questions: how many pre-1978 child care facilities are regulated by the Office of Child Care (by City and County), how many of the pre-1978 facilities were inspected in 2013; among those inspected, how many were found to have paint-related noncompliance issues, and among these, how many were not renewed in 2013 due to unresolved paint-related noncompliance. Cheryl Hall reported that the facilities are inspected 2x a year and not all are following the same guidance within the agency.

Barbara Moore suggested that we finalize the 2014 priorities in March.

There being no further business, Linda Roberts made a motion to adjourn, seconded by Mary Snyder-Vogel. The meeting was adjourned at 11:06 AM.

MARYLAND

Task Force to Study Point–of–Care Testing for Lead Poisoning

Dr. Clifford S. Mitchell
Chairperson

January 16, 2014

The Honorable Martin O'Malley
Governor
State of Maryland
Annapolis, MD 21401-1991

The Honorable Thomas M. Middleton
Senate Finance Committee
3 East
Miller Senate Building
Annapolis, MD 21401

The Honorable Peter A. Hammen
House Health and Government Operations Committee
Room 241
House Office Building
Annapolis, MD 21401

RE: Final Report of the Task Force to Study Point–of–Care Testing for Lead Poisoning

Dear Governor O'Malley, Chair Middleton, and Chair Hammen:

Pursuant to House Bill 303, Chapter 365 of the Acts of 2013, the Task Force to Study Point–of–Care Testing for Lead Poisoning submits this report on the findings and recommendations of the Task Force related to point-of-care testing for lead poisoning.

I hope this information is useful. If you have questions about this report, please contact me at 410-767-7438 or cliff.mitchell@maryland.gov.

Sincerely,

Dr. Clifford S. Mitchell
Chairperson

cc: Christi Megna, JD
Laura Herrera, MD, MPH
Donna Gugel, MHS
Sarah Albert, MSAR #9606

REPORT TO THE GENERAL ASSEMBLY
BY THE
TASK FORCE ON POINT OF CARE TESTING
FOR LEAD POISONING
CHAPTER 365

Maryland Department of Health and Mental Hygiene

January 2014

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EXECUTIVE SUMMARY

Chapter 365 (House Bill 303), enacted by the Maryland General Assembly in 2013, established a Task Force to Study Point of Care Testing for Lead Poisoning (the Task Force). The goal of the Task Force was to study and make recommendations regarding the use of and reimbursement for point-of-care (POC) testing to screen and identify children with elevated blood-lead levels. The following information was to be included in the study:

(1) The benefits of point-of-care testing waived under the federal Clinical Laboratory Improvement Amendments (CLIA);
(2) The use of point-of-care testing in other states;
(3) Barriers to point-of-care testing, including regulatory barriers related to licensing of medical laboratories;
(4) Determining appropriate reimbursement for point-of-care testing and reporting; and
(5) Any other items the task force considers important relating to point-of-care testing.

The recommendations adopted by the Task Force are:

(1) Maryland should encourage the use of POC testing for lead;
(2) The Task Force encourages the Laboratories Administration to consider ways of promoting the wider use of POC tests for lead, particularly by making it easier for providers to implement POC testing using either a LeadCare II CLIA-waived test, a filter paper Tamarac™ test, or any other future approved POC test;
(3) The Task Force urges the Department of Health and Mental Hygiene (DHMH) and the Department of the Environment (MDE) to consider additional practices to increase testing rates;
(4) Any decision to promote more widespread use of POC testing should be accompanied by an active outreach to providers, parents, members of the public, payors and others, to actively promote the use of the POC testing to increase testing rates, and to explain why increased testing is important in eradicating lead exposure and lead poisoning.

BACKGROUND AND INTRODUCTION

Chapter 365 (House Bill 303), enacted by the Maryland General Assembly in 2013, established a Task Force to Study Point of Care Testing for Lead Poisoning. Exposure to lead remains the most significant and widespread environmental hazard for children in Maryland (MD). While the prevalence of elevated blood lead levels in children has declined significantly over the years, there are still children who continue to be exposed to lead through a variety of exposure sources. With the recognition that there are no "safe levels" of lead in the body, and in light of the US Centers for Disease Control and Prevention's (CDC) new recommendations making 5 micrograms per deciliter a level of concern, the challenge is how best to target testing of MD children. The goal of the Task Force was to study and make recommendations regarding the use of and reimbursement for point-of-care (POC) testing to screen and identify children with elevated blood-lead levels. The following information was to be included in the study:

- The benefits of point-of-care testing waived under the federal Clinical Laboratory Improvement Amendments (CLIA);
- The use of point-of-care testing in other states;
- Barriers to point-of-care testing, including regulatory barriers related to licensing of medical laboratories;
- Determining appropriate reimbursement for point-of-care testing and reporting; and
- Any other items the task force considers important relating to point-of-care testing.

The membership and meeting schedule of the Task Force are shown in Appendices 1 and 2.

LEAD POISONING AND LEAD TESTING IN MARYLAND

Lead poisoning and lead exposure remain significant public health problems in Maryland. In 2011, 110,539 Maryland children aged 0 – 72 months were tested for blood lead levels, of whom 364 (0.3%) were identified with a blood lead level ≥10micrograms per deciliter (µg/dL).[1] Overall, this represents a testing rate of 21.7% of the children born during this period who would be in the eligible age-range, state-wide. The highest testing rates for children 0-72 months were found in jurisdictions that require testing of all children at age 1 and 2 years, including Somerset County (34.3%), Baltimore City (33%), Allegany County (27.2%), and Worcester County (26.4%). A detailed breakdown of testing rates by jurisdiction is provided in Appendix 3.

A statute enacted by the Maryland General Assembly in 2000 requires testing of children at 12 and 24 months of age residing in "at risk" areas of the State.[2] Additionally, all children living in Baltimore City or children receiving Medicaid services, regardless of their residence in the State, are designated as "at risk" and are required to be tested. A lead exposure risk assessment questionnaire, assessing children for exposures to known sources of lead is also required of all children at their 12 and 24-month visits. Under MD law, a child under six years of age must

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[1] Source: Maryland Department of the Environment. *Childhood Blood Lead Surveillance in Maryland, Annual Report 2012* ("MDE Annual Surveillance Report"). Accessed November 28, 2013 at: http://mde.maryland.gov/programs/Land/Documents/LeadReports/LeadReportsAnnualChildhoodLeadRegistry/LeadReportCLR2012.pdf.

[2] Md. Code Ann., Health-General § 18-106

have evidence of appropriate screening within 30 days of entering a child care center, family child care home, or nonpublic nursery school. In addition, the parent of a child who resides in or previously lived in an "at risk" area must provide documentation of lead testing at first enrollment into pre-kindergarten, kindergarten, or first grade.[3]

Concern about the overall state testing rate, and about testing rates in specific areas and populations, have been the focus of discussions in the Maryland Lead Poisoning Prevention Commission, and have also prompted DHMH to reassess the targeting strategy used to identify "at risk" areas.

CLINICAL LABORATORY IMPROVEMENT AMENDMENTS AND THE WAIVER PROCESS

The U.S. Centers for Medicare & Medicaid Services is responsible for the regulation of all non-research laboratory testing on humans through the Clinical Laboratory Improvement Amendments process (commonly known as CLIA). CLIA requires that all entities that perform even one test, including a waived test on, "materials derived from the human body for the purpose of providing information for diagnosis, prevention or treatment of any disease or impairment of, or the assessment of the health of, human beings" meet certain federal requirements. If any entity performs tests for these purposes, it is considered under CLIA to be a laboratory and must register with the CLIA program.

In accordance with COMAR 10.10.03.01, a person is required to possess a license before offering to perform or performing a medical laboratory test or examination in this State. Individuals performing such tests must apply for both the CLIA and Maryland lab license through the Office of Health Care Quality. The fees are $150 and $200 every two years for the CLIA and Maryland license respectively. Both are renewed every two years.

Currently in Maryland, blood lead testing in a clinical laboratory is a permitted, not excepted test, and requires enrollment in a proficiency testing program per COMAR 10.10.05.01. To have a test added to the excepted list requires recommending excepted test status to the Secretary's Laboratory Advisory Committee. The Laboratory Advisory Committee's responsibilities include making a recommendation to the Secretary in favor of or against granting a test excepted status. The pertinent regulation explaining this process can be found at COMAR 10.10.02.01 (E).

TECHNOLOGY OF POINT OF CARE LEAD TESTING

Lead exposure and lead poisoning are classically measured through the blood lead level (BLL). This test measures the amount of lead in blood. The test involves the following components:

- Sample collection – blood is obtained through a venipuncture sample (*venous*), which generally takes place in a provider office or commercial laboratory site; a collection with a *capillary* tube (again typically in a provider's office, it has the advantage of requiring a much smaller blood sample); or the collection of a blood spot on filter paper, which can

[3]Maryland Family Law Article 5-556.1

take place in virtually any setting. A key factor in test accuracy at this stage is the use of appropriate cleaning techniques, to prevent lead dust on the surface of either the skin or the sample collection equipment from contaminating and falsely elevating the reported lead result.

- Sample analysis – lead in the blood is measured by various techniques, commonly in commercial diagnostic laboratories by graphite furnace atomic absorption spectrometry. Important aspects of the test are the laboratory's internal quality analysis and quality control (QA/QC), as well as *proficiency testing*, which refers to a program in which an external agency sends an unknown sample periodically to the diagnostic laboratory for testing, thus providing a source of external quality checks on the diagnostic laboratory.

- Reporting – Once analyzed, the results must be reported to the health care provider. This can be done in some cases electronically directly from the instrument to a provider through electronic messaging; typically, it is through a fax or mailed (paper) report. Alternatively, the results may be displayed by the instrument and require transcription. In addition to reporting to the provider, in Maryland all blood lead tests for children must be reported to the Childhood Lead Registry, based at the Maryland Department of the Environment (MDE).

Point of care (POC) testing commonly refers to testing in which the test takes place in the location where the patient is being seen, although a distinction must be made between the collection of a sample and the processing of the test to determine the results of the test. Generally, POC testing refers to a system whereby the sample is collected, analyzed, and the results delivered all in the same location and same time that the patient is being evaluated. An example would be a urine dipstick test done in the provider's office while the patient is in the office.

In the case of blood lead tests, there are two systems commonly used for POC testing, although one only involves collection of the sample at the site, and so is not a true POC test as described above. This test, available from Tamarac Medical, Inc., involves collection of a small amount of blood on a filter paper, which is then sent to a laboratory for analysis and reporting. In this respect, although sample collection is simplified compared with either venous or capillary samples, there are still test attributes that resemble other non-POC tests – the sample must be sent to an offsite laboratory for analysis, then reported back to the provider.

The only US Food and Drug Administration (FDA) -approved POC test for blood lead in use today in the United States is manufactured by Magellan Diagnostics of Billerica, MA, currently being marketed as the LeadCare II. This device is a CLIA-waived POC test that involves collection of a blood sample (either capillary or venous), testing of a drop of blood by anodic stripping voltammetry (a technique to measure the amount of lead in blood by measuring the electric current needed to oxidize lead in the blood), and direct reporting to the operator by a visual display panel. Blood is collected either in a capillary tube or by venipuncture, then mixed with reagents and placed in the machine. The results are displayed directly by the machine.

It is important to recognize that the LeadCare II test is intended as a *screening* test only; if an elevated BLL is detected on screening, the provider must confirm the results through a venous blood level using a different approved laboratory method.

POTENTIAL BENEFITS OF POINT OF CARE TESTING IN MARYLAND

The Task Force heard from a number of health care providers and others about some of the advantages of POC testing. These included:

- ✓ Providers uniformly reported that the likelihood of getting a blood lead test is much higher with POC testing, due to the ease of testing in the office, the ability to provide immediate feedback to the patient and family, and the ability to perform a capillary blood draw, rather than a venous sample. In the absence of POC testing, patients receive a provider order for a lab test, go to the lab, have blood drawn, and wait for the sample to be sent to the lab, processed, and the results reported to the provider, and then wait for the provider to contact them or see them back again.

- ✓ With POC testing, the entire process takes place during one office visit, so if the BLL is not at or above the level of concern, and the patient and family learn the results immediately. If the BLL is below the reference value (5µgldL), the family is advised about the importance of prevention; if the BLL is of concern, the family is informed immediately and the patient is referred immediately for a confirmatory test. This also improves follow-up and reduces the time required to act on a confirmed elevated BLL.

- ✓ Because the number of separate provider and lab visits is fewer, the cost to the patient and family should be less. Less administrative staff time is needed to contact patients/families and arrange for follow-up visits. It is not clear whether insurers would realize savings from POC testing, however, because this depends on the rate of confirmatory testing needed, how many repeat office visits could be avoided in the alternative scenarios, the cost of commercial laboratory tests versus POC testing, and other variables.

- ✓ Improved compliance for blood lead testing.

- ✓ The effect of POC testing on patient flow through clinics and emergency departments may depend on whether the tests are incorporated as part of overall testing and vaccination. One provider reported to the Task Force that POC testing did not significantly affect the overall clinic flow, but this may depend on the frequency of testing and other factors.

BARRIERS TO POINT OF CARE TESTING IN MARYLAND

Technological Barriers

The Task Force identified a number of potential technical barriers, although it appears there are solutions for all of them. With respect to the accuracy of the lead POC test, it appears that the test has sufficient accuracy under normal operating conditions to serve as a valid screening device, when used as recommended by the manufacturer. The issues identified by the Task Force include:

Quality Assurance and Quality Control (QA/AC) – The reagent test kits come with sufficient reagent to do two QA/QC tests per 48-test kit. Questions were raised by Task Force members about whether the two QA/QC tests would be sufficient if the test kits were used slowly over a long period of time. Nothing was offered by other states or presenters that indicated this was a problem, but it might be an issue to be addressed in standard operating procedures or laboratory guidance.

Proficiency Testing –Proficiency testing is a way of ensuring the ongoing reliability of testing procedures. FDA's CLIA waiver means that proficiency testing is not required for the lead POC device. However, a number of states do require proficiency testing, and Maryland has previously approved other CLIA-waived tests for the Excepted list but required proficiency testing. A proficiency test requirement might slightly alter the economic and practice decisions of some providers, but probably not a large number.

Reporting –The Task Force noted that there is no direct electronic reporting capacity which would allow the test results to be reported directly to the Maryland Childhood Lead Registry (CLR). The software package developed by the manufacturer has a number of limitations which may make it problematic for practices to use, and this raises an issue for the expansion of POC tests. MDE currently allows providers to fax lead POC reports to the CLR. However, if use of lead POC devices increases, this would entail a significant data entry increase for the CLR, requiring additional personnel and increasing the opportunity for data entry errors.

Another possibility for reporting would be for the State to provide a direct data entry platform for provider offices, similar to Immunet, the immunization registry where providers enter and access vaccination information for their patients directly. This would also be an advantage for patients who may switch providers. The Task Force heard that the use of an Immunet-like system, or the direct coupling of blood lead test results with Immunization data was being done in a number of states, including Rhode Island, Wisconsin, Michigan, and New Jersey. The Task Force also heard from the CLR that there could be some issues of reporting accuracy with a direct coupling of the systems, but the concept was worthy of discussion. Another possibility, integration of lead reporting within provider electronic health records (EHRs) which could then be accessed

directly by the CLR, would require a series of technological and statutory innovations that are not yet available.

Economic Barriers

The Task Force heard that Medicaid rates for lead tests, which are based on Medicare, are not necessarily what all insurers will pay to reimburse practices for POC tests. The reimbursement rates vary considerably, from no additional reimbursement for some insurers that bundle payments for testing, to separate reimbursement for sample collection, POC test, and counseling provided by other MCOs.

The Task Force also had a discussion regarding value-based purchasing (VBP) and the metrics applied to Medicaid Managed Care Organizations (MCOs) to assess their performance. Some Medicaid MCOs have expressed concern about differences between Healthcare Effectiveness Data and Information Set (HEDIS) quality measures they report, and the measures for lead testing rates in place in Maryland Medicaid for VBP. According to Medicaid, the measures for VBP are more specific to Maryland, which has more lead poisoning and lead exposure than many other parts of the country. While this might not constitute an economic barrier for POC testing, it was raised by MCOs in the context of the Task Force's discussion, and is included here for consideration in that context.

Another potential barrier is that reimbursement for counseling based on the blood lead test may be different for health care providers providing the counseling in an obviously clinical location, than reimbursement for counseling that occurs in other locations such as a WIC clinic. The Task Force heard that in some cases where the counseling occurs in such a location, there may be difficulty in obtaining reimbursement for counseling services. The Task Force also heard that in some locations providers can charge a well-child care office visit, but are not permitted to use other evaluation and management (E/M) codes at the same time.

Regulatory Barriers

As noted in the section on CLIA and the waiver process (page 5), this POC test can be placed on the Excepted List for Maryland based on an assessment and recommendation from the Laboratory Advisory Committee to the Laboratories Administration. To date, the Laboratory Advisory Committee has not considered this issue. Task Force members and others raised a number of issues that might be considered by the Laboratory Advisory Committee, including:

- ✓ Quality control and proficiency testing – the Task Force heard from both members and others that FDA (or some other entity) should hold manufacturers accountable for incorporating QC and PT into waived test device design.

- ✓ Proper device use – Task Force members had questions about how to assure that providers complied with the manufacturers' instructions for device operation, particularly for quality assurance and quality control.

- ✓ Reporting to the Maryland Childhood Lead Registry – Task Force members want to ensure appropriate mechanisms to provide test results to surveillance programs, as required by Maryland law.

- ✓ Challenges in how to code tests for billing and mandatory reporting purposes.

Barriers and Opportunities at the Level of Providers

The Task Force heard that other states use a number of strategies to encourage the use of POC testing by providers. One such strategy involves integration of POC testing with the Women, Infants, and Children (WIC) program, which already does blood collection to assess hemoglobin levels. Wisconsin and several other states have been able to increase screening by integrating POC testing with WIC blood collection.

Another strategy was described by Wisconsin, in which MCOs created "opportunity reports" for providers, quality reports that summarized the experience of the provider compared to external and/or internal MCO benchmarks, or other appropriate internal/external comparisons. Each provider was periodically supplied with an "opportunity report" that tracked how the provider was doing in lead testing.

Finally, there was also discussion of whether lead testing would be considered a "standard of care" measure.

USE OF POINT OF CARE TESTING IN OTHER STATES

The Task Force dedicated an entire meeting to hearing from other states, and also looked at publically available data from other states. The experience of these states is instructive.

Wisconsin-- In 2005, less than one-third of Wisconsin Medicaid children received their mandatory tests for lead at one and two years of age. In 2008, heath care providers in Wisconsin started to use POC testing for lead and Medicaid MCOs worked together with WIC to pay for lead testing at WIC clinics. Some of the considerations that went into WIC's decision to adopt POC testing:

1. The WIC clinics were able to bill for the POC lab test, although this required discussions with Medicaid. They were also able to bill separately for blood draws for lead tests, doubling their reimbursement.
2. They were not always able to participate in proficiency training.
3. Transmitting all of the lead test results to the state lead registry was a hurdle that had to be overcome. The eventual solution involved incorporating the lead registry with the immunization registry.

Wisconsin has ongoing challenges, but overall results have been extremely positive and their Medicaid testing rates have increased by 40%. One of the biggest factors in improving testing rates has been to issue individual "report cards" with testing rates to every Medicaid provider. In

addition, Wisconsin found it very helpful to "marry" lead test data to their immunization registry, so that providers had access to both registries in a single application.

Texas – Texas also conducts blood lead POC testing through the WIC program; the regulations to do so were only changed within the past year. Medicaid has also put in an amendment related to POC test reimbursement rates. Although all providers are supposed to report their test results to the lead registry, billing data shows that providers are billing for more tests than they are reporting to the registry. Medicaid is planning corrective actions related to reporting, but the Task Force does not have the details of these proposals. The Texas Health Department sends a letter to providers using LeadCare II about the requirement to report all blood lead results. Providers send in paper reports, and many agencies (such as Head Starts) send a big batch of results for July – October during school enrollment. The Texas Health Department lead program is working with Texas Medicaid to increase reporting, but this remains problematic. They have seen an increase in higher blood lead levels, but don't know whether levels of 15 μg/dL and above levels are real or a result of user error in performing the test. One issue they have noted is that some POC tests are being confirmed with the same venous sample used for the original POC test (rather than a separate venipuncture). Texas does not require proficiency testing, but they do encourage staff training.

Massachusetts – Massachusetts has approximately 60 lead POC users. Very few are using POC testing for screening in the office; in most cases samples are batch tested at a central location. Massachusetts is confident about reporting, but requires proficiency testing. The test is currently considered to be a moderately complex test by the State Laboratory, similar to Maryland. Their experience with reporting of blood lead test results to the lead registry is similar to that of other POC systems. One problem they have identified is that it is difficult to distinguish a clinical lab with a LeadCare II device from a commercial laboratory provider. Massachusetts has also identified the need for a universal laboratory reporting system for electronic reporting. The free software currently available for the LeadCare II system has limitations. For example, the field for lead test results allowed only three characters, which in some cases required rounding of decimal results: for example, 24.7 became 24. Ordinarily, Massachusetts would consider that a result of 24.7 to be 25μg/dL, but it was rounded down in data base. Magellan, the LeadCare II manufacturer, was not interested in expanding or updating the software. Adding data by providers is a burden, so software upgrades would be very helpful. Generally, Massachusetts's experience is that 75% – 80% of children tested are between the age of 9 – 48 months (the state screening requirement). Massachusetts has very good compliance, in part because children cannot be enrolled in group or family day care without lead testing. Massachusetts uses a standard that is different from the American Academy of Pediatrics and the CDC recommendations because they determined that enough children were lead poisoned after age 2 to require testing up to age 4. Massachusetts is not necessarily supporting the use of POC testing with the LeadCare II, because of concerns about the lack of proficiency testing.

New Jersey– New Jersey requires testing at 12 months, 24 months, and any child between three and six years of age who has never previously been screened. With respect to POC lead tests, New Jersey is moving cautiously because of costs of testing and a desire to have administrative procedures in place. Currently, they are not treating the lead POC test as CLIA-waived, and require three rounds of proficiency tests. New Jersey is considering a waiver after two

successful rounds of required proficiency tests, and started a pilot project in May 2012, when they were able to trade Lead Care I for Lead Care II machines. New Jersey State Laboratories have also provided some standard operating procedures (SOPs), which they are reviewing with clinical laboratories. New Jersey is also doing memorandas of understanding (MOUs) with some local health department (LHD) pilot sites. According to these MOUs, a medical director must be onsite at the LHD and all elevated test results must have venous confirmation. New Jersey has been working with the manufacturer (Magellan) regarding reagent expiration. They also have some issues with reporting, involving de-duplication of test results by date of birth. In addition, they are working with the New Jersey Medicaid program on reimbursement rates and confirmation of Medicaid participants. Generally, they have found the provider community to be very receptive to lead POC testing, and are planning to expand their pilot to look at children under 6 and adults participating in recovery/reconstruction using post-hurricane Sandy funds. In summary, New Jersey is planning to expand the use of lead POC testing, but is working on specific issues/requirements:

- Proficiency testing – they currently require three rounds, but are moving towards requiring two rounds of testing;
- Results reporting to the State registry – they do know roughly where the machines are, but don't always know who is doing the testing or who is getting a test (name, DOB confirmation are issues).

Reimbursement for Point of Care Testing

The Task Force members solicited input from the provider community and other stakeholders to develop some rough cost figures for analysis of implementing and maintaining a POC testing program within a clinical practice. According to this information, an estimate of costs for running a lead POC testing program within a practice would include the following:

Table 1. Estimated operational costs for point of care testing for lead in Maryland.

Program Component	Cost	Comments
LeadCare II device	$1,850 - $2,059	
CLIA waiver registration	$150.00	Every 2 years
Maryland fee for lead testing	$200.00	Every 2 years
Maryland application fee for lead test	$100.00	Every 2 years
Test kits	$2,928	Based on 144 tests free with machine purchase, then 366 tests at $8/test
Staff time	$893	Based on 2 tests/day/provider, or 510 tests/year
Proficiency testing (if required)	$460.00	Based on data from Wisconsin
Total costs	$6,581 - $6,790	

Based on these assumptions, the Task Force estimates that with current Medicaid reimbursement rates of $12.52 per test, a practice would break even with 434 tests in the first year and 429 tests in the second year. With either a higher reimbursement rate or additional reimbursement for the sample collection, the breakeven point would occur even sooner. Additional details of the economic analysis are presented in Appendix 4.

Based on input from Task Force members, other states, and clinical practitioners, the testing could be incorporated in typical practices without significant difficulty or alteration of patient flow. One clinician noted that he was able to send all of his POC test results to the Maryland Childhood Lead Registry by fax, and the CLR was then able to enter the data manually. It should be noted that while it is likely that practices would be able to submit faxed reports to the CLR, it is not clear that the CLR has sufficient personnel to enter the additional test results, and there is also the issue of additional transcription/data entry errors with manual data entry.

FINDINGS AND RECOMMENDATIONS

The Task Force considered a number of options in making its recommendations. The options included:

Option 1: No changes to the current status of POC testing, which would leave it off the Excepted List, but still allowed.

Option 2: Encourage POC testing by urging the Laboratory Advisory Committee and the Laboratories Administration to place the LeadCare II test (or similar POC tests, if available in the future) on the Excepted List.

Option 3: Encourage POC testing by urging the Laboratory Advisory Committee and the Laboratories Administration to place the LeadCare II test (or similar POC tests, if available in the future) on the Excepted List, but with qualifications related to proficiency testing, quality assurance and quality control, and reporting to the Maryland Childhood Lead Registry, discussed above.

In addition, the Task Force noted some of the reimbursement issues that were raised in the course of the meetings and discussed potential recommendations related to those issues.

Based on evidence reviewed by the Task Force, the following findings and recommendations are offered.

Finding 1: Point of care testing has been used successfully in Maryland and other states. When used in conjunction with other incentives, POC testing appears to encourage testing of children for lead exposure.

The Task Force heard consistently that POC testing has been used successfully in other states and in Maryland as a test to screen patients for lead exposure. There appear to be no significant issues regarding its reliability or validity, and it has obtained approval from the FDA as a CLIA-waived test. The Task Force heard from other states about some striking examples of programs

that successfully used POC testing, in combination with other measures (outreach to providers, use of POC tests in WIC clinics, alterations in reimbursement formulas, report cards to providers on their individual testing rates), to increase the rate of lead testing for children. There is no reason to assume the same measures would not have similar effects in Maryland.

Recommendation 1: Maryland should encourage the use of POC testing for lead.

The Task Force heard consistent evidence from health care providers and other states that use of lead POC testing had led to increased testing rates, without any evidence that patient safety had been compromised. POC testing appears to make for a better experience for patients and their families through more immediate connection between test results, patient education and intervention, and improved satisfaction. To encourage lead POC testing, Maryland should consider reducing barriers discussed in Finding 2.

Finding 2: Administrative and technological barriers to the expanded use of POC testing for lead in Maryland include: (1) The current regulatory status of the LeadCare II device as a non-excepted CLIA-waived test, which is more restrictive than necessary to assure patient safety, and serves as a deterrent to increased use of the device; and (2) The lack of an easy mechanism with which to report POC test results to the Maryland Childhood Lead Registry.

According to the Laboratories Administration, the Laboratory Advisory Committee has not previously had a request to consider whether the LeadCare II device (or any other lead POC test) should be on the Excepted List.

Recommendation 2: The Task Force encourages the Laboratories Administration to consider ways of promoting the wider use of POC tests for lead, particularly by making it easier for providers to implement POC testing using either a LeadCare II CLIA-waived test, a filter paper Tamarac™ test, or any other future approved POC test. Any decision to encourage the wider use of POC testing for lead with the LeadCare II or another approved POC test should be made in conjunction with policies that address quality assurance/quality control, proficiency testing, the use of standard operating procedures and mandatory reporting to the Maryland Childhood Lead Registry.

The Task Force heard from experts, other states, practitioners, and the industry, that several issues should be considered in deciding whether to adopt widespread use of POC testing. The Task Force feels particularly strongly that in deciding whether to promote wider use of the LeadCare II device, the Laboratory Advisory Committee and Laboratories Administration should strongly consider the following:

(1) Users of the device should have standard operating procedures to supplement manufacturer's recommendations that guide issues such as quality control and quality assurance, transportation and location of the device, temperature control for reagents, etc.;

(2) Proficiency testing should be required as a condition of being on the Excepted list; and

(3) The manufacturer should be required or encouraged to address the issue of direct reporting of results to the Maryland Childhood Lead Registry, or there should be some other mechanism to ensure reporting to the Childhood Lead Registry.

Finding 3: It appears that with current reimbursement rates, health care providers should be able to recover the costs of lead POC tests with moderate testing frequency. However, there are potential economic barriers for certain providers, particularly those providers with small practices, and those whose managed care organization contracts do not specifically reimburse for either lead testing or sample collection. There may be additional disincentives if lead POC testing is carried out outside of provider offices.

Recommendation 3: The Task Force urges DHMH and MDE to consider additional practices to increase testing rates, including:

- Promotion of lead testing in WIC clinics;
- Working with Medicaid and private insurers to make testing easier through examining reimbursement rates and costs including reimbursement for sample collection; and
- Creation of "opportunity reports" for each provider, showing how that provider is doing relative to appropriate internal and external benchmarks.

Recommendation 4: Any decision to promote more widespread use of lead POC testing should be accompanied by an active outreach to providers, parents, members of the public, payors and others, to actively promote increased testing, and to explain why increased testing is important in eradicating lead exposure and lead poisoning.

The use of lead POC testing would make it easier for federally qualified health centers and other ambulatory care centers to extend testing to other at-risk populations, including older children not previously tested and pregnant women. The Task Force noted that the Maryland State Legislature might want to consider revising Maryland's requirements for blood lead testing in children up to age 6 for children who have not previously been tested. If testing takes place by age 2, no further testing is required.

The Task Force gratefully acknowledges the assistance of the following individuals who provided information about their state programs:

State	**Individuals**
Massachusetts Department of Public Health	Paul Hunter, Director, Childhood Lead Poisoning Prevention Program, Environmental Health Bureau Francine Medaglia, Clinical Coordinator, Childhood Lead Poisoning Prevention Program, Environmental Health Bureau

New Jersey Department of Health	Crystal Owensby, Coordinator, Child Health Program
Rhode Island Department of Health	Dr. Peter Simon, MD, MPH, Assistant Medical Director Rhode Island Department of Health
Texas Department of State Health Services	Teresa Willis, Blood Lead Surveillance, Environmental and Injury Epidemiology and Toxicology Unit
Wisconsin Department of Health Services	Charles Warzecha, Director of Environmental Health Margie Coons, Director, Lead Screening Program

Appendix 1. Membership of the Task Force on Point of Care Testing for Lead Poisoning

Clifford S. Mitchell, MS, MD, MPH (Chairman) – Director, Environmental Health Bureau, Prevention and Health Promotion Administration, Maryland Department of Health and Mental Hygiene

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Shaketta Denson, Esquire. – Family Advocate Attorney, Coalition to End Childhood Lead Poisoning

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Honorable Nathaniel Oaks – Maryland House of Delegates

Amy Richardson, MD, MBA – Medical Director, Johns Hopkins HealthCare

Tina Wiegand – Manager, Childhood and Newborn Screening Program, Laboratories Administration, Maryland Department of Health and Mental Hygiene

APPENDIX 2. MEETING SCHEDULE OF THE TASK FORCE

- Meeting Dates:
  - September 26, 2013
  - October 1 9:00 AM
  - *October 3 Joint Meeting with Maryland Lead Poisoning Prevention Commission
  - October 10 9:00 AM
  - October 24 9:00 AM
  - November 14 9:00 AM
  - December 2 2:00 PM

APPENDIX 3. TESTING RATES FOR CHILDREN AGES 0 – 72 MONTHS BY JURISDICTION, 2012.

Blood Lead Testing of Children 0-72 Months by Jurisdiction in 2012[1]

County	Population of Children[2]	Children Tested		Children with BLL 5-9 µg/dL						Children with BLL >=10 µg/dL					
				Old Cases[3]		New Cases[4]		Total		Old Cases[5]		New Cases[6]		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	4,853	1,320	27.2	14	1.1	40	3.0	54	4.1	4	0.3	8	0.6	12	0.9
Anne Arundel	48,260	8,338	17.3	10	0.1	64	0.8	74	0.9	0	0.0	5	0.1	5	0.1
Baltimore	67,225	16,329	24.3	28	0.2	174	1.1	202	1.2	8	0.0	26	0.2	34	0.2
Baltimore City	56,701	18,717	33.0	424	2.3	800	4.3	1,224	6.5	71	0.4	148	0.8	219	1.2
Calvert	7,159	715	10.0	0	0.0	7	1.0	7	1.0	0	0.0	1	0.1	1	0.1
Caroline	3,234	773	23.9	1	0.1	13	1.7	14	1.8	0	0.0	2	0.3	2	0.3
Carroll	13,047	1,247	9.6	9	0.7	18	1.4	27	2.2	3	0.2	1	0.1	4	0.3
Cecil	9,047	1,221	13.5	2	0.2	12	1.0	14	1.1	0	0.0	0	0.0	0	0.0
Charles	13,254	1,963	14.8	1	0.1	11	0.6	12	0.6	0	0.0	3	0.2	3	0.2
Dorchester	2,797	694	24.8	3	0.4	15	2.2	18	2.6	0	0.0	1	0.1	1	0.1
Frederick	20,976	3,039	14.5	3	0.1	23	0.8	26	0.9	4	0.1	3	0.1	7	0.2
Garrett	2,225	427	19.2	1	0.2	5	1.2	6	1.4	1	0.2	0	0.0	1	0.2
Harford	21,100	2,979	14.1	5	0.2	29	1.0	34	1.1	1	0.0	5	0.2	6	0.2
Howard	24,707	2,500	10.1	1	0.0	24	1.0	25	1.0	3	0.1	3	0.1	6	0.2
Kent	1,406	243	17.3	1	0.4	6	2.5	7	2.9	0	0.0	2	0.8	2	0.8
Montgomery	89,202	20,515	23.0	18	0.1	151	0.7	169	0.8	9	0.0	15	0.1	24	0.1
Prince George's	81,273	20,417	25.1	26	0.1	196	1.0	222	1.1	3	0.0	17	0.1	20	0.1
Queen Anne's	3,868	494	12.8	0	0.0	13	2.6	13	2.6	0	0.0	2	0.4	2	0.4
Saint Mary's	10,618	1,634	15.4	2	0.1	26	1.6	28	1.7	0	0.0	1	0.1	1	0.1
Somerset	1,774	608	34.3	5	0.8	13	2.1	18	3.0	0	0.0	2	0.3	2	0.3
Talbot	2,648	606	22.9	2	0.3	6	1.0	8	1.3	1	0.2	2	0.3	3	0.5
Washington	12,691	2,675	21.1	17	0.6	102	3.8	119	4.4	0	0.0	0	0.0	0	0.0
Wicomico	8,582	2,154	25.1	9	0.4	35	1.6	44	2.0	0	0.0	4	0.2	4	0.2
Worcester	3,240	856	26.4	1	0.1	6	0.7	7	0.8	0	0.0	2	0.2	2	0.2
County Unknown[7]		75		0		3		3		1		2		3	
Total	**509,885**	**110,539**	**21.7**	**583**	**0.5**	**1,792**	**1.6**	**2,375**	**2.1**	**109**	**0.1**	**255**	**0.2**	**364**	**0.3**

1. The table is based on the selection of the highest venous or the highest capillary in the absence of any venous test.
2. Adapted from Maryland census population 2010, provided by the Maryland Data Center, Maryland Department of Planning, www.planning.maryland.gov/msdc.
3. Children with a history of a blood lead level of 5-9 µg/dL. These children may have carried over from 2011 or had a blood lead level of 5-9 µg/dL in previous years. Any child with a history of blood lead test of ≥10 µg/dL is not counted in this column
4. Children with the very first blood lead level of 5-9 µg/dL in 2012. These children were either not tested in the past or their blood lead levels were below 5 µg/dL. If a child had a blood lead test of ≥10 µg/dL in 2012 or in the past is not counted in this column.
5. Children with a history of a blood lead level ≥10 µg/dL. These children may have carried over from 2011 or had a blood lead test of ≥10 µg/dL in previous years.
6. Children with the very first blood lead test of ≥10 µg/dL in 2011. These children were either not tested in the past or their blood lead levels were below 10 µg/dL. This definition may not necessarily match the criteria for the initiation of case management.
7. Includes cases with out-of-state residence address at the time of the highest blood lead test.

APPENDIX 4. ECONOMIC ANALYSIS OF POC LEAD TESTING

Start-up Expense

COSTS*		
Component	**Cost**	**Remarks**
Lead Care II device	2058.79	(Based on current price quote)
CLIA waiver registration	150.00	(every 2 years)
MD fee for lead testing	200.00	(every 2 years)
MD Application fee	100.00	(every 2 years)
Proficiency testing	460.00	(from Wisconsin's cost)
Test kits	336.68	(Test per kit, based on current price quote)
TOTAL	2968.79	
REIMBURSEMENT		
Alternative 1	1802.88	Assumes $12.52/test reimbursement and first 3 test kits free (144 free tests)
Alternative 2:	3242.88	Assumes $12.52 and $10 collection fee/test reimbursement and first 3 test kits free (144 free tests)

Testing reimbursement/expense

Less staff time cost @$1.75/test -252.00

$2990.88

At this reimbursement rate, the start-up expense is fully covered after performing the initial 144 tests.

Each 48-test kit would reimburse $1080.96, with an expense of $336.68 for the kit and staff time of an additional $84 for a total expense of $420.68. This would net a practice $660.28 for every test kit at this level of reimbursement.

HOUSE BILL 888

M3 4lr1674
HB 924/13 – ENV

By: **Delegates Stein, Holmes, McMillan, and Weir**
Introduced and read first time: February 5, 2014
Assigned to: Environmental Matters

A BILL ENTITLED

AN ACT concerning

Environment – Reduction of Lead Risk in Housing – Applicability and Registration Requirements

FOR the purpose of altering the application of certain provisions of law relating to reducing lead risk in housing to apply to certain property constructed before a certain date; requiring certain owners to register certain properties built between certain dates in a certain manner; providing certain civil penalties for certain registration violations; providing a certain registration fee for certain properties built between certain dates; repealing certain obsolete language; altering a certain definition; and generally relating to reducing lead risk in housing.

BY repealing and reenacting, without amendments,
Article – Environment
Section 6–801(a)
Annotated Code of Maryland
(2013 Replacement Volume)

BY repealing and reenacting, with amendments,
Article – Environment
Section 6–801(b), 6–803, 6–817(a)(1) and (b)(1), 6–819(f), and 6–843
Annotated Code of Maryland
(2013 Replacement Volume)

BY adding to
Article – Environment
Section 6–811.1 to be under the amended part "Part III. Registration of Property"
Annotated Code of Maryland
(2013 Replacement Volume)

EXPLANATION: **CAPITALS INDICATE MATTER ADDED TO EXISTING LAW.**
[Brackets] indicate matter deleted from existing law.

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Laws of Maryland read as follows:

Article – Environment

6–801.

(a) In this subtitle the following words have the meanings indicated.

(b) (1) "Affected property" means:

(i) A property constructed before 1950 that contains at least one rental dwelling unit;

(ii) On and after January 1, 2015, a property constructed before **[**1978**]** **1966** that contains at least one rental unit; or

(iii) Any residential rental property for which the owner makes an election under § 6–803(a)(2) of this subtitle.

(2) "Affected property" includes an individual rental dwelling unit within a multifamily rental dwelling.

(3) "Affected property" does not include property exempted under § 6–803(b) of this subtitle.

6–803.

(a) This subtitle applies to:

(1) Affected property; **[**and**]**

(2) Notwithstanding subsection (b) of this section, any residential rental property, the owner of which elects to comply with this subtitle**; AND**

(3) THE REGISTRATION OF PROPERTY AS PROVIDED UNDER § 6–811.1 OF THIS SUBTITLE.

(b) This subtitle does not apply to:

(1) Property not expressly covered in subsection (a) of this section;

(2) Affected property owned or operated by a unit of federal, State, or local government, or any public, quasi–public, or municipal corporation, if the affected property is subject to lead standards that are equal to, or more stringent than, the risk reduction standard established under § 6–815 of this subtitle; or

(3) Affected property which is certified to be lead–free pursuant to § 6–804 of this subtitle.

Part III. Registration of [Affected] Property.

6–811.1.

(A) (1) THIS SECTION APPLIES TO A PROPERTY CONSTRUCTED BETWEEN JANUARY 1, 1966, AND DECEMBER 31, 1977, BOTH INCLUSIVE, THAT CONTAINS AT LEAST ONE RENTAL DWELLING UNIT.

(2) THIS SECTION DOES NOT APPLY TO A PROPERTY THAT IS CERTIFIED TO BE LEAD–FREE IN ACCORDANCE WITH § 6–804 OF THIS SUBTITLE.

(B) ON OR BEFORE DECEMBER 31, 2014, THE OWNER SHALL REGISTER EACH PROPERTY USING FORMS PREPARED BY THE DEPARTMENT.

(C) AN OWNER WHO HAS REGISTERED PROPERTY UNDER THIS SECTION SHALL:

(1) RENEW THE REGISTRATION OF THE PROPERTY ON OR BEFORE DECEMBER 31 OF EACH YEAR OR ACCORDING TO A SCHEDULE ESTABLISHED BY THE DEPARTMENT BY REGULATION; AND

(2) UPDATE THE INFORMATION CONTAINED IN THE OWNER'S REGISTRATION WITHIN 30 DAYS AFTER ANY CHANGE IN THE INFORMATION REQUIRED BY THE DEPARTMENT.

(D) AN OWNER WHO FIRST ACQUIRES PROPERTY AFTER DECEMBER 31, 2014, SHALL REGISTER THE PROPERTY IN ACCORDANCE WITH THIS SECTION WITHIN 30 DAYS AFTER THE ACQUISITION.

(E) THE DEPARTMENT MAY NOT DISCLOSE AN INVENTORY OR A LIST OF PROPERTIES OWNED BY AN OWNER.

(F) (1) AN OWNER WHO FAILS TO REGISTER THE PROPERTY IN ACCORDANCE WITH SUBSECTION (B) OF THIS SECTION IS LIABLE FOR A CIVIL PENALTY OF UP TO TRIPLE THE AMOUNT OF EACH REGISTRATION FEE THAT IS DUE UNDER § 6–843(A)(1)(II) OF THIS SUBTITLE.

(2) AN OWNER WHO FAILS TO RENEW THE PROPERTY IN ACCORDANCE WITH SUBSECTION (C) OF THIS SECTION IS LIABLE FOR A CIVIL

PENALTY OF UP TO DOUBLE THE AMOUNT OF EACH REGISTRATION FEE THAT IS DUE UNDER § 6–843(A)(1)(II) OF THIS SUBTITLE.

6–817.

(a) (1) Except for properties constructed between January 1, 1950, and December 31, **[**1977**]** **1965**, both inclusive, on and after February 24, 2001, an owner of affected properties shall ensure that at least 50% of the owner's affected properties have satisfied the risk reduction standard specified in § 6–815(a) of this subtitle, without regard to the number of affected properties in which there has been a change in occupancy.

(b) (1) Except for properties constructed between January 1, 1950, and December 31, **[**1977**]** **1965**, both inclusive, on and after February 24, 2006, an owner of affected properties shall ensure that 100% of the owner's affected properties in which a person at risk resides, and of whom the owner has been notified in writing, have satisfied the risk reduction standard specified in § 6–815(a) of this subtitle.

6–819.

(f) Except as provided in § 6–817(b) of this subtitle and except for properties constructed between January 1, 1950, and December 31, **[**1977**]** **1965**, both inclusive, on and after February 24, 2006, an owner of affected properties shall ensure that 100% of the owner's affected properties in which a person at risk does not reside have satisfied the modified risk reduction standard.

6–843.

(a) (1) Except as provided in this subsection and subsection (b) of this section, and in cooperation with the Department of Housing and Community Development, the State Department of Assessments and Taxation, and other appropriate governmental units, the Department shall provide for the collection of an annual fee for **[**every**]** rental dwelling **[**unit**]** **UNITS** in the State **AS FOLLOWS:**

[(2)**]** **(I)** The annual fee for an affected property is $30**; AND**

(II) THE ANNUAL FEE FOR A PROPERTY THAT IS REQUIRED TO BE REGISTERED UNDER § 6–811.1 OF THIS SUBTITLE IS $30 PER UNIT UP TO A MAXIMUM OF 750 UNITS PER OWNER.

[(3) (i) Subject to the provisions of subparagraphs (ii) and (iii) of this paragraph, on or before December 31, 2000, the annual fee for a rental dwelling unit built after 1949 that is not an affected property is $5. After December 31, 2000, there is no annual fee for a rental dwelling unit built after 1949 that is not an affected property.

(ii)] **(2)** The owner of a rental dwelling unit built after 1949 that is not an affected property may not be required to pay the fee provided under this paragraph if the owner certifies to the Department that the rental dwelling unit is lead free pursuant to § 6–804 of this subtitle.

[(iii)**] (3)** An owner of a rental dwelling unit who submits a report to the Department that the rental dwelling unit is lead free pursuant to § 6–804 of this subtitle shall include a $10 processing fee with the report.

(b) The fees imposed under this section do not apply to any rental dwelling unit:

(1) Built after 1978; or

(2) Owned and operated by a unit of federal, State, or local government, or any public, quasi–public, or municipal corporation.

(c) **(1)** The fee imposed under **[**this section**]** **SUBSECTION (A)(1)(I) OF THIS SECTION** shall be paid on or before December 31, 1995, or the date of registration of the affected property under Part III of this subtitle and on or before December 31 of each year thereafter or according to a schedule established by the Department by regulation.

(2) THE FEE IMPOSED UNDER SUBSECTION (A)(1)(II) OF THIS SECTION SHALL BE PAID ON OR BEFORE DECEMBER 31, 2014, OR THE DATE OF REGISTRATION OF THE PROPERTY UNDER § 6–811.1 OF THIS SUBTITLE AND ON OR BEFORE DECEMBER 31 OF EACH YEAR THEREAFTER OR ACCORDING TO A SCHEDULE ESTABLISHED BY REGULATION BY THE DEPARTMENT.

(d) An owner who fails to pay the fee imposed under this section is liable for a civil penalty of up to triple the amount of each registration fee unpaid that, together with all costs of collection, including reasonable attorney's fees, shall be collected in a civil action in any court of competent jurisdiction.

SECTION 2. AND BE IT FURTHER ENACTED, That this Act shall take effect June 1, 2014.

MARCH 6, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

March 6, 2013

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick	Hazard ID Professional	
HALL, Cheryl	Office of Child Care	
HORNIG, Karen	Maryland Insurance Administration	
JENKINS, Melbourne	Property Owner Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	
McLAINE, Patricia	Child Health/Youth Advocate	
MOORE, Barbara	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
ROBERTS, Linda Lee	Property Owner Post 1949	
SNYDER-VOGEL, Mary	Child Advocate	
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Parent of a Lead Poisoned Child	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Insurer	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

March 6, 2013

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
Elham Hatch	DHMH	ehatch@jhsph.edu Johns Hopkin
Wes Stewart	[redacted]OHAI	swstewart@ghhi.org
Shaketta Denson	GHHI	sdenson@ghhi.org
Myra Kmuth	BCHD	myra.kmuth@baltimorecity.gov
Clifford Mitchell IV	DHMH	
Christina Reusch	MSCCA	409 Daudt Bel Air MD 21015 msccal@comcast.net
Arthur Gray		

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, March 6, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business
   - 2014 Legislation
   - Priorities for 2014

3. New Business
   - DHMH Targeting Plan – Cliff Mitchell

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, April 3, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

AERIS Conference Room
March 6, 2014

Approved Minutes

Members in Attendance
Patrick Connor, Cheryl Hall, Karen Hornig, Melbourne Jenkins, Edward Landon, Pat McLaine, Barbara Moore, Linda Roberts and Mary Snyder-Vogel

Members not in Attendance
Delegate Nathaniel Oaks

Guests in Attendance
Elham Hatef – DHMH, Wes Stewart – GHHI, Shakette Denson – GHHI, Myra Knowlton – BCHD, Cliff Mitchell – DHMH, Christina Peusch – MSCCA, and Arthur Gray – BCHCH

Introductions
Pat McLaine called the meeting to order at 9:38 AM with introductions.

Future Meeting Dates
The next Lead Commission meeting is scheduled for Thursday, April 3, 2014 at MDE in the AERIS conference room. The Commission will meet from 9:30 AM to 11:30 AM.

Approval of Minutes
Motion by Ed Landon, seconded by Mel Jenkins, to approve the February 6, 2014 meeting minutes with changes was approved unanimously.

Old Business
Legislation: Ed Landon reported that he listened to the hearings on HB 431 and HB 888, heard by Environmental Matters on February 19th, but the Committee vote has still not been posted. Shaketta Denson requested that the Commission send a letter in opposition to HB 888, which has not yet been cross-filed in the Senate. This bill would change requirements for rental property owners in properties built between 1950 and 1978 including eliminating requirement for tenant pamphlet and dust clearance; owners would just pay fees. Amendments have been proposed related to areas accessible to children. Horacio Tablada indicated that MDE had testified against this bill. Wes Stewart indicated that HB 644 had passed in 2011 because more properties built between 1950 and1978 had been associated with children with elevated blood lead levels. Outside Baltimore City, a large percentage of rentals were constructed after 1950. CDC has indicated there is no safe level of lead, and with 5µg/dL now the level of concern, we have 7

times more children being identified. In addition, there is no evidence to show that this class of properties is safer; as they age, violations are expected to increase. Maryland should continue efforts to reduce exposure of young children to lead in housing. Barbara Moore made a motion that the Lead Commission send a letter in opposition to HB 888, motion seconded by Mary Snyder-Vogel, 5 members in favor (Cheryl Hall, Barbara Moore, Mary Snyder-Vogel, Pat McLaine, and Ed Landon), none opposed, 4 abstained (Karen Stakem Hornig, Mel Jenkins, Linda Roberts and Patrick Connor). Motion passed. Pat McLaine will write a draft for review by Commissioners focused on HB 888 as originally filed.

Priorities for 2014 – Review of 6-808 statute. Pat McLaine suggested the Commission focus on quarterly reports for: (1) MDE data; (2) Office of Child Care data; (3) Case management of lead poisoned children data; and annual review of screening data. Other interests include: follow-up of 5-9, Medicaid reimbursement for point of care testing, implementation of RRP rule, focus on 50-78 housing, changes with Affordable Care Act. Cliff Mitchell suggested that role of Commission was to back-stop departments, determine if their work was going well and if they were doing an adequate job of outreach and education. Patrick Connor asked who would coordinate response to blood lead levels (BLLs) of 5-9µg/dL; because Maryland is inconsistent in our response state-wide to BLLs of 10+µg/dL, what will we do for 5-9µg/dL? Paula Montgomery suggested that outreach to providers is needed; they could complete a Notice of Defect if there was a problem. Pat McLaine indicated that the Commission had recommended case management/environmental investigation follow-up at 10µg/dL, health care provider follow-up at 5-9µg/dL with option for central point of contact if provider concerned based on patient history. Mary Snyder-Vogel indicated that responsibilities for clinicians needed to be clearer. Barbara Moore suggested that it outreach to provider offices may be needed. Cliff Mitchell indicated that he was working with Preventative Medicine Residents to educate providers and that this was a huge lift for providers. DHMH will be asking for a lot: testing children, if 5-9µg/dL, confirm and follow, make sure BLL is not going up, work to identify source and reduce exposure. Practices may be able to have a nurse/CHW make home visits as part of clinical practice, rather than Health Department personnel, when confirmed BLL above 5µg/dL is persistent. Such a person could also complete a Notice of Defect. This will depend on reimbursement from Medicaid. Pat McLaine suggested that the Commission also needs to think about other property owner issues – where are we seeing the biggest problems? Can we help? Is infrastructure sufficient? Linda Roberts noted that owner-occupied properties are a big problem, based on the data. Myra Knowlton indicated that educational classes for owner occupants provided by Baltimore City Health Department were well received, and the Commission may want to re-visit that approach. She noted that pending changes as a result of the Affordable Care Act are not clear to local public health agencies. Paula Montgomery suggested that we may need to consider how we can have a centrally-available resource for follow-up on BLLs of 5-9µg/dL. Patrick Connor asked which agency would determine the level of effort needed to look for a source and which agency would regulate this effort. Regardless of who pays for an inspection, Patrick Connor asked who will regulate looking for a source. Paula Montgomery stated that

MDE is following identified cases and investigating sources. Some people refuse follow-up – about 20% refuse or have moved or were poisoned elsewhere. John Krupinsky gave a report on case management in Maryland. Barbara Moore noted that the issue was consistency across local jurisdictions: discrepancies between visits at 10 or 15µg/dL, visits or phone calls provided by local health departments. Pat McLaine noted that the problem was one of workforce: community public health nurse positions were wiped out by state budget cuts several years ago and Maryland needs to find ways to be able to help families. Cliff Mitchell noted that additional resources may not be made available to public health departments. He suggested that the Commission think about a new model where the person following up is from a clinical provider's office, even for BLLs of 10µg/dL and above. If DHMH decides to recommend universal screening, there will be a relatively larger number of children with BLLs 10+µg/dL across the state. No public health nurses may be available. He suggests that we need to think about how to leverage changes in the Affordable Care Act in order to do primary prevention more effectively, particularly among the larger number of children with BLLs 5-9µg/dL. No decisions were made about priorities for 2014 – discussion will be continued to April meeting.

New Business

DHMH Targeting Plan

Cliff Mitchell reported that the final draft of the plan has been reviewed at the staff level at DHMH and MDE. As soon as both secretaries have signed off, Cliff Mitchell will send the plan for comments to the Commission and the Public. Three options are being considered: (1) Testing based on 2005-2009 BLL test results; (2) Testing based on the 2000 targeting plan; (3) Universal testing or a discrete period, followed by evaluation of results and reexamination of approach. Approach 1 may over-estimate the number of children with BLLs of 5+µg/dL because few children were tested and may over-weight densely populated zip codes compared to less populated zip codes. Approach 2 would probably identify the same areas as in the current plan. Approach 3 will be more expensive but easier for providers to comply, less biased by population density, and would enable the development of future strategies based on better data. Cliff Mitchell will inform the Commission of progress as soon as a decision has been made.

Mel Jenkins asked about the long term cost (21 years) of a child with an elevated blood lead level (10µg/dL). Mary Snyder-Vogel noted that costs should include costs for case management. The Coalition to End Childhood Lead Poisoning indicated that it is working on a report on the costs of a child with an elevated blood lead level.

Agency updates

MDE – Paula Montgomery distributed copies of MDE's case management guidelines. She indicated that home visits are happening except in two counties and that all were following the

guidelines, which indicate "if resources allow". Barbara Moore noted that it was important to find ways to increase resources so that all children could be seen. Paula Montgomery indicated that most counties have made it a priority despite budget cuts. Paula Montgomery also reported on MDE's on-line survey with licensed lead inspectors. Letters were mailed out to 400 inspectors and MDE has received 67 responses to date (survey closes March 21, 2014). MDE had expected better follow-through since this is a professional, accredited community. Patrick Connor indicated the letter was clear and that the survey was very easy to complete, taking less than 5 minutes. Pat McLaine asked if MDE could develop an email list to send out a reminder email to inspectors; Paula indicated that might be possible but noted that MDE is having major issues with their current computer system: upgrading to Windows 2007 as proposed would eliminate support for the current system.

DHMH – nothing new to report

DHCD (State) – nothing new to report

Baltimore City Health Department – Myra Knowlton indicated there was nothing new on DHMH payment for Environmental Investigations.

Baltimore City Housing and Community Development – nothing new to report

Child Care Administration – Cheryl Hall indicated that the Office of Childcare has about 11,000 entities on file. In the CCIS system, there is no recording of the construction date of a facility. OCC is dependent of local jurisdictions to do inspections, and individual records are retained at the local site. Cheryl Hall indicated that OCC cannot generate a report with the existing data that is maintained. Cheryl Hall noted she had tried matching SDAT data to facilities addresses in the past, with mixed results. Both Paula Montgomery (MDE) and Cliff Mitchell (DHMH) indicated that SDAT data was available; it may be possible to link OCC addresses with SDAT data directly. Cheryl Hall indicated that no data on the identification of lead hazards or paint in poor condition is maintained centrally. Paula Montgomery offered to provide training for each county; Cheryl Hall will take this back to the Chief of the Office of Child Care. The Commissioners discussed concerns about the lack of information available about the extent of lead risk in Maryland Childcare facilities, including the extent to which potential lead hazards are being identified and followed up appropriately. Mary Snyder-Vogel moved that the Commission send a letter to Elizabeth Kelley, Director of the Office of Child Care, asking for data of interest. The motion was seconded by Patrick Connor, and approved unanimously. Pat McLaine will prepare a draft for review by Commissioners.

Maryland Insurance Administration – nothing new to report

Coalition – Wes Stewart reported that Congress had passed the federal budget which includes $15 million for the CDC lead program. States may now potentially get funding for lead programs.
Ed Landon made a motion to adjourn the meeting, seconded by Cheryl Hall, passed unanimously. The meeting was adjourned at 11:40 AM.

Lead Commission Suggested Priorities for 2014

Follow up with Housing Authorities (compliance with 24 CFR 35)

Funding for LPPP activities

Funding for lead abatement

Medicaid reimbursement for case management and environmental investigation of homes

Increasing lead screening of Maryland children

- Targeting plan for lead screening
- Compliance for Medicaid children
- Improved guidelines for testing
- Targeted education of primary care providers, child care providers, parents
- Tool boxes
- Point of care testing
- WIC Screening (possibly using point of care testing devices)

Lead exposure and school outcomes

Clinical lead case management guidelines

- PCP
- Public health case management

Screening of other at-risk groups

- Pregnant women
- Children age 7 and older

Improved oversight/enforcement of existing laws/regulations (regulatory, legislative, administrative)

- Registration and EA-6-8
- RRP

Lead poisoning prevention in owner occupied housing

Opportunities presented by the Affordable Care Act

Healthy Homes

- Green and healthy homes initiatives, particularly healthy energy efficient homes
- Asthma, asthma triggers, CO
- Statutory mandates for green and healthy homes

Support/testimony for 2014 Legislation

Lead safety in owner-occupied housing

Statute Text

Article - Environment

§6–807.

(a) There is a Lead Poisoning Prevention Commission in the Department.

(b) (1) The Commission consists of 19 members.

(2) Of the 19 members:

(i) One shall be a member of the Senate of Maryland, appointed by the President of the Senate;

(ii) One shall be a member of the Maryland House of Delegates, appointed by the Speaker of the House; and

(iii) 17 shall be appointed by the Governor as follows:

1. The Secretary or the Secretary's designee;

2. The Secretary of Health and Mental Hygiene or the Secretary's designee;

3. The Secretary of Housing and Community Development or the Secretary's designee;

4. The Maryland Insurance Commissioner or the Commissioner's designee;

5. The Director of the Early Childhood Development Division, State Department of Education, or the Director's designee;

6. A representative of local government;

7. A representative from an insurer that offers premises liability coverage in the State;

8. A representative of a financial institution that makes loans secured by rental property;

9. A representative of owners of rental property located in Baltimore City built before 1950;

10. A representative of owners of rental property located outside Baltimore City built before 1950;

11. A representative of owners of rental property built after 1949;

12. A representative of a child health or youth advocacy group;

13. A health care provider;

14. A child advocate;

15. A parent of a lead poisoned child;

16. A lead hazard identification professional; and

17. A representative of child care providers.

(3) In appointing members to the Commission, the Governor shall give due consideration to appointing members representing geographically diverse jurisdictions across the State.

(c) (1) (i) The term of a member appointed by the Governor is 4 years.

(ii) A member appointed by the President and Speaker serves at the pleasure of the appointing officer.

(2) The terms of members are staggered as required by the terms provided for the members of the Commission on October 1, 1994.

(3) At the end of a term, a member continues to serve until a successor is appointed and qualifies.

(4) A member who is appointed after a term has begun serves only for the remainder of the term and until a successor is appointed and qualifies.

Maryland Department of the Environment
Lead Poisoning Prevention Program

Case Coordination Guidelines for Lead Poisoned Children

Action Levels for Community Health Nurse's Coordination with Environmental Investigator and Health Care Provider

This presents minimum standards set by CDC and State law. Consider individual patient characteristics and caregiver capabilities and adjust the frequency of follow-up health care actions accordingly.

BLL	Minimum CDC Recommendations for BLL Follow-up	Coordinate with Health Care Provider	Coordinate with Parent/Guardian and Provide Service Coordination	Coordinate with Environmental Investigator
<5 µg/dL Venous or Capillary **5-9 µg/dL Venous or Capillary**	As mandated by EPSDT, Maryland Targeted Screening Law, and Baltimore City Ordinance. Within 3 month follow-up with venous level.	The Health Care Provider's (HCP) responsibilities are: • Lead and nutritional education along with assessing for possible sources of lead exposure. • Repeat and track blood lead level.	**Venous or Capillary:** • Education and Outreach for prevention. • For tenants in pre-1950 rental properties, complete EA 6-8 Compliance Interview and forward to MDE. Review and provide tenant "Notice of Defect".	Compliance enforcement of pre-1950 rental property owners. Enforcement of Notice of Defect.
10-14 µg/dL Venous or Capillary	**3** months for capillary **3** months for **Early** follow-up venous *Early follow-up is the first 2-4 tests after identification of an elevated level.* **6-9** months for **Late** follow-up venous *Late follow-up is identified as after the elevated blood lead level begins to decline.*	The HCP responsibilities are as above plus: • Educate to decrease environmental exposure and review WIC's Dietary Food Pyramid. • Repeat and track blood lead level according to "Blood Lead Follow-up" chart that contains CDC guidance.	**Venous or Capillary:** • Education and Outreach for prevention. HV if resources allow. • Follow-up blood lead level monitoring. **Venous or 2 capillaries within 12 weeks include:** • Mail out of "Official Notice Packet" for residence of pre-1950 rental properties. • Information about Special Loans Housing Program.	***Coordinate* Immediately for Environmental Inspection** **Venous** Environmental Inspection to take place within 5 days of referral from Health Department.
15-19 µg/dL Venous or Capillary	**3** months for capillary **1-3** months for **Early** follow-up of a venous blood lead level. **3-6** months for **Late** follow-up of a venous blood lead level.	Contact within 1 month (measure from specimen date) to confirm specimen type and to coordinate follow-up care. The HCP responsibilities are as above plus: • Evaluate for iron deficiency • Take environmental	**Venous or Capillary:** • Education and Outreach for prevention. • Follow-up blood lead level monitoring. **Venous or 2 capillaries within 12 weeks:** • Mail out of "Official Notice Packet" for residence of pre-1950 rental properties. **Venous:** **Home visit (HV) by CHN or trained ancillary person within 15 days of notification.**	***Coordinate* Immediately for Environmental Inspection** **Venous** Environmental Inspection to take place within 5 days of referral from Health Department.

Maryland Department of the Environment
Lead Poisoning Prevention Program

Case Coordination Guidelines for Lead Poisoned Children

Action Levels for Community Health Nurse's Coordination with Environmental Investigator and Health Care Provider

This presents minimum standards set by CDC and State law. Consider individual patient characteristics and caregiver capabilities and adjust the frequency of follow-up health care actions accordingly.

BLL	Minimum CDC Recommendations for Follow-up BLL Within:	Coordinate with Health Care Provider	Coordinate with Parent/Guardian and Provide Service Coordination	Coordinate with Environmental Investigator
20-44 µg/dL Capillary	1 week-1 month The higher the capillary report, the more urgent the need for a venous specimen to validate the report.	Contact as soon as possible, preferably within 1 week from specimen date, to encourage the HCP to validate the result with a venous test.	Follow-up blood lead level monitoring.	Not applicable.
20-44 µg/dL Venous	**20-24 µg/dl** **1-3** months for **Early** and **Late** follow-up of a venous blood lead level. **25-44µg/dL** **2** weeks-**1**month for **Early** follow-up of a venous blood lead level. **1**month for **Late** follow-up of a venous blood lead level. The higher the blood lead level, the more urgent the follow-up.	Contact as soon as possible, preferably within 1 month from Specimen Date to discuss with HCP referral to specialty center. The HCPs responsibilities are as above plus: Complete medical / nutritional H & P, developmental assessment, and consultation with specialty centers experienced in chelating and management of lead poisoned children.	**CHN HV within 5 workdays of referral from MDE.** • Follow specific "Guidelines for Nursing Case Management" attached. • Mail out of "Official Notice Packet" for residence of pre-1950 rental properties (Venous or 2 caps within 12 weeks) • Information about Special Loans Housing Program.	***Coordinate* Immediately for Environmental Inspection** **Venous Levels 20-29µg/dL** Environmental Inspection to take place within 5 days of referral from Health Department. **Venous Levels >= 30µg/dL** Environmental Inspection to take place within 2 days of referral from Health Department.
45-59 µg/dL Capillary	48 hours	Contact within 48 hours (measure from Specimen Date) to discuss validate with STAT venous.	Contact regarding need for STAT repeat specimen within 2 workdays.	Not applicable.
	AS SOON AS POSSIBLE for **Early** follow-up of a venous blood lead level.	Contact within 1 workday (measure from specimen date) The HCP responsibilities are	**CHN HV within 2 workdays of referral from MDE.** • Follow specific "Guidelines for Nursing Case Management" attached.	***Coordinate* Immediately for Environmental Inspection**

Maryland Department of the Environment
Lead Poisoning Prevention Program

Case Coordination Guidelines for Lead Poisoned Children

Action Levels for Community Health Nurse's Coordination with Environmental Investigator and Health Care Provider

This presents minimum standards set by CDC and State law. Consider individual patient characteristics and caregiver capabilities and adjust the frequency of follow-up health care actions accordingly.

	Minimum CDC Recommendations for Follow-up BLL Within:	**Coordinate with Health Care Provider**	**Coordinate with Parent/Guardian and Provide Service Coordination**	**Coordinate with Environmental Investigator**
60-69 µg/dL Capillary	24 hours	Contact within 24 hours (measure from Specimen Date) to discuss validate with STAT venous.	Contact regarding need for STAT repeat specimen within 1 workday.	Not applicable.
>=70 µg/dL Venous	**AS SOON AS POSSIBLE** for **Early** follow-up of a venous blood lead level. Chelation with subsequent follow-up for **Late** follow-up of a venous blood lead level.	**Medical Emergency: Hospitalize** Contact within 1 workday to discuss hospitalization (measure from specimen date)	**CHN HV within 1 workday of referral from MDE.** • Follow specific "Guidelines for Nursing Case Management" attached. • Mail out of "Official Notice Packet" for residence of pre-1950 rental properties (Venous or 2 caps within 12 weeks) • Information about Special Loans Housing Program.	***Coordinate* Immediately for Environmental Inspection** **Venous** Environmental Inspection to take place within 2 days of referral from Health Department.
>=70 µg/dL Capillary	Immediately as an emergency	Contact immediately to validate with STAT venous.	Contact regarding need for STAT repeat specimen.	Not applicable.

Guidelines for Nursing Case Management

Assessment

- Initiate telephone contact with health care provider to confirm result, demographic information, and plan of care. Contact family to coordinate home visit and plan of treatment. If family has no telephone, make home visit to establish initial contact. Complete EA 6-8 Compliance Interview with guardian.
- Make a home visit in coordination with the Environmental Division of MDE, or if child lives in Baltimore City or Prince Georges' County, coordinate with the local health department.
- If the Nurse must home visit prior to the environmental investigator's home visit
    - Provide a brief assessment of immediate risks.
    - Counsel family to reduce obvious lead exposure of child (restrict access to areas).
- Identify other children and adults at risk in the environment and coordinate blood lead testing.
- Assess resources, refer and coordinate services as needed for:
    - Health insurance for adequate medical coverage
    - Supplemental food program for Woman, Infants and Children (WIC)
    - Nutritional counseling (may be a service covered by the health care insurer)
    - Transportation for treatment
    - Temporary relocation
    - Relocation to alternative housing
    - Housing special cleaning/repair/maintenance
    - Housing Special Loans Program
    - Social services
    - Legal services or landlord/tenant relations

Short Term Planning and Coordination

- Coordinate with the health care provider and guardian for follow-up blood lead tests. Discuss with the health care provider referral to tertiary care centers specializing in management of childhood lead poisoning.
- Explain to family and HCP the need for Public Health intervention (nursing and environmental).
- Provide health education about
    - Possible sources of lead exposure
    - Relationship of blood lead level to adverse health effects
    - Importance of adequate nutrition and eating foods high in iron and calcium
    - Means of reducing exposure through environmental management of identified risks (including special cleaning and hand washing)
- Provide written referrals to other agencies as appropriate including using Interagency Referral Form for referral to Department of Housing and Community Development Special Loans and Grants program.
- In complex cases, local health department may wish to convene a team (CHN, Environmental Investigator, Health Care Provider, Social Services, Housing, Day Care) to plan a coordinated approach.
- Coordinate on-going management of case with environmental investigator and assist with planning for immediate exposure reduction
    - Special cleaning
    - Restrict access to hazardous area(s)
    - Temporary relocation
- Coordinate on-going management of case with Environmental Investigator for
    - Hazard reduction
    - Relocation
    - Abatement guidance
    - Enforcement actions

- **Guideline when Oral Chelation is prescribed:**
  If oral chelation is prescribed, provide feedback to health care provider regarding environmental investigation. Prior to chelation, make referral for assessment of environment to verify lead-safe environment. If the child is exposed to a leaded environment, the Nurse should inform the HCP that it is essential that children should not be exposure to lead during or immediately after chelation treatment.

Long Term Planning and Coordination

Guidelines for Nursing Case Management

Review and Report

- If follow-up BLL increases by ≥ 5 µg/dL, review with Environmental Investigator and repeat home visits are indicated for monitoring and re-assessment.
- Review plans for health care with Health Care Provider, coordinate as needed, and report information regarding outcome of environmental investigation.
- On a quarterly basis, report case management status and outcomes to MDE Lead Program Nurse Consultant by sending a copy of the tracking form or entering data into Stellar system.

DISCHARGE RULES

Types of Discharge

Management Complete

Case will be discharged (closed) when:

- Two consecutive tests are ≤ 9µg/dL, venous or capillary
- According to the treating health-care provider a child no longer requires medical treatment and follow-up blood lead testing (beyond routine screening)
- All probable lead sources or hazards in the child's current environment have been investigated and remediated.

Administrative Discharge

A case can be discharged (closed) from active follow-up when the local case manager has exhausted all **active** efforts to ensure medical and environmental management.

Recommended Lead Screening Schedule

AGE ► SCREENING METHOD	6 - 8 Months	9 - 11 Months	12 Months	15 Months	18 Months	2 Years	3 Years	4 Years	5 Years
Questionnaire	×	×	×	×	×	×	×	×	×
Lead Blood Test			×	(×)	(×)	×	(×)	(×)	(×)

KEY: × Required by the Maryland Healthy Kids Program (EPSDT)
(×) Required if not done when previously scheduled

×Blood lead test is required at any visit that Questionnaire triggers a concerning or "I don't know" response.

Elevated Blood Lead Diagnostic and Follow-Up Chart

This table presents the suggested frequency of follow-up tests. Case managers and HCPs should consider individual patient characteristics and caregiver capabilities and adjust the frequency of follow-up tests accordingly.

Confirmation of a Capillary Blood Lead Test

Screening test result (µg/dL)	Perform a confirmation test within:
5-9	3 months
10-19	3 months
20-44	1 week-1 month[a]
45-59	48 hours
60-69	24 hours
> 70	Immediately as an emergency lab test

[a] The higher the BLL on the screening test, the more urgent the need for confirmatory testing.

Schedule for Follow-Up Blood Lead Testing[a]

Venous blood lead level (µg/dL)	Early follow-up (First 2-4 tests after identification)	Late follow-up (After BLL begins to decline)
5-9	3 months	6-9 months
10-14	3 months[b]	6-9 months
15-19	1-3 months[b]	3-6 months
20-24	1-3 months[b]	1-3 months
25-44	2 weeks-1 month	1 month
> 45	As soon as possible	Chelation with subsequent follow-up

[a] Seasonal variation of BLLs exists and may be more apparent in colder climate areas. Greater exposure in the summer months may necessitate more frequent follow-ups.

[b] Some case managers or HCPs may choose to repeat blood lead tests on all new patients within a month to ensure that their BLL level is not rising more quickly than anticipated.

APRIL 3, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

April 3, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick	Hazard ID Professional	
HALL, Cheryl	Office of Child Care	
HORNIG, Karen	Maryland Insurance Administration	
JENKINS, Melbourne	Property Owner Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	
McLAINE, Patricia	Child Health/Youth Advocate	
MOORE, Barbara	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
ROBERTS, Linda Lee	Property Owner Post 1949	
SNYDER-VOGEL, Mary	Child Advocate	
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Parent of a Lead Poisoned Child	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Insurer	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

April 3, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
Paula Montgomery	MDE	paula.montgomery@maryland.gov
Shaketta Denson	GHHI	sdenson@ghhi.org
Jody Johnson	Cullaborate	takebackyourlsb@gmail.com
Myra Knowlton	BCHD	myra.knowlton@baltimorecity.gov
Laura Fox	BCHD	Laura.Fox@Baltimorecity.gov
Ruth Ann Norton	GHHI	rnorton@ghhi.org
Sheneka Frasier-Kyer	BCHCD	sheneka.frasierkyer@baltimorecity.gov
Clifford S. Mitchell	DHMH	cliff.mitchell@maryland.gov

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
April 3, 2014

Approved Minutes (5-1-14)

Members in Attendance
Patrick Connor, Cheryl Hall, Karen Hornig, Edward Landon, Pat McLaine, and Barbara Moore

Members not in Attendance
Melbourne Jenkins, Delegate Nathaniel Oaks, Linda Roberts and Mary Snyder-Vogel

Guests in Attendance
Shakette Denson – GHHI, Ruth Ann Norton – GHHI, Myra Knowlton – BCHD, Cliff Mitchell – DHMH, Jody Johnson – Laura Fox – BCHD, Sheneka Frasier – BCDHCD, and Paula Montgomery – MDE,

Introductions
Pat McLaine called the meeting to order at 9:41 AM with welcome and introductions.

Future Meeting Dates
The next Lead Commission meeting is scheduled for Thursday, May 1, 2014 at MDE in the AERIS Conference room. The Commission will meet from 9:30 AM to 11:30 AM.

Approval of Minutes
Motion was made by Ed Landon, seconded by Karen Hornig to approve the March minutes with changes and approved unanimously.

Discussion
Old Business
Legislation: Pat McLaine reported that a letter regarding Commission's concerns about HB 888 was not sent. Ed Landon reported that this bill was not voted out of Committee.

Lead in Childcare: Following approval by Commissioners, a letter from the Commission was sent on March 27, 2014 to Elizabeth Kelley, Director of Maryland State Department of Education, Division of Early Childhood Development, Office of Child Care requesting lead-related information about Maryland Child Care facilities. Ms. Kelley provided an email response on March 28, 2014 indicating the Office of Child Care's willingness to work in collaboration with the Commission. Pat McLaine sent an email response on April 2, 2014 clarifying the Commission's interests and inviting Ms. Kelley to attend the Commission meeting in May. Copies of the letters were distributed at the meeting.

A lengthy discussion of the issues followed. Ed Landon asked who has responsibility for writing policies and procedures to enact the law – who does what, when, where and how. The regulations are unclear. Shaketta Denson stated that she always thought the laws applied to child care. Cheryl Hall noted that the Office of Child Care (OCC) regulations require that facilities be free of any hazards at all, across the board. Paula Montgomery indicated that pre-1950 rental property must have a certificate. If the

property was built before 1979 and had any lead hazards, the owner must hire a licensed risk assessor to test and sample and to determine that the problem was "fixed". Cheryl Hall stated that referrals are being made but follow-up is not being tracked centrally. Paula Montgomery stated that if a licensing specialist identified defective paint, the owner must hire an accredited risk assessor to conduct a risk assessor. Based on the findings and needs, an accredited contractor must be hired. Then, the risk assessor comes back to ensure that the property is safe from lead hazards. For pre-50 property (soon to be pre-1978): rental must have a certificate, owner-occupied must have a certificate that the property is free from lead hazards. Cheryl Hall stated again that such work was done and results were put in an individual file but there is no central data base.

Patrick Connor noted that he wanted to make sure he understood what has been said: all child care facilities are potentially compliant but the OCC has no ability to show compliance in licensed facilities. Outside of papers filed in the regional offices, there is no central record and OCC does not know the date of construction of licensed facilities. Pat McLaine indicated that information was needed for the population of more than 11,000 child care facilities. Patrick Connor asked if the OCC has documentation that licensed child care facilities meet the standards of this law. Cheryl Hall stated that OCC may have documentation. Patrick Connor noted that if the central data base cannot give OCC information on lead safety or age of construction, how does the licensing specialist (about 120 of them) know to ask this question if it is only recorded on the initial application? Cheryl Hall stated that the application form included a history of lead paint issues and a comment section, on paper only. Ruth Ann Norton suggested that this could be fixed simply: data could be collected on initial records and shared electronically. This was recommended in the Commission's follow-up letter of April 2nd.

Paula Montgomery asked if State OCC collected all inspection data. Cheryl Hall replied that zoning and environmental requirements must all be met, and that documentation goes into the CATS system, but there is presently no data element for lead. Paula Montgomery noted that the type of occupancy (rental, owner-occupied) could be easily identified using the homesteader tax credit information, making it easy to identify age of construction and rental status. Pat McLaine noted that this would be particularly easy to monitor if there was an electronic field in CATS for age of construction and ownership status. Ed Landon asked what was being done for new applications. Karen Hornig noted that it was the Commission's job to make sure a state agency is compliant with the law. She suggested that the Commission should invite Ms. Kelley to attend our next meeting along with counsel to outline the steps that OCC will take in the next six month to become or ensure compliance. The focus should be on compliance: what action steps OCC will take to assure us that they as an agency are doing what they are supposed to do to monitor facilities. Shaketta Denson asked what was compliance for a child care facility? If peeling, chipping paint was cited, what then? Paula Montgomery indicated that rental properties must have a lead certificate. Any property built before 1978 must be evaluated for defective paint. If defective paint is identified, the property must be evaluated for hazards by a licensed risk assessor. If hazards are identified, the proposed center must address those hazards and the risk assessor must reassess. For all other categories of buildings, the OCC licensing specialist determines if peeling chipping paint is present. If it is, the licensing specialist asks about the age of construction.

Karen Hornig noted that it appears that work is being done but there is no tracking and no central data available to evaluate. OCC is unable to draw appropriate conclusions about the data because of the process. Cheryl Hall noted that there were 13 offices and regions, with Baltimore City and PG County being the largest. She noted that many environmental, health and safety issues are inspected. Barbara

Moore noted that all the documentation is in individual files, in a filing cabinet in a regional office. Responsibility is taken individually. The problem is that there is no compilation of data into monthly, quarterly and annual reports because lead is not part of the tracking system. OCC may be compliant with the law but right now we have no way to know. Ed Landon noted that he was surprised that this was not previously identified in an audit. Cheryl Hall noted that OCC is dependent on local jurisdictions to do the work. If they tell us the property passed zoning (etc.), OCC accepts this verification. The central database has a check-off that the property passes local requirements.

Cheryl Hall asked what more OCC should do: central documentation? Training licensing specialists to be risk assessors? Karen Hornig indicated that the job of licensing specialist is to make an initial assessment. It is important to be able to demonstrate compliance. Is there a specific problem we are trying to solve other than access to data? Cheryl Hall stated that she could not provide the data the Commission asks for because the data is not maintained this way.

Patrick Connor noted that that if a rental property is in compliance but has a child occupant with a BLL of 12μg/dL, local government will evaluate the property as part of the follow-up for the child. But how will we know that the risk is not from a child care center? Paula Montgomery stated that MDE does follow up on this issue during all poisoned child follow-ups. Myra Knowlton stated that BCHD does follow up whenever daycare is identified during the follow-up process. Barbara Moore noted that from her clinical perspective, if risk was identified in a home, the childcare center was not inspected. Clinicians are pulling out their hair because they cannot get follow-up at child care centers. Myra Knowlton offered to follow-up on any child care facility in Baltimore City.

Barbara Moore asked if the licensing specialist looks at every child care facility twice a year; Cheryl Hall indicated yes. Cliff Mitchell asked what was the end product of these inspections? A program evaluation? What are the strengths and weaknesses in place to protect children from lead hazards? What is the status of lead protection in child care facilities? Do we think there is an imminent threat to children in licensed child care facilities? Cheryl Hall indicated that she did not know the magnitude of the problem. Patrick Connor asked what happens if an applicant finds lead hazards in a proposed facility. Cheryl Hall said that the facility would not be approved and no children would be allowed there. Patrick Connor asked what happened if a licensing specialist visited 6 months later and identified deteriorated paint. How long does the Center have to resolve the problem: 15 days, 30 days, more? Cheryl Hall indicated that that depended on the nature of the problem and that in some instances, the owner must relocate children. Patrick Connor asked how many of those events occurred in 2013. Barbara Moore asked if parents must be informed of risks identified. Cheryl Hall stated that OCC recommended to child care facilities that they notify parents and encourage them to test their children. Barbara Moore stated that if the child was 3-4 years old, the child would not likely be re-tested. Ruth Ann Norton asked why the OCC recommended that facilities notify parents – why not require them to do so? Cheryl Hall stated that the Licensing Specialist would ask the local health department to help. Barbara Moore stated that the issue is the requirement of notice. Patrick Connor stated that 40CFR745 requires a child care facility operator to notify/disclose to parents within 15 days of notice. Contractor must provide notice before any work involving six square feet of surface area. The operator is required to notify parents under Federal Law. Under 24CFR part 35, if federal dollars are going to homes, the parents must be notified. Since December 1996, we really have tools in place to solve these challenges. We need education, training and enforcement of the law.

Pat McLaine will follow up with Director Kelley and invite her to attend the May 1 meeting.

Targeting Plan: Cliff Mitchell indicated that the Targeting Plan is still being revised/reviewed and there was nothing new to report.

Baltimore City Billing DHMH for Environmental Investigation: Laura Fox indicated that the City was establishing a centralized billing system to bill for the work of City programs. Cliff Mitchell indicated that lead was only one of many issues being considered with the Affordable Care Act (ACA) implementation. Laura Fox indicated that capacity and funding cuts were also an issue. Barbara Moore asked if BCHD will be looking for reimbursement for case management and environmental investigation; Laura Fox indicated for both. Cliff Mitchell noted that the ACA implementation is changing things radically – are health departments viable? Can they do cost recovery for programs they manage? Pat McLaine noted that this is a key issue for childhood lead poisoning prevention programs and that she will keep asking about progress. BCHD cannot get reimbursement for services if too much time has gone by. Cliff Mitchell indicated that local health departments were once funded primarily by state dollars. Now less than half of funding is state and the rest is from local revenues or categorical grants. CDC has cut categorical funding. Local health departments either cut back on their programs (the majority have no epidemiologist and decreased staffing for communicable disease follow-up) or look at eliminating services, particularly services the health care system now will pay for. If local health departments can't bill for services, there will be no revenues for those services. Cheryl Hall noted that without assistance from local health departments, state agencies will have to absorb a lot of the work now being done by local health department staff.

New Business – Priority Setting

Pat McLaine asked Commissioners to vote on their top three choices for priorities for the Lead Commission for this year. The priorities identified by Commissioners were:

1. Tracking progress (lead safety in housing, lead testing, BCHD health and housing, etc.)
2. Lead risks in child care
3. Laboratory issues (including point of care testing, proper tubes for testing)
4. Tied: RRP Implementation and Tool box for primary care providers

Agency updates

MDE

Paula Montgomery stated that MDE is preparing mock ups for the lead rental registry to go on-line; it should be live in May. Commissioners were pleased and would like to see a demonstration at the May meeting. Ms. Montgomery reported that the program is making a final presentation on the RRP implementation to the Secretary. The department plans to incorporate RRP in risk reduction and will begin regulation writing soon. Regulations should come out in June 2014. Ms. Montgomery reported that MDE's on-line contractor survey had 23% participation and was now closed; she will provide a report on the survey next month.

DHMH

Cliff Mitchell reported that the DHMH Laboratories Advisory Committee Meeting was scheduled for Thursday, April 17 at 8:30 in L-37. The Lead Point of Care Testing is on the agenda; the Committee has received the final report and will make recommendations concerning Lead Point of Care Testing. Cheryl

Hall made a motion that the Commission send a letter to the Laboratory Advisory Committee in support of point of care testing, seconded by Patrick Connor and passed unanimously. Commissioners were interested that POC testing be on the accepted list, that reporting should be emphasized, and that QC issues be stressed. The letter will be sent to Dr. John Newby, copy to Secretary Sharfstein and copies to the Point of Care Task Force. Pat McLaine will draft the letter, to be reviewed by Cliff Mitchell and

Patrick Connor and sent out for review by Commissioners. Patrick Connor, Barbara Moore and Pat McLaine interested in attending this meeting.

Cliff Mitchell stated that the Targeting Plan was still under review, as were the practice management guidelines. He indicated that DHMH plans to update the screening questionnaire, which will be available in Spanish and English.

DHCD (State)
Ed Landon indicated there was nothing new to report. Ed Landon reported that he had contacted the Governor's Appointment Office and that they are "working on" the appointments.

Baltimore City Health Department
Laura Fox indicated that billing is now being looked at as a global health department issue. The Lead Program is now relocated to new offices at 7 East Redwood Street.

Baltimore City Housing and Community Development
Shaneka Frazier Case indicated that Baltimore City Housing had reached their goal for the quarter for lead abatement. A total of 97 units have been completed to-date.

Child Care Administration
Cheryl Hall indicated she had nothing more to report.

Maryland Insurance Administration
Karen Stakem Hornig indicated there was nothing to report.

Coalition
Nothing new to report.

DHMH has developed Grand Rounds presentations for health providers on healthy homes focusing on lead and asthma. Presentations are being done at St. Mary's County.

Webinar from the State Association of Public Health Laboratories on lead testing issues will be broadcast this afternoon; Patrick Connor's office will have recaps available on Monday.
Patrick Connor will send instructions to Commissioners on how to access recaps.

Patrick Connor made a motion to adjourn the meeting, seconded by Barbara Moore, passed unanimously. The meeting was adjourned at 11:39 AM.

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
BaltimoreMD21230

Thursday, April 3, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business

3. Priority Setting for 2014

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, May 1, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
    a. Maryland Department of the Environment
    b. Department of Health and Mental Hygiene
    c. Department of Housing and Community Development
    d. Baltimore City Health Department
    e. Office of Childcare
    f. Maryland Insurance Administration
    g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

March 27, 2014

Elizabeth Kelley, Director
Maryland State Department of Education
Division of Early Childhood Development
Office of Child Care
200 W. Baltimore Street
Ba timore, Maryland 21201

Subject: 15-Family Child Care; 16-Child Care Centers; 17-Child Care Letters of Compliance; 18- Large Family Child Care Homes

Reference: Title 13A.15-18 .05 – Physical Plant and Equipment; .05 – Lead Safe Environment

Dear Ms. Kelley,
This letter serves as a formal request from the Lead Poisoning Prevention Commission for information about lead exposure risks in Maryland child care centers. Our Commission was established under Environmental Article 6 – 807 and has the statutory responsibility to study and collect information related to protecting children from lead poisoning, including children attending child care centers, family child care homes and preschool facilities. The Commission is tasked with reviewing the implementation and operation of Environmental Article 6 – 8 during its regular meetings throughout the year and submitting a report to the Governor and General Assembly on the results of the review, and the Commission's recommendations concerning other lead poisoning issues, and the need for further action that the Commission determines to be necessary. During the last several years, the Commission has requested information about the safety of children attending licensed child care facilities from the Department of Education – Early Childhood Development Division's representative to our Commission, Ms. Cheryl Hall. During the last several years, information provided to the Commission about lead hazards in licensed child care facilities has been incomplete and "lead related" information is not available on your website.

At our March 6, 2014 meeting, Ms. Hall suggested that we contact you directly regarding the following information, pertinent to Environmental Article 6-807 which she indicated that she was not able to provide or easily access:

1. Number of Licensed Child Care facilities (homes and centers) constructed prior to 1950
2. Number of Licensed Child Care facilities(homes and centers) constructed between 1950-1978
3. Number of Licensed Child Care facilities constructed prior to 1978 which failed in 2013 (or any year) to be in compliance with COMAR 13A 15-.18.05.05
4. Number of Licensed Child Care facilities constructed prior to 1978 which the Agency denied an Initial, Current or Continuing License or registration due to non-compliance with COMAR 13A.15-.18.05.05

5. Number of Child Care facilities submitting compliance documentation in accordance with COMAR 13A.15 - 18.05.05

In addition, the Commission would like clarification about the means and methods that your Agency undertakes to document compliance with COMAR 13A.15-.18.05.05 – *Lead-Safe Environment, for both the* initial and continuing license evaluations. During our February meeting, we learned that the Child Care licensing staff evaluating compliance with COMAR 13A.15-.18.05.05 may not be trained in or aware of the State standards related to:

1. Lead-based Paint Inspections;
2. Lead-based Paint Risk Assessments;
3. Dust-lead standards;
4. Soil-lead standards; and
5. Paint-lead standards.

We would welcome having the information for our next meeting, on April 3, 2014. This information is crucial to our understanding how the Department of Education, is documenting an initial and ongoing Lead-Safe Environment for the children in Maryland's regulated child care facilities and to what degree lead hazards continue to be a problem in older facilities. Thank you in advance for your assistance.

Sincerely,

Pat McLaine

Pat McLaine, RN, MPH, DrPH
Chair, Governor's Lead Commission

CC: Rolf Grafwallner, Asst. Superintendent

Horacio Tablada, MDE

Tracy Smith, MDE

Lead Commissioners

MARYLAND

RE: Family Child Care, Child Care Centers, Child Care Letters of Compliance & Large Family Child Care Homes

McLaine, Pat <mclaine@son.umaryland.edu> Wed, Apr 2, 2014 at 2:09 PM
To: Liz Kelley <Liz.Kelley@msde.state.md.us>, Tracy Smith -MDE- <tracy.smith@maryland.gov>
Cc: Cliff Mitchell <cliff.mitchell@maryland.gov>, "Hornig, Karen" <khornig@mdinsurance.state.md.us>, "Landon, Ed" <landon@dhcd.state.md.us>, Linda Roberts <LRoberts@emcmgmt.com>, Mel Jenkins <meljenkins@smcmail.com>, Cheryl Hall <Cheryl.Hall@msde.state.md.us>, "Montgomery, Paula" <Paula.Montgomery@maryland.gov>, "Moore, Barbara" <bmoore@mwph.org>, "Snyder-Vogel, Mary" <vogel@kennedykrieger.org>, "Connor, Patrick" <pconnor@connorsolutions.com>, "horacio.tablada@maryland.gov" <horacio.tablada@maryland.gov>, Christine Peusch <mscca1@comcast.net>, Rolf Grafwallner <rgrafwal@msde.state.md.us>, Paula Johnson <Paula.Johnson@msde.state.md.us>

Dear Ms. Kelley,

Thank you for your prompt response to our letter. The Lead Commission is most interested in having a clear understanding about the management of environmental lead risks in regulated child care facilities.

Age of construction is used to identify properties that may contain lead hazards. Maryland laws governing lead paint are tied to the age of construction. Requirements for training, certification and special work practices are in place for firms performing renovation, repair and painting projects that disturb paint in homes and child care facilities built before 1978. It is unclear how the Office of Child Care (OCC) could determine whether lead risks are present in licensed child care facilities without age of construction information. This information could be requested as part of an initial or renewal application process or found through the Department of Assessment and Taxation. Because the age of housing stock varies across the State, the Commission would like to have this information available on licensed child care facilities on a region by region (or county) and facility type basis.

On-going compliance related to environmental lead exposures cannot be assured in regulated childcare facilities if this data is not tracked in the OCC's electronic data base (Child Care Administrative Tracking System). In older facilities that have lead paint, on-going oversight may be necessary, particularly if paint has ever been found to be peeling or flaking. The Commission is concerned that children cared for in regulated child care facilities found to have lead hazards and compliance problems are protected, and if necessary, moved to safe facilities. We would like to know more about the pre-1978 facilities with lead violations that submitted compliance documentation in accordance with COMAR 13A.15-18.05.05 as well as the facilities denied initial, current or continuing license or registration due to non-compliance, including where they are, what was done, and if children still being cared for in those facilities. The Commission also is interested in having this information by region (or county) and facility type.

We would also be interested in seeing the application process used for new and renewing facilities. If it is all done electronically, we would be happy to provide a screen so this can be shown at the

meeting.

The extent to which current Maryland child care facilities are at-risk for lead hazards also has policy implications. Housing resources (such as grant and loan programs) could be targeted to these providers if such a need were documented and we are willing to advocate for such targeting if the need is present.

Licensed childcare provides an excellent opportunity to protect Maryland children from the hazards of lead paint. The Commission appreciates your dedication to ensuring a safe and healthy environment for children in regulated child care facilities and looks forward to meeting with you in person at our regularly scheduled meeting tomorrow or on May 1, 2014 and to working together towards these common goals.

Sincerely,

Pat McLaine

Pat McLaine, RN, MPH, DrPH
Chair, Governor's Lead Commission

From: Liz Kelley [Liz.Kelley@msde.state.md.us]
Sent: Friday, March 28, 2014 1:55 PM
To: Tracy Smith -MDE-
Cc: Cliff Mitchell; Hornig, Karen; Landon, Ed; Linda Roberts; McLaine, Pat; Mel Jenkins; Cheryl Hall; Montgomery, Paula; Moore, Barbara; Snyder-Vogel, Mary; Connor, Patrick; horacio.tablada@maryland.gov; Christine Peusch; Rolf Grafwallner; Paula Johnson
Subject: RE: Family Child Care, Child Care Centers, Child Care Letters of Compliance & Large Family Child Care Homes

Dear Ms. Smith and Dr. McLaine,

Wanting to respond to your request as quickly as possible, I have done some preliminary inquiries to our Regional Licensing Offices to determine the level of information they collect and record. I have also spoken with Ms. Cheryl Hall to determine the level of information provided to the Commission concerning lead exposure risk in child care. I understand that Ms. Hall has continued to inform the Commission concerning licensing interventions to address compliance issues related to COMAR 13A.15.05.02 and COMAR 13A.16-.18.05.05 Lead Safe Environment in child care facilities. In response to your questions concerning child care facilities licensed by the MSDE:

- While information concerning the date of construction of a building is requested on the Notice of Intent form for a child care center license, there is no mechanism within the Child Care Administrative Tracking System (CCATS) to track the information. This information is not requested, nor required, for a family child care home registration. A match could be made between the OCC list of licensed/registered child care facilities with the information available through the Department of Assessment and Taxation.

- The information concerning non-compliances with COMAR 13A.15.05.02 and COMAR 13A.16-.18.05.05 is captured in our electronic licensing inspection system (ELIS), but not easily accessible as there is not a report for this specific non-compliance. Therefore, generating this information would take a great deal of

staff time and effort but will be done if specifically requested by the Commission.

- The agency does not keep a listing of the facilities constructed prior to 1978 that were denied an initial, current, or continuing license or registration due to non-compliance with COMAR 13A.15.05.02 or COMAR 13A.16-.18.05.05.

- A compilation of a list reflecting the number of facilities submitting compliance documentation would have to be done on a region by region basis through an individual record review of the affected properties.

- Child care licensing staff receive initial and on-going training on the regulations for child care facilities, including determining compliance with all aspects of COMAR 13A.15.05.02 and COMAR 13A.16-.18.05.05.

The issues related of data collection and tracking may be more effectively addressed by:

- The Maryland Department of the Environment who is responsible for certifying affected rental properties;

- Requiring accredited lead inspection/remediation contractors performing services in buildings used by children to report directly to the Maryland Department of the Environment all activities related to lead testing and remediation; and

- We recommend that the Department of Assessment and Taxation, local housing/health and environmental agencies maintain the responsibility for verifying the habitability of a house or building and should report this directly to the Maryland Department of the Environment as a standard part of the zoning process. OCC requires documentation of usability prior to granting a license or registration.

Ms. Hall, Ms. Paula Johnson, Licensing Branch Chief, and I are happy to continue to work in collaboration and cooperation with the Governor's Lead Commission in ensuring that all children in regulated child care in Maryland are cared for in a safe and healthy environment.

Sincerely,

Liz Kelley

Director, Office of Child Care

MSDE

liz.kelley@msde.state.md.us

From: Tracy Smith -MDE- [mailto:tracy.smith@maryland.gov]

Sent: Friday, March 28, 2014 10:09 AM
To: Liz Kelley
Cc: Cliff Mitchell; Hornig, Karen; Landon, Ed; Linda Roberts; McLaine, Pat; Mel Jenkins; Cheryl Hall; Montgomery, Paula; Moore, Barbara; Snyder-Vogel, Mary; Connor, Patrick; horacio.tablada@maryland.gov; Christine Peusch; Rolf Grafwallner
Subject: Family Child Care, Child Care Centers, Child Care Letters of Compliance & Large Family Child Care Homes

I sent this email yesterday, but there was an issue w/an email address. Here it is again.

Dear Ms. Kelley,

The Governor's Lead Poisoning Prevention Commission is submitting this formal request for information about lead exposure risks in Maryland child care centers.

Please see the attached letter.

Respectfully,

Pat McLaine, RN, MPH, Dr.Ph

Chair, Governor's Lead Commission
mclaine@son.umaryland.edu

Tracy A. Smith
Executive Assistant to the Director
Land Management Administration
1800 Washington Boulevard - STE 610
Baltimore, MD 21230-1719
410-537-3304

410-537-3002(fax)
Tracy.Smith@maryland.gov

Respectfully,
Tracy A. Smith
Executive Assistant to the Director
Land Management Administration
1800 Washington Boulevard - STE 610
Baltimore, MD 21230-1719
410-537-3304

MAY 1, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

May 1, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

	Name/Signature	Representing	Telephone/Email
✓	CONNOR, Patrick	Hazard ID Professional	
✓	HALL, Cheryl	Office of Child Care	410-332-0815
✓	HORNIG, Karen	Maryland Insurance Administration By phone	
✓	JENKINS, Melbourne	Property Owner Pre 1950	
✓	LANDON, Edward	Dept. Housing and Community Dev.	410-514-7444
✓	McLAINE, Patricia	Child Health/Youth Advocate	
X	MOORE, Barbara	Health Care Provider	
✓	OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
✓	ROBERTS, Linda Lee	Property Owner Post 1949	3015621766
✓	SNYDER-VOGEL, Mary	Child Advocate By phone	
	VACANT	Secretary of the Environment or Designee	
	VACANT	Local Government	
	VACANT	Parent of a Lead Poisoned Child	
	VACANT	Financial Institution	
	VACANT	Child Care Providers	
	VACANT	Insurer	
	VACANT	Property Owner Pre 1950 Outside Baltimore City	
	VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet
May 1, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
Joe Wright	LMA	X3392
Michelle Fransen	Cogency/Dr Cheung	michelle f@ dr cheung - oem advisor . com
Myra Knowlton	BCHD	
Annie O'Grady	Connor	aogrady@connorsolutions.com
Jody Johnson	Self	johnsonjody05@gmail.com
Wes Stewart	BCHD	gwstewart@bhdmail.org
Paula Montgomery	MDE	paula.montgomery@maryland.gov
Mike O'Leary	HCD	michael.o'leary@baltimorecity.gov
Laura Fox	BCHD	Laura.Fox@baltimorecity.gov
Tracy Smith	MDE	
Pat Grant	MDE	
Wade McCord	MDE	
Cliff Mitchell	DHMH	

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, May 1, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business

3. A Demonstration of the Public Lead Rental Registry Search

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, June 5, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
    a. Maryland Department of the Environment
    b. Department of Health and Mental Hygiene
    c. Department of Housing and Community Development
    d. Baltimore City Health Department
    e. Office of Childcare
    f. Maryland Insurance Administration
    g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
May 1, 2014

Approved Minutes

Members in Attendance
Patrick Connor, Cheryl Hall, Karen Stakem Hornig (via phone), Melbourne Jenkins, Edward Landon, Pat McLaine, Delegate Nathaniel Oaks, Linda Roberts and Mary Snyder-Vogel.

Members not in Attendance
Barbara Moore

Guests in Attendance
Wes Stewart - GHHI, Myra Knowlton – BCHD, Jody Johnson – self, Laura Fox – BCHD, Michelle Fransen - Dr. Cheung/OEM Advisor, LLC, Annie O'Grady – Connor Solutions, Mike O'Leary – HCD, Linda Rogers, BCHD, Joe Wright – MDE, Wade McCord – MDE, Pet Grant – MDE, Tracy Smith – MDE, and Paula Montgomery – MDE.

Introductions
Pat McLaine called the meeting to order at 9:45 AM with welcome and introductions.

Future Meeting Dates
The next Lead Commission meeting is scheduled for Thursday, June 5, 2014 at MDE in the AERIS Conference room. The Commission will meet from 9:30 AM to 11:30 AM.

Approval of Minutes
Motion was made by Mel Jenkins, seconded by Ed Landon to approve the April minutes with changes and approved unanimously.

Discussion

Old Business
Ed Landon noted that the Livability Code now requires a balcony inspection if the property is more than 10 years old and suggested that this might be a better approach for future lead related language.

Pat McLaine reported that she had received a phone call from Elizabeth Kelly, Director of Maryland State Department of Education, Division of Early Childhood Development, Office of Child Care who is planning to attend the Commission's July Meeting. Cheryl Hall reported that a tool has been designed for the regional offices to systematically assess all properties being used for childcare that were built before 1950 and 1950-1978. This report will indicate if the property failed compliance, is in compliance, or how compliance was demonstrated. Region 2 (Baltimore City) has sent in its report. A meeting is scheduled for regional managers on 5/13/2014 to provide a review and technical assistance as needed. Cheryl noted that some problems have been identified (for instance, verification of rental certification appears to be absent from regional records; what was actually done in response to an identified defect; absence of dust

wipe testing from the testing of properties) but a report will be provided at the June meeting. Cheryl Hall indicated that the child-care centers receive XRF reports from accredited contractors but often do not get dust wipe test results. She will be glad to be able to search the rental registry for information by address. Patrick Connor asked if the Office of Childcare needed more than one month to prepare a report. Cheryl Hall answered that they would need more time but would provide an update at the June meeting. A total of 9,824 facilities have to be reviewed for age of housing to identify if the property is affected or non-affected. Information about whether a property being used for child care is owner occupied or rental or in a public school or church is not readily apparent at this time. In addition, because there has been a big change in staff, this review of lead status of child care facilities will be very timely.

DHMH lead screening plan – Dr. Cliff Mitchell indicated there was nothing new to report.

Baltimore City Billing – Laura Fox indicated that an RFP had gone out in late April for a consultant for billing who would be able to help the entire Health Department, including the Lead Program.

Paula Montgomery announced that MDE would provide training to the Regional Child Care office staff.

Pat McLaine reported that she attended the meeting of the Laboratory Advisory Committee this morning to provide the Commission's support for Point of Care (POC) testing. The meeting focused on presentations about the lead point of care technology; the group was concerned about whether the POC testing met requirements for a letter of exception and whether there was any problem with false negatives. Pat McLaine reported that she mentioned the Commission's concerns about lab testing using the wrong tubes.

Demonstration of the Public Lead Rental Registry Search

Paula Montgomery presented MDE's plans to make the Lead Rental Registry data publically available and introduced Pet Grant who answers the phones for the Lead Program. The Lead Rental Registry Property Search is available from MDE's home page (left hand column); the public will be able to search by property number or address. The property number is available from the SDAT site or an owner's property bill and will include a two-digit county number as the first two digits. The database will not be searchable by owner, in accordance with existing law, but information available includes the owner number, company name, property address and registration status. If you click on an address, you will be able to get more data on registration, etc. Paula Montgomery noted that this lookup includes information only about registration although future plans include developing the capacity to link to the certificate and enforcement data bases so that PIAs are things of the past. Search will be possible by address with or without city/county information. One participant asked how we can identify a property if it is not registered; Paula Montgomery indicated that if a property was not registered, it would not be in this registry. Linda Roberts asked if there was any report on the number of houses demolished in Baltimore City. If the property no longer exists, the status code will say "removed". Linda Roberts also asked how information that a property is no longer for rent would be verified by MDE; Paula Montgomery indicated that the owner must sign off that the information is accurate under penalty of perjury. A recommendation was made to add a link to the DAT database to this site. Joseph Wright indicated that many owners get certified but have failed to register. Paula Montgomery asked Commissioners and guests to send comments to Joseph.Wright@maryland.gov with cc to Paula Montgomery.

Agency updates

MDE

Paula Montgomery reported that MDE is gearing up for regulation of properties built from 1950 through 1978. MDE is preparing a letter about pending changes and legal requirements which will be sent to Housing Authorities, County and municipal housing agencies, and other agencies and partners.
Ed Landon indicated that he would invite MDE to present at the DHCD codes meetings to take place in four locations. DHCD should also put the information on RRP in loan requirements packages.
Paula Montgomery indicated that MDE would attend all regional meetings to provide information about all requirements. Patrick Connor expressed concern about Section 8 properties. Historically, Housing Authorities were resistant to checking for a risk reduction certificate. But once they realized the certificates were under 1018 law, they became interested in checking for a risk certificate. Patrick Connor suggested that MDE might want to look at letters from the Housing Commission that mapped out the link between having a risk certificate and the 1018 law. Paula Montgomery stated that the problem was that MDE does not have a list of Section 8 houses. Patrick Connor noted that outside of Baltimore City, one Housing Authority made pre-1950 assets lead free years ago. To be successful, we have to communicate to Section 8 of public housing owners. Patrick Connor indicated that he would send a list of agencies he knew were associated with Section 8 to MDE. A concern was raised that Section 8 staff do not understand what a certificate looks like or how to interpret lab sheets with dust wipe results. Ed Landon noted that a HQS inspector inspects every house identified for the Section 8 program. Paula Montgomery indicated that the problem had been getting information to the right people. Ed Landon indicated he would get information out within DHCD. Wes Stewart indicated that the Coalition was willing to do training if needed for housing choice owners and housing authorities at their monthly meeting of Section 8 owners. Linda Roberts noted that DHCD still has an affordable housing seminar. Ed Landon stated that Bill Tamborino's office should know who to contact. Patrick Connor noted that 16 people in the State of Maryland do this and it should be possible to reach out to them all.

Paula Montgomery also reported on the results of MDE's Contractor Survey. Twenty-five percent (25%) of contractors participated in the survey and were very supportive of the idea to upload results on-line. This would save data entry and decrease fraudulent certificates. Based on the survey results, the program will recommend having a web-based application process.

Paula Montgomery reported that the regulations on RRP are being amended now. An attorney is working with the group with a plan that the regulations will be ready for public comment in August. MDE will provide a further update for the Commission at a later meeting.

DHMH

Nothing to report.

DHCD (State)

Nothing to report.

Baltimore City Health Department

Laura Fox indicated that the City was posting for a new lead coordinator, a Civil Service position, to replace the position held by Hosanna Asfau-Means. The position is a Public Health Administrator III, requiring a Master's degree or a Bachelor's degree and 5 years of experience. Laura Fox will send a job description and a link to the Commissioners by email.

Baltimore City Housing and Community Development
A representative indicated that the lead abatement program met their HUD quarterly quota. The agency is considering making a grant application to the US Conference of Mayors to provide vouchers to people relocating for nutrition education and nutritious food. They have also connected with WIC to make sure people can get services if eligible.

Child Care Administration
Nothing further to report.

Maryland Insurance Administration
Nothing to report.

Coalition
Wes Stewart indicated that money was available for lead hazard control from the Exelon/BGE merger including $19 million to the city and 19.6 million to DHCD. Individual grants can include $15,000 for lead hazard reduction work. Bill Ariano oversees the program. This was an initiative of the Public Service Commission and the Consumer Law Funds. The funds may be available to home-based childcare and will have income requirements. This would dramatically increase funding for lead poisoning prevention. Linda Roberts asked if DHCD knew where the money was being spent on lead.

After brief discussion, Commissioners indicated that they had no problem with a meeting in August.

Motion to adjourn the meeting was made by Patrick Connor, seconded by Karen Stakem Hornig, passed unanimously. The meeting was adjourned at 11:30 AM.

(b) Nursery school holding a certificate of approval to operate or a letter of exemption from approval that was issued by the State Board of Education before December 1, 1971, and is still in effect; and

(2) A child care program currently approved by the office to operate with less square footage per child than required by §A of this regulation may continue to operate with that reduced square footage as long as the:

(a) Operator demonstrates to the satisfaction of the office the impossibility of complying with the minimum square footage required by §A of this regulation while maintaining the economic viability of the program; and

(b) Office determines that the reduced square footage does not threaten the health, safety, or welfare of any child in care.

B. In calculating the square footage of floor space provided for each child, the following may not be included:

(1) Any floor space, rooms, or areas that are not suitable or available for the daily program activities of the children, such as but not limited to columns, vestibules, and corridors, food preparation areas, kitchens, bathrooms, adult work areas, permanently equipped isolation areas or sleeping rooms, storage units, and storage space; and

(2) Furniture, except for:

(a) Children's chairs and tables which are nonfixed and multipurpose;

(b) Moveable equipment used for infant care, such as high chairs and swings;

(c) Moveable play equipment;

(d) An adult-size rocking chair or other adult-size comfortable chair;

(e) An adult-size couch; and

(f) Open shelves for children's daily activities.

C. In centers that care for infants or toddlers, diapering stations shall be included in calculating the square footage of floor space provided for each child.

D. In a small center, the space for children may include space within the family living area.

.04 Building Repair and Maintenance.

Building maintenance, repair, or renovation activity may not occur while a child in care is on the premises if the activity may present a significant risk to child safety or health.

.05 Lead-Safe Environment.

A. A center operator may not use paint with lead content on any:

(1) Exterior or interior surface of the facility; or

(2) Material or equipment used for child care purposes.

B. If the child care center is a residential rental property constructed before 1950, which is an affected property as defined by Environment Article, §6-801(b), Annotated Code of Maryland, the operator shall submit a copy of the current lead risk reduction or lead free certificate.

C. If the facility was constructed before 1978 and is not certified lead free pursuant to Environment Article, §6-804(a)(2)(i), Annotated Code of Maryland, the operator shall:

(1) Ensure there is no chipping, peeling, flaking, chalking, or deteriorated paint on any surface of an interior or exterior area of the facility that is used for child care;

(2) If deterioration of a surface in an area used for child care is noted, or if renovation of the premises occurs that disturbs a painted surface, arrange to have a lead dust test:

(a) Conducted by an accredited visual inspector pursuant to COMAR 26.16.02.03B to meet the risk reduction standard, if the facility is an affected property; or

(b) Conducted in areas used for child care by an accredited risk assessor pursuant to COMAR 26.16.05.11, if the facility is not an affected property; and

(3) If a lead dust test is required under §C(2) of this regulation, obtain:

(a) A passing score on that test; and

(b) Verification from the lead inspector performing the test that the requirements of §C(2) and (3)(a) of this regulation have been met.

D. In a facility constructed before 1978 and not certified lead free under Environment Article, §6-804(a)(2)(i), Annotated Code of Maryland, when performing renovation which disturbs the painted surface of an interior or exterior area used for child care, the operator shall ensure that the work is performed by an individual accredited to perform the lead paint abatement services using safe work practices as required by Environment Article, Title 6, Subtitle 10, Annotated Code of Maryland, and corresponding regulations.

.06 Ventilation and Temperature.

A room may be used for child care only if it:

A. Has natural or mechanical ventilation that provides adequate exchange of air to protect a child's health and comfort;

B. Is free of moisture and dampness; and

C. Has a temperature at floor level of not less than 65° F.

.07 Water Supply.

MARYLAND STATE DEPARTMENT OF EDUCATION
DIVISION OF EARLY CHILDHOOD DEVELOPMENT
OFFICE OF CHILD CARE
- Licensed Child Care -
March 2014

O.C.C. REGIONS	JURISDICTIONS	NUMBER LICENSED CHILD CARE CENTERS *	CAPACITY	NUMBER REGISTERED FAMILY CARE HOMES * *	CAPACITY
1	ANNE ARUNDEL	224	14,648	616	4,663
2	BALTIMORE CITY	317	16,474	743	5,697
3	BALTIMORE CO.	381	22,402	990	7,502
4	PRINCE GEORGE'S	402	24,018	947	7,349
5	MONTGOMERY	474	32,537	950	7,090
6	HOWARD	170	12,340	400	2,966
7	ALLEGANY	24	1,400	68	520
	GARRETT	15	533	21	156
	WASHINGTON	59	4,165	235	1,803
8	CAROLINE	10	392	99	757
	DORCHESTER	18	625	49	380
	KENT	8	248	19	148
	QUEEN ANNE'S	17	1,028	101	707
	TALBOT	20	1,119	58	440
9	SOMERSET	10	617	31	239
	WICOMICO	44	2,926	126	937
	WORCESTER	18	855	38	289
10	CALVERT	53	2,438	147	1,102
	CHARLES	71	4,361	252	1,863
	ST. MARY'S	40	1,714	230	1,707
11	CECIL	37	1,686	124	954
	HARFORD	92	6,044	346	2,610
12	FREDERICK	114	7,310	366	2,726
13	CARROLL	87	5,299	182	1,344
	TOTALS	2,705	165,179	7,138	53,949

* Includes Letter of Compliance (LOC) facilities

* * Includes Large Family Child Care Homes

TOTAL REGULATED FACILITIES: 9,843

JUNE 5, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

June 5, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick	Hazard ID Professional	
HALL, Cheryl	Office of Child Care	410-332-0815
HORNIG, Karen Karen Hornig	Maryland Insurance Administration	
JENKINS, Melbourne Mel Jenkins	Property Owner Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	410-514-7444
McLAINE, Patricia PM Laine	Child Health/Youth Advocate	
MOORE, Barbara	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	4108413283
ROBERTS, Linda Lee	Property Owner Post 1949	301-562-1766
SNYDER-VOGEL, Mary	Child Advocate	443-923-2812
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Parent of a Lead Poisoned Child	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Insurer	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

June 5, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
✓ Kay Abrams	MSDE OCC	306 cw Redwood - 410-332-0913 Kabrams@msde.state.md.us
✓ Sally Bjornholm	GHHI	2714 Hudson St 410-534-6447 sbjornholm@ghhi.org
✓ Michelle Fransen	Orchevy & DEM Advisor	1421 Clarkview Rd, Ste 100, Balto 1443-322-1228 / michellef@orchevy-demadvisors.com
✓ Kate Malenfant	UMB	Kadenmale@gmail.com / 443-866-4868
✓ Shaketta Denson	GHHI	sdenson@ghhi.org / 443 842 5734
✓ Lisa Boney	KKI	Boney@kennedykrieger.org / 6015035005
✓ Dae-Hee Lee	KKI	LeeDa@kennedykrieger.org / 765-716-4310
✓ Myra Knuth	BCHD	myra.knuth@baltimorecity.gov
Kenneth Strom	City Hall	
Paula Z	MDE	
Tracy Smith	MDE	

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, June 5, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business
   Office of Childcare update

3. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, July 10, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

4. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

5. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
June 5, 2014

Approved Minutes

Members in Attendance

Cheryl Hall, Karen Stakem Hornig, Melbourne Jenkins, Edward Landon, Pat McLaine, Barbara Moore, Delegate Nathaniel Oaks, Linda Roberts and Mary Snyder-Vogel.

Members not in Attendance

Patrick Connor.

Guests in Attendance

Kay Abrams – MSDE OCC, Sally Bjornholm – GHHI, Michelle Fransen – Dr. Chueng/OEM Advisor, Kate Malenfant – UMB, Myra Knowlton – BCHD, Jody Johnson – self, Shaketta Denson – GHHI, Lisa Boney – KKI/student, Dae-Hu Lee – KKI/student, Kenneth Strong – Baltimore City Housing, Clifford Mitchell – DHMH, Tracy Smith – MDE, and Paula Montgomery – MDE.

Introductions

Pat McLaine called the meeting to order at 9:35 AM with welcome and introductions.

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, July 10, 2014 at MDE in the AERIS Conference room. The Commission will meet from 9:30 AM to 11:30 AM.

Approval of Minutes

A motion was made by Ed Landon, seconded by Cheryl Hall to approve the minutes with changes and approved unanimously.

Discussion

Old Business

Cheryl Hall reported on the on-going review by the Office of Child Care at thirteen regional licensing offices and distributed a table showing data that was complete for all regions except Region 5 (Montgomery County) for which information was not available. Two regions (2 – Baltimore City and 4 – Prince George's) will repeat their review. Cheryl Hall indicated that she had held a meeting with regional managers to explain what information was needed. Cheryl Hall reported that the Office of Child Care will modify how they report and document information in the ELIS CCRT system. The data items to be modified would include the construction date of the property, and if lead certificate was supplied. Major issues include that licensing specialists

did not receive certificates from rental property owners. In Baltimore City and Prince George's County, some owners did not supply certificates to renters. Cheryl Hall asked if Paula Montgomery could look at Harford, Cecil, Howard, Anne Arundel and Carroll Counties; Paula Montgomery indicated she could look at pre-1950 and 1950-1978 properties but could not look at all 9,000 properties and stated that the data base needed a built date. Cheryl Hall indicated that the date of construction is in DAT. It is not possible for the OCC Licensing staff to determine the property registration or certification status. This is based on the advice given previously during the lead registration data base presentation. Paula Montgomery confirmed that MDE would be willing to look at pre-1950 and 1950-1978 built rental properties being used for child care. Pat McLaine suggested doing a small QC sample of properties by county (e.g. 1 in 15 properties) to see if database listing is in agreement with DAT determination. Paula Montgomery suggested working with DAT to try to find a linkage. Barbara Moore suggested adding another line to the table for post-1978 property so the distribution of properties by age categories would be complete. Ed Landon noted that Talbot and Garret Counties were missing from the table and suggested that the Office of Child Care send a letter to a responsible person in each county asking them to be responsible for providing this information and to send a copy to the county executive. Barbara Moore asked if an owner-occupied property used for child care must also be inspected for lead if problems were identified (e.g. defective paint). Cheryl Hall confirmed that was correct. The N/A on the table submitted is intended to reflect 1) the number of buildings that are owner occupied child care facilities; 2) structural defect was cited; 3) lead dust test results; and 4) Lead Hazard Remediation if completed. These items will be reflected in subsequent commission reports based on the number of regional licensing inspection reports submitted to the central office. Cheryl Hall noted that the Office of Child Care will have central reporting of any inspections not in compliance. A full report will be made in July when Elizabeth Kelly, Director of MSDE Division of Early Childhood Development, Office of Child Care is expected to attend the meeting.

Paula Montgomery reported on the results of MDE's Lead Inspection Survey of the currently regulated community of inspectors to determine their ability to enter information via a web-based application as opposed to a paper certificate. Ninety (90) inspectors responded; 10 tables were distributed for review. Currently certificates are issued to inspectors, returned complete and sent to data entry facility, with many opportunities for errors. Commissioners were asked to email Paula Montgomery with any questions. MDE is now in the process of gathering requirements for data systems within the lead program and expects to be able to support this. Clifford Mitchell indicated that food inspectors are using a tablet system. This is not fast or easy or inexpensive and MDE should have realistic expectations for the work. Karen Stakem Hornig said this is similar to MIA's experience of moving to on-line licensing for insurance. If inspectors want to do business with MDE, it is acceptable to set this up as a requirement. It is in the best interest of the citizens of the state that MDE have the best and most accurate tools available. Cheryl Hall suggested that such a system would make it easier for the

Office of Child Care. Paula Montgomery stated that all affected properties being used for child care should have certificates. Barbara Moore indicated that Mt. Washington was using scanning; the advantage is that you have a hard copy of an actual document; the disadvantage is that data cannot be broken down into data fields so the system was not useful for data collection and analysis. Also, the system is very dependent on putting a copy into the scanner.

Clifford Mitchell reported that the DHMH targeting plan and clinical case management guidelines are still in internal review. He indicated that he expects to have a decision in the fall and has already informed the counties that funding for case management will not be changed this year. A change in the targeting plan would potentially affect changes in funding. The bulk of money will probably still go to counties with the largest caseloads.

Clifford Mitchell noted that he had received good feedback from the Laboratory Advisory Committee, including positive response to comments from the Commission and at their May meeting. He indicated he did not see any roadblocks to moving Point of Care Testing to the accepted list but does not have a date for any change in regulation. Clifford Mitchell suggested that the Commission should have a meeting focused on outreach education to providers and increasing testing. He noted that a number of things will be happening in the next year. DHMH is developing a slide deck of information for clinical management of asthma and lead to tie to changes in Medicaid reimbursement (case management, home environmental assessment); this will give DHMH a way to pay for this or make referrals. DHMH wants managed care to use a case manager to access resources. Karen Stakem Hornig made a suggestion that Care First be tapped to help fund a provider education effort. Care First must spend a certain percentage of profit on charitable work and has a direct link to providers. Care First is a resource in terms of cash, delivery system and production and this would be in line with their mission. Other foundations exist but Care First was statutorily created and has been directive in terms of mission. They also have to spend a certain amount on charitable giving and report to the Maryland Insurance Administration.

With regard to Public Housing Authority contacts, Ed Landon provided Paula Montgomery a list of Public Housing Authority contacts; Paula Montgomery indicated she has a letter formulated.

Ed Landon noted that last month DHCD had $19 million in the Targeted Enhanced Weatherization Program. Ed Landon indicated that this program will send an administrator to the Lead Commission meetings and is now in the early stages of putting their program together.

New Business

Lavender top tube draft letter to DHMH and the Laboratory Advisory Committee was discussed. Barbara Moore noted that although the venipuncture tubes for blood lead draws are blue and tan, the proper capillary tubes have lavender tops. Mt. Washington has already seen clinical problems with children admitted for chelation based on venipuncture draws using the lavender

top tubes who's BLLs on retesting were found not to be elevated. Linda Roberts asked if it would be helpful to provide clearer written instruction. Barbara Moore suggested attaching pictures of the correct and incorrect tubes to any correspondence from the Commission. Karen Stakem Hornig suggested asking the government relations people from Lab Corps and Quest to come to a meeting to discuss this matter. They could potentially resolve this matter quickly and internally. Delegate Nathanial Oakes indicated that he liked this idea and that if this does not work, we could look at legislative or regulatory approaches. Barbara Moore suggested we should also consider sending letters with pictures out to providers through Managed Care Organizations. Karen Stakem Hornig asked that the draft letter be sent to commissioner for their comments. Next steps will include inviting Lab Corps and Quest to a future meeting as well as the Office of Health Care Quality.

Agency updates

MDE – nothing further to report

DHMH – no representative

DHCD (State) – Ed Landon indicated that DHCD will be adopting new building codes for 1/1/2015. Ed Landon noted that the water fountains at the DHCD offices were only now being tested for lead, 28 years after the agency has been in the building.

Baltimore City Health Department – Myra Knowlton reported that the application process for the new lead director, to replace Madeline Shea, has closed and that the program will get the list of about 150 eligible candidates in about two weeks. The City hopes to hire by the end of the summer. Myra Knowlton asked the Commissioners what qualities they would be looking for in this director. Ed Landon suggested that the director should know the City. Shaketta Denson said the director should be compassionate about their work, not complacent, perhaps from outside the system. Mary Snyder-Vogel said the person should be able to listen to and learn from existing staff. Pat McLaine indicated the individual should have good partnership, communication and collaboration skills. Karen Stakem Hornig suggested a problem-solving orientation with leadership and executive skills, saying she told her staff to never come to her with a problem without three viable solutions within the resources they have available. Barbara Moore suggested giving the candidate a scenario to determine how they would think through problems. Mel Jenkins said that the individual should understand the organizational structure; Barbara Moore added that they should also understand the state, city and private health care structures. Karen Stakem Hornig said the person should be able to break down silos. Ken Strong suggested that the person should be a shamelessly opportunistic bureaucrat, thinking creatively. Paula Montgomery noted the person should be able to prioritize needs within the organization. Linda Roberts suggested the person should be solutions and results focused.

Myra Knowlton reported that the number of children with BLLs of 10µg/dL is not decreasing; BCHD is putting together a database based on the questionnaire to better analyze the factors and determine their best course of action. Lead appears to be coming from porches, foyers, outside of dwelling units, and also be associated with cultural factors such as candy and kohl. BCHD has had a number of products tested. They want to zero in on the problem and determine how best to focus their approach. BCHD staff are making telephone calls with all children identified with 5-9µg/dL BLL but few of these families want home visits. If problems are identified, they are taking dust tests. Many of the lab slips on the 5-9 are not being reported in a timely manner and many are missing address and phone numbers. Based on longstanding work with MDE, the labs should know better. Pediatricians are also not doing follow-up testing. Mary Snyder-Vogel asked if it would be good to try to get blood more often. Linda Roberts asked what information providers were giving to families whose children had a BLL in the 5-9µg/dL range. Barbara Moore said that information varies. Anticipatory guidance is typically given. Until providers begin using Point of Care Testing, they won't know results and can't counsel family when they are in the office. Most primary care practices send something home with families. Shaketta Denson noted that none of the Coalition's clients had received information sheets from their PCP. Cheryl Hall noted that the parents do have a copy of laboratory reports.

Maryland Insurance Administration – Karen Stakem Hornig indicated that this would be her last meeting because she is leaving MIA to take a new position as Executive Director of National Producer Insurance Agency (NPIR) in Kansas City. The position is a big opportunity and she has family in the area. She will be at MIA until the end of June. Nancy Egan will be her replacement; she will be the Deputy Commissioner, has a health insurance background and is a lawyer. Karen Stakem Hornig thanked the Commissioners for all working together on this very important problem and remembered back to her first meeting when the Commission was again talking about lavender top tubes and she had wondered, "what in the world is that".

Baltimore City Housing and Community Development – Ken Strong reported that HUD had made a monitoring visit, the HUD grant is in the "green" zone with no problems identified, and Baltimore City can apply for new funding in the next round; Baltimore City Housing plans to go after the maximum amount (3.9 million). Ken Strong reported that staff attended the Healthy Housing conference in Nashville, that Baltimore was doing well and that Green and Healthy Homes movement was gaining traction. He indicated that the program might intensify work with Section 8. Ken Strong also noted that he is preparing a proposal to the US Conference of Mayors focused on nutrition and childhood lead poisoning, based on a connection with the WIC program. Paula Montgomery asked if there would be any funding for Baltimore City Health Department in that proposal, noting that MDE continues to fund BCHD even with the loss of CDC funding.

Child Care Administration – Nothing further to report

Coalition – Nothing further to report

Motion to adjourn the meeting was made by Karen Stakem Hornig, seconded by Mary Snyder-Vogel, and passed unanimously. The meeting was adjourned at 11:03 AM.

Maryland State Department of Education
Office of Child Care Lead Hazard Compliance

LEAD HAZARD COMPLIANCE STATUS	OCC Regional Licensing Offices June 2014 Lead Compliance Summary Report																										
	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Region 7		Region 8		Region 9		Region 10		Region 11		Region 12		Region 13		Total
Record the following information v	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	
Number of Child Care Facilities	616	224	743	317	990	381	947	402	950	474	400	170	324	98	326	53	195	73	629	164	470	129	366	114	182	87	9824
(a) Affected Prop. pre-1950	24	7	238	66	2	1	2	0			0	0	9	5	2	0	4	0	5	2	2	0	1	4	0	0	374
(b) Failed Compliance 1950/1978	0	0	3	0	0	3	0	0			0	0	3	0	0	2	0	0	0	13	0	0	0	0	0	0	24
(c) 1950-1978 Constru/Renova	134	44	145	58	9	2	378	86			14	2	44	39	64	30	61	15	133	37	4	1	18	9	0	0	1327
(d) 1950-1978 Failed Compliance	0	0	3	0	3	0	0	0			8	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	20
(e) Lead Cert/Lead Dust Cert.	0	0	2	0	2	0	2	0			0	0	3	0	2	0	3	0	188	4	0	0	0	0	0	0	206
(f) owner occupied	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
2. Structural Defect Cited	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Peeling flaking paint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Damaged walls or floor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Soil sampling completed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
3. Lead Dust Testing Completed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
4. Lead Hazard Remediation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
																											0
2013 Not Complete																											0
2013 2nd Not Complete																											0
N/A Not answered																											0
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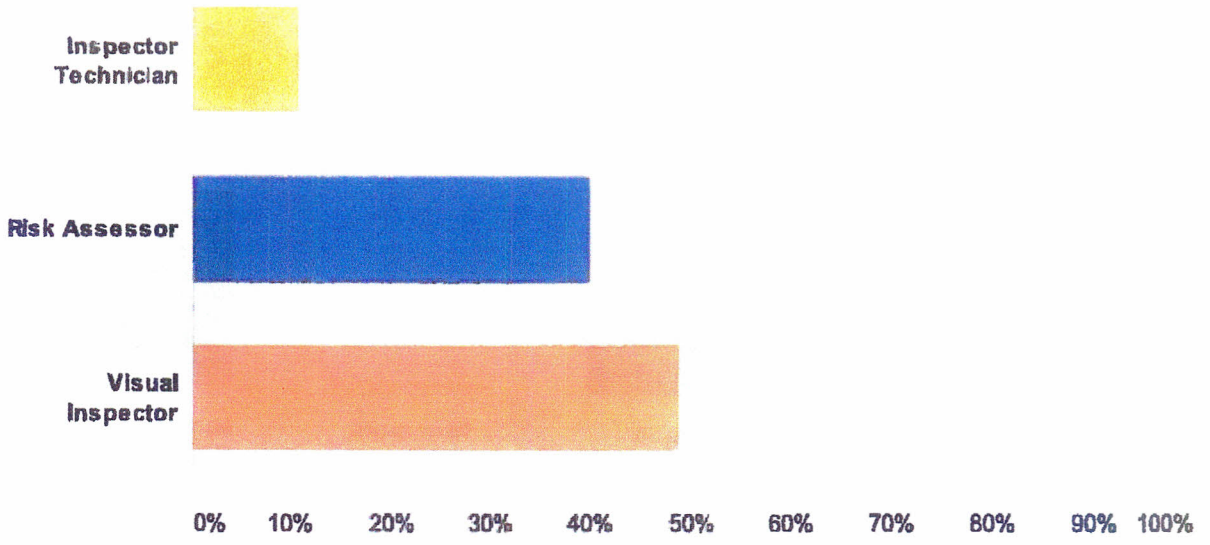
																											0
																											0

Projected Activities: 1. Develop a data collection system within CCATS related to 13A.15-18.05.05 target date not yet established?
2. All lead hazard non-compliance activities will be reported to central office.
3. MDE requested to research addresses for rental registration and certification when not provided by operator of the facility.

Regions:

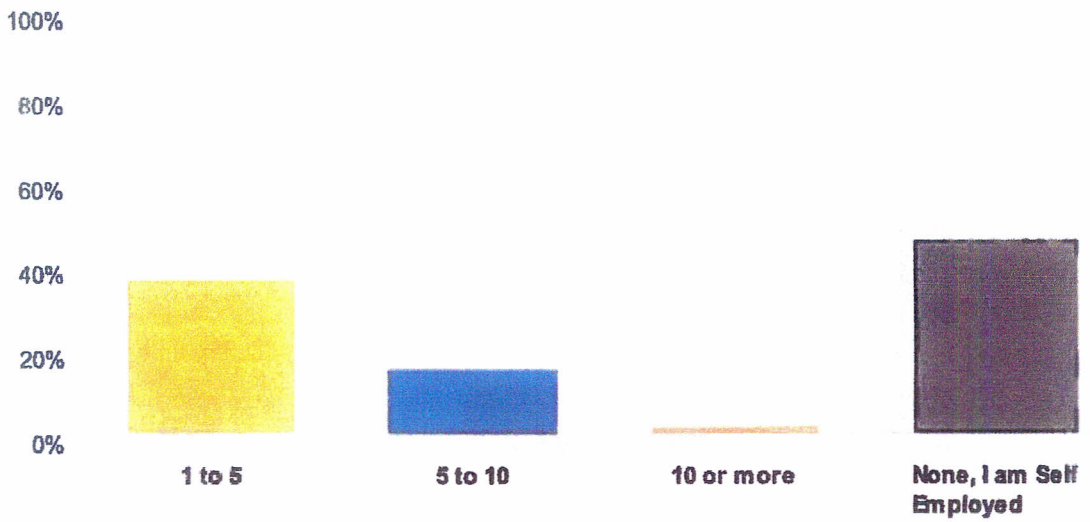
1. Anne Arundel 2. Baltimore City 3. Baltimore County 4. Prince George's 5. Montgomery County 6. Howard, Carroll 7. Washington, Alleghany, Frederick
8. Caroline, Kent, Queen Anne's, Dorchester 9. Somerset, Wicomico, Worcester 10. St. Mary's, Calvert, Charles 11. Harford, Cecil

What type of Maryland Accreditation do you hold for Lead Inspections?



Answer Choices	Responses	
Inspector Technician	11.11%	10
Risk Assessor	40.00%	36
Visual Inspector	48.89%	44
Total		90

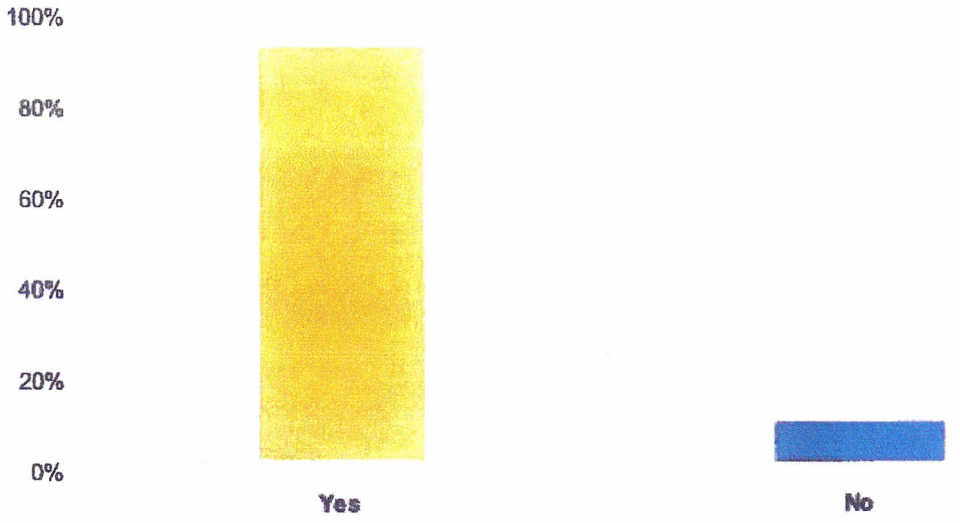
How many many employees work for your Lead Inspection Company?



Answer Choices	Responses	
1 to 5	36.26%	33
5 to 10	15.38%	14
10 or more	2.20%	2
None, I am Self Employed	46.15%	42

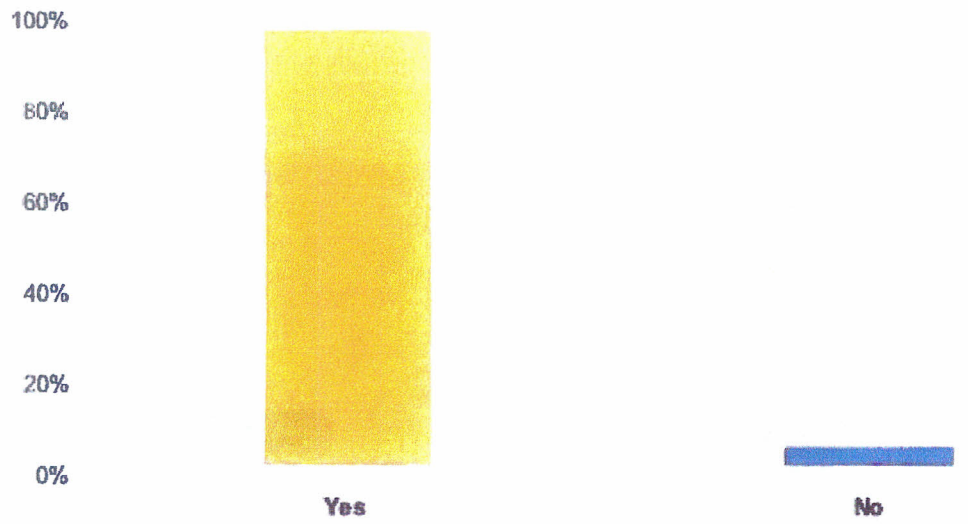
Total Respondents: 91

Do you have the ability to scan and upload documents to a computer?



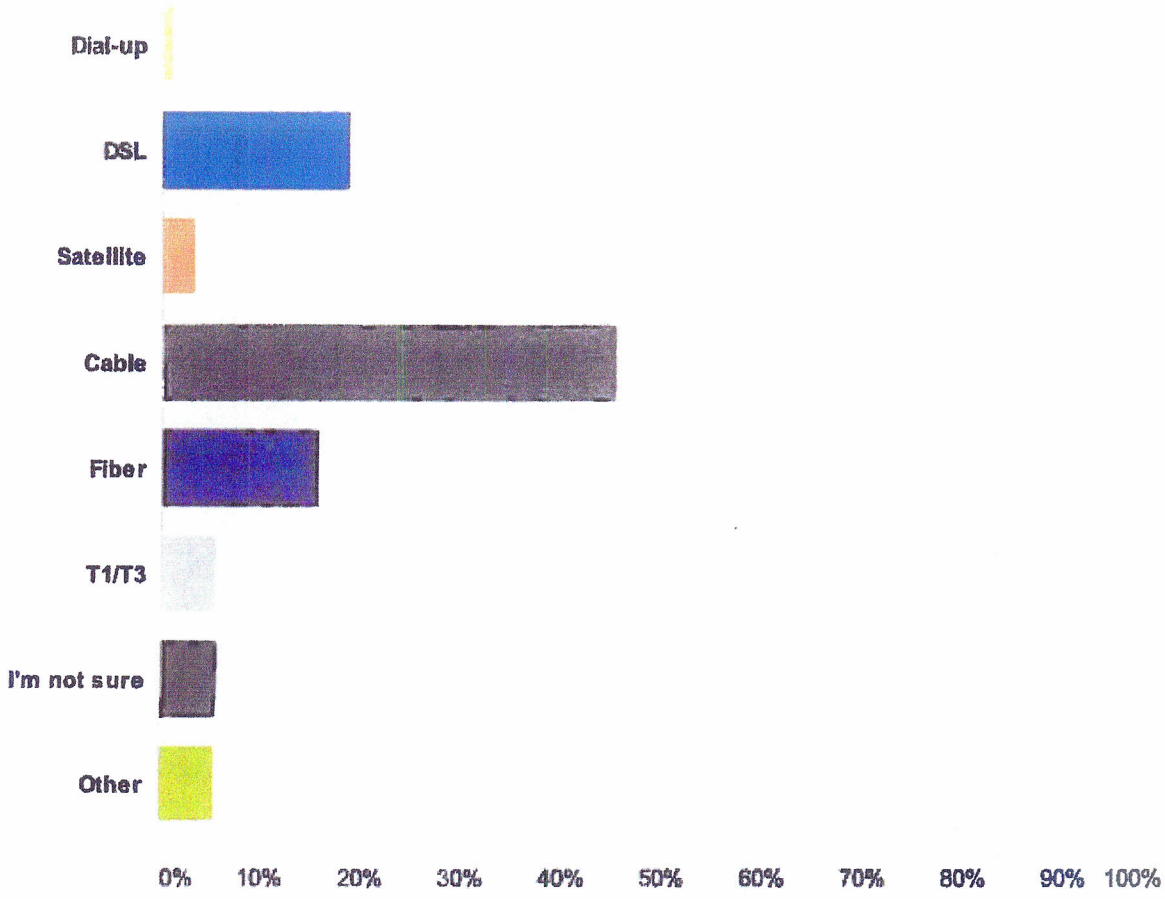
Answer Choices	Responses	
Yes	91.11%	82
No	8.89%	8
Total		90

Does your Inspection Company have Internet Access?



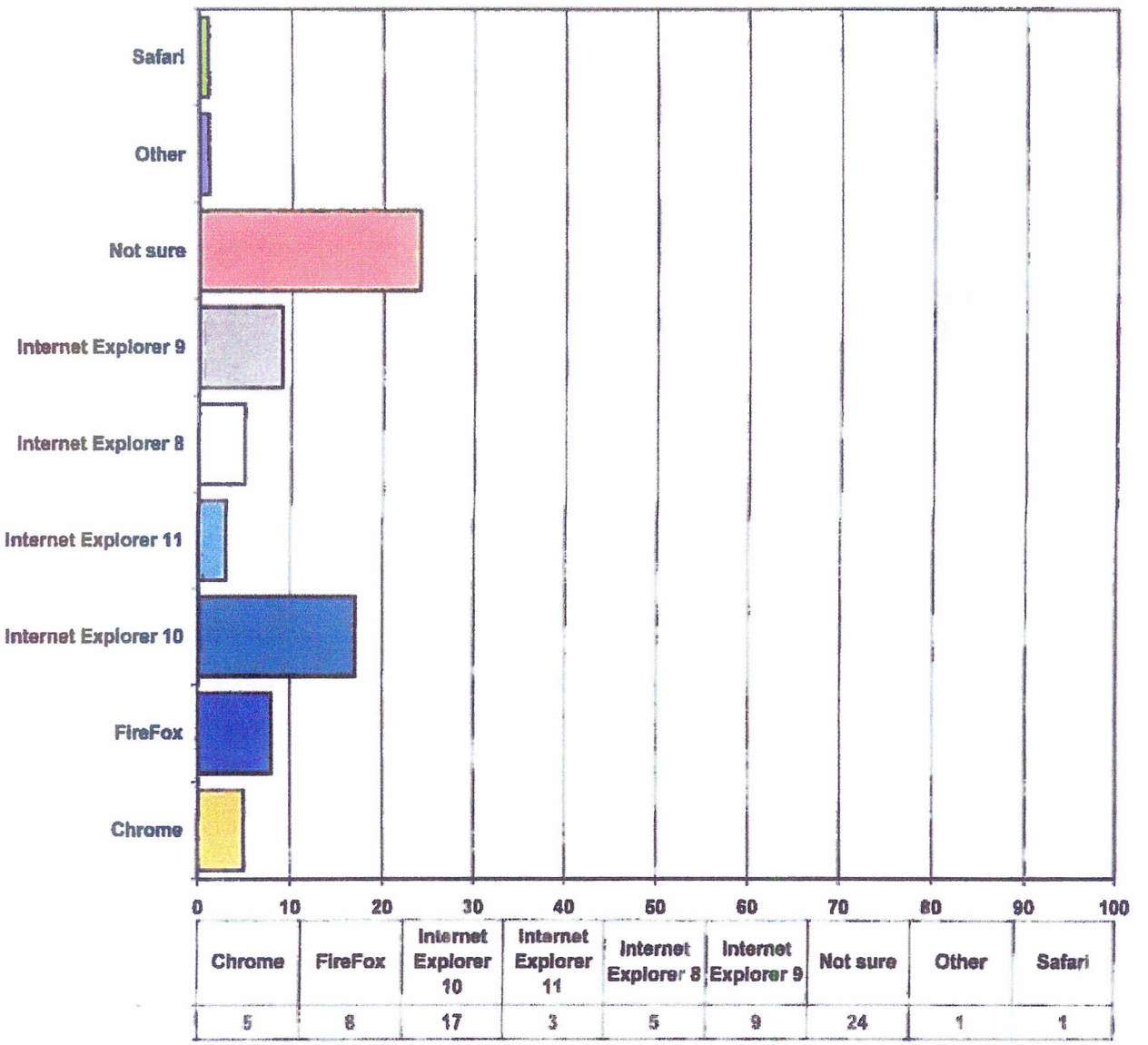
Answer Choices	Responses	
Yes	95.60%	87
No	4.40%	4
Total		91

What Type of Internet access does your Company have?



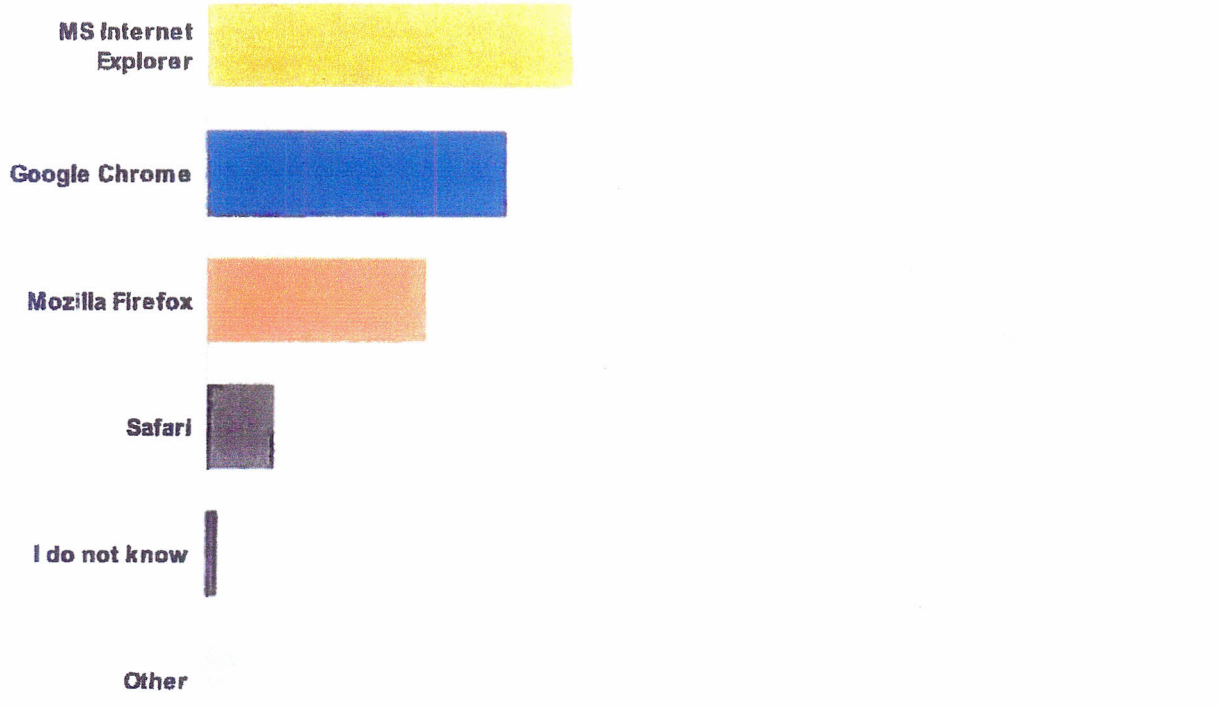
Answer Choices	Responses	
Dial-up	1.10%	1
DSL	18.68%	17
Satellite	3.30%	3
Cable	45.05%	41
Fiber	15.38%	14
T1/T3	5.49%	5
I'm not sure	5.49%	5
Other	5.49%	5
Total		91

What Version of Internet Browser does your Company Use? (Internet Explorer, Chrome, etc.)



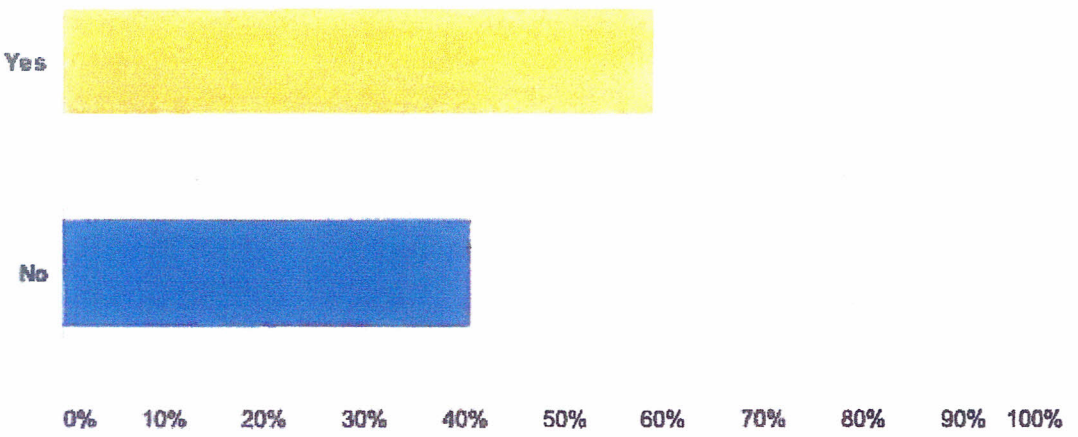
Chrome	FireFox	Internet Explorer 10	Internet Explorer 11	Internet Explorer 8	Internet Explorer 9	Not sure	Other	Safari
5	8	17	3	5	9	24	1	1

What type of Internet Browser does your Company currently use?



Answer Choices	Responses	
MS Internet Explorer	36.67%	33
Google Chrome	30.00%	27
Mozilla Firefox	22.22%	20
Safari	6.67%	6
I do not know	1.11%	1
Other	3.33%	3
Total		90

Do your inspectors have access to the internet while doing inspections?

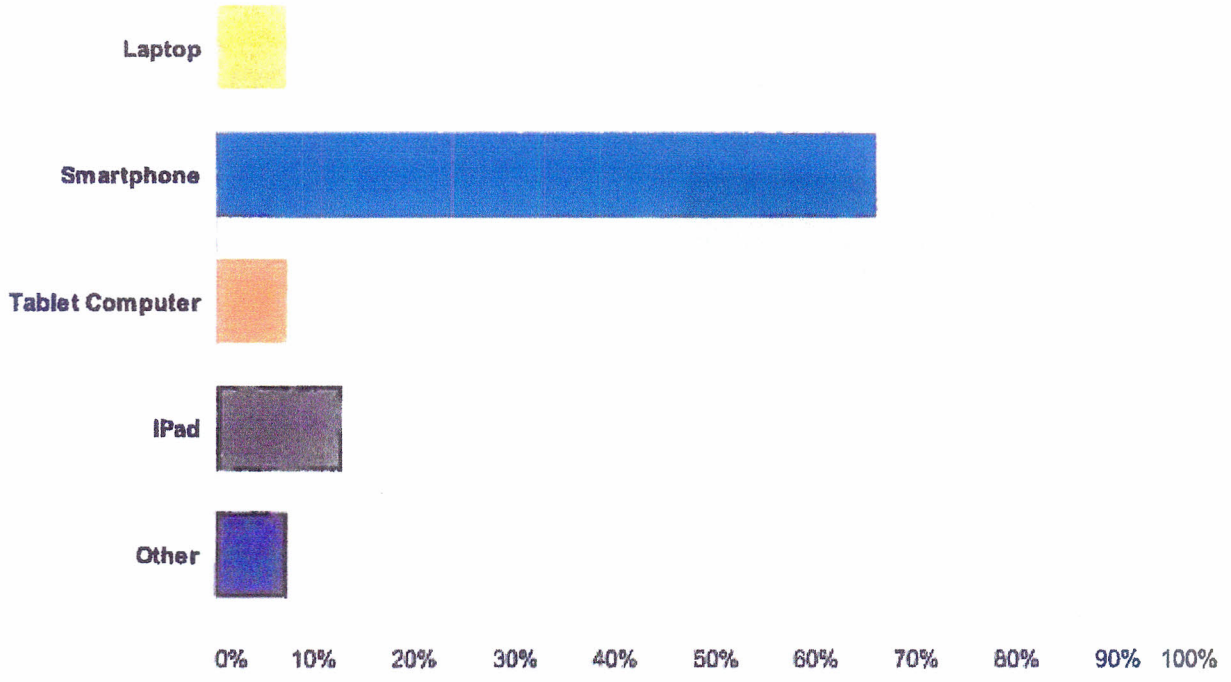


Answer Choices	Responses	
Yes	59.34%	54
No	40.66%	37
Total		91

Q9

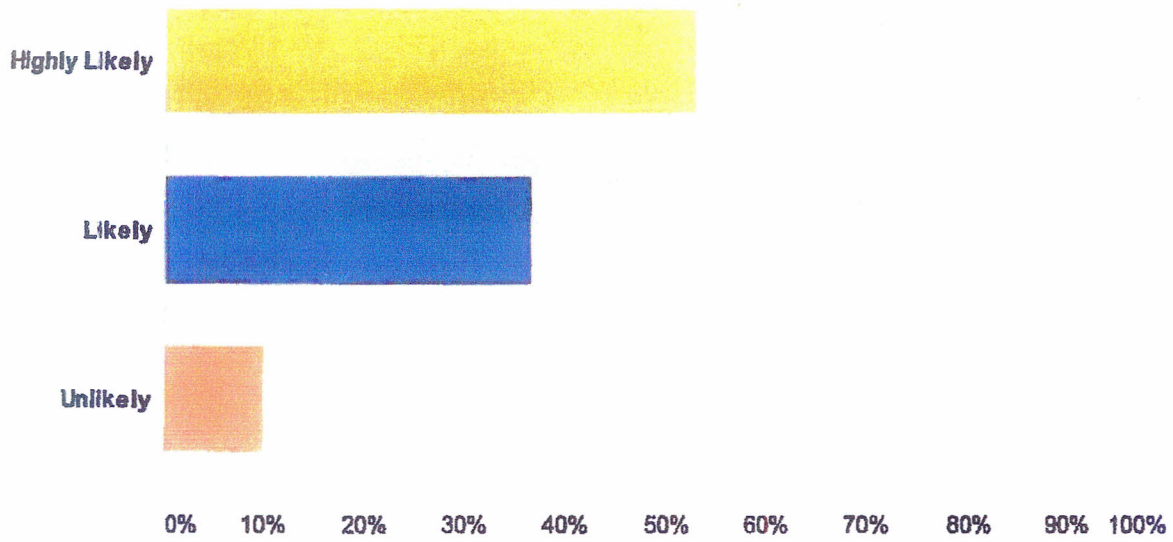
Export

If you answered "Yes" to the previous question, then what type of device do they use to access the internet?



Answer Choices	Responses	
Laptop	**7.14%**	4
Smartphone	**66.07%**	37
Tablet Computer	**7.14%**	4
IPad	**12.50%**	7
Other	**7.14%**	4
Total		56

How likely are you to use a web based application to submit lead inspections documents?



Answer Choices	Responses	
Highly Likely	53.33%	48
Likely	36.67%	33
Unlikely	10.00%	9
Total		90

JULY 10, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

July 10, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
Liz Kelley	MSDE-OCC	200 W Baltimore St Baltimore 21201 410-767-7806
Shaketta Denson	GHHI	2714 Hudson St Balto 21224 4438425724 sdenson@ghhi.org
A. Gray for K. STRONG	B'more Hsg	
Kate Malenfant	UMBSON	Kmale001@umaryland.edu
Andrew Bonic	MMHA	443-322-1004 abonic@mmhaonline.org
Michelle Fransen	Cogency	michellef@cogencyteam.com
Wayne Knewitz	BCWD	
Paula Montgomery	MDE	paula.montgomery@maryland.gov.

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

July 10, 2014

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Name/Signature	Representing	Telephone/Email
CONNOR, Patrick	Hazard ID Professional	
HALL, Cheryl CH	Office of Child Care	410-332-0805
~~HORNIG, Karen~~	Maryland Insurance Administration NANCY EGAN	410 468 2486
JENKINS, Melbourne	Property Owner Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	
McLAINE, Patricia PMcLaine	Child Health/Youth Advocate	
MOORE, Barbara	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
ROBERTS, Linda Lee LM	Property Owner Post 1949	301 562-1768
SNYDER-VOGEL, Mary	Child Advocate	
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Parent of a Lead Poisoned Child	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Insurer	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, July 10, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Elizabeth Kelley, Director, Office of Child Care, Maryland State Department of Education, Division of Early Childhood Development – Report on Lead Oversight by Office of Child Care

3. Old Business

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for *Thursday, August 7, 2014 at MDE in the AQUA* Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

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    e. Office of Childcare
    f. Maryland Insurance Administration
    g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
July 10, 2014

Approved Minutes

Members in Attendance

Cheryl Hall, Ed Landon, Pat McLaine, Barbara Moore (via phone), and Linda Roberts.

Members not in Attendance

Patrick Connor, Melbourne Jenkins, and Delegate Nathaniel Oaks and Mary Snyder-Vogel.

Guests in Attendance

Paula Montgomery, Elizabeth Kelley - Director, Office of Child Care, Maryland State Department of Education, Division of Early Childhood Development , Shaketta Denson – GHHI, Myra Knowlton – BCHD, Nancy Egan – Maryland Insurance Administration, Arthur Gray - Baltimore Housing, Kate Malenfont – UMBSON, Andrew Bonic - MMHA and Michelle Franson - Dr. Cheung/OEM Advisor.

Introductions

Pat McLaine called the meeting to order at 9:35 AM with welcome and introductions.

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, August 7, 2014 at MDE in the AQUA Conference Room, Front Lobby, 9:30 AM to 11:30 AM.

Approval of Minutes

A motion was made by Ed Landon seconded by Linda Roberts to approve the June minutes with changes, and approved unanimously.

Discussion

Old Business - Office of Child Care

Elizabeth (Liz) Kelley, Director, Office of Child Care, Maryland State Department of Education, Division of Early Childhood Development began the review of lead oversight by the Office of Child Care (OCC). Liz Kelley has been a licensing specialist and knows the process of inspecting facilities and talking with child care providers. She indicated that staff are trained and retrained in protocols and problem resolutions. Previously the Office of Child Care (OCC) has not had a mechanism to track lead compliance; this is not an element in the CCATS system. The OCC does not yet track the date that a building is built; this date is now on the "Notice of Intent" but not yet in the application. Liz Kelley indicated that the OCC will change the application paperwork and the database. The OCC is in the process of obtaining information for all child care facilities from the Regional Offices and from individual licensing specialists.

Information shared with the Commission represents the numbers the OCC has been able to confirm thus far. Paula Montgomery suggested using the Department of Assessments and Taxations (DAT) to determine if a property is owner-occupied (based on the owner having a Homestead Tax Credit). She indicated that counties can get the built date if it is missing from DAT. MDE now gets monthly updates from DAT but had to inform DAT initially what information was needed. Liz Kelley indicated that the OCC does not have the capability to do this and that the OCC had identified a lot of holes, so they contact the homeowner directly. Paula Montgomery recommended that age of housing verification should be done right the first time, suggesting that the OCC could verify information with local government since this is a requirement under the child care regulations. Having accurate information will become more problematic in the future because all properties built before 1978 will soon be required to use lead safe work practices and trained workers.

Liz Kelley indicated that because of the urgency, OCC did their best to get information. She stated she did not know how to get the information or who could do the crosswalk so OCC can get the information from MDE into their system. OCC has a contractor and data systems managers for ELIS and CCATS. Ed Landon asked if the system was tied in with "DoIT". Liz Kelley indicated that the CCATS contract is a "DoIT" contract. Ed Landon stated that there has to be an easy way for DoIT to figure out how to get the dates of construction into the data base. Paula Montgomery agreed that the date of construction was most important. Liz Kelley indicated that OCC could do a crosswalk with the SDAT dates. Cheryl Hall noted that OCC staff know how to use SDAT to verify dates for first time and non-compliant properties. Paula Montgomery stated that OCC will need higher level support for this crosswalk and offered to provide assistance based on MDE's experience. Pat McLaine suggested that it would be important to also use MDE's expertise to identify age of housing when that was not readily accessible in DAT. Liz Kelley noted that ELIS gets nightly download from CCATS. She will also add the age of construction data into ELIS as a priority item. She indicated that OCC can produce reports based on non-compliance now but does not yet know the age of construction or property ownership. Ed Landon asked how compliance with risk assessment and correction of hazards is being documented. Liz Kelley indicated that OCC has had difficulty getting a Certificate of Compliance from rental property owners. Paula Montgomery stated that if the owner is not giving a copy of the Certificate, they probably do not have it. Chery Hall stated that OCC does not know how many facilities are lacking a certificate and cannot easily look this up since this is not a field in the database. Paula Montgomery suggested that OCC must be willing to enforce the law; OCC cannot issue a license to a renter unless the owner documents compliance with the law. OCC needs a copy of the certificate. Liz Kelley stated that she needs to check with the Attorney General on this matter. Cheryl Hall indicated that OCC is requiring that information for new licensees but needs information for approximately 50 properties. Paula Montgomery stated that MDE would be willing to look up all 50 properties, to confirm their registration, certification and date of certification. She stated that this is Primary Prevention and MDE's focus at this time. Nancy Egan asked what was being done for renewal applications. Liz Kelley indicated that licenses do not expire but information is updated every two years.

There also is no application fee. Ed Landon asked about other code requirements, such as fire and health, and business licenses – who keeps a data base for such information about licensed child care facilities? Nancy Egan asked if OCC has authority under its regulations to require a one-time renewal application. Liz Kelley indicated yes, that OCC used to have renewals but did away with them. Licenses are non-expiring. OCC has to take action against a license in order to do something. Licensing specialists inspect facilities every year and OCC believes it is better to capture information every year at the time of inspection. Pat McLaine asked whether OCC could get information about RRP out to child care facilities. Paula Montgomery indicated that the Counties are responsible for reporting potential non-compliance; she has a letter to go out once new rules are in place. Nancy Egan indicated that with overlapping responsibilities, it would be important to coordinate efforts with local officials and have a meeting of the minds.
Paula Montgomery asked if child care facilities could be required to attend a webinar on RRP that talked about housing quality standards. Liz Kelley indicated that such a requirement would need change in regulation but thought that training was a wonderful idea. Liz Kelley indicated that OCC has a quarterly partner's newsletter where information can be posted, availability of a webinar can be advertised, and articles about RRP or other subjects can be made available to the regulated community. In addition, OCC has regular education/training for licensing specialists where information can be shared. Cheryl Hall noted that the Licensing Specialists regularly refer child care providers to MDE's website. Liz Kelley indicated that child care specialists review all regulations with the prospective child care operators and stated that property owners must certify that they have read and comply with all child care regulations. Paula Montgomery stated that the RRP is triggered by pre-1978 residential property or a child occupied facility where the contractor is doing this for money. Ed Landon suggested that many of the 11,000 child care facilities probably don't use licensed contractors or pull permits when they have work done. They must use someone who is trained. Cheryl Hall asked what was required if a child care operator did the work themselves. Liz Kelley said she needed to check this with the Attorney General. Nancy Egan stated that sometimes, individuals do renovations in their homes and the state is not aware. Linda Roberts stated that her company does webinars all the time. They are recorded and she would be willing to make them available as a reference. Shaketta Denson stated that people who watch the webinar will at least have knowledge about how to do containment. Linda Roberts noted that DC has a program "Project Empowerment" where prospective employees are sent to an office for 90 days at no cost to get experience, learn on the job skills and eventually get jobs. Ed Landon indicated that DHCD has a similar internship program but pays young people. Barbara Moore asked if there was any way to easily check to database to see if a facility is in compliance and if it has a history of non-compliance. Liz Kelley stated that the inspection site identifies if there has been non-compliance in the last two years; lead compliance would be listed there. A check on an individual facility would bring up two years of inspection history, would give the date of inspection and list non-compliances. If lead is "non-compliant", that would be on the list. Barbara Moore indicated that the Commission has been unable to access this information in the past. Liz Kelley indicated that files were organized by the child care provider's last name and stated OCC would be happy to help the Commission

navigate the system. She noted that OCC would be changing the search capacity to add "doing business as…" Cheryl Hall added that if the address is known, information should be available from the licensing specialist. Liz Kelley confirmed that she would be happy to get information out to providers and to have MDE participate in state-wide conferences for child care providers in Spring and Fall. A School Age Alliance meeting may also be of interest.

Old Business – Weatherization Program
Ed Landon indicated that a new administrator for the program has not yet been identified.

Old Business – Lavender Top Tubes
Barbara Moore and Pat McLaine are working on a statement concerning health impacts. Nancy Egan will get information to contacts at Quest.

Agency updates

MDE – Paula Montgomery reported that CDC has announced a grant focused on primary prevention that is due July 22, 2014. Total funding is $11 million. MDE will apply and wants a letter of support from the Commission. The focus will be using laws to leverage prevention. Nancy Egan moved and Ed Landon seconded to send a letter of support for the application; all Commissioners were in favor. Paula Montgomery will send an abstract summary to Pat McLaine.

DHMH – no representative was present

DHCD (State) – Ed Landon reported that the Secretary was leaving September 1 and it was not clear who will be the interim Secretary. DHCD is in the process of adopting the 2015 International Building and Residential codes by 1/1/2015; locals must adopt by 7/1/2015. The Property Maintenance Code will not be adopted this year. The Property Rehab Code does not say anything about lead property maintenance.

Baltimore City Health Department - Myra Knowlton will present at the September Commission meeting on a day in the life – a street level perspective of Health Department staff. Myra Knowlton indicated that BCHD is still interviewing for the director position.

Linda Egan asked if it would be possible for Commissioners to visit a home undergoing RRP in the proper way. The issue of demolition was raised; one year ago Jason Hessler spoke about a requirement for information about training accreditation prior to issuing a permit for demolition or rehab. This would take care of the problem on the front end. The Commission will invite Jason Hessler to provide an update at our September meeting on what he has done to make changes and how Baltimore City Housing will be able to verify that contractors are certified for RRP.

Baltimore City Housing and Community Development – Myra Knowlton reported that the Health Department is pleased at the success that Baltimore City Housing has had in getting at-risk properties abated through the HUD program, particularly properties owned by individuals on Social Security or SSI. Many such properties have required repair or replacement of the roof. Paula Montgomery asked if co-ownership had been an issue. Arthur Gray said this has not been a big impediment.

Child Care Administration – Cheryl Hall indicated there was nothing further to report

Maryland Insurance Administration – Nancy Egan stated she was very honored to be a member of the Commission. She served as MIA staff on an earlier legislative workgroup and went with Paula Montgomery to meet with SDAT. She is glad to see that things are working and that little steps have been followed through. Nancy Egan sits on other Councils and indicated it was nice to see how the Commissioners work together to try to find a path to solutions.

Coalition – nothing further to report.

Motion to adjourn the meeting was made by Ed Landon, seconded by Linda Rogers, and passed unanimously. The meeting was adjourned at 11:10 AM.

GOVERNOR'S LEAD COMMISSION MEETINGS FOR CY 2014

DATE	LOCATION	TIME
Thursday, January 9, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, February 6, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, March 6, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, April 3 2014	AQUA Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, May 1, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, June 5, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, July 10, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, August 7, 2014	AQUA Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, September 4, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, October 2, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, November 6, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.
Thursday, December 4, 2014	AERIS Conference Room	9:30 a.m. - 11:30 a.m.

AUGUST 7, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

August 7, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

	Name/Signature	Representing	Telephone/Email
X	CONNOR, Patrick	Hazard ID Professional	
✓	HALL, Cheryl	Office of Child Care	410-332-0815
✓	~~HORNIG, Karen~~	Maryland Insurance Administration	
✓	JENKINS, Melbourne	Property Owner Pre 1950	
✓	LANDON, Edward	~~Dept. Housing and~~ Community Dev.	410-514-7494
✓	McLAINE, Patricia	Child Health/Youth Advocate	
~~X~~	MOORE, Barbara	Health Care Provider	
X	OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
✓	ROBERTS, Linda Lee	Property Owner Post 1949	301-562-1766
X	SNYDER-VOGEL, Mary	Child Advocate	
✓	Clifford Mitchell	DAMIF	
	VACANT	Secretary of the Environment or Designee	
	VACANT	Local Government	
	VACANT	Parent of a Lead Poisoned Child	
	VACANT	Financial Institution	
	VACANT	Child Care Providers	
	VACANT	Insurer	
	VACANT	Property Owner Pre 1950 Outside Baltimore City	
	VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

August 7, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
DEBRA GODSEY	MSDE-DCC	306 REDWOOD ST. (MSDE LICENSING)
Shaletta D. Denson	GHHI	sdenson@ghhi.org
Michelle Hansen	Cogency	Michelle f@ cogencyteam.com
Jody Johnson	self	johnsonjody05@gmail.com
Ron Winebolt	ADBH	rwinebolt@adba-metro.org
Arthur B. Gray	K. Strong DHCI	arthur.gray@baltimorecity.gov
Lynne Mayer	BCHD	
Jonathan Klanderud	MDE	jonathan.klanderud@maryland.gov
Jill Krupinsky	MDE	Jill.krupinsky@maryland.gov
~~NANCY EGAN~~	~~MHA~~	~~member~~ NANCY.EGAN@maryland.GOV
Lisa Nissley	OS/MDE	lisa.nissley@maryland.gov.
Horacio Tablada	MDE	Horacio.Tablada@maryland.gov
Vikram Krishnasamy	EH	vkrishn1@jhu.edu
Ruth Ann Norton	CLPHA	ranorton@leadsafe.org
Christine Pesuit	Maryland State Child Care	409 David Ct mscca1@comcast.net

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, August 7, 2014
9:30 a.m. - 11:30 a.m.

AQUA Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business

   - Update on Child Care initiative
   - Update on lavender topped tube

3. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, September 4, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

4. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

5. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
August 7, 2014

APPROVED Minutes

Members in Attendance

Nancy Egan, Cheryl Hall, Melbourne Jenkins, Ed Landon, Pat McLaine, Barbara Moore, Linda Roberts and Cliff Mitchell.

Members not in Attendance

Patrick Connor, Delegate Nathaniel Oaks and Mary Snyder-Vogel.

Guests in Attendance

Debra Godsey – MSDE-OCC; Shaketta Denson – GHHI, Michelle Fransen – Cogency, Jody Johnson – self, Ron Wineholt – AOBA, Arthur Gray – DHCD, Myra Knowlton – BCHD, Jonathan Klanderud – MDE staff, John Krupinsky – MDE staff, Lisa Nissley – OS/MDE; Horacio Tablada – MDE, Ruth Ann Norton – CECLP/GHHI, Christine Peusch – Maryland State Child Care.

Introductions

Pat McLaine called the meeting to order at 9:35 with welcome and introductions.

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, September 4, 2014 at MDE in the AERIS Conference Room, Front Lobby, 9:30 AM to 11:30 AM.

Approval of Minutes

A motion was made by Ed Landon seconded by Barbara Moore to approve the July minutes with changes and was approved unanimously.

Discussion

Old Business – Office of Child Care

Cheryl Hall reported that monthly reports on lead compliance are sent directly to her. Cheryl shared a sample report for July 2014 for Charles and St. Mary's Counties. The report was modified to identify the number of owner-occupied facilities and the number of facilities built between 1950-1978 cited for non-compliance. The table does not summarize the number of facilities lacking lead certification and the number of lead certificates does not equal the number of pre-1950 properties. For example, in Region 2, 138 affected properties were built before 1950 and 50 were built between 1950 and 1947, but only 12 had a lead certificate. Linda Roberts asked if a reminder could be sent to all owners for whom Office of Child Care has no certificate. Jonathan Klanderud asked if the Office of Child Care could refer non-compliant facilities to

MDE. Linda Roberts asked if all child care facilities had to meet the requirements of the law; don't they need a certificate even if they are 00? Cheryl Hall stated that 00 means they do not need a certificate. Barbara Moore asked if new applicants were allowed to have children at their facility before the Center or home meets state standards. Cheryl Hall said she had recently found two facilities in operation before they had been approved and they were shut down. Barbara Moore asked if line B was mislabeled; Cheryl Hall indicated yes. Pat McLaine asked Cheryl Hall to report back next month as to how the Office of Child Care is dealing with the universe of homes/centers, for which we do not have certificate information, for example sending letters to the facility manager, checking status with MDE. Cheryl Hall noted that nothing has been done yet with the CATS system; she is not sure about ELIS. Cheryl Hall reported that she is planning to retire at the end of September.

Old Business – Lavender Topped Tubes

Nancy Egan reported that she had reached out to Quest Diagnostic regarding the problem. A representative indicated there were two types of lavender topped tubes. A letter received from F. Leland McClure, Director for Clinical Toxicology at Quest Diagnostics was distributed at the meeting; Dr. McClure will attend the Commission's September or October meeting. Barbara Moore noted that one practice she knows uses a purple microtainer for venous sample (this type of tube is meant for capillary samples). However, errors appear to occur most often when the lead level is checked and the practitioner also orders a hematocrit and mistakenly puts both into a regular purple tube. With regards to appearance, Barbara Moore said the microtainer is one to one and a half inches with a screw cap; the regular tube is 2-3 inches with a rubber cap. John Krupinsky said that requisitions from Quest say "lavender tube" but could be changed to properly identify microtainers. Chery Hall asked what the situation was in individual doctor's offices. Barbara Moore said Quest and Lab Corp are the biggest labs doing business in Maryland, but the specimens are not usually analyzed in Maryland (facilities are in North Carolina and New Jersey). John Krupinsky noted that if we could intervene sooner, when the draw was done, for example at a draw station, we might be able to make a difference. Barbara Moore said a lot of PCPs are drawing finger sticks, even where a high percentage of kids have BLLs >5μg/dL. John Krupinsky estimates that he has seen 2-3 purple top tube errors per year. Ruth Ann Norton asked if this problem could be solved by DHMH telling providers what to do and to get confirmation. Cliff Mitchell said he is planning to include this in the revised clinical guidelines. John Krupinsky noted that he thought a focus with the labs, draw stations and hospitals would have more of an impact. Cliff Mitchell noted that multiple levels of intervention will be needed and that revision of the guidelines by DHMH should increase screenings. Point of care testing will also change the metric as we may get more false positives. Barbara Moore noted that Lab Corp's requisition does not identify the type of tube – you have to look it up. John Krupinsky asked how many different types of tubes are manufactured and if there is a standard way to label them. Barbara Moore said the colors on the tubes are universal and noted that having a high BLL gets things moving. Nancy Eaton said she would reach out to Lab Corps as well as to Quest. Michelle Fransen asked why tubes were manufactured with lead. Cliff Mitchell noted that an acid wash was needed to eliminate lead, which is pervasive in the environment. Mel Jenkins asked if there was a cost difference. Barbara Moore replied that she

could check on costs. In primary care practices, the supply of tubes may not turn over quickly. Barbara Moore indicated she will bring sample tubes, a Quest lab slip, and a report form to the PCP and to MDE to a future meeting. One concern is that the statement about the sample is often on the 2nd page of the report which the PCP may not see. Pat McLaine will contact Patrick Parsons from New York State to get their input.

Old Business Point of Care Testing

Cliff Mitchell reported that the DHMH Lab had developed regulations proposing to put point of care testing on the accepted list; MDE is reviewing those regulations today. The Lab will specify in regulations that: (1) Users must report to the Childhood Lead Registry as per current law; (2) Users will be required to do proficiency testing. Cliff Mitchell indicated that the regulations would be open for public comment, maybe in September. Tracy will send a copy out to Commissioners and this will be discussed at the September or October meeting. Barbara Moore asked if DHMH had any idea about primary care practices that might purchase point of care testing. Cliff Mitchell noted that medium-sized groups probably are more likely to purchase the system. He observed point of care testing and it worked very well.

Old Business – DHMH Screening Guidelines

Cliff Mitchell indicated that he hopes to have the screening guidelines out for review this fall, in time to focus on increasing screening in 2015. Cheryl Hall asked if this would include the screening/targeting plan. Ruth Ann Norton noted the importance of having a media strategy on expanding to pre-1978 housing and increasing screening; it is important to get into as many meetings as possible (property owners, owner-occupied, etc.) and we may want to buy media time. Cliff Mitchell noted that the costs/benefits of lifetime exposure and of a single case needed to be made clear since providers may ask why all the sudden renewed emphasis on lead if the "problem is going away." Cheryl Hall noted that pediatricians feel many more pressing issues and child care parents often ask her why testing is needed if their child is at low risk. Cliff Mitchell questioned BLL testing as part of WIC as only two children with elevated BLLs were identified during this effort; what does the general public care? Pat McLaine noted that we don't want to test forever, but we do want to find where the risks are and do what is needed to eliminate exposures. Ruth Ann Norton stated that we need a communication strategy to lead implementation on screenings and primary prevention.

Agency updates

MDE – Horacio Tablada reported that the CDC grant application was submitted; Paula will share the abstract with the Commission. Ed Landon said DHCD had sent a letter of support to CDC. Pat McLaine indicated that she was informed that a support letter from the Commission was not permitted as part of the application. Horacio Tablada indicated that MDE was working on outreach to pre-1978 property owners, getting flyers to multi-housing associations, and the realtors associations, etc. MDE has prepared a fact sheet and plans to send letters out this month to pre-1978 owners who are not registered and not 00; flyers will be sent to address of record regarding expansion of the law and the on-line registration system. MDE is meeting with the multi-housing association that will do an auto data dump from their system to MDE's system.

Flyers will be available at the State Fair and at a meeting of realtors in Ocean City. Horacio Tablada said that MDE appreciated the importance of an outreach effort and was trying to make it more systematic. Ruth Ann Norton asked if there was a template that could be posted on the internet. Horacio Tablada indicated that MDE is working on this – a nice template in plain language. Horacio Tablada reported that the RRP regulations were in final draft and may be ready to send to the commission for review; he is working with the AG's office and expects that MDE will publish them in late September or early October. After publication, MDE will outreach to other stakeholder meetings; MHIC is one target of interest. Ruth Ann Norton suggested that a pop up could be added to the renewal testing being done by contractors. Horacio Tablada noted that the new data base for enforcement and certificate tracking will "talk" to the registration database (a finding from earlier workgroup, since the database is not relational). MDE hopes to eventually have information available on-line. Horacio Tablada indicated that MDE will now send letters to properties registered but without certificates, notifying them about the need for certificates. Replacement of the STELLAR database is the next step. STELLAR programs are all run on Windows XP, no longer supported and not used for security reasons.

DHMH – nothing more to report

DHCD – Ed Landon reported that DHCD had hired a new manager for the targeted enhanced program, John Mello, who was willing to come to explain the program in November. Ruth Ann Norton stated that six contractors would be trained in August following a two-day training on assessment covering health, safety and lead. Ed Landon reported that there would be a public hearing in September on the new building codes, which will go into effect January 1, 2015. DHCD will train people from across the state and will include information from MDE about RRP in the training. RRP information is not in any Maryland codes offices where individuals are pulling permits on a daily basis.

BCHD – no updates for either health or housing

Office of Child Care – nothing more to report

Maryland Insurance Administration – nothing to report

New Business

Commission vacancies – Horacio Tablada reported that MDE's Office of the Secretary has made recommendations for positions and hopes to have all seats filled by September 1, 2014.

Jody Johnson stated that she was an environmental toxicologist working with honeybees. The bees sample the environment within 2 miles of their hive. Airport fuel for small planes has lead in it and can shed lead over the environment when these small aircraft are in flight (jet liners use kerosene, not leaded gas). A paper was recently published in Italy showing how bees had been used to sample heavy metals in the environment. This method would enable scientists to look at

the demographic distribution of lead in the outside environment, another way to sample levels of metals in the environment. If lead in children is going down, is there another metal that lead is coupled with (for example, chromium) that should be assessed.

Ruth Ann Norton reported that the Coalition is going through a major website update and would appreciate any feedback on the site. By 2015, the site will be fully bilingual. Ruth Ann Norton noted two major community meetings were being organized in Baltimore City with funding from an Environmental Justice grant from EPA; she will let the Commission know more. The Coalition wants to put a media strategy together.

Motion to adjourn the meeting was made by Ed Landon, seconded by Cheryl Hall, and passed unanimously. The meeting was adjourned at 11:30 AM.

Maryland State Department of Education

Office of Child Care Lead Hazard Compliance Summary

LEAD HAZARD COMPLIANCE STATUS	OCC Regional Licensing Offices July 2014 Lead Compliance Summary Report																										
	Region 1		Region 2		Region 3		Region 4		Region 5		Region 6		Region 7		Region 8		Region 9		Region 10		Region 11		Region 12		Region 13		Total
Record the following information with yes-1/No	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	Homes	Centers	
Number of Child Care Facilities	616	224	743	317	990	381	947	402	950	474	400	170	324	98	326	53	195	73	629	164	470	129	366	114	182	87	9824
(a) Affected Prop. pre-1950	24	7	138	34	2	1	2	0	5	2	0	0	9	5	2	0	4	0	5	2	2	0	1	4	0	0	249
(b) Failed Compliance 1950/1978	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	2	0	0	0	13	0	0	0	0	0	0	24
(c) 1950-1978 Constru/Renova	134	44	503	199	9	2	378	86	53	1	14	2	44	39	64	30	61	15	133	37	4	1	18	9	0	0	1880
(d) 1950-1978 Failed Compliance	0	0	9	0	3	0	0	0	0	0	8	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	26
(e) Lead Cert/Lead Dust Cert.	0	0	12	0	2	0	2	0	0	0	0	0	3	0	2	0	3	0	188	4	0	0	0	0	0	0	216
(f) owner occupied	0	0	1	0	5	0	1	1	2	0	0	0	3	0	0	0	0	0	2	1	0	0	0	0	0	0	16
2. Structural Defect Cited	0	0	1	0	4	0	1	1	2	0	0	0	3	0	0	0	0	0	2	1	0	0	0	0	0	0	15
Peeling flaking paint	0	1	1	0	9	1	1	1	2	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	19
Damaged walls or floor	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Soil sampling completed	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	0
3. Lead Dust Testing Completed	N/S	N/S	N/S	1	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	1
4 Lead Hazard Remediation	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	0
																											0
																											0
																											0
N/S-None Submitted																											0
S-Submitte																											0
																											0
																											0

Projected Activities: 1. Develop a data collection system within CCATS related to 13A.15-18.05.05 target date not yet established?

2. All lead hazard non-compliance activities will be reported to central office.

3. MDE requested to research addresses for rental registration and certification when not provided by operator of the facility.

Regions:

1. Anne Arundel 2. Baltimore City 3. Baltimore County 4. Prince George's 5. Montgomery County 6. Howard, Carroll 7. Washington, Alleghany, Garrett, Frederick

8. Caroline, Kent, Queen Anne's, Dorchester 9. Somerset, Talbot, Wicomico, Worcester 10. St. Mary's, Calvert, Charles 11. Harford, Cecil

Clinical Implications of Using the Wrong Tube for a Blood Lead Test

The clinical implications of using the wrong tubes for a blood lead test (e.g. lavender topped tubes) affect the child, the family, and all resources including community services and insurance providers. There are individual, family and opportunity costs for repeating the test and even higher costs if the child is identified as needing treatment. These implications include:

For the child:

- Increase in the number of blood draws needed to verify an elevated blood lead level (BLL), which can increase pain, stress/fear of blood draws for the child
- Unnecessary hospitalization for chelation if the BLL is $\geq$45µg/dL – this level triggers immediate action, with potential for physical and emotional burden on the child and family. Chelation is not free of risks for the child. Hospitalization is 19 days if lead free housing is not available.

For the family:

- Increase in time taken off of work for additional doctor's visits
- Increased stress of having child in the hospital, including physical, emotional and financial burden.
- Stress of considering relocation

For resources:

- High BLL activates community services including local health department (both environmental inspector and case manager), Maryland Department of the Environment
- Insurance company has to pay for additional and unnecessary blood draws, analysis, specialty appointments and hospitalization

Labs have a choice in how they report results, providing a "result" that they know is not accurate, based on use of the wrong collection tube, or reporting that the sample is "insufficient" based on use of the wrong tube. It would make good sense to try to prevent use of improper tubes by targeting information and social marketing to upstream users in labs and in provider offices.

Quest Diagnostics

August 1, 2014

Patricia L. McLaine
Chair
Lead Poisoning Prevention Commission
Montgomery Park Business Center
1800 Washington Blvd
Baltimore MD 21230

Dear Ms. McLaine:

By way of introduction, I must first extend a 'thank you' for your inquiry and the opportunity to provide you with information that you may find useful. My role at Quest Diagnostics is Director for Clinical Toxicology and LC-MSMS national testing operations. My blood lead-related background goes back more than 30 years with laboratory testing and includes a recent appointment to the CDC Laboratory Workgroup to the CDC Advisory Committee for Childhood Lead Poisoning Prevention as well as three past gubernatorial appointments to the state of Missouri for the Governor's Lead Poisoning Advisory Committee.

As I read through your inquiry regarding the standard of care for blood lead specimen collection and the subject of lavender tubes, there appears to be information that may be taken out of context. The industry standard for blood lead specimen collection and laboratory analysis is to utilize lead-free certified collection materials. This practice has been in effect for many, many years.
Blood lead specimen collection products typically used for the collection of blood lead samples would include the following:

- Tan top evacuated tubes (manufactured specifically for lead testing)
  Royal blue top evacuated collection tubes (manufactured for trace metals analysis – including lead)
- Lavender microtainer* (limited volume container for general analysis – including lead)
  The last device listed above (lavender collection container) may be a potential source of misinformation regarding lavender tubes as not being certified for blood lead testing. The microtainer version of this lavender blood collection product is actually certified as lead-free while the routine larger lavender tube is not. These limited volume lavender microtainer devices are ***commonly*** and appropriately utilized to obtain fingerstick/heelstick capillary sample collections from children.

Some useful links and information that I will incorporate into the response:

- Recent 2013 CDC Guidelines for POC Blood Lead Measurements. I was a member of the committee that researched, wrote and published the guidelines. Use of collection supplies) suitable for blood lead is specifically noted – including tan top tubes.
  http://www.cdc.gov/nceh/lead/ACCLPP/20131024_POCguidelines_final.pdf

- CDC training video noting the use of lead-free certified collection materials: http://www.cdc.gov/nceh/lead/training/blood_lead_samples.htm

Please note, *if* a laboratory receives a specimen collection container that is not certified to be lead-free, the practice is to test those samples without delay. If the blood lead results from this analysis are found to be elevated, the results are released and the report to the physician should include remarks that specimen collection was submitted in a container not certified as lead free. The logic for these actions is to provide the earliest notification to health care providers that an elevated blood lead condition *may be present* and that confirmation of elevated results needs be performed using certified lead-free collection materials. The risk of a falsely elevated result pales in comparison to time delays that could be critical in identifying a child at risk for lead poisoning.

I would be happy to attend any future meetings of the commission to answer any questions they may have. In the interim, if I can provide any additional information, please let me know. I am more that glad to assist.

Best regards,

F. Leland McClure, PhD, D-ABFT

SEPTEMBER 4, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

September 4, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick PC	Hazard ID Professional	
EGAN, Nancy by phone	Maryland Insurance Administration	
JENKINS, Melbourne	~~Property Owner~~ Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	
McLAINE, Patricia (by Telephone)	Child Health/Youth Advocate	
MITCHELL, Cliff	Department of Health and Mental Hygiene	
MOORE, Barbara (by telephone)	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	NOAKS@CEIWC.COM.
ROBERTS, Linda Lee	Property Owner Post 1949	
SCOTT, John	Insurer for Premises Liability Coverage in the State	
SNYDER-VOGEL, Mary	Child Advocate	
WITHERSPOON, Tameka	Parent of a Lead Poisoned Child	443 6220798 Tameka_Witherspoon@yahoo.com
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Office of Child Care/MSDE	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

GUESTS

Governor's Lead Commission Meeting Attendance Sheet

September 4, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

	Name	Representing	Address/Telephone/Email
✓	Geraldine Woodson	BCHD	7 E. Redwood Street 443-984-2470 Balto., MD 21202 geraldine.woodson@baltimorecity.go
✓	RON WINEHOLT	~~MDA~~	
✓	KEVIN	MDE	
✓	Paula Montgomery	MDE	paula.montgomery@maryland.gov
✓	JOHN KRAWINSKY	MDE	JOHN.KRAWINSKY@MARYLAND.GOV
✓	Wes Stewart	GHHT	gwstewart@ghhi.org
✓	Jody Johnson	Collaborate	~~take~~ takeback.your.lzb@gmail.com
✓	arthur d gray	City DHCD	arthur.gray@baltimorecity.gov representing Ken Strong
✓	Myra Knowlton/EAS	BCHD	

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
September 4, 2014
Start: 0937
End: 1107

APPROVED Minutes

Members in Attendance

Patrick Connor, Nancy Egan (via phone), Melbourne Jenkins, Ed Landon, Pat McLaine (via phone), Barbara Moore (via phone), Delegate Nathaniel Oaks, John Scott, Tameka Witherspoon.

Members not in Attendance

Cliff Mitchell, Linda Roberts and Mary Snyder-Vogel.

Guests in Attendance

Ezatollah Keyvan-Larijani – MDE, Jody Johnson – self, Ron Wineholt – AOBA, Arthur Gray – DHCD, Myra Knowlton – BCHD, John Krupinsky – MDE staff, Paula Montgomery – MDE staff, Wes Stewart – CECLP/GHHI, Geraldine Woodson – BCHD,

Introductions

Welcome to New Members

- John Scott, Jr.
- Tameka Witherspoon

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, October 2, 2014 at MDE in the AERIS Conference Room, Front Lobby, 9:30 AM to 11:30 AM.

Approval of Minutes

August meeting Minutes will be deferred until October 2014

Discussion

Old Business

- None

New Business

Dr. Keyvan made a presentation on "Annual Report of 2013 Childhood Lead Poisoning". The PowerPoint Presentation will be provided to Commission Members. Registry processes about 11,700 samples per month. System has been computerized since 1992 with data for 2 million children. MDE has a list of "Lead Care" locations but not all locations are testing Maryland children. MDE provides BLL results of 10µg/dL and above to county health department but not for BLLs of 5-9µg/dL. The Health Care provider is the primary contact for the 5 to 9 µg/dL sample results. MDE provides Baltimore City all blood lead data on a weekly basis, including BLLs of 5-9µg/d. Eight (8) laboratories perform over 89% of the blood leads for Maryland children; all report electronically. MDE data includes the child's highest reported blood lead level (Cap or Venous). Readers of the 2013 report should not use NHANES data for comparison purposes. The report process is different and does permit for comparison.

The Chair inquired about Case Management of greater than 5µg/dL including but not limited MDE cross referencing address for investigation. MDE indicates that more than 50% of the greater than 5µg/dL cases are in Baltimore City. The in-place MOU covers these cases. In the Counties, support for greater than 5µg/dL is not readily available. No info packets are being provided for children with BLLs of 5µg/dL and higher. MDE is getting some calls. Barbara Moore asked who initiates calls to MDE. John Krupinsky indicated that counties do a variety of things (some send educational material, some refer to MDE, some do EA6-8 questionnaires and look up compliance). But follow-up only occurs if the provider calls MDE. Barbara indicated that most providers do now know what to do. Dr. Keyvan noted that CDC is not clear about this problem and what to do. There are also occupational cases of lead poisoning, identified by MDE as part of the adult lead registry.

The lack of a clear state standard for investigation was raised. Even when a risk assessment is done, potential sources of exposure may be identified but there may not be one sole source for lead. Some case investigators stop investigating if they see lead in the house; others are more curious. Other sources can include vinyl windows and siding with lead.

Pat McLaine asked if there was follow-up of 5-9s with the registry. Paula Montgomery reported that Baltimore City refers all rental properties with an associated BLL of 5-9µg/dL to MDE and MDE pursues enforcement. Baltimore City will also refer a notice of Defect.MDE had been doing work on the Shore (in Wicomico and Somerset) when MDE had the CEC grant. But without doing case management on BLLs 5-9µg/dL, Paula Montgomery did not see how MDE could evaluate them. MDE is waiting on recommendations from DHMH on testing and Point of Care testing. Paula noted that MDE is in the process of developing integrated systems now; current systems are antiquated and don't talk to each other. MDE does not have IT specialists to

do this. Majority of Baltimore City Blood Lead results list addresses that are not accurate. The listed address can be: solely a mail address; a previous residence; or otherwise wrong.

Wes Stewart requested that MDE and the Commission take a more aggressive role in primary prevention. There is no protocol in place for children with BLLs 5-9µg/dL. Case management standards are needed for the state.

Patrick Connor requested that the Commission have input to 2013 Surveillance Report. MDE does not think this can happen because the report is complete. Commission will not review or have input prior to the report being released. The Chair commented that the Commission is not at the "Table" on this report. Commissioners requested a copy of the report and were told it was coming out. Commissioners requested copies of the slides from the meeting; MDE will try to send out or provide at the next meeting. Commissioners will get a link to the report when it comes out.

Ed Landon reported that Consumer Investment Fund (CIF) for lead hazard reduction is available. BGE merger in part provided this funding. A DHCD representative will provide a presentation to the Commission.

Agency updates

MDE – Paula Montgomery – RRP Regulations will be presented to the Secretary next month and will be provided to the accredited community for comment. Copy will be sent to Commissioners. MDE continues to process new regulations for the 1950 to 1978 residential dwelling units.

DHCD – Ed Landon – The state will be adopting new codes. An October 10th hearing is scheduled. January 1, 2015 the new International codes are to be adopted. The new Property Maintenance Code may be adopted next year. Energy codes will be in effect in 2015, local jurisdictions will have 5 months to adopt their codes. Property maintenance, rehab and green codes will be adopted next year after the International Council adopts.

BCHD – Ms. Woodson – Baltimore City's presentation on the Perspective from the Street View will be provided at next month's meeting.

MIA – Nancy Egan – No Report

DHMH – Cliff Mitchell – Not in attendance

Office of Child Care – Not in attendance

Motion to adjourn the meeting was made by Ed Landon, seconded by Patrick Connor and passed unanimously. The meeting was adjourned at 11:07 AM.

OCTOBER 2, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

NOTICE

This Notice is provided pursuant to § 10-624 of the State Government Article of the Maryland Code. The personal information requested on this sign-in sheet is intended to be used to contact you concerning further information about the subject of this public hearing or meeting. Failure to provide the information requested may result in you not receiving further information. You have the right to inspect, amend, or correct this sign-in sheet. The Maryland Department of the Environment ("MDE") is a public agency and subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State law.

SIGN-IN MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

October 2, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick	Hazard ID Professional	
EGAN, Nancy	Maryland Insurance Administration	
JENKINS, Melbourne	Property Owner Pre 1950	
LANDON, Edward	Dept. Housing and Community Dev.	
McLAINE, Patricia	Child Health/Youth Advocate	
MITCHELL, Cliff	Department of Health and Mental Hygiene	
MOORE, Barbara	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
ROBERTS, Linda Lee	Property Owner Post 1949	
SCOTT, John	Insurer for Premises Liability Coverage in the State	
SNYDER-VOGEL, Mary	Child Advocate	
WITHERSPOON, Tameka	Parent of a Lead Poisoned Child	
VACANT	Secretary of the Environment or Designee	
VACANT	Local Government	
VACANT	Financial Institution	
VACANT	Child Care Providers	
VACANT	Office of Child Care/MSDE	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

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GUESTS

Governor's Lead Commission Meeting Attendance Sheet

October 2, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name	Representing	Address/Telephone/Email
LELAND MCCLURE	QUEST DIAGNOSTICS	2110 E. MARGATE LN, KIRKWOOD, MO leland.f.mcclure@questdiagnosti com
Marta Harting	Quest	750 E. Pratt St. Suite 900 Baltimore 21202 mdharting@verable com
Ken Strong	City ITCS	Ken.Strong@baltimorecity.gov
Mike O'Leary	" "	michael.o'leary@baltimorecity.gov
John Mello	DHCD	Mello@dhcd.state.md.us
RON WINEHOLT	AOSA	rwineholt@aoa-metro.org
Annie O'Grady	Connor	aogrady@connorsolutions.com
Josephine Johnson	self	johnsonjudy05@gmail com.
Ruchi Agarwal	DHMH	
Sunil Chandgi	DHMH	
Rachel Mutinda	DHMH	
RuthAnn Norton	GHHI	
Jeff Fromm	MDE	
Paula T. Montgomery	MDE	
Christine Reusch	MSCCA	409 Davidson Rd Belair MD 21015

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, October 2, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business
   - Update on Lavender Topped Tubes
     - Leland McClure, Director for Clinical Toxicology and LC-MSSMS National Testing Operations for Quest Diagnostic
   - Update on Child Care Initiative
   - Update on Point of Care Testing

3. New Business
   - Tameka Witherspoon - Open Discussion on Preventing Lead Poisoning in Children
   - John Mello, CIF Targeted & Enhanced Weatherization Program Manager Housing & Building Energy Programs, CDA Maryland Department of Housing & Community Development

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, November 6, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
October 2, 2014

APPROVED Minutes (11/6/14)

Members in Attendance

Patrick Connor, Nancy Egan, Ed Landon, Pat McLaine, Cliff Mitchell, Barbara Moore, Linda Roberts, John Scott, and Tameka Witherspoon.

Members not in Attendance

Melbourne Jenkins, Delegate Nathaniel Oaks, and Mary Snyder-Vogel.

Guests in Attendance

Leland McClure – Quest Diagnostics, Jody Johnson – self, Ron Wineholt – AOBA, Ken Strong – DHCD, Myra Knowlton – BCHD, John Krupinsky – MDE staff, Paula Montgomery – MDE staff, Ruth Ann Norton – CECLP/GHHI, Marta Harting – Quest, Mike O'Leary – City HCD, John Mello – DHCD, Annie O'Grady – Connor, Shuchi Agarual – DHMH, S. Chendal – DHMH, Rachel M. – DHMH, Jeff Fretwell – MDE, Christine Peusch – MSCCA, and John Krupinsky – MDE.

Introductions

Pat McLaine called the meeting to order at 9:35 AM with welcome and introductions.

Welcome to New Members

- Cheryl Hall – Reappointed for another term
- Melbourne Jenkins, Jr. – Reappointed for another term
- Paula Montgomery – Secretary of the Environment or Designee
- Barbara Moore – Reappointed for another term
- Christina Peusch – Child Care Provider
- Linda Roberts – Reappointed for another term

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, November 6, 2014 at MDE in the AERIS Conference Room, Front Lobby, 9:30 AM to 11:30 AM.

Approval of Minutes

A motion was made by Ed Landon seconded by Barbara Moore to approve the August minutes with changes and was approved unanimously. September minutes were deferred until the November meeting.

Announcement

Ken Strong announced that HUD had made 14 awards for lead hazard reduction on Tuesday, September 30, 2014 and that Baltimore was not funded. Baltimore is currently funded through 6/30/2014 and the City is putting a plan together with local and state funding for the fiscal year beginning 7/1/2014. Mr. Strong indicated that the City met all benchmarks for the current grant, is committed to improvement, and is working to improve their proposal for next year. Michael O'Leary will attend future Lead Commission meetings. The HUD grant had funded a full time home visitor from the Health Department and Mr. Strong said he would continue that funding. Ruth Ann Norton noted that the grant process was very competitive, noting that the difference in scores between winners and losers was 0.1 point. Ms. Norton noted that Philadelphia also was not funded, and indicated that Baltimore should be in a good position for the next round of funding.

Discussion

Old Business – Lavender Topped Tubes

Pat McLaine introduced Leland McClure, Director for Clinical Toxicology and LC-MSSMS National Testing Operations for Quest Diagnostics. Leland McClure is familiar with lead poisoning prevention issues having served on the Governor's Lead Commission in Missouri from 1999 to 2009 and also on CDC's Advisory Committee. A packet of information on lead testing was distributed to meeting participants. Regular lavender topped tubes are not certified for lead but lavender microtainer tubes are certified for lead capillary collection and can also be used for venous collection. Tan and blue topped tubes are also certified. Samples of tubes were passed around by Barbara Moore. Leland. McClure indicated that best practice notes and procedures for blood lead testing is available on-line; skin preparation is also critical. However, if a non-trace metal tube is used, the lab will test the sample but will report the findings with a caveat. This is based on the concern that this sample may be the only sample that can be obtained from the patient. If the initial results indicate that the family may need intervention, Leland. McClure indicated that it is far better to have a false positive than no information. A copy of the lab results were shown for a venous and capillary sample with a BLL of 6µg/dL, which was flagged with an "H" as "high". The capillary sample included a caveat regarding the need to confirm the sample. The lab provides reports by exception if the wrong tube was submitted. John Scott asked if the tube was not certified and the blood was retested, how different would the two BLLs be? Leland McClure stated he hadn't looked at this – that there was no longitudinal correction of data. Barbara Moore passed around lab slips from Mt. Washington with identifiers removed. She asked how many specimens are submitted per year in incorrect tubes. Leland McClure said he did not have that information but that he could identify the number of tubes submitted on Maryland children in non-certified tubes. Barbara Moore reported that a BLL of 13 was eventually confirmed as an 8µg/dL. Mr. McClure was asked what the level of uncertainty was; according to CDC guidance it is above +/- 10% or 2-3 µg/dL for a fixed value, whichever is greater. Precision in the lab depends on the instrument. For values less than 20µg/dL, precision is a fixed interval (a BLL of 20 could be 17-23µg/dL, for example). The level of uncertainty in a change from a 14 to an 8µg/dL may be due to stress. John Krupinsky brought a Quest requisition being used at a local health department that identified a lavender tube

for the BLL, which is misleading. Leland McClure stated that the requisition needs to be looked at. Mr. Krupinsky said that Quest told him that if the lab slip was not explicit about type of sample, the sample is considered to be a cap. If the result indicates this is a cap, venous confirmation is needed, which might take 2 weeks or more. If the sample really was a 30 venous, we will be delaying case management for 2-weeks plus. Mr. Krupinsky asked what could be done at the draw site to verify that the sample is a venous or a capillary, indicating that the CLPP program spends a lot of time confirming information because of the way it is identified on the lab slip. The Quest lab slips received by MDE's Lead Registry program do not have this information. John Krupinsky indicated that providers receive so much verbiage that they sometimes miss critical information. MDE really needs to know if a specimen is capillary or venous. Barbara Moore indicated that Lab Corp has a separate form for heavy metals; lead is not on the regular blood draw form. But Quest uses one form for both types of blood draws. There was a question about newer forms being different. Paula Montgomery asked why tubes were used if they contained lead at all. Leland McLure indicated that lead is a contaminant, ubiquitous in the environment, and it's inclusion in such tubes is not intentional. Barbara Moore asked if it was possible to make a royal blue or tan microtainer for lead; that would be more of a fail-safe process in the office. Cliff Mitchell noted that there is no way to prevent all errors and that we need to educate providers. Barbara Moore said that health care providers would be better off having a separate form for heavy metals, with tubes clearly identified for that purpose. John Krupinsky indicated that any lab reporting form has to have all fields required by the state, including specimen type. Nancy Egan asked why the color of tube could not be changed to royal blue. Pat McLaine noted that it would be better from an injury prevention perspective to use the same color for all tubes. Leland McClure indicated that the blue top tube is a single use for lead only. Barbara Moore stated her biggest concern was getting information to community PCPs and lab draw stations. Leland McClure indicated that the requisition form can be changed to include tan topped tubes ("T"). He indicated that although the requisition form does not identify venous or capillary sample type, that needs to be identified for lead specimens. He indicated that Quest can make that happen and that Quest can also improve education about lead testing and the importance on the type of draw with the lab draw stations. He also agreed to look at historical data to identify (1) the total number of BLL specimens drawn in Maryland in capillary tubes and the total number with BLLs of 5µg/dL and higher; (2) the total number of samples drawn in the wrong tube and the total number of those with a BLL of 5µg/dL or higher. In addition, Leland McClure indicated he would ask Becton-Dickinson for a tan or blue topped microtainer tube. With regards to the reporting needs for Maryland, he indicated that a Fax to MDE should clearly identify the need for a repeat specimen. Information on the draw type will be on the requisition and in the database. Quest will increase education to the lab draw stations on an annual basis. Quest will also incorporate lead testing as an educational topic into monthly lab update newsletters.

Old Business – MDE 2013 Lead Registry Presentation

Commissioners have not yet received a copy of the presentation from the September 2014 meeting.

Old Business – Point of Care Testing

Cliff Mitchell reported that DHMH's proposed recommendation for proficiency testing and reporting to the Lead Registry must be reviewed by the Department of Budget and Management. This will be printed in the Maryland Register and is scheduled to go into effect in mid-March 2015. The point of care testing for lead would then become CLIA-approved with the requirement to conduct proficiency testing and report all results to the registry. Barb Moore asked how the word would get out. Cliff Mitchell reported that DHMH hopes to roll out a new screening plan soon and will be developing clinical case management guidelines for BLLs 5-9μg/dL. Cliff Mitchell indicated that Spring 2015 would provide a big opportunity to do outreach on lead in general, making available the clinical guidelines and targeting strategy. John Krupinsky noted that in the past, MDE had held annual meetings with the local health departments and recommended that such meeting be held before the guidelines are announced in January or February. A question was asked about how PCPs will know about point of care issues, including reimbursement and purchase. Cliff Mitchell noted that DHMH has met with Medicaid and MCO directors. DHMH has also developed grand rounds slide deck with the Coalition and plans to provide Grand Rounds around the state, conducted by Preventive Medicine residents.

New Business – Lead Poisoning Prevention Activities

New Commissioner, Tameka Witherspoon, led a discussion of ideas for activities to help prevent childhood lead poisoning. She announced two events for Lead Awareness Week: a candle lighting on 10/19 in front of her home and a tree planting on 10/22 in front of Dundalk School. Ms. Witherspoon's ideas included: providing a fresh fruit and vegetables basket to families of children diagnosed with lead poisoning and helping them to hook up with the food bank (Mike O'Leary suggested contacting Laura Fox from BCHD for assistance); holding a breakfast at IHOP with cartoon characters for lead poisoned children, teaching them to make healthy snacks and talking with parents about things they could do; speaking at PTA meetings about the importance of getting kids tested for lead; having a lead awareness t-shirt, wuing a graphite colored ribbon (Lets help put a stop to lead poisoning); holding a lead awareness walk in 2015-possibly to begin January 2015; development of a family support group for parents/caregivers to improve skills and coping strategies for dealing with problems; having a big awareness sign in the Dundalk Fourth of July parade; sending birthday cards to children diagnosed with lead poisoning; having an annual summer cookout for families; sponsoring a toy drive at Christmas time; having commercial on lead awareness; having billboards on lead awareness; being part of the Healthy Expo at the Baltimore Convention Center in March. Ms. Witherspoon plans to work with Sally from the Coalition. A woman from Maryland Childcare Advocacy said she would see if lead could still be included at a legislative meeting to be held in Annapolis. Paula Montgomery indicated that MDE may also be able to work on outreach efforts with Tameka.

New Business – CIF Targeted and Enhanced Weatherization Program, DHCD

John Mello, Program Manager for Housing and Building Energy Programs, reported that funds had been awarded for about one year and that DHCD was getting started with pilot implementation now. The goal is to target low income, high energy homes that can't be reached

by other programs, for example, homes with structural problems, infiltration, lead hazards, asbestos, or mold. The program does not serve Baltimore City, will include housing assessment and intervention and will also focus on radon and fall prevention. Target is 1,700 units by June 30, 2017. The per-unit caps are $6,000 for energy and $15,000 for non-energy interventions. Five contractors have been identified and they work with a network of subcontractors. The program has identified homes with energy audits that were deferred because the needs were too high. The goal is to identify alternative sources for referrals once this pot of money is depleted. They do a combined healthy homes/home energy assessment, conduct a resident interview, using a comprehensive housing assessment tool. The goal is to produce a combined scope of work. The aim is to make the case for funding of this type understanding that non-energy benefits can cut health care costs. The territory to be served is the BGE territory, except for Baltimore City (e.g. Anne Arundel and Prince George's Counties). The program can take referrals from lead program staff. Paula Montgomery indicated that MDE refers families to DHCD website, noting that there are many programs and MDE does not know what programs individuals are eligible for. Mr. Mello indicated that this program is a grant. MDE has had many owner-occupied residents referred to DHCD and it has been a very lengthy and frustrating process. Mr. Mello indicated that this program has specific intake staff and follows DOE guidelines of 200% of poverty level. The program will work with rental programs in the future. All contractors are properly accredited for RRP – every single worker must have 8 hours of training. Landlords must agree that they can't raise the rent for 3 years. Ed Landon noted that many of the programs handled at the local level need a one-stop shopping approach. Mr. Mello agreed to provide an information sheet for the Commissioners to be shared at a future meeting and will return to provide an update in 2015.

Agency updates

In light of the short time remaining, agency updates were deferred.

Ed Landon, DHCD, reported that a hearing on the updated building code will be held next Friday, October 10th at DHCD with a 30 day comment period to follow with the intent for the code to go into effect on 1/1/2015.

Motion to adjourn the meeting was made by Ed Landon, seconded by Patrick Connor and passed unanimously. The meeting was adjourned at 11:35 AM.

Quest Diagnostics

Because lead poisoning can happen to any kid.

The CDC recommends all children ages 1–5 get their blood lead levels tested.[1]

Multiple lead sources mean a variety of pediatric patients are at risk.

Paint in homes built before 1978 is not the only cause of lead exposure. Children may also be affected by coming into contact with:

- Water pumped through lead pipes
- Imported items, including clay pots
- Consumer products like candy, makeup and jewelry
- Certain home remedies

New CDC guidelines mean more children will likely test positive.

In the past, blood lead level tests below 10 mcg/dL were not considered a level of concern and may or may not have been reported to parents. A new lower cutoff (5 mcg/dL) is now being used to identify children associated with lead-exposure hazards.[1]

As a result, more children will likely be identified as having elevated blood lead levels.

Previous	Current
Level of Concern ≥10 mcg/dL lead in blood	Elevated Blood Lead ≥5 mcg/dL lead in blood

Quest Diagnostics can help you be part of the solution.

Early testing and treatment are critical.

By using the new CDC reference range to identify lead exposure earlier, you can work with parents, doctors, public officials and communities sooner to reduce a child's future exposure. This is important because:

- Lead poisoning may occur with no obvious symptoms.
- The nervous, hematopoietic, endocrine, renal and reproductive systems can be affected.
- Pediatric patients are more susceptible to lead effects than adults.
- Elevated lead levels can cause learning disabilities and behavioral problems.
- Very high lead levels can cause abdominal discomfort, seizures, coma and even death.

Please note: the CDC updates do not change the recommendation that chelation therapy be considered when blood lead levels are greater than or equal to 45 mcg/dL.

Follow-up action is necessary if elevated blood lead levels are found. For more information and resources, visit the CDC website's Childhood Lead Poisoning Prevention Program at cdc.gov/nceh/lead/about/program.htm.

If lead poisoning is found, Quest Diagnostics provides the services you need to begin treatment as soon as possible.

The Quest Diagnostics Lead Screening Test detects lead levels in blood, giving you the information you need to counsel patients and get them started on treatment, if necessary. We also provide services designed to make the process easier:

- Pediatric Hotline at 1-855-ALL-4Kid(s)—a resource for healthcare providers looking for a better understanding of test results and/or advice on counseling patients.
- Local Patient Centers—with over 2,000 Patient Service Centers across the U.S., Quest Diagnostics makes scheduling appointments easy and convenient for your patients.

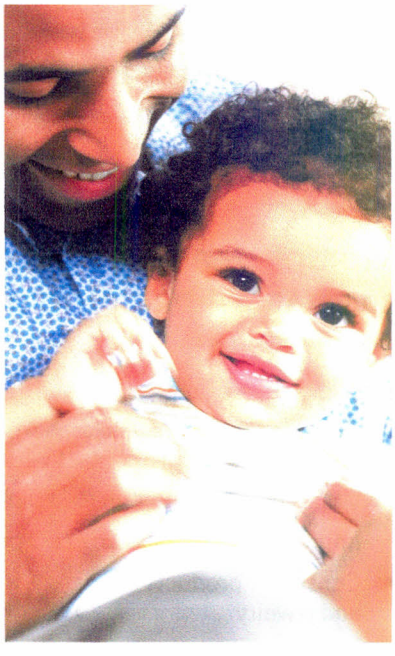
Quest Diagnostics Blood Lead Test

Test Name	Test Code	Specimen Requirements	CPT Code**
Lead, Blood	599	Preferred Specimen(s) Whole blood in certified low-lead collection tube: • 3mL venous blood in an EDTA (tan-top) tube or equivalent *or* • 0.5 mL capillary whole blood in an EDTA capillary collection (lavender-top) tube or equivalent	83655

Notes: Not all EDTA collection tubes are certified as low-lead content. Submit separate collection tube if ordering another test. Capillary testing is available for infants.

**The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.

This test will be performed using a procedure that has not been cleared or approved by the FDA. The analytical performance characteristics of this test have been determined by Quest Diagnostics. This test should not be used for diagnosis without confirmation by other medically established means.



For more information, speak to your Quest Diagnostics sales representative or visit us at QuestDiagnostics.com.

Reference

1. Centers for Disease Control and Prevention website: cdc.gov/nceh/lead/

HTTPS://WWW.BD.COM/VACUTAINER/LABNOTES/VOLUME14NUMBER2/BEST_PRACTICE.ASP

LABNOTES - VOLUME 14, NO.2, 2004

Best Practice: Lead Testing

Q: Which blood collection tubes can be used for lead testing, particularly on pediatric patients?

A: BD offers two different types of tubes for lead testing. Both have been FDA cleared for use in lead determinations and are certified to be of low lead content (thereby minimizing the risk of false positive lead results).

- **BD Microtainer® K_2EDTA Tube with BD Microgard™ Closure (Ref #365974)**

This tube is used for capillary collections from skin punctures such as heelsticks on infants or fingersticks on small children. It holds between 250 and 500 µl of blood. The amount of lead in this tube is certified to be less than one nanogram.

The following BD white papers offer supporting clinical documentation for this tube:

- VS5343-BD Microtainer® K_2EDTA Tubes Catalog #365974: Evaluation of Lead Using Graphite Furnace Atomic Absorption Spectrophotometry (GFAAS).
- VS5344-BD Microtainer® K_2EDTA Tubes Catalog #365974: Evaluation of Lead Using Anodic Stripping Voltometry (ASV).

Both of these studies show that the BD Microtainer® K_2EDTA Tube, Ref. #365974 is an acceptable capillary blood collection device that ensures accurate and precise results for lead analysis by both GFAAS and ASV methods.

The original style of BD Microtainer® Tube with K_2EDTA (Ref #365973) is not certified to be low lead.

- **BD Vacutainer® K_2EDTA Plus Plastic Tube (Ref # 367855)**

This tube draws 3mL of venous blood and is ideal for pediatric venipunctures. It is certified for low lead content, with a background lead amount of 2.5ppb (parts per or 0.25µg/dL. The concentration of EDTA in the tube is 1.8 mg/mL of blood, whic consistent with all other BD Vacutainer® EDTA Tubes.

To obtain copies of BD white papers, contact our Technical Services Department.

The Centers for Disease Control (CDC) reports that the principal sources of lead exposure for children in the United States are house dust contaminated by leaded paint and soil contaminated by both leaded paint and decades of industrial and motor vehicle emissions.[1]

Exposure to lead can damage the nervous, hematopoietic and renal systems. Extremely high blood lead levels (>70 ug/dL) can potentially cause seizures, coma and even death.[1]

Children between the ages of 12-36 months are most vulnerable to lead poisoning because[2]:

- They ingest more lead due to hand-to-mouth transfer
- Their gastrointestinal tracts absorb more lead than adults
- Their developing central nervous systems are more sensitive to the effects of lead poisoning

References

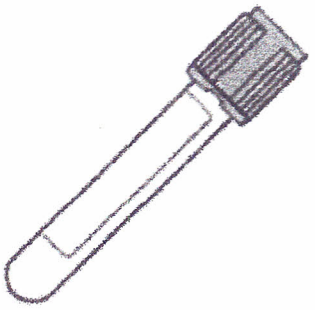
1. Meyers, P.A., et al. "Surveillance for Elevated Blood Lead Levels Among Children - US, 1997-2001". CDC MMWR™, September 12, 2003.
2. The Screening Policy and Guidance for Preventing Childhood Lead Poisoning in Arizona. www.hs.state.az.us

BD

PRODUCT CATALOG

VENOUS BLOOD COLLECTION TUBES

Product Number: 367855



Key Product Features

Availability	Australia, New Zealand, Asia Pacific, Latin America, Canada, US
Product type	Plus plastic tube, BD safety-engineered device
DNR (Latex) free?	Yes
Sterile?	Yes
Type	Sterile tube
Brand	BD Vacutainer©, BD Hemogard™
Safety feature	BD Hemogard™ closure, Plastic
Additive	K_2 EDTA (spray-dried), 5.4mg
Bar coded tube	No
Closure color	Tan
Closure type	BD Hemogard™
Dimension	13 x 75 mm
Label	Paper
Material	Plastic
Usage	Lead determination
How sterilized	Cobalt radiation
Storage	Normal conditions
Resterilize	No

Quest Diagnostics – Test Center

http://www.questdiagnostics.com/testcenter/TestDetail.action?tabName=OrderingInfo&ntc=599

Lead, Blood

Test Code
509

CPT Code(s)
83655

Preferred Specimen(s)
3 mL whole blood collected in K2 EDTA (tan-top) tube

Minimum Volume
Venous: 0.5 mL
Capillary: 0.2 mL

Alternative Specimen(s)
3 mL whole blood collected in: Sodium heparin, lead-free (tan-top) tube, or EDTA or sodium heparin (dark/royal blue-top) tube • 0.5 mL capillary blood collected in: EDTA capillary (lavender-top) tube

Collection Instructions
Collection material such as alcohol swabs should be lead-free. Use powderless gloves. For capillary collection, wash hands throughly with soap and dry with clean, low-lint towel. Once washed, fingers must not come into contact with any surface. Clean skin (finger or other area for venipuncture) with lead-free alcohol swab before puncture. Avoid work-site collection.

Note: Tests performed on a specimen submitted in a nontrace element tube or nonacid-washed/nonmetal-free container may not accurately reflect the patient's level. If a nontrace element tube/container is received, it will be accepted for testing; however, elevated results are reported with a message that resubmission with a trace element tube/container is recommended.

Specimen Container
K2 EDTA (tan-top) tube

Examples of Quest Diagnostics blood lead reporting on next pages:

LEAD, BLOOD 6 H mcg/dL DB

Reference range for adults and children >6 years: <10
Reference range for children birth to 6 years: <5

Blood lead levels in the range of 5-9 mcg/dL have been associated with adverse health effects in children aged 6 years and younger. Patient management varies by age and CDC Blood Lead Level range. Refer to the CDC website regarding Lead Publications/Case Management for recommended interventions.

LEAD(B) COLLECTION SAMPLE CAPILLARY

Due to the possibility of lead contamination of the skin, it is recommended that any elevated lead level collected in a capillary tube be confirmed by a blood sample collected by venipuncture.

LEAD, BLOOD 6 H mcg/dL DB

Reference range for adults and children >6 years: <10
Reference range for children birth to 6 years: <5

Blood lead levels in the range of 5-9 mcg/dL have been associated with adverse health effects in children aged 6 years and younger. Patient management varies by age and CDC Blood Lead Level range. Refer to the CDC website regarding Lead Publications/Case Management for recommended interventions.

LEAD(B) COLLECTION SAMPLE VENOUS

LEAD, BLOOD 15 H mcg/dL DB

Verified by repeat analysis.

Testing was performed on a specimen submitted in a tube which has not been certified to be free of lead contamination. Repeat testing on a specimen drawn in a trace element tube is recommended prior to initiation of chelation therapy or environmental investigation of potential lead sources. Whole blood in a tan top (heparin) or royal blue top (EDTA or heparin) trace element vacutainer is recommended.

Reference range for adults and children >6 years: <10
Reference range for children birth to 6 years: <5

Blood lead levels in the range of 5-9 mcg/dL have been associated with adverse health effects in children aged 6 years and younger. Patient management varies by age and CDC Blood Lead Level range. Refer to the CDC website regarding Lead Publications/Case Management for *recommended interventions.*

LEAD(B) COLLECTION SAMPLE VENOUS

LEAD, BLOOD 25 H mcg/dL DB

Verified by repeat analysis.

Reference range for adults and children >6 years: <10
Reference range for children birth to 6 years: <5

Blood lead levels in the range of 5-9 mcg/dL have been associated with adverse health effects in children aged 6 years and younger. Patient management varies by age and CDC Blood Lead Level range. Refer to the CDC website regarding Lead Publications/Case Management for recommended interventions.

LEAD(B) COLLECTION SAMPLE VENOUS

LABORATORY CORPORATION OF AMERICA
DATE: 08-14-2014 STATE REPORTING PAGE: 2

LAB ADDRESS:

LabCorp Burlington
1447 York Court
Burlington NC 27215-3361

PATIENT NAME/ADDRESS [redacted] MD

PAT. ID [redacted]

SPECIMEN NUMBER	SPECIMEN DATE	AGE YEARS	AGE MONTHS	SEX	BIRTHDATE	RPT DATE
[redacted]	08-13-2014	004	08	M	[redacted]	08/14/2014

TEST NAME	TEST NUM	RESULTS	UNITS	PERFORMING LAB
Lead, Blood (Pediatric)	[redacted]	10	ug/dL	BN

Please note reference interval change

If the collected specimen type was capillary, the Centers for Disease Control and Prevention provide the following recommendation: Repeat pediatric blood levels equal to or greater than 5 ug/dL on a fresh venous blood specimen.

Detection Limit = 1
(Children under 16 years)

Verified by repeat analysis
BLOOD LEAD ONLY:
RACE - BLACK
ETHNICITY - NON-HISPANIC
SPECIMEN TYPE - BLOOD VENOUS

Guardian: [redacted]

Ph: [redacted]

AGENCY ADDRESS:

MARYLAND DEPT OF ENVIRONMENT
LEAD POISONING PREVENTION
1800 WASHINGTON BLVD.
BALTIMORE MD 21230

CUSTOMER ADDRESS: ACCT # [redacted]

[redacted] MD
[redacted] MD
[redacted] MD
[redacted]

PHYSICIAN: [redacted]

MARYLAND
REPORT OF ELEVATED BLOOD LEAD LEVELS

CHILD

NAME (LAST, FIRST AND MIDDLE):			
[redacted]			
STREET ADDRESS	CITY	STATE	ZIP CODE
[redacted]	[redacted]	MD	[redacted]
DATE OF BIRTH (MONTH/DAY/YEAR)	SEX: ☐ MALE ☑ FEMALE	RACE: ☐ WHITE ☐ BLACK ☐ AMERICAN IN ☐ ASIAN/PACIFIC ☐ OTHER	
[redacted]			
PATIENT'S GUARDIAN	PATIENT'S PHONE NUMBER		
[redacted]	[redacted]		
REQUESTING PHYSICIAN HOSPITAL OR CLINIC	CLIENT ID NUMBER		
[redacted]	[redacted]		
STREET ADDRESS	LABORATORY RESULTS TYPE OF BLOOD SAMPLE		
[redacted]	☐ CAPILLARY ☑ VENOU		
CITY / STATE	LEAD RESULTS		
[redacted] MARYLAND			
ZIP CODE / TELEPHONE NUMBER	VALUE		
[redacted]	37 UG/DL		
NAME OF TESTING LABORATORY			
Quest Diagnostics			
STREET ADDRESS	CITY	STATE	
1901 SULPHUR SPRING RD	BALTIMORE	MD	
ZIP CODE	TELEPHONE NUMBER		
21227	410-536-1358		
LAB SAMPLE NUMBER	COLLECTION DATE	DATE RECEIVED	DATE REPORTED
[redacted]	6/19/14	6/20/14	6/20/14

SRMDLD

QUEST DIAGNOSTICS NICHOLS INSTITUTE Phone 1-703-802-6900
14225 NEWBROOK DRIVE, P.O. BOX 10841, CHANTILLY, VA 20153-0841 PAGE 2
BLOOD LEADS - STATE OF MARYLAND

Printed 07 JUN 2014 Including Results for Period of 06 JUN 2014 through 06 JUN 2014

LAB IDENTIFIER	TEST DATE	PATIENT NAME/ADDRESS	DATE COLLECTED	DOB	SEX/RACE	LEAD RESULT mcg/dL
CHILDRENS NATIONAL MED CTR, LABORATORY MEDICINE, 111 MICHIGAN AVENUE, WASHINGTON, DC 20010 Phone: 202-476-5355						
[redacted]	06/06/2014	[redacted]	06/05/2014 09:03	[redacted]	M/U	10
		Patient phone: [redacted]		Specimen: V		
			Medicaid#:	Purpose:	Hispanic:	
		Requesting physician: [redacted]	Guardian: [redacted]			
		Physician phone:				

NOVEMBER 6, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

NOTICE

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SIGN-IN MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

November 6, 2014

PLEASE NOTE: This sign-in sheet becomes part of the public record available for inspection by other members of the public.

Name/Signature	Representing	Telephone/Email
CONNOR, Patrick	Hazard ID Professional	
EGAN, Nancy	Maryland Insurance Administration	same
JENKINS, Melbourne	Property Owner Pre 1950	same
LANDON, Edward	Dept. Housing and Community Dev.	
McLAINE, Patricia	Child Health/Youth Advocate	same
MITCHELL, Cliff	Department of Health and Mental Hygiene	
MONTGOMERY, Paula	Secretary of the Environment or Designee	same
MOORE, Barbara	Health Care Provider	
OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
PEUSCH, Christina	Child Care Providers	
ROBERTS, Linda Lee	Property Owner Post 1949	
SCOTT, John	Insurer for Premises Liability Coverage in the State	
SNYDER-VOGEL, Mary	Child Advocate	
WITHERSPOON, Tameka	Parent of a Lead Poisoned Child	
VACANT	Local Government	
VACANT	Financial Institution	
VACANT (Cheryl Hall)	Office of Child Care/MSDE	
VACANT	Property Owner Pre 1950 Outside Baltimore City	
VACANT	Maryland Senate	

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GUESTS

Governor's Lead Commission Meeting Attendance Sheet

November 6, 2014

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Name	Representing	Address/Telephone/Email
Shakéta Denson	GHHI	2714 Hudson St | 4438425724 | sdenson@ghhi.org
Colin Choney	DHCD	100 Community Pl | 202-629-8762 | Colin.Choney@maryland.gov
Michelle Fransen	Cogency	mfransen@cogencyteam.com
Mike O'Leary	Balt City HCD	michael.o'leary@baltimorecity.gov 410 396 3023
Jody Johnson	self	johnsonjody05@gmail.com
Meghan Swentz	SeltD	

LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, November 6, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business
   - Update on Lavender Topped Tubes
   - Update on Child Care Initiative
   - Update on Lead Poisoning Prevention Week Activities

3. New Business

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, December 4, 2014 at MDE in the AERIS Conference Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
November 6, 2014

Approved Minutes (12/4/14)

Members in Attendance

Nancy Egan, Melbourne Jenkins, Pat McLaine, Cliff Mitchell, Paula Montgomery, Barbara Moore, and Delegate Nathaniel Oaks.

Members not in Attendance

Patrick Connor, Ed Landon, Christina Peusch, Linda Roberts, John Scott, Mary Snyder-Vogel, and Tameka Witherspoon.

Guests in Attendance

Shaketta Denson – GHHI, Colin Choney – DHCD, Michelle Fransen – Cogency, Mike O'Leary – Baltimore City HCD, Jody Johnson – self, and Myra Knowlton – BCHD.

Introductions

Pat McLaine called the meeting to order at 9:40 AM with welcome and introductions.

Welcome to New Members

- Cheryl Hall – Reappointed for another term
- Melbourne Jenkins, Jr. – Reappointed for another term
- Paula Montgomery – Secretary of the Environment or Designee
- Barbara Moore – Reappointed for another term
- Christina Peusch – Child Care Provider
- Linda Roberts – Reappointed for another term

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, December 4, 2014 at MDE in the AERIS Conference Room, Front Lobby, 9:30 AM to 11:30 AM.

Approval of Minutes

A motion was made by Mel Jenkins and seconded by Nancy Eaton to approve the September minutes with minor changes; the minutes were approved unanimously. A motion was made by Mel Jenkins and seconded by Barbara Moore to approve the October minutes; the minutes were approved unanimously.

Discussion

Old Business

Purple Top Tubes – The Commission has not yet heard back from Quest. They are planning to contact John Krupinsky. Nancy Egan reported that she has contacted Lab Corps and would like to identify any issues for them. Paula offered to set up a conference call to discuss these issues, to include MDE staff, Nancy Egan, Barbara Moore and Pat McLaine.

Office of Childcare – Pat McLaine will contact before the December meeting for an update.

Lead Poisoning Prevention Week – Pictures from the tree planting and Tameka were passed around. MDE staff attended a press event for Green and Healthy Homes. Paula Montgomery announced that MDE has begun an outreach campaign targeting about 2,000 contractors and members of the regulated community, focusing on the RRP and changes coming with the law. MDE also mailed notices out to 150,000 owners of non-owner occupied properties built between 1950 and 1978 with a structure larger than 1 square foot. MDE is also doing outreach to owners of multi-family dwellings. Paula reported that MDE has received a flood of calls and e-mails and has been busy fielding questions. The Coalition also went to a lot of schools with staff from MDE and local health departments.

.

New Business - none

Agency updates

Baltimore City Housing – Baltimore City did not win another round of funding. Ken Strong has cobbled together enough money for a one year period following the expiration of the current HUD grant. Baltimore City Housing will fund a full time home visitor from the Health Department and has several hundred thousand for lead and asthma work. Ken wants to be supportive of any legislative efforts.

Baltimore City Health Department – Myra Knowlton reported that BCHD is still looking for a le4ad director. She will send the job description to Tracie Smith so it can be sent to Commissioners.

Maryland Department of the Environment – Paula reported that MDE has finished the RRP regulation, which is now with HT. It goes next to MDE's Secretary and then will get published in ALAR. Paula will let the Commission know when the regulation has been submitted for publication. There will be a 30 day public comment period following the posting. MDE is also working with EPA to grandfather EPA-accredited individuals. Paula Montgomery reported that MDE received funding from CDC; 22 states were funded. MDE got half of the amount they had requested ($225,000) to continue with primary prevention efforts with Baltimore City Health Departments by making referral on pre-1950 rental properties. Paula will be traveling to CDC in December to talk about what states will now do with the HELPS program and to discuss action on BLLs of 5-9µg/dL.

Department of Housing – nothing to report

Maryland Insurance Administration – Nancy Egan reported that the Baltimore Sun had recently reported on a lead case with $1.1 million in damages. The Kennedy Krieger case is also being tried now.

Department of Health and Mental Hygiene – Cliff Mitchell reported that DHMH now has all comments on the lead targeting plan. He will report to the Commission next month (December 2014). The Lead Point of Care Testing recommendations will be available in the spring. Clinical guidelines for local health departments and clinical providers are in process. Cliff also noted that DHMH has been doing some work with Baltimore City Housing and DHCD about weatherization funding and coverage for lead and asthma. Lead grants are also out to seven jurisdictions (update next month). Barbara Moore asked whether Annual meetings with the local health departments have been scheduled yet. Paula thought the meetings should be held after all changes have been finalized. Pat McLaine noted that it was important to let local Health Departments know about proposed changes in advance of them being announced to the public. Paula will ask John to attend the next meeting.

Motion to adjourn the meeting was made by Mel Jenkins, seconded by Nancy Egan and passed unanimously. The meeting was adjourned at 10:28 AM.

DECEMBER 4, 2014

LEAD POISONING PREVENTION COMMISSION MEETING

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SIGN-IN MEMBERS

Governor's Lead Commission Meeting Attendance Sheet

December 4, 2014

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	Name/Signature	Representing	Telephone/Email
X	CONNOR, Patrick	Hazard ID Professional	
	EGAN, Nancy	Maryland Insurance Administration	4107462486
X	JENKINS, Melbourne	Property Owner Pre 1950	
	~~LANDON~~, Edward	Dept. Housing and Community Dev.	410-514-7499
	McLAINE, Patricia	Child Health/Youth Advocate	
X	MITCHELL, Cliff	Department of Health and Mental Hygiene	
	MONTGOMERY, Paula	Secretary of the Environment or Designee	
	MOORE, Barbara	Health Care Provider	
	OAKS, Nathaniel (Delegate)	Maryland House of Delegates	
	PEUSCH, Christina	Child Care Providers present- she signed the GUEST sign in sheet	
X	ROBERTS, Linda Lee	Property Owner Post 1949	
	SCOTT, John	Insurer for Premises Liability Coverage in the State	301-351-5068
X	SNYDER-VOGEL, Mary	Child Advocate	
	WITHERSPOON, Tameka	Parent of a Lead Poisoned Child	443 622 0798
	VACANT	Local Government	410-396-3474
	VACANT	Financial Institution	
	VACANT (Cheryl Hall)	Office of Child Care/MSDE	
	VACANT	Property Owner Pre 1950 Outside Baltimore City	
	VACANT	Maryland Senate	

KLEINHAMMER SUSAN

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GUESTS

Governor's Lead Commission Meeting Attendance Sheet

December 4, 2014

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Name	Representing	Address/Telephone/Email
JOHN KAUFUSCH	MDE	JOHN.KAUFUSCH@MARYLAND.GOV
RON WINEHOLT	AOBA	rwinehlt@aoba-metro.org
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LEAD POISONING PREVENTION COMMISSION
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

Thursday, December 4, 2014
9:30 a.m. - 11:30 a.m.

AERIS Conference Room
AGENDA

1. Welcome and Introductions

2. Old Business

3. New Business
   - Cliff Mitchell – Targeting Plan
   - Presentation on the bulk upload process for OLRR – Joe Wright, MDE

4. Future Meeting Dates: The Next Lead Commission Meeting is scheduled for Thursday, January 8, 2015 at MDE Stat Room Room – Front Lobby, 9:30 AM to 11:30 AM.

5. Agency Updates
   a. Maryland Department of the Environment
   b. Department of Health and Mental Hygiene
   c. Department of Housing and Community Development
   d. Baltimore City Health Department
   e. Office of Childcare
   f. Maryland Insurance Administration
   g. Other Agencies

6. Public Comment

GOVERNOR'S LEAD POISONING PREVENTION COMMISSION

Maryland Department of the Environment
1800 Washington Boulevard
Baltimore MD 21230

AERIS Conference Room
December 4, 2014

APPROVED Minutes (1-8-15)

Members in Attendance

Nancy Egan, Susan Kleinhammer, Ed Landon, Pat McLaine, Paula Montgomery, Barbara Moore, Delegate Nathaniel Oaks, Christina Peusch, John Scott, Ken Strong, and Tameka Witherspoon.

Members not in Attendance

Melbourne Jenkins, Cliff Mitchell, Linda Roberts, and Mary Snyder-Vogel.

Guests in Attendance

John Krupinsky – MDE, Ron Wineholt – AOBA, Tommy Tompsett – MMHA, Michelle Fransen – Cogency, Shaketta Denson – GHHI, Jody Johnson – self, Myra Knowlton – BCHD and Erica Kea – DHCD-MD, and Joe Wright – MDE .

Introductions

Pat McLaine called the meeting to order at 9:40 AM with welcome and introductions.

Welcome to newly appointed Commissioners Ken Strong, Susan DiGaetano-Kleinhammer, Mary-Snyder Vogel (re-appointed), and Pat McLaine (re-appointed).

Future Meeting Dates

The next Lead Commission meeting is scheduled for Thursday, January 8, 2015 at MDE in the MDEStat Conference Room, Front Lobby, 9:30 AM to 11:30 AM.

Approval of Minutes

A motion was made by Ed Landon, seconded by John Scott to approve the November minutes as written; the minutes were approved unanimously.

Discussion

New Business

Bulk Upload Process for OLRR - Joe Wright, MDE, began by describing the bulk upload process to be used to help management companies transfer information about their 1950-1978 rental properties to a spreadsheet to submit to the Lead Rental Registry (OLRR) at MDE. Joe demonstrated individual and bulk upload processes to upload information. The spreadsheet has two sheets, one with property number listed and one with individual units listed by tracking numbers, issued by MDE. The OLRR must build the profile first. A unit spreadsheet can include hundreds of units. MDE completes a validation process and sends to IT. IT completes another validation process and uploads into the registry. Once MDE has received payment, the units will be shown as "active"; if MDE has not been paid, they will be shown as "inactive". Cost is $30/unit. Information can be edited by the owner or owner's delegate. The owner can add or delete individual properties as needed. Question was asked about change in tenant occupancy – Joe indicated that property owners were not required to report change in occupancy until the next renewal but are required to do a risk assessment at every turnover. The change would be entered at the next renewal. Ed Landon asked if Baltimore City Housing maintained a list of such units in public housing. Joe Wright indicated that MDE receives hard copy information on turnovers. Question was asked about format for data entry so that data could be matched up with certification by inspectors. Joe Wright indicated that information should be the same but there still may be records that are not matched. Question was asked about what MDE does when individual inspection company provides a copy of an inspection certificate; Paula Montgomery indicated that presently the databases don't talk to each other and the parcel numbers don't match across the databases. But MDE does not yet have all certificates posted. Ron Wineholt indicated that his members appreciate having the bulk upload process and asked why the fields did not include certificate numbers. Joe Wright indicated that properties were required to have a certificate when they turned over. Ron Wineholt asked if this meant that there was no requirement that properties have certificates in order to be registered; Joe Wright confirmed that this was correct. Paula Montgomery indicated that the registration and certification processes are mutually exclusive. Registration is annual, certificate is another piece. Legislation may be needed to require both. Ed Landon noted that public housing units are registered, but asked if they are getting certificates. Paula Montgomery indicated that public housing must be registered with the Department and must have a certificate for every turnover. Ed Landon noted concern that all public housing units may not have certificates. Ron Wineholt asked what apartment owners are saying about the process. Paula Montgomery indicated she had received a call from a major complex concerned about how to meet turnover requirements. Most units were nearly lead free, but the property would not be able to meet all requirements before 1/1/15. Paula Montomgery recommended that the owner's representative come to MDE with a plan for bringing the properties into compliance. This would be considered a voluntary settlement agreement. Most issues were exterior – cornices, exterior doors, columns. Ed Landon indicated concern that lead certificates are in place in public housing at unit turnover in accordance with Maryland law. Shaketta Denson noted that placement of families required valid registration and

certificates. Susan Kleinhammer stated that the problem of lead safety was bigger in private housing. Joe Wright indicated that MDE has an on-line public search function that pulls up registration information on line: "Lead Rental Registry Property Search". If a property is or has ever has been registered, it will have a tracking number. Tameka Witherspoon noted that when her child was poisoned the family was moved twice. The second unit got a certificate. She was told that the unit was lead free but then was told that the complex had lead. Susan Kleinhammer noted that the property could be limited lead free and still have a "lead free" certificate. Barbara Moore noted that if there is lead on the exterior, this can still present a problem for the child and family.

DHMH Targeting Plan – Cliff Mitchell reviewed testing strategy options. The current testing strategy dates back to 2008. Any child less than 6 years of age enrolled in Medicaid must be tested at 12 and 24 months. Children who live in targeted zip codes must be tested at 12 and 24 months and have had at least one lead test before 6 years of age. If a child is not enrolled in Medicaid and is not living in an at-risk zip code, health care providers are required to screen with a questionnaire and if anything is positive, to conduct a BLL test. Currently, overall testing rates are less than desired: Medicaid testing may be 60%, other payers 20%. Testing is better in certain areas, including Baltimore City. Cliff Mitchell indicated that DHMH had looked at 3 approaches: (1) Universal testing; (2) lead testing based on housing stock/age; (3) lead testing based on current testing data to identify 50, 70 and 90% of kids with BLL$\geq$5µg/dL. The plan chosen was universal testing at 12 and 24 months, from 2015 -2018 (3 year period) with a reevaluation at the end of the 3 year period.

DHMH plans to develop new clinical management guidelines and envisions a large communication effort on testing and on managing test results. A draft document: "Maryland Lead Testing Targeting Strategy, November 2014" was provided to Commissioners only but has not yet been publically released. Management for BLLs 5-7µg/dL would include: confirm with venous, test sibs, retest for the next 6 months (3 times). Cliff Mitchell thinks most of the children will have short term, one-time exposures and BLLs will fall below 5µg/dL within 6 months. He reviewed Table 2 (page 11) evaluating targeting strategy options. Costs for universal testing approach include costs for follow-ups. With universal testing, Maryland could identify 400 more children with BLLs in the 10-20µg/dL range and much larger numbers of children with BLLs in the 5-9µg/dL range. Local Health Departments will not case manage children with BLLs 5-9µg/dL due to insufficient resources. The plan will be for the health care provider to follow the child. Health care providers could also talk more about notice of defect. Pat McLaine asked about the issue of an automatic referral of an address for children with 5-9µg/dL BLLs to check on rental property status and if rental, housing registration and certification, as had been discussed during the winter 2012-2013. This could be done without additional local health department resources. Nancy Egan asked if the estimate of costs included additional tests and costs for insurers. Cliff Mitchell responded that a large number of children are already enrolled in Medicaid and already should be tested. The Department is also adopting regulations to expand the Point of Care testing opportunities. John Krupinsky indicated that

MDE has recommendations for children with 5-9µg/dL BLLs which MDE sends out to local health departments. They can send to families and MDE also sends this out when individuals call. Materials include the COMAR 6-9 Rental Property Questionnaire with Notice of Defect. Local Health Departments are calling MDE. MDE is also working with Baltimore County to provide phone follow-up for children with 5-9µg/dL BLLs.

Commissioners raised concerns that Maryland will lose one year (2015) because PR and marketing is needed in advance of planned implementation and asked what plans were in place to get WIC and the MCOs on board. Cliff Mitchell said he was already meeting with the Medicaid MCOs and that the MCOs already receive payment based on meeting the HEDIS measures. DHMH and MDE are willing to do an aggressive message and outreach campaign that will need to be phased in. John Scott noted that the current rate for Medicaid testing is 60% and asked what DHMH thought would be the rate of testing if a universal approach was adopted. Cliff Mitchell indicated that prior to the ACA, the focus was on illness care but he did not have an estimate. Susan Kleinhammer, noting that capillary sticks sometimes result in false positives, asked if DHMH would require venipuncture. Cliff Mitchell said this was discussed with the Point of Care Testing Workgroup and the probability was low. He indicated that it may be less costly to do capillary testing than all venous. Commissioners Pat McLaine, Susan Kleinhammer (will be helpful in homes undergoing remodeling), Barbara Moore (will be easier for providers and clinics), Ken Strong (would like to see more follow-up built in), Paula Montgomery and Tameka Witherspoon expressed support for a universal testing approach. However, many expressed concerns that without enforcement and additional money for response, we would not be able to do what was needed. Funding and resources are clearly needed for both housing and health. Nancy Egan asked if the change would be made by regulation. Cliff Mitchell indicated that a change in regulations was not required and when DHMH adopts a plan that becomes the reference point. Nancy Egan voiced support for the universal testing approach stating her only concern was increase in insurance costs on the health care side. Cliff Mitchell indicated that the cost for one poisoned child might be $1 million and the cost for 400 children to be identified could be $40 million. Barbara Moore noted that we should recognize the problems for health care providers – the numbers will be much higher. Ed Landon expressed concern about the timing of the new initiative during the change in administration and the many anticipated changes during the next few months, noting that it was a shame it was starting so late. Cliff Mitchell indicated that DHMH just needed to put a stake in the ground as to what was the best public health strategy. Christina Peusch stated that she entirely agreed; childcare providers are already required to have all children tested and the new approach would be clearer. John Scott agreed, saying costs are gray but from a cost standpoint, we may get much more back by testing children and health insurance agencies may get more traction.

Ed Landon made a motion to send a letter to Laura Hererra indicating (1) the Commission's wholehearted support for DHMH's targeting strategy for universal testing of children at 12 and 24 months of age for the next three years; (2) the Commission's concerns about the urgency of this matter due to lack of time; (3) the need for additional resources to support local health departments and health care providers; and (4) the need for additional enforcement. The motion

was seconded by Barbara Moore and passed unanimously with one abstention (Cliff Mitchell). Barbara Moore and Pat McLaine will draft a letter for review by Commission. Barbara Moore asked if any recommendations would be made for retesting of children with a prior BLL of 5-9µg/dL. Cliff Mitchell indicated that the recommendations probably would not address this. Myra Knowlton indicated that BCHD is approaching all families of children with BLLs of 5-9µg/dL, following up when they receive the lab report. BCHD is also working with health care providers who call.

Old Business

Laboratory Follow-up: QUEST – local requisition form issue addressed by Dr. Leeland. Lab Corps – John Krupinsky indicated most issues are resolved but he will set up a meeting to include Nancy Egan and Pat McLaine to discuss this prior to the January meeting.

Office of Child Care – Pat McLaine will follow-up and provide more information in January.

Agency updates

Maryland Department of the Environment – nothing more to report

Maryland Department of Health and Mental Hygiene – nothing more to report

Maryland Department of Housing and Community Development – Ed Landon indicated that new building codes to take effect on January 1, 2014 would be adopted next week. Ed Landon requested information on RRP for training for building code officials; Paula Montgomery will provide this.

Maryland Insurance Administration – nothing to report

Baltimore City Department of Housing and Community Development – Ken Strong indicated that the City is investing $200K for cases with asthma, energy conservation and lead issues, using Public Service Commission funding.

Tameka Witherspoon indicated she is working on establishing a support group for parents, which should be set up by next month. She is also reaching out to PTAs about getting information out about lead testing.

Motion to adjourn the meeting was made by Ed Landon, seconded by Barbara Moore and passed unanimously. The meeting was adjourned at 11:30 AM.

MARYLAND
Department of Health and Mental Hygiene

Not For Distribution

MARYLAND LEAD TESTING TARGETING STRATEGY

November, 2014

DRAFT DOCUMENT

Joshua M. Sharfstein, MD
Secretary

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EXECUTIVE SUMMARY

This document outlines a revised lead testing strategy for Maryland children, based on changes in public health recommendations regarding lead exposure and the changing face of lead exposure in Maryland. The revised lead testing targeting strategy is part of a comprehensive review of Maryland's public health lead strategy, which has one goal – the elimination of lead exposure in the State. The key recommendations in this targeting strategy are as follows:

1. ***Universal testing of children ages 12 and 24 months:*** For a period of three years (from 2015-2018), all Maryland children under the age of 6 years should be tested for lead exposure at 12 and 24 months of age.
2. ***Re-evaluation of recommendations based on surveillance findings:*** At the end of three years, DHMH will re-evaluate these recommendations, based on the results of universal testing over the three-year period.
3. ***Clinical management guidelines:*** Children with a blood lead test of 5 – 9 micrograms per deciliter (mcg/dL) should have a confirmatory test, an assessment of possible sources of lead exposure, an assessment of other potentially vulnerable individuals in the home, and a repeat blood test until it is clear that they do not have ongoing lead exposure.

These recommendations are one part of a comprehensive State strategy to eliminate or control known sources of lead in the environment, conduct surveillance of blood lead levels, ensure appropriate clinical follow-up for those exposed, and provide case management for lead-exposed children. The State's Lead Poisoning Prevention Program is based at the Maryland Department of the Environment (MDE) and is conducted in concert with the Maryland Department of Health and Mental Hygiene (DHMH) and local health departments.

In addition to this revised strategy for testing, the Department is also revising its regulations on point-of-care testing to make it easier for providers to do lead testing in the office and report the results directly to parents and caregivers; promulgating new guidelines for the clinical cast management of children with blood leads of 5 – 9 mcg/dL; and revising its regulations regarding the reporting of blood lead tests to the Maryland Childhood Lead Registry. Together with new rules governing rental properties and home renovation and repairs, the new testing strategy and clinical guidelines are intended to move the State towards the goal of zero lead exposure in Maryland children.

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1. BACKGROUND AND INTRODUCTION

This report recommends a revised strategy for testing Maryland children for lead exposure. It is the first comprehensive reassessment of lead testing strategies in the State since 2004 and incorporates new recommendations from the U.S. Centers for Disease Control and Prevention (CDC) regarding blood lead levels that should trigger responses from clinicians, government agencies, and other stakeholders. The report was also prepared in response to significant changes in both statutory and regulatory requirements, as well as the progress that Maryland has made in reducing lead poisoning cases in the State since 1985.

Exposure to lead remains the most significant and widespread environmental hazard for children in Maryland, although substantial reductions in lead exposure and lead poisoning have also been achieved. While the prevalence of elevated blood lead levels in children in Maryland has declined dramatically over the years, there are still children with historically elevated blood lead levels and a number of children who are newly exposed to lead every year (Figure 1). There are also adults with elevated blood lead levels identified each year. Children are most vulnerable to the adverse effects of lead exposure before age six, a period when their neurological systems are developing and when hand-to-mouth behaviors increase the opportunity for ingestion of lead-containing material. Exposure to lead can cause permanent neurological damage that may be associated with learning disabilities, decreased intelligence, and behavioral problems. Exposure to lead in paint chips and lead-contaminated dust from deteriorated painted surfaces is the primary cause of elevated blood lead levels in young children; however, some old or imported toys, lead-painted pottery, certain hobbies, traditional home remedies or cosmetic items, and clothing contaminated with lead from the workplace are all other possible sources of lead.

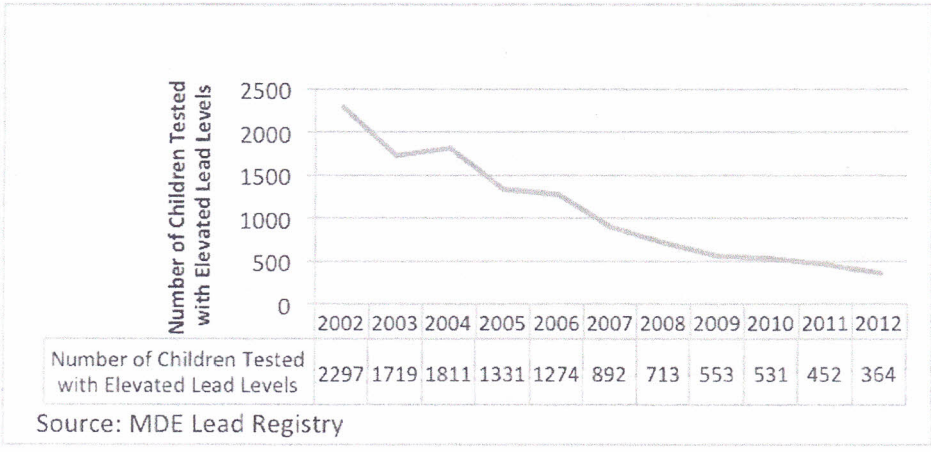

Figure 1. Number of newly-diagnosed children with blood leads of 10 mcg/dL or greater by year.

The Maryland Department of the Environment (MDE) is the principal state agency charged with lead poisoning prevention. MDE manages the Maryland childhood lead registry (CLR), conducts enforcement actions, and coordinates with state and local agencies on lead poisoning prevention measures. MDE has worked in conjunction with the Department of Health and Mental Hygiene (DHMH) toward the goal of eliminating childhood lead poisoning through

identification and elimination of sources of lead in the environment, surveillance, blood lead testing, coordination of resources, and case management.

2. EVOLUTION OF MARYLAND'S CURRENT TESTING TARGETING STRATEGY

The goal of the State's lead poisoning prevention program is to eliminate lead poisoning in Maryland. The State has made significant progress towards this goal through the identification and elimination of sources, such as lead paint in rental housing, and the testing and identification of children with lead exposure. The goal of testing is to identify children exposed to lead as soon as possible so that interventions can effectively address both sources of exposure and the clinical course of action for the child. There is an additional goal of preventing other children from being exposed.

In 1997, the CDC issued a report on childhood lead poisoning (CDC, 1997), revising an earlier recommendation for universal screening (CDC, 1991) and recommending universal testing of children receiving Medicaid or Supplemental Food Program for Women Infants and Children (WIC) or residing in areas identified as high-risk, and targeted screening for all other children. In response to the public health concern of childhood lead poisoning in Maryland and revised CDC guidance, the 1997 Maryland General Assembly enacted House Bill (HB) 1138 as emergency legislation. This bill directed DHMH to establish a Childhood Lead Screening Program to increase awareness of lead poisoning and to ensure testing of children under age six in areas identified as "at-risk." HB 1138 suggested specifically targeting childhood blood lead testing to "at-risk" areas, specifically those census tracts with large concentrations of pre-1978 housing, as well as those with the highest rates of lead poisoned children, based on CLR surveillance results. In response, DHMH collaborated with various organizations and the University of Maryland to develop the targeting plan in 2000, identifying geographic areas in Maryland that were at increased risk for childhood lead poisoning (Center for Health Development, 2000).

The most important factors in the 2000 targeting plan found to predict the risk of elevated blood levels in a particular ZIP code were: (1) the percentage of pre-1950 housing; (2) median housing value; (3) "poverty index" (based on a formula incorporating the percentage of residents receiving public assistance income, the percentage of female-headed households, and the percentage of families below the poverty threshold); and (4) percentage of homes built between 1950 and 1979. These variables were then used to identify "at-risk" ZIP codes across the entire State.

Legislation enacted by the 2000 General Assembly required testing of children at 12 and 24 months of age residing in these "at-risk" areas of the state (Maryland Code Annotated, Health-General Article § 18-106). Additionally, all children living in Baltimore City or children receiving Medicaid services, regardless of their place of residence, were designated as "at-risk," thus requiring testing. A lead exposure risk assessment questionnaire evaluating children for

exposures to known sources of lead was also required of all children at their 12 and 24-month visits. In 2003, a law was passed that required the parent of a child that either previously or currently resided in an "at-risk" area to provide documentation of lead testing at first enrollment into pre-kindergarten, kindergarten, or first grade (Maryland Code Annotated, Family Law Article § 5-556.1). Under Maryland law, a child under six years of age must have evidence of appropriate screening within 30 days of entering a child care center, family child care home, or nonpublic nursery school.

In early 2004, DHMH again commissioned the University of Maryland, this time to evaluate and update the 2000 model and targeting plan. This update focused on: (1) analysis of the 2000 model variables, (2) reapplication of the 2000 model using data from the 2000 U.S. Census and 2001-2002 CLR data, (3) creation of an updated "at-risk" ZIP code list, and (4) development of recommendations for future lead testing in Maryland (Maryland Department of Health and Mental Hygiene, 2004). As a result of this 2004 evaluation, an additional 78 "at-risk" ZIP codes were identified. Appendix 1 lists and shows the specific counties and ZIP codes identified as "at-risk" as a result of the 2004 revision to the State targeting plan. The results of the updated 2004 targeting plan supported targeting outreach and education efforts to increase childhood lead testing in areas at greatest risk, as well as testing all children living in Baltimore City and all children receiving services through Medicaid, as required by Maryland law.

3. REVISION OF FEDERAL AND STATE CLINICAL GUIDELINES FOR LEAD EXPOSURE

In May, 2012, the CDC accepted recommendations from its Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) regarding lowering children's blood lead levels from 10 mcg/dL to 5 mcg/dL (Advisory Committee on Childhood Lead Poisoning Prevention, 2012; CDC, 2012). This recommendation included eliminating the term "level of concern" (previously set at 10 mcg/dL), and substituting a new term, "reference level" equal to the 97.5th percentile of blood lead measured in children in the National Health and Nutrition Examination Survey (NHANES), which is currently 5 mcg/dL.

Maryland DHMH endorsed this recommendation and issued a letter to clinicians June 7, 2012, recommending that clinicians follow the new CDC guideline and re-test children with blood lead levels of 5 – 9 mcg/dL within 3 months (Appendix 2). At the time, the Department also stated that it would follow up these guidelines with additional guidance on: "the referral and case management process for children with new blood lead tests between 5 and 9 mcg/dL, whether and how far to "look back" for children who previously have had blood lead levels between 5 and 9 mcg/dL, and the appropriate clinical and administrative management of children with historic blood lead levels between 5 and 9 mcg/dL." The Department subsequently embarked on a detailed analysis of surveillance results for childhood lead exposure in the State in cooperation with MDE, leading to the current proposal. In addition, the Department has developed recommendations for case management of children with blood lead levels between 5

and 9 mcg/dL, which are being issued separately from this document. The next section describes the rationale for and evaluation of the Department's revision of the State testing strategy.

4. TESTING STRATEGY REVISION: RATIONALE AND EVALUATION

There are four important factors that make this an appropriate time to revise the State's targeting plan. First, it has been a decade since the plan was last re-evaluated, a decade that has seen a significant decline in the number and rate of new cases of childhood lead poisoning. Second, the risk factors for new cases have changed. A decade ago, most of the cases of elevated blood leads were from children in rental units exposed to peeling and chipping lead paint. While these sources are still important, a larger proportion of cases now come from sources including owner-occupied housing, rental housing not previously covered under Maryland law, non-paint sources such as food or consumer products, or sources that can not be identified. Third, the change in Federal recommendations adopted in 2012 means that a larger number of children, who previously might have been tested and had blood leads less than 10 mcg/dL or not have been tested at all, should now be tested and identified by their primary care providers. And fourth, even under the current targeting plan, many children who should be tested are not, which has prompted the Department to take a fresh look at the entire strategy and assess why it is that testing rates are not as high as recommended.

Three options were evaluated in developing the new strategy: (1) a testing targeting strategy based on lead levels in children tested for lead exposure, using data from the Maryland Childhood Lead Registry for the period 2005-2009; (2) targeted testing based on criteria similar to the previous 2000 and 2004 strategies, which used factors such as housing age and demographics in a model to predict the areas of highest lead exposure risk; and (3) testing of all children (universal testing) under the age of 6 (the period when children are at greatest risk of permanent damage from lead exposure). These options are described in Table 1 and in more detail in Appendix 3, Methods).

Table 1. Description of testing strategy options evaluated

Testing Strategy	Description of Strategy
Option 1: Testing based on ZIP code distribution of 2005-2009 test results	Lead test results between 2005-2009 for children under age 6 in the Maryland Childhood Lead Registry were used to predict the ZIP codes that would yield the greatest number of children with lead levels ≥ 5 µg/dL (Appendix 3)
Option 2: Testing based on updated Maryland targeting model	"At-risk" areas defined using risk factors similar to 2000, 2004 targeting plans: housing characteristics, population demographics (Appendix 3)
Option 3: Universal testing	All children under 72 months tested at 12, 24 months of age (Appendix 3)

Each option was evaluated according to how well it addressed health disparities; its efficiency in identifying children with elevated lead levels (sensitivity); simplicity; its completeness of coverage; and its potential cost-effectiveness.
The evaluation criteria also included the following assumptions:

- The State should prioritize testing vulnerable populations that are disproportionately exposed to lead or disproportionately affected by lead poisoning.
- All children enrolled in Medicaid should be tested for lead exposure at ages one and two years, as per the current policy.
- Targeting strategies should be designed to maximize the likelihood of identifying children with higher lead levels first, then children with lower levels.
- Any targeting strategy that does not involve universal testing should be simple to administer and understand, so that parents, health care providers, and health care organizations can easily determine whether a particular child should be tested.
- Any targeting strategy that does not involve universal testing should, at a minimum, ensure that all children who are not tested are screened by questionnaire for potential lead exposure, then tested based on suspicion of potential lead exposure.
- Any targeting strategy that does not involve universal testing should also be designed to avoid disproportionate or systematic exclusion of particular groups from testing.
- The testing strategy should be cost-effective; specifically, it should assure that the anticipated large numbers of blood lead levels of 5 – 9 mcg/dL results do not consume resources to the extent that they prevent an adequate response to more severely exposed children.
- The State should provide guidance to health care practitioners and organizations on how to manage children who are tested and found to have blood lead levels between 5 – 9 mcg/dL.

5. FINDINGS AND RECOMMENDATIONS

In developing its recommendations, the Department has weighed the strengths and weaknesses of each of the three options. The selection of the best strategy depends on a number of factors, including: (1) the estimated number of lead-exposed children identified through selective (i.e., non-universal) testing, as well as the estimated number of lead-exposed children who might be missed; (2) the costs of testing and associated follow up; (3) the impacts of expanded testing on both the public and on the health care system; (4) the potential benefits of identifying children with low-level exposures before they become significantly exposed; and (5) potential limitations of data and models used to analyze each of the targeting strategy options.

The findings of the evaluation are summarized in Table 2, and in more detail in Appendix 4. Using methods similar to those in the 2000 and 2004 Maryland targeting plan, options one and two characterized areas as "high", "moderate," or "low" risk groups. Adoption of the first strategy would result in testing 420,158 children, of whom 293,258 would be expected to have a blood lead level at or above the reference level of 5 mcg/dL while missing an additional 5,631 children predicted to have a blood lead level at or above the reference. Given the results from the second model, 106,570 children would be indicated to receive testing, 31,747 of whom are predicted to have a blood lead level at or above the reference and missing an additional 614 children predicted to have a blood lead level at or above the reference level of 5 mcg/dL.

Any targeted (non-universal) testing inevitably leads to the likelihood of excluding some children from testing. For instance, in areas with newer housing, parents and providers may not consider lead testing because it is considered to be a problem of older inner cities. In addition, the use of historical test data is results in biased projections of test results in the entire population, although the direction of the bias is not easily predicted. In areas that are not currently "at-risk," it is possible that testing is more likely to occur in individuals who are suspected of lead exposure, which would bias those results towards higher concentrations in those tested. Furthermore, the use of a model that emphasizes housing characteristics and demographics will also underemphasize the role of non-housing-related sources of lead exposure, and partly ignores the progress MD has made in controlling lead paint exposures. Only universal testing is simple to administer and understand for health care providers, parents, and policy makers. Universal testing is the only choice that ensures equity with respect to testing selection, but is likely to result in tests that need to be repeated or followed up, increasing associated healthcare costs.

Although the most costly option to implement, adoption of a universal testing strategy for a pre-determined period of time will provide useful data on the true prevalence and distribution of children with elevated blood lead levels in the State. Appendix 5 provides details of the potential costs of the targeting options. This improved understanding of lead risks would ultimately improve future lead testing strategies for the State. The U.S. Census Bureau estimated there were 439,326 children less than 6 years old in 2011. The 2011 MDE Lead Poisoning Prevention Program's annual report indicates that 21.9% of MD children less than 6 years old were tested in 2011 and found 2.5% of those tested had a blood lead level ranging from 5 –

9mcg/dL, and 0.4% had a blood lead level greater than or equal to 10mcg/dL. As an upper limit estimate of the "true" number of children with significant lead levels in the State, if the same proportion of tests held in the total population of children, an estimated 12,740 children would be expected to have a blood lead level greater than or equal to 5mcg/dL.

By contrast, neither targeted testing strategy will produce a representative sample of all children in the State, meaning that neither strategy will give an accurate picture of lead levels in the entire population. The population of children who are currently tested for elevated blood lead is also strongly influenced by the prior targeting strategy, which may bias the risk areas identified using any of these revised targeting strategies. In the ZIP codes targeted under the existing targeting plan, the average percentage of children in the population tested from 2005-2009 ranges from 10 to 61% with a median of 32%, while in non-targeted areas, the average percentage tested ranges from 0.5 to 46% with a median of 18%.

Since a smaller percentage of children from non-target areas are currently tested, the lead levels of children who are tested are unlikely to be representative of the population of children in the area. This could lead either to under-estimation of the "true" population lead level, or over-estimation, depending on whether the few children who are tested are suspected of lead exposure (meaning their levels would likely be higher than other children) or are tested for some other reason, such as access to care (which could lead to misclassification in any direction).

Another limitation of the targeted testing approaches is that they are determined from, and influenced by, population size and 2005-2009 testing rates in the areas. These testing strategies involve a calculation of the predicted number of children with a blood lead level at or above the reference based on this population data. Areas with a large population are more likely to be identified as "at-risk," even if they have a lower proportion of tests above the reference level, or a smaller predicted probability. For example, consider ZIP code A with a total population of 100 children and 6/10 (60%) test results above the reference level and consider ZIP code B with a total population of 1,000 children and 1/10 (10%) test results above the reference level. Targeting approach 1 would result in 60 and 100 children (respectively) estimated to have a blood lead level above reference. Based on this, ZIP code B is more likely to be targeted, although children in ZIP code A may be at greater risk for having a blood lead level above the reference. Essentially, areas with a high proportion of test results ≥5mcg/dL and a small population are less likely to be targeted than ZIP codes with a large population that have a small proportion of test results ≥5mcg/dL.

Universal testing would be the most expensive of the proposed testing strategies to implement. This strategy also presents an additional issue of how to manage the increased numbers of children with lead levels in the 5-9mcg/dL range who would likely be identified if all children were tested. These children would require repeat testing, and many of them might ultimately not go on to develop higher blood lead levels. However, research has indicated that there is no "safe" level of lead exposure in children, and cognitive effects have been noted in children with increasingly low levels. If adopted, an estimated 10,862 children would require follow-up testing, at an estimated cost of between $471,000 and $831,000 per year for the three

years of universal testing. It is likely, however, that most of these children will only require repeat testing to confirm that they are *not* being exposed to lead on an ongoing basis. However, a small, but unknown, number will also be found to have blood lead exposures, which, if prevented through this early detection, would significantly lower the lifetime costs associated with lead poisoning. A complete cost-effectiveness analysis is beyond the scope of this document, but it is notable that the rate of IQ loss has been noted greatest per unit blood lead *below* 10 mcg/dL. Additionally, nationwide lead hazard analyses considering costs for medical treatment, lost earnings, lost tax revenue, special education costs, and other associated costs suggest a return of $17 to $221 for each dollar invested in lead hazard control (Gould, 2009). Therefore the cost of any of the proposed strategies pale in comparison to the costs of untreated disease, and maximizing detection efforts should remain paramount.

Given these considerations, the State has elected to adopt a strategy of universal testing for a period of three years. This strategy is most likely to produce a true picture of lead exposures across the State, is easy to administer and understand for all parties involved, and is most likely to move the State towards the goal of eliminating lead poisoning and lead exposure among children. At the end of the three-year period, the State intends to re-evaluate the results and decide whether to modify the test strategy. Coincident with the adoption of this strategy, the State will promulgate recommendations on the management of children with blood lead levels of 5 – 9 mcg/dL, anticipating the need to clarify issues such as how long such cases should be followed.

In recommending this option, the Department recognizes that heath care providers, parents, and other stakeholders will need to receive extensive outreach and education about testing, test interpretation, and test follow-up. In particular, there may be some questioning of, and resistance to, testing in areas where people have not previously been subject to testing requirements. Outreach and communication should therefore focus on the ease of testing, the importance and value of early identification of lead exposure, and the fact that the strategy will be re-evaluated after a period of time. The communication should also emphasize that this is the most equitable and easily administered strategy for everyone.

Table 2. Evaluation of Targeting Strategy Options

Testing Strategy	Estimated number of 1- and 2-year old children to be tested[§]	Estimated number of children with EBL ≥10mcg/dL[§]	Estimated number of children with EBL 5 - 9mcg/dL[§]	Prioritizes vulnerable populations based on disproportionate exposure or effects	Simple for providers, parents to interpret	Ensures screening by questionnaire for children not tested	Addresses disparities observed in current testing	Estimated cost of implementation[§]
Option 1 – Testing based on ZIP code distribution of 2005-2009 test results	91,201 (79,983 Venous, 11,218 Capillary)	1,100 (1,040 Venous, 60 Confirmed Capillary)	7,108 (6,159 Venous, 949 Confirmed Capillary)	May be biased towards areas where testing more likely to be done only in cases of suspected lead poisoning	No	No	No	$2,577,901 - $3,853,697
Option 2 – Testing based on updated Maryland targeting model	108,245 (92,008 Venous, 16,237 Capillary)	1,148 (1,104 Venous, 44 Confirmed Capillary)	8,051 (6,809 Venous, 1,242 Confirmed Capillary)	Assumes exposures primarily related to housing characteristics	No	No	No	$2,904,642 - $4,403,261
Option 3 – Universal testing of all children under 6 at 12 and 24 months	146,037 (124,131 Venous, 21,906 Capillary)	1,548 (1,489 Venous, 59 Confirmed Capillary)	10,862 (9,186 Venous, 1,676 Confirmed Capillary)	Most equitable	Yes	Not applicable	Yes	$3,918,061 – $5,939,876

[§]See Appendix 5, Table A-5.1 for details.

* IN any OF these Recommendations BLL will Quadrupal ice above c 5-9

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APPENDIX 1. Current (2014) "At-Risk" Areas (from 2004 Targeting Plan)

Figure A-1.1. Maryland Lead Targeting Plan, 2004 Revision

Table A-1.1. "At-Risk" ZIP Codes Identified in the Maryland Lead Targeting Plan, 2004 Revision

Allegany	Baltimore County	Frederick	Montgomery	Prince George's (cont.)
ALL	(cont.)	(cont.)	20783	20913
	21239	21719	20787	
Anne Arundel	21244	27127	20812	**Queen Anne's**
20711	21250	21757	20815	21607
20714	21251	21758	20816	21617
20764	21282	21762	20818	21620
20779	21286	21769	20838	21623
21060		21776	20842	21628
21061	**Baltimore City**	21778	20868	21640
21225	ALL	21780	20877	21644
21226		21783	20901	21649
21402	**Calvert**	21787	20910	21651
	20615	21791	20912	21657
Baltimore County	20714	21798	20913	21668
21027				21670
21052	**Caroline**		**Prince George's**	
21071	ALL	**Garrett**	20703	**Somerset**
21082		ALL	20710	ALL
21085	**Carroll**		20712	
21093	21155	**Harford**	20722	**St. Mary's**
21111	21757	21001	20731	20606
21133	21776	21010	20737	20626
21155	21787	21034	20738	20628
21161	21791	21040	20740	20674
21204		21078	20741	20687
21206	**Cecil**	21082	20742	
21207	21913	21085	20743	**Talbot**
21208		21130	20746	21612
21209	**Charles**	21111	20748	21654
21210	20640	21160	20752	21657
21212	20658	21161	20770	21665
21215	20662		20781	21671
21219		**Howard**	20782	21673
21220	**Dorchester**	20763	20783	21676
21221	ALL		20784	
21222		**Kent**	20785	**Washington**
21224	**Frederick**	21610	20787	ALL
21227	20842	21620	20788	
21228	21701	21645	20790	**Wicomico**
21229	21703	21650	20791	ALL
21234	21704	21651	20792	
21236	21716	21661	20799	**Worcester**
21237	21718	21667	20912	ALL

APPENDIX 2. June 7, 2012 Department of Health and Mental Hygiene Letter to Clinicians on New CDC Guidance

STATE OF MARYLAND
DHMH

Maryland Department of Health and Mental Hygiene
201 W. Preston Street • Baltimore, Maryland 21201
Martin O'Malley, Governor – Anthony G. Brown, Lt. Governor – Joshua M. Sharfstein, M.D., Secretary

June 7, 2012

Dear Health Care Provider:

In May, 2012, the U.S. Centers for Disease Control and Prevention (CDC) responded to recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) to revise the guidelines for childhood lead poisoning.

This letter summarizes the Department of Health and Mental Hygiene's (DHMH) recommendations for the prevention, diagnosis, and management of lead poisoning in children. The letter also summarizes the CDC response and rationale, and the current activities of DHMH and the Department of the Environment (MDE) to respond to this change in guidelines.

The key questions for health care providers addressed in this letter are:

- *What are the recommendations of the Advisory Committee on Childhood Lead Poisoning Prevention, and what were CDC's responses to those recommendations?*
- *What blood lead level should trigger a response by a health care provider?*
- *What is the recommendation for children with blood lead levels between 5 and 9 microgram/deciliter (µg/dL)? For children with blood lead levels 10 µg/dL or greater?*
- *Are there changes in the recommendations for which children in Maryland should be screened or tested for possible lead exposure, the screening and testing procedures, or the ages of screening and testing?*

Key Points of Advisory Committee's Recommendations and CDC's Response

The recommendations from the ACCLPP were based on a thorough review of the science of childhood lead poisoning. The ACCLPP's recommendations were based on the weight of evidence from a growing body of studies showing that the effects of lead appear to be irreversible and can occur at levels < 10 µg/dL. Key points of the recommendations are as follows:

- The ACCLPP recommends that the term "level of concern" be eliminated from all future agency policies, guidance documents, and other CDC publications. CDC agreed that the emphasis should be on preventing even these low exposure levels.

- CDC agreed that the agency should use a childhood BLL reference value based on the 97.5th percentile of the population BLL in children ages 1-5 (currently 5 µg dL) to identify children and environments associated with lead-exposure hazards. The reference value should be periodically updated, based on the most recent population based blood lead surveys among children.

- Clinicians should monitor the health status of all children with a confirmed BLL ≥ 5 µg dL for subsequent changes in BLL until all recommended environmental investigations and mitigation strategies have been completed, and should notify the family of all affected children of BLL test results in a timely and appropriate manner. Clinicians also should collaborate with local and state health agencies to ensure that the appropriate services and resources are provided to children and their families.

- Both the ACCLPP and CDC emphasized the importance of educating families, service providers, advocates, and public officials on the primary prevention of lead exposure in homes and other child-occupied facilities to ensure that lead hazards are eliminated before children are exposed.

Recommendations for Maryland Health Care Providers

Based on the new CDC recommendations, DHMH, in consultation with the Lead Poisoning Prevention Program at MDE, is taking the following steps. DHMH is currently recommending that all providers follow the guidelines below regarding lead poisoning prevention in children.

1. *There is no change in the recommendations for the age of testing for children in Maryland.* **The requirement remains that children living in zip codes identified as "at-risk") in the Maryland State Targeting Plan (view at-risk zip codes: http://fha.dhmh.maryland.gov/mch/Documents/Lead-revisedatriskareas2004a.pdf), and all children enrolled in Maryland Healthy Kids (EPSDT), should receive a lead test at ages 12 and 24 months.** In addition, all children should be screened for possible lead exposure with questions about peeling, flaking, or chipping paint, as well as other sources of lead exposure. Any child who has potential sources of lead exposure should be tested for lead.

2. *DHMH, consistent with the new CDC guidance, recommends that children with a lead level greater than the new reference level of 5 µg dL should be retested within 3 months.* In addition, families whose children have a confirmed level greater than 5 µg dL should receive lead and nutritional education, and be assessed for possible sources of lead exposure.

3. *There has been no change in the Maryland law related to housing and lead levels.* Maryland law still recognizes a level of 10 µg dL as the level that triggers regulatory action related to rental housing.

Further Recommendations to Come

A number of important policy issues remain to be answered, including the referral and case management process for children with new blood lead tests between 5 and 9 µg/dL, whether and how far to "look back" for children who previously have had blood lead levels between 5 and 9 µg/dL, and the appropriate clinical and administrative management of children with historic blood lead levels between 5 and 9 µg dL.

DHMH and MDE will work with local health departments to develop recommendations and guidelines for these questions, based on future CDC guidance and on input from key stakeholders. The agencies propose to solicit stakeholder and public input into these decisions through the Maryland Lead Poisoning Prevention Commission. The agencies anticipate updating state guidance this fall..

Resources for Providers

For further information, including resources for parents, providers, tenants, home owners, contractors, and rental owners, data on childhood lead tests in Maryland, and changes in recent laws affected lead, visit the Maryland Lead Poisoning Prevention Program website at: http://mde.maryland.gov/programs/Land/LeadPoisoningPrevention/Pages/Programs/LandPrograms/lead_coordination_index.aspx. You can also call the Childhood Lead Poisoning Prevention program at 410-537-3825. Questions for DHMH can be directed to the Environmental Health help line toll-free at 1-866-703-3266.

Sincerely,

Frances Phillips RN, MHA
Deputy Secretary for Public Health

Clifford S. Mitchell, MS, MD, MPH
Assistant Director for Environmental Health and Food Protection

APPENDIX 3. Methods

This section describes the analytic framework for the project, beginning with a description of the data sources, followed by the methods used to prepare the data set(s) used for the analysis. The last section describes the methods used to assemble the data to test each of the three different options for a revised lead targeting strategy for Maryland.

Data Sources

Maryland childhood lead testing data were downloaded from the Childhood Lead Registry's Systematic Tracking of Elevated Lead Levels and Remediation (STELLAR) data base. Additional property data were obtained from the State Department of Assessments and Taxation (DAT) and MDE Rental Registry data sets. These data were cleaned, geocoded, and then merged using residential addresses. New variables for each address's latitude, longitude, census tract, and county were added using Centrus geocoding software. Detailed descriptions of these data sets and initial data cleaning procedures are in Appendix 6.

The resulting file included record-level information on the basic demographics (age, gender), blood lead test results (sample date, test type, blood lead level), address (street address, latitude, longitude, census tract) and housing characteristics (year of construction, assumed rental status) on each individual child tested in Maryland annually from 2005-2009. Children without valid State addresses or children for whom age was unknown were excluded from the analyses. Each child was counted only once in the full project data set for the year in which they received a blood lead test, using the highest confirmatory or venous test.

To present a baseline description of lead testing and the characteristics of children tested in Maryland, descriptive statistics were computed on the full project data set. Tables and maps were generated to summarize the characteristics of children who received a blood lead test from January 1, 2005 through December 31, 2009. Both annual and 5-year aggregate analyses were performed, retaining each child's highest venous, unknown, or capillary test result (in that order) for the specified time period. Venous samples were considered the most accurate.[2] Samples with an "unknown" type were prioritized over capillary samples because it was possible that some proportion included venous samples. Any decimals in the reported blood lead levels were rounded *down* to the nearest whole number (e.g., a blood lead level of 9.9 would be rounded to 9), because legally, a blood lead level of 9.9 is still considered less than 10. For annual descriptive analyses, each child was counted once per year in the year they received a blood lead test. These results were presented stratified by year. For the 5-year aggregate analysis, each child was counted only once per 5-year period.

Data were prepared and analyzed with SAS Version 9.2. Maps were prepared using ArcGIS ArcMap 10. Tables were prepared using Microsoft Excel 2010.

Targeting Strategy Option 1 (Target Testing Based on the Distribution of Blood Lead Levels in Children Tested between 2005-2009, by ZIP Code)

The first targeting strategy involves testing all 1- and 2-year old children in the State residing in "at-risk" areas, as well as all children receiving Medicaid. This strategy defines "risk" based on historically observed test results from the CLR for all children less than 72 months of age tested between 2005 and 2009. This approach assumes that the proportion of children with a test result of 5mcg/dL or higher is representative of the entire ZIP code. The "expected" number of children with a blood lead level above the CDC reference level of 5mcg/dL was then calculated based on this assumption.

This approach is based upon the assumption that the risk (probability) of having a blood lead level ≥5mcg/dL in a population of children *tested* is the same as the *actual* risk (probability) in the population of children residing in that ZIP code. Unlike Strategy Option 2, below, it does not depend on housing characteristics or other predictors, but instead is based solely on the historically observed distribution of blood lead levels from the Maryland Childhood Lead Registry. This assumption is most accurate for areas of the state that already have relatively high testing rates, but is less accurate for areas that traditionally have relatively low rates of testing.

The full project data set was restricted to children less than 6 years of age. This data set was then aggregated over a 5-year period, and the test result of the highest venous, unknown, or capillary was retained, resulting in a data set that included a single record per individual child tested from 2005-2009. Next, the data set was aggregated by ZIP code, obtaining the total number of tests overall and the number of results ≤4mcg/dL, 5-9mcg/dL and ≥10mcg/dL per ZIP code. The proportion of tests at, or above, the current reference level was calculated as the total number of tests with results ≥5mcg/dL divided by all tests in each ZIP code (Equation 1).

Equation A-3.1. Proportion of Tests at or above CDC Reference Level of 5µg/dL

$$\text{Proportion} = \frac{Number\ Results \geq 5\mu g/dL}{Total\ Number\ of\ Tests}$$

The annual population of children residing in each ZIP code was estimated using the 2000 and 2010 U.S. Census counts of the total number of children less than 6 years of age in each ZIP code. Procedurally, US Census ZIP Code Tabulation Areas (ZCTAs) were merged using a Geographic Information System (GIS) computer map so that each represented the boundary of each US Post Office ZIP Code. The 2000 Census data were obtained from the 2000 Census summary file compact disk, and Excel files of the 2010 Census data were obtained by MDE from the Maryland Department of Planning. These counts were interpolated to estimate the total annual number of children less than 6 years of age residing in each ZIP code for 2001-2009. The annual counts of children for each inter-censal year were calculated using the

accepted premise of a linear change in annual population within the decade. The method, while is not as accurate as the 2000 population count, is an accepted method to determine ZIP code population totals for intervening years. The total population change (increase or decrease) from 2000 to 2010 for each ZIP code was divided by 10 (10 years) and a 1/10 increment was added to the total population for the previous year, resulting in an annual estimate of the number of children less than 6 years of age.

The expected number of children with a blood lead level at or above the reference level was calculated by multiplying the proportion of tests at or above the reference level by the estimated population of children less than 6 years of age in each ZIP code.

The list of ZIP codes was sorted in descending order of the proportion of children with a blood lead level ≥5µg/dL, based on the 2010 population total, and the cumulative percent was calculated. Potential "at-risk" ZIP codes were identified by summing the number of children less than 6 years old with an expected blood lead level greater than, or equal to, 5µg/dL in each area, starting with areas with the largest number of children expected to have blood lead levels of 5µg/dL or greater, until the cumulative total number of cases amounted to 90%, 75%, or 50% of all cases expected in the State. The ZIP codes capturing 90%, 75%, or 50% of the State's total number of children were identified as "at-risk."

The computed risk status measure of each ZIP code was merged with other information about each child (zip code to child match). The ZIP code polygon-child file was used to identify characteristics of individual children from "at-risk" and "non-risk" ZIP codes. Further analyses of this file permitted assessments of the various risk definitions. The Chi-Square test was used to assess whether there were statistically significant differences in the demographic characteristics of "at-risk" and "non-risk" areas.

Targeting Strategy Option 2 (Target Testing Based on Updated Maryland 2000 and 2004 Targeting Model)

The second targeting strategy involves testing all children enrolled in Medicaid and all 1- and 2-year old children in the State residing in "at-risk" areas, with "risk" defined based on historically observed risk factors such as housing and other demographic data from the U.S. Census. Additional measures from the State Department of Assessments and Taxation (DAT), MDE Rental Registry, MDE Enforcements, and U.S. Census were analyzed to identify potentially new information that could differentiate residential ZIP codes on lead risk. This approach is based upon the assumption that historically identified risk factors continue to be the primary influence on a child's risk of lead poisoning in MD and utilizes more recent data to examine the current influence and distribution of these in the state. In other words, the assumption underlying this strategy is that a primary risk for lead exposure continues to be lead paint, as in other states in the Northeast United States.

As described above, the initial data consisted of one recorded test per child annually for all children tested from 2005 to 2009. As before, the highest venous, unknown, or capillary sample was used. The resulting data set was then aggregated by census tract. This data set

differed from that in the first strategy in that it included counts of the total number of individual children less than 6 years of age tested and the total number of children with test results that were ≤4 μg/dL and ≥5 μg/dL for each census tract. The percentage of children with tests at or above the CDC reference level (5mcg/dL) was calculated as the number of children with test results at or above 5mcg/dL divided by the total number of children in each census tract and multiplied by 100 (Equation 2). The denominator was determined by computing the sum of total children with test results below (≤4μg/dL) with total children with test results at or above the revised lead reference level (5mcg/dL) per census tract.

Equation A-3.2. Percentage of Tests At or Above CDC Reference Level

$$\text{Percentage of tests} = \frac{Number\ Results \geq 5\mu g/dL}{Total\ Number\ of\ Tests} \times 100$$

The American Community Survey (ACS) 2009 5-year estimate (2005-2009) data set by census tract was used for the analysis. The following census tract characteristics identified as critical to the analysis of the data for the 2000 and 2004 targeting models:

- total number of children less than 6 years of age
- total number of families with children less than 5 years of age below poverty level
- total number of female-headed households with children less than 6 years of age
- number of housing units by age, median housing values
- number of households with public assistance income
- total population by race
- number of occupied and vacant houses
- number of renter- and owner-occupied houses
- median household income

The median household income and housing value for each census tract were used to calculate percentages by census tract (Appendix A). The census tract demographics data were merged with the prepared CLR data containing the counts and the percentage of tests at or above the reference level by census tract number.

Because the CLR data set includes five years of data, the average annual proportion of children tested from 2005-2009 was computed for each census tract. This was the total number of individual children less than 6 years old tested each year divided by the estimated total population of children less than 6 years old per census tract (Equation 3). The ACS 5-year estimated population of children by census tract was used as the annual population estimate. Because the annual denominator came from the population census, each child was counted once per year. For consistency in the numerator, an individual child less than 6 years old was counted once for each year in which she/he received a lead test. For this measure, an individual child was

counted only once per year, provided that a child received a lead test and was less than 6 years of age in that year.

Equation A-3.3. Mean Annual Percentage of Children <6 Years Old Tested

$$\text{Percentage} = \frac{NT\ 2005 + NT\ 2006 + NT\ 2007 + NT\ 2008 + NT\ 2009}{Total\ Number\ of\ Tests} \times 100$$

NT=Number of Children Tested

The dependent variable of interest was census tract "risk area" versus census tract non-risk area. This census tract risk area was defined as the percentage of unique children with blood lead tests (one single lead test for each child) per census tract at or above the reference level of 5μg/dL. For census tracts in MD, this percentage ranged from 0 to 61%. Four dummy-variable binary measures were created: 25th, 50th, 75th, and 90th percentiles. These percentile cut points were selected to identify high-risk census tracts that included 3, 5, 9 and 17% of test results at or above the four reference cut off values, respectively. For example, using the 50th percentile cut-off, census tracts with greater than or equal to 5% of tests at or above the reference level would be considered "at-risk" areas.

Census tract characteristics of areas identified as risk and non-risk were compared for each outcome. Risk and non-risk areas were compared using the two-sample t-test of the dependent variable was continuous. Correlations between the covariates were evaluated using the Pearson's correlation coefficient statistic. Based on the results of these comparisons and the observed correlations between the covariates, a "poverty scale" variable was created. This new poverty scale index was computed by summing the standardized proportion of female-headed households, the proportion of households with public assistance income, and the proportion of families below the poverty level. The mean and standard deviation of each of these variables were calculated and used to generate a "standardized value" (Equation 4 a-c). The standardized values were then averaged, resulting in the poverty scale variable used in the model (Equation 5).

Equation A-3.4. Census Tract Standardized Poverty Variables

a) Female-Headed Household (FHH): Standardized FHH = $\frac{\%FHH(tract) - Mean\%\ FHH(state)}{FHH\ Standard\ Deviation\ (state)}$

b) Public Assistance Income (PA): Standardized PA = $\frac{\%PA(tract) - Mean\%\ PA(state)}{PA\ Standard\ Deviation\ (state)}$

c) Families Below Poverty (FBP): Standardized FBP = $\frac{\%FBP(tract) - Mean\%\ FBP(state)}{FBP\ Standard\ Deviation\ (state)}$

Equation A-3.5. Mean Census Tract Poverty Scale Variable

$$\text{Poverty Scale} = \frac{\text{Standardized FHH} + \text{Standardized PA} + \text{Standardized FBP}}{3}$$

The bivariate relationship between the community variables (predictors) and the outcome (being a "risk area") was evaluated by computing crude odds ratios (ORs) and ORs adjusted for the average proportion of children less than 6 years of age tested. To calculate the ORs, census tracts were aggregated into tertiles consisting of low, medium, and high groups for each of the independent variables. To construct these groups, the census tracts were sorted with respect to the independent variable, then cut-off values were identified that divided the population of children into three groups, each containing approximately a third of the census population of children less than 6 years old.[3,9]

Predictive models for each of the four outcomes (dependent variables) were developed and included covariates historically considered to be significant predictors of lead risk in Maryland, as identified in the earlier models.[3,4] Logistic regression models were used to evaluate the association between each of these covariates and the dependent variable. Each of the four models was evaluated based on several model criteria. These model assessment criteria included the Hosmer-Lemeshow test, Somers' D statistic, and the area under the receiver operating characteristic (ROC) curve. The area under the ROC curve gives a quantitative indication of each model's ability to distinguish between risk and non-risk census tracts and can range from 0.5 (worst) to 1.0 (ideal). The ROC curve plots the probability of correctly detecting a risk area (sensitivity) and correctly detecting a non-risk area (1-specificity).

The results for the models were used to generate a predicted probability for each census tract. The predicted number of children was calculated as the predicted probability of that census tract multiplied by the total population of children less than 6 years of age living in that census tract. Census tracts were then ranked as high, moderate, low, or negligible risk based on the percentage of children predicted to have a blood lead level at or above the reference level in that area. The intervals used here are based on the previous state model[3]; this was done to make the current findings comparable to those from the models used in the previous State targeting plans. For each outcome, census tracts containing 40-100% of the highest number of predicted "at-risk" children were classified as high risk; tracts containing 11-39.9% were classified as moderate risk; tracts containing 2-10.9% were classified as low risk; and tracts containing less than 2% were classified as negligible risk. The rankings for each outcome measure were mapped to depict the distribution of risk areas across the state. Under the current State targeting plan, areas classified as high, moderate, and low risk are all targeted (Maryland Code Annotated, Health-General Article § 18-106; see also Maryland General Assembly House Bill 1221 (2000 Session)) .

Targeting Strategy Option 3 (Universal Testing)

The final option for a universal testing strategy would be to test every child in the state at the age of one and two years. The universal testing approach eliminates the need to identify "at-risk" areas; rather, the expectation would be that all children in every jurisdiction would be tested at age one, and again at age two. Children older than two years of age who were not previously tested are not assumed to be retrospectively tested in this option.

APPENDIX 4. Results of the Analysis

Descriptive Statistics

The number of individual children (≤18 years old) tested in Maryland increased each year from 113,186 in 2005 to 119,866 in 2009, while the number of children with blood lead levels greater than 10mcg/dL decreased. The 181 records for which the child was from a state other than Maryland, or the child's state of residence was unknown (0.01-0.09% annually), were excluded, as were reports for any persons older than 18 years of age. Annually, 59-65% of all children tested in the state were 2 years old or younger. Completeness of information about a child's race and ethnicity has improved each year. In 2009, however, ethnicity and racial data was still incomplete, with 38% and 46% of tested children's ethnicity and race, respectively, still unknown (these variables were still included, however, because of the importance of addressing historical disparities in lead exposure). Table A-4.1 summarizes the demographic information of all Maryland children who received a blood lead test from 2005-2009.

Of the children less than 6 years old tested in the State each year, most were from Prince George's County (17.1-18.2%), Baltimore City (16.7-17.7%) or Montgomery County (16.5-17.5%). Table A-4.2 summarizes, by county, the number and percentage of children less than 6 years old tested each year from 2005-2009. The average annual percentage of census-tract-defined children tested for lead ranged from 2-90% during this 5-year period (Figure 3). The median percentage of blood lead tests at, or above, the reference level for all census tracts in the state was 5%. The percentage of test results at or above the reference level by census tract for all children less than 6 years old tested ranged from 0.5-61.9% (Figure 4). Summary statistics of all children tested in the state, stratified by blood lead level (≤4, 5-9, and ≥10mcg/dL), are presented in Table A-4.3.

Table A-4.1. Characteristics of Children Tested for Elevated Blood Lead Levels, Maryland 2005-2009

	2005		2006		2007		2008		2009	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Individual Children Tested:	113,186		115,922		118,197		118,893		119,866	
Sex										
Female	54,366	48.0	55,686	48.0	56,894	48.1	57,789	48.6	57,940	48.3
Male	56,840	50.2	58,377	50.4	60,443	51.1	60,521	50.9	61,212	51.1
Unknown	1,980	1.7	1,859	1.6	860	0.7	583	0.5	714	0.6
Age (years)										
<1	10,178	9.0	10,595	9.1	11,280	9.5	11,360	9.6	10,961	9.1
1	32,108	28.4	34,190	29.5	35,809	30.3	36,307	30.5	36,549	30.5
2	24,208	21.4	26,038	22.5	26,822	22.7	28,349	23.8	29,815	24.9
3	11,659	10.3	11,697	10.1	12,011	10.2	11,616	9.8	11,822	9.9
4	12,016	10.6	11,900	10.3	11,497	9.7	11,006	9.3	10,932	9.1
5	8,827	7.8	8,471	7.3	8,259	7.0	7,845	6.6	7,502	6.3
6-18	14,183	12.5	13,026	11.2	12,516	10.6	12,406	10.4	12,285	10.2
Race										
White	18,009	15.9	20,396	17.6	25,577	21.6	27,222	22.9	27,968	23.3
Black	19,840	17.5	23,601	20.4	27,742	23.5	31,011	26.1	32,371	27.0
Other*	2,198	1.9	2,757	2.4	3,453	2.9	4,231	3.6	3,992	3.3
Unknown	73,139	64.6	69,168	59.7	61,425	52.0	56,429	47.5	55,535	46.3
Ethnicity										
Hispanic	7,776	6.9	10,144	8.8	13,890	11.8	16,300	13.7	17,905	14.9
Non-Hispanic	31,848	28.1	38,112	32.9	46,426	39.3	52,408	44.1	56,428	47.1
Unknown	73,561	65.0	67,663	58.4	57,873	49.0	50,174	42.2	45,518	38.0
Race/ Ethnicity										
White, non-Hispanic	10,812	9.6	12,777	11.0	16,914	14.3	18,311	15.4	18,569	15.5
Black, non-Hispanic	15,421	13.6	18,863	16.3	22,689	19.2	25,877	21.8	27,098	22.6
Other*, non-Hispanic	1,340	1.2	1,596	1.4	2,016	1.7	2,645	2.2	2,619	2.2
Unknown, Non-Hispanic	4,275	3.8	4,876	4.2	4,807	4.1	5,575	4.7	8,142	6.8
Hispanic	7,776	6.9	10,144	8.8	13,890	11.8	16,300	13.7	17,905	14.9
Unknown	73,562	65.0	67,666	58.4	57,881	49.0	50,185	42.2	45,533	38.0
Year Child's Home Built										
Pre 1950	20,042	17.7	20,559	17.7	20,916	17.7	20,899	17.6	21,274	17.7
1950 to <1978	19,885	17.6	20,640	17.8	21,045	17.8	21,864	18.4	21,631	18.0
1978 or After	23,699	20.9	24,650	21.3	25,759	21.8	25,330	21.3	24,703	20.6
Unknown	49,560	43.8	50,073	43.2	50,477	42.7	50,800	42.7	52,258	43.6
Probable Rental Property**										
Yes	18,847	16.7	19,702	17.0	20,200	17.1	20,782	17.5	21,295	17.8
No	47,565	42.0	49,015	42.3	50,254	42.5	50,220	42.2	49,299	41.1
Unknown	46,774	41.3	47,205	40.7	47,743	40.4	47,891	40.3	49,272	41.1
Child Resides in 2004 Target Area										
Yes	65,085	57.5	67,341	58.1	67,688	57.3	68,067	57.3	69,228	57.8
No	47,820	42.2	48,563	41.9	50,493	42.7	50,755	42.7	50,621	42.2
Unknown	281	0.2	18	0.0	16	0.0	71	0.1	17	0.0
Sample Type										
Capillary	15,575	13.8	16,560	14.3	16,119	13.6	15,898	13.4	15,948	13.3
Venous	89,302	78.9	90,340	77.9	92,127	77.9	90,778	76.4	88,935	74.2
Unknown	8,309	7.3	9,022	7.8	9,951	8.4	12,217	10.3	14,983	12.5

* Other Includes Asian/Pacific Islander, Native American/Alaskan and Multiracial

** Probable Rental Properties Identified as those properties in the DAT file where the Owner's Mailing address is not the Property Address

Table A-4.2. Annual Lead Testing Counts and Percentages,* by County for Maryland Children <6 years of age, 2005-2009

	2005		2006		2007		2008		2009	
County	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	1,035	32.6	1,176	34.8	1,233	34.5	1,325	35.1	1,373	34.6
Anne Arundel	6,618	21.4	6,401	19.4	6,627	18.9	6,829	18.4	7,344	18.7
Baltimore County	15,229	35.7	15,621	34.2	16,511	33.9	15,889	30.8	16,178	29.6
Baltimore City	17,373	47.0	18,206	46.4	17,628	42.4	18,557	42.3	19,074	41.3
Calvert	743	16.1	734	14.9	784	15.0	767	13.8	697	11.9
Caroline	853	44.5	888	42.4	852	37.6	858	35.2	894	34.2
Carroll	1,441	16.4	1,356	14.6	1,422	14.5	1,344	13.1	1,341	12.5
Cecil	1,043	18.4	1,055	17.3	1,188	18.2	1,265	18.3	1,213	16.5
Charles	1,812	21.5	1,918	21.3	2,004	20.9	2,032	19.9	1,839	17.1
Dorchester	623	35.8	696	37.2	678	33.8	680	31.8	732	32.3
Frederick	3,021	22.5	3,121	21.8	3,455	22.7	3,379	20.9	3,183	18.6
Garrett	530	34.6	496	30.8	540	32.0	478	27.1	475	25.8
Harford	2,940	21.3	3,045	20.7	3,355	21.6	3,265	19.9	3,187	18.5
Howard	2,265	13.8	2,187	12.6	2,329	12.7	2,496	12.9	2,490	12.3
Kent	174	19.5	256	26.8	334	32.8	303	28.1	323	28.3
Montgomery	16,348	28.8	17,409	28.6	18,298	28.3	18,616	27.1	18,261	25.2
Prince George's	17,900	34.1	18,581	33.2	18,059	30.4	18,729	29.8	19,621	29.6
Queen Anne's	478	19.0	625	23.4	704	24.8	595	19.8	607	19.2
Somerset	492	45.6	514	44.0	528	42.0	522	38.8	497	34.6
St. Mary's	1,382	21.3	1,551	22.1	1,463	19.4	1,519	18.8	1,527	17.8
Talbot	572	34.9	637	36.1	701	37.0	609	30.1	617	28.7
Washington	3,241	40.5	3,016	35.1	3,069	33.5	3,041	31.2	3,003	29.1
Wicomico	2,097	39.6	2,430	42.5	2,974	48.5	2,419	37.0	2,247	32.3
Worcester	703	32.4	968	42.2	942	39.0	910	35.9	850	32.0

* Denominator used to calculate percentages based on U.S. Census population data.

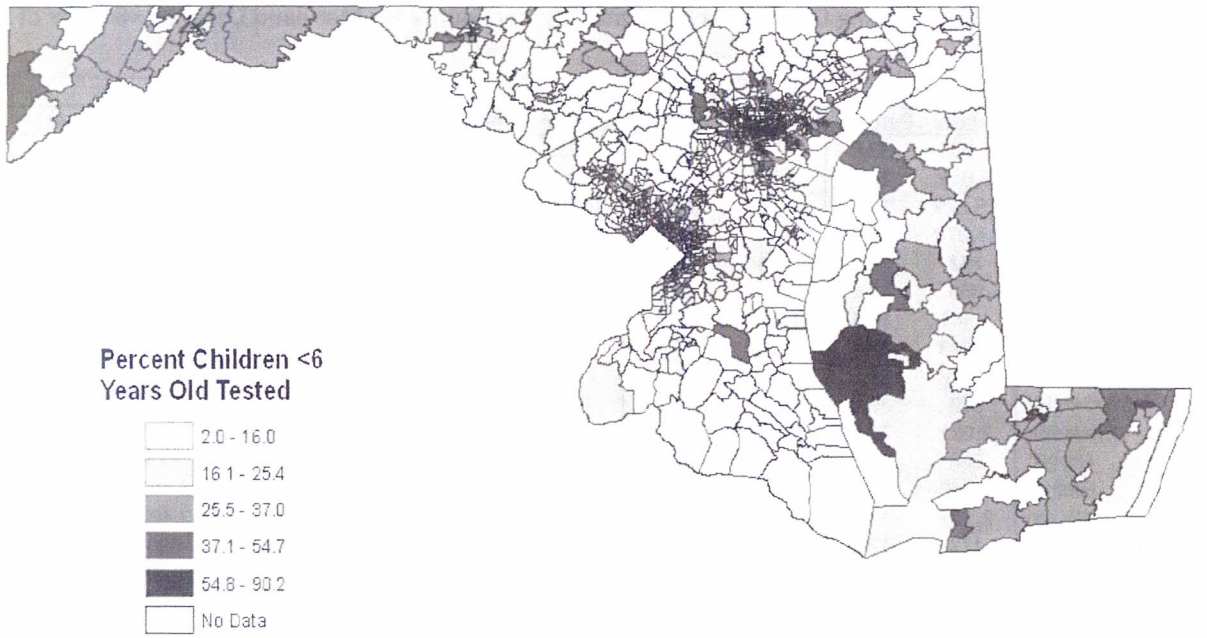


Figure A-4.1. Percent of Children <6 Years Old Tested, by Census Tract, Maryland 2005-2009

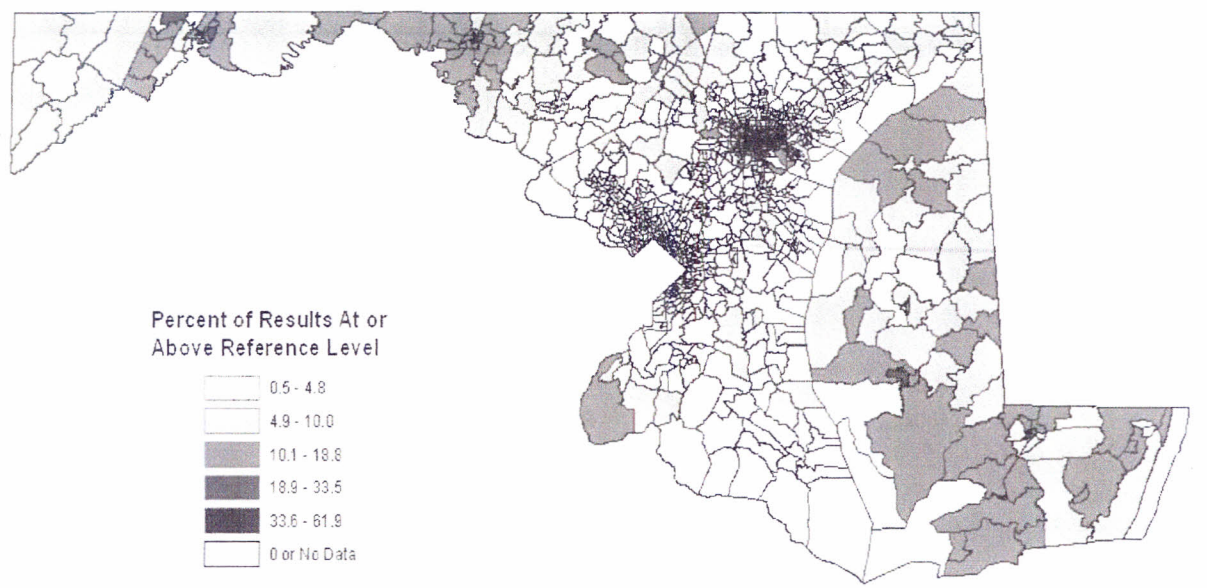


Figure A-4.2. Percent of Blood Lead Test Results ≥5mcg/dL for Maryland Children <6 years old, by Census Tract, 2005-2009

Table A-4.3. Characteristics of Children Tested for Elevated Blood Lead Levels, by Year and Blood Lead Level, Maryland 2005-2009

Year	2005						2006						2007					
Blood Lead Level	≤4		5-9		10+		≤4		5-9		10+		≤4		5-9		10+	
	n	%	n	%	10+	%	n	%	n	%	n	%	n	%	n	%	n	%
Individual Children :	103,243		8,428		1,515		104,886		9,692		1,344		109,688		7,546		963	
Sex																		
Female	49,815	48.3	3,881	46.0	670	44.2	50,593	48.2	4,504	46.5	589	43.8	53,111	48.4	3,384	44.8	399	41.4
Male	51,567	49.9	4,440	52.7	833	55.0	52,577	50.1	5,058	52.2	742	55.2	55,765	50.8	4,116	54.5	562	58.4
Unknown	1,861	1.8	107	1.3	12	0.8	1,716	1.6	130	1.3	13	1.0	812	0.7	46	0.6	2	0.2
Age (years)																		
<1	9,751	9.4	372	4.4	55	3.6	10,087	9.6	466	4.8	42	3.1	10,838	9.9	417	5.5	25	2.6
1	29,411	28.5	2,303	27.3	394	26.0	30,946	29.5	2,870	29.6	374	27.8	33,214	30.3	2,308	30.6	287	29.8
2	21,339	20.7	2,453	29.1	416	27.5	22,879	21.8	2,796	28.8	363	27.0	24,352	22.2	2,216	29.4	254	26.4
3	10,335	10.0	1,110	13.2	214	14.1	10,360	9.9	1,129	11.6	208	15.5	10,953	10.0	916	12.1	142	14.7
4	11,030	10.7	808	9.6	178	11.7	10,824	10.3	934	9.6	142	10.6	10,722	9.8	665	8.8	110	11.4
5	8,180	7.9	544	6.5	103	6.8	7,768	7.4	613	6.3	90	6.7	7,761	7.1	439	5.8	59	6.1
6-8	7,341	7.1	555	6.6	100	6.6	6,784	6.5	580	6.0	84	6.3	7,006	6.4	387	5.1	62	6.4
9-11	2,986	2.9	172	2.0	32	2.1	2,674	2.5	181	1.9	21	1.6	2,656	2.4	131	1.7	13	1.3
12-14	1,782	1.7	80	0.9	16	1.1	1,652	1.6	97	1.0	14	1.0	1,366	1.2	48	0.6	8	0.8
15-18	1,082	1.0	30	0.4	7	0.5	907	0.9	26	0.3	6	0.4	817	0.7	19	0.3	3	0.3
Race																		
White	16,716	16.2	1,169	13.9	124	8.2	18,787	17.9	1,476	15.2	133	9.9	24,151	22.0	1,295	17.2	131	13.6
Black	17,101	16.6	2,247	26.7	492	32.5	20,053	19.1	2,995	30.9	553	41.1	24,823	22.6	2,541	33.7	378	39.3
Other*	1,998	1.9	159	1.9	41	2.7	2,483	2.4	229	2.4	45	3.3	3,231	2.9	179	2.4	43	4.5
Unknown	67,428	65.3	4,853	57.6	858	56.6	63,563	60.6	4,992	51.5	613	45.6	57,483	52.4	3,531	46.8	411	42.7
Ethnicity																		
Hispanic	7,452	7.2	271	3.2	53	3.5	9,517	9.1	559	5.8	68	5.1	13,368	12.2	469	6.2	53	5.5
Non-Hispanic	28,160	27.3	3,018	35.8	670	44.2	33,245	31.7	4,139	42.7	728	54.2	42,527	38.8	3,367	44.6	532	55.2
Unknown	67,630	65.5	5,139	61.0	792	52.3	62,123	59.2	4,993	51.5	547	40.7	53,791	49.0	3,710	49.2	372	38.6
Race/Ethnicity																		
White, non-Hispanic	10,050	9.7	674	8.0	88	5.8	11,693	11.1	988	10.2	96	7.1	16,051	14.6	776	10.3	87	9.0
Black, non-Hispanic	13,246	12.8	1,777	21.1	398	26.3	15,868	15.1	2,512	25.9	483	35.9	20,262	18.5	2,094	27.7	333	34.6
Other*, non-Hispanic	1,222	1.2	96	1.1	22	1.5	1,435	1.4	132	1.4	29	2.2	1,896	1.7	96	1.3	24	2.5
Unknown, Non-Hispanic	3,642	3.5	471	5.6	162	10.7	4,249	4.1	507	5.2	120	8.9	4,318	3.9	401	5.3	88	9.1
Hispanic	7,452	7.2	271	3.2	53	3.5	9,517	9.1	559	5.8	68	5.1	13,368	12.2	469	6.2	53	5.5
Unknown	67,631	65.5	5,139	61.0	792	52.3	62,124	59.2	4,994	51.5	548	40.8	53,793	49.0	3,710	49.2	378	39.3
Year Child's Home Buil																		
Pre 1950	15,625	15.1	3,543	42.0	874	57.7	16,011	15.3	3,712	38.3	836	62.2	17,084	15.6	3,229	42.8	603	62.6
1950 to <1978	18,915	18.3	885	10.5	85	5.6	19,339	18.4	1,216	12.5	85	6.3	20,208	18.4	783	10.4	54	5.6
1978 or After	22,829	22.1	795	9.4	75	5.0	23,527	22.4	1,054	10.9	69	5.1	24,977	22.8	737	9.8	45	4.7
Unknown	45,874	44.4	3,205	38.0	481	31.7	46,009	43.9	3,710	38.3	354	26.3	47,419	43.2	2,797	37.1	261	27.1
Probable Rental Property**																		
Yes	15,624	15.1	2,604	30.9	619	40.9	16,260	15.5	2,840	29.3	602	44.8	17,386	15.9	2,396	31.8	418	43.4
No	44,255	42.9	2,852	33.8	458	30.2	45,185	43.1	3,407	35.2	423	31.5	47,381	43.2	2,557	33.9	316	32.8
Unknown	43,364	42.0	2,972	35.3	438	28.9	43,441	41.4	3,445	35.5	319	23.7	44,921	41.0	2,593	34.4	229	23.8
Child Resides in 2004 Target Area																		
Yes	56,998	55.2	6,765	80.3	1,322	87.3	58,600	55.9	7,556	78.0	1,185	88.2	60,804	55.4	6,029	79.9	855	88.8
No	45,990	44.5	1,639	19.4	191	12.6	46,270	44.1	2,134	22.0	159	11.8	48,870	44.6	1,515	20.1	108	11.2
Unknown	255	0.2	24	0.3	2	0.1	16	0.0	2	0.0	0	0.0	14	0.0	2	0.0	0	0.0

Year	2008						2009					
Blood Lead Level	≤4		5-9		10+		≤4		5-9		10+	
	n	%	n	%	n	%	n	%	n	%	n	%
Individual Children :	112,598		5,523		772		114,313		4,947		606	
Sex												
Female	54,961	48.8	2,485	45.0	343	44.4	55,422	48.5	2,267	45.8	251	41.4
Male	57,085	50.7	3,012	54.5	424	54.9	58,221	50.9	2,639	53.3	352	58.1
Unknown	552	0.5	26	0.5	5	0.6	670	0.6	41	0.8	3	0.5
Age (years)												
<1	11,039	9.8	293	5.3	28	3.6	10,680	9.3	268	5.4	13	2.1
1	34,346	30.5	1,721	31.2	240	31.1	34,909	30.5	1,479	29.9	161	26.6
2	26,527	23.6	1,608	29.1	214	27.7	28,071	24.6	1,553	31.4	191	31.5
3	10,892	9.7	617	11.2	107	13.9	11,152	9.8	597	12.1	73	12.0
4	10,424	9.3	505	9.1	77	10.0	10,453	9.1	412	8.3	67	11.1
5	7,466	6.6	333	6.0	46	6.0	7,178	6.3	282	5.7	42	6.9
6-8	7,109	6.3	292	5.3	36	4.7	6,554	5.7	220	4.4	42	6.9
9-11	2,661	2.4	93	1.7	14	1.8	2,872	2.5	84	1.7	8	1.3
12-14	1,331	1.2	38	0.7	6	0.8	1,481	1.3	33	0.7	6	1.0
15-18	800	0.7	22	0.4	4	0.5	963	0.8	19	0.4	3	0.5
Race												
White	26,073	23.2	1,031	18.7	118	15.3	26,849	23.5	1,019	20.6	100	16.5
Black	28,752	25.5	1,956	35.4	303	39.2	30,454	26.6	1,683	34.0	234	38.6
Other*	4,047	3.6	154	2.8	30	3.9	3,856	3.4	123	2.5	13	2.1
Unknown	53,726	47.7	2,382	43.1	277	35.9	53,154	46.5	2,122	42.9	259	42.7
Ethnicity												
Hispanic	15,903	14.1	341	6.2	56	7.3	17,579	15.4	287	5.8	39	6.4
Non-Hispanic	49,427	43.9	2,529	45.8	452	58.5	53,507	46.8	2,538	51.3	383	63.2
Unknown	47,268	42.0	2,652	48.0	254	32.9	43,224	37.8	2,116	42.8	178	29.4
Race/Ethnicity												
White, non-Hispanic	17,737	15.8	505	9.1	69	8.9	18,031	15.8	486	9.8	52	8.6
Black, non-Hispanic	24,021	21.3	1,597	28.9	259	33.5	25,529	22.3	1,375	27.8	194	32.0
Other*, non-Hispanic	2,555	2.3	75	1.4	15	1.9	2,528	2.2	82	1.7	9	1.5
Unknown, Non-Hispanic	5,114	4.5	352	6.4	109	14.1	7,419	6.5	595	12.0	128	21.1
Hispanic	15,903	14.1	341	6.2	56	7.3	17,579	15.4	287	5.8	39	6.4
Unknown	47,268	42.0	2,653	48.0	264	34.2	43,227	37.8	2,122	42.9	184	30.4
Year Child's Home Buil												
Pre 1950	17,883	15.9	2,530	45.8	486	63.0	18,648	16.3	2,254	45.6	372	61.4
1950 to <1978	21,239	18.9	569	10.3	56	7.3	21,067	18.4	505	10.2	59	9.7
1978 or After	24,801	22.0	486	8.8	43	5.6	24,201	21.2	471	9.5	31	5.1
Unknown	48,675	43.2	1,938	35.1	187	24.2	50,397	44.1	1,717	34.7	144	23.8
Probable Rental Property**												
Yes	18,577	16.5	1,887	34.2	318	41.2	19,375	16.9	1,664	33.6	256	42.2
No	48,077	42.7	1,855	33.6	288	37.3	47,368	41.4	1,709	34.5	222	36.6
Unknown	45,944	40.8	1,781	32.2	166	21.5	47,570	41.6	1,574	31.8	128	21.1
Child Resides in 2004 Target Area												
Yes	62,825	55.8	4,571	82.8	671	86.9	64,629	56.5	4,084	82.6	515	85.0
No	49,707	44.1	947	17.1	101	13.1	49,667	43.4	863	17.4	91	15.0
Unknown	66	0.1	5	0.1	0	0.0	17	0.0	0	0.0	0	0.0

* Other Includes Asian/Pacific Islander, Native American/Alaskan and Multiracial

** Probable Rental Properties Identified as those properties in the DAT file where the Owner's Mailing address is not the Property Address

Targeting Strategy Option 1 (Target Testing Based on the Distribution of Blood Lead Levels in Children Tested between 2005-2009, by ZIP Code)

Estimating Expected Elevated Blood Lead Tests

There were 521,648 blood test results for children less than 6 years of age. When restricted to the single highest venous, unknown, or capillary test result (in that order) for each child, there were 396,951 individual test results from 2005-2009. Of these, 78% were venous samples, the most accurate measure of blood lead level; 13% were capillary samples, the least accurate relative to venous tests; and 9% were unknown. An additional 362 records missing ZIP codes were excluded, leaving 396,588 test records for individual children from 595 unique ZIP codes throughout the state.

To calculate the number of children less than 6 years of age living in each ZIP code by year, annual inter-censal estimates were calculated for each ZIP code using the U.S. Census for 2000 and 2010. This resulted in annual population estimates for 450 ZIP codes in the State. These estimates were merged with the aggregated number of tests per ZIP code, producing annual blood lead testing counts and estimated population counts for 450 ZIP codes in the State. A total of 1,991 blood lead tests in the CLR data could not be matched with a corresponding ZIP code and were excluded from further analyses. These ZIP codes may have been added by the U.S. Postal Service after the year 2000, or they may have been incorrectly entered into the STELLAR database and were not valid. For the ZIP codes included in analysis, the percentage of test results greater than, or equal to, the reference level of 5 mcg/dL among children less than 6 years of age ranged from 0.6 to 50% (Figure A-4.3).

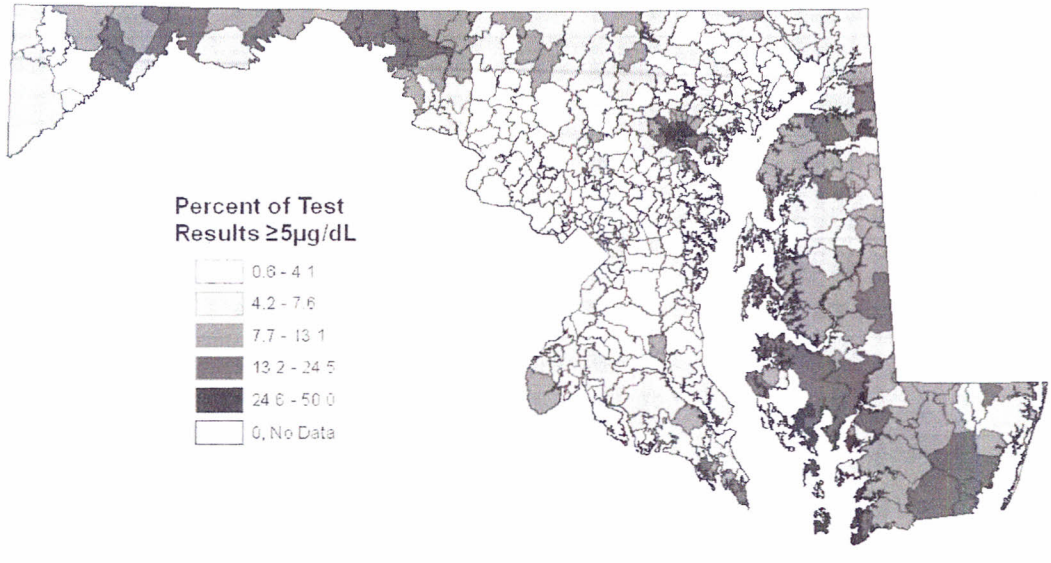


Figure A-4.3. Percent of Blood Lead Test Results ≥5mcg/dL for Maryland Children <6 years old, by ZIP Code, 2005-2009

An estimate of the total number of children less than 6 years of age in MD with an elevated blood lead test was computed by applying the observed percentage of test results with levels at or above the reference level in each ZIP code from 2005-2009 to the total population of children in that ZIP code. Based on this analysis, an estimated 28,012 children were expected to have a blood lead level at or above the reference level of 5mcg/dL. ZIP codes containing a cumulative 90%, 75% and 50% of the expected children with blood lead levels above reference in the state were identified as potential "at-risk" areas. Depending on the risk area definition considered, 14,101 to 25, 342 of these children were captured in the identified ZIP code risk areas.

Identifying At-Risk ZIP Codes

There were 173 "at-risk" ZIP codes identified which would be expected to contain 90% of the children less than 6 years of age with blood lead levels at, or above, the reference level of 5 mcg/dL (Figure A-4.4, Table A-7.1). The observed percentage of test results at, or above, the reference level from 2005-2009 in these ZIP codes ranged from 1.7% to 38.6% and the total ZIP code populations ranged from 305 to 5,525 children under 6 years of age. Decreasing the percentage of children to 75% of those children expected to have blood lead levels at, or above, the reference level decreased to 95 the number of "at-risk" ZIP codes (Figure A-4.5, Table A7.2). The observed percentage of test results at, or above, the reference level ranged from 2.1% to 38.6% in these ZIP codes, and the total population of children less than 6 years of age ranged from 531 to 5,525. If the goal were to identify the "at-risk" areas containing 50% of the children expected to have blood lead levels at, or above, the reference level of 5 mcg/dL, 32 ZIP were identified (Figure A-4.6, Table A-7.3). The observed percentage of children with test results at, or above, the reference level ranged from 4.7 to 38.6%, and the total population of children less than 6 years of age ranged from 1,067 to 5,051 in these ZIP codes.

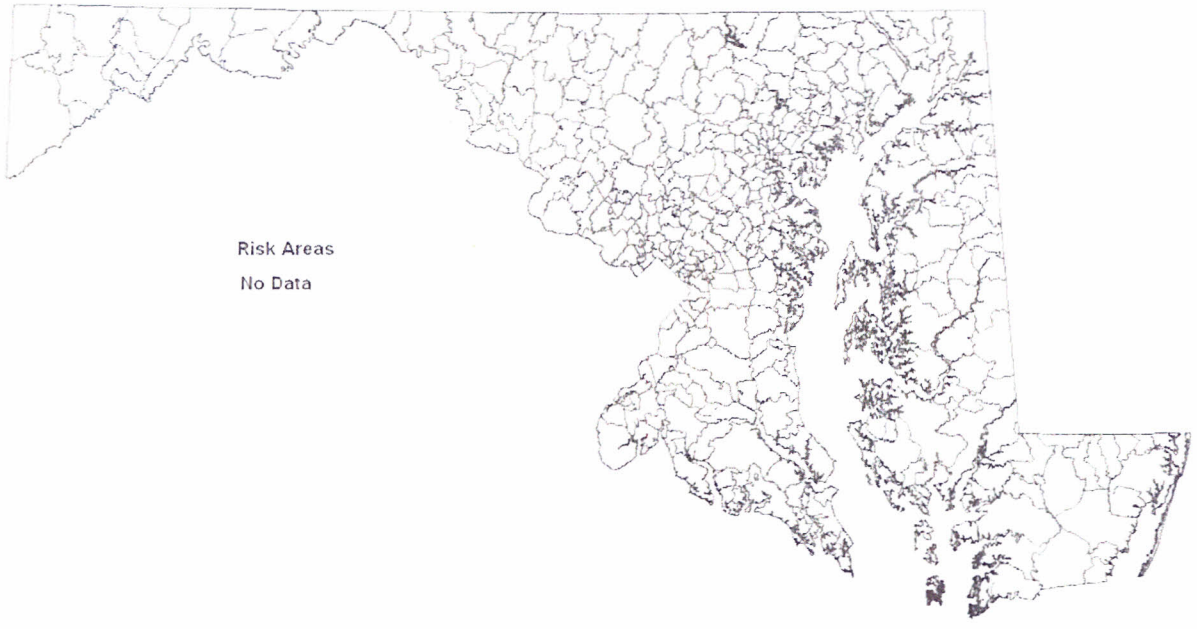


Figure A-4.4. ZIP Codes Capturing a Cumulative 90% of Children Expected to Have a Blood Lead Level ≥5mcg/dL, Maryland

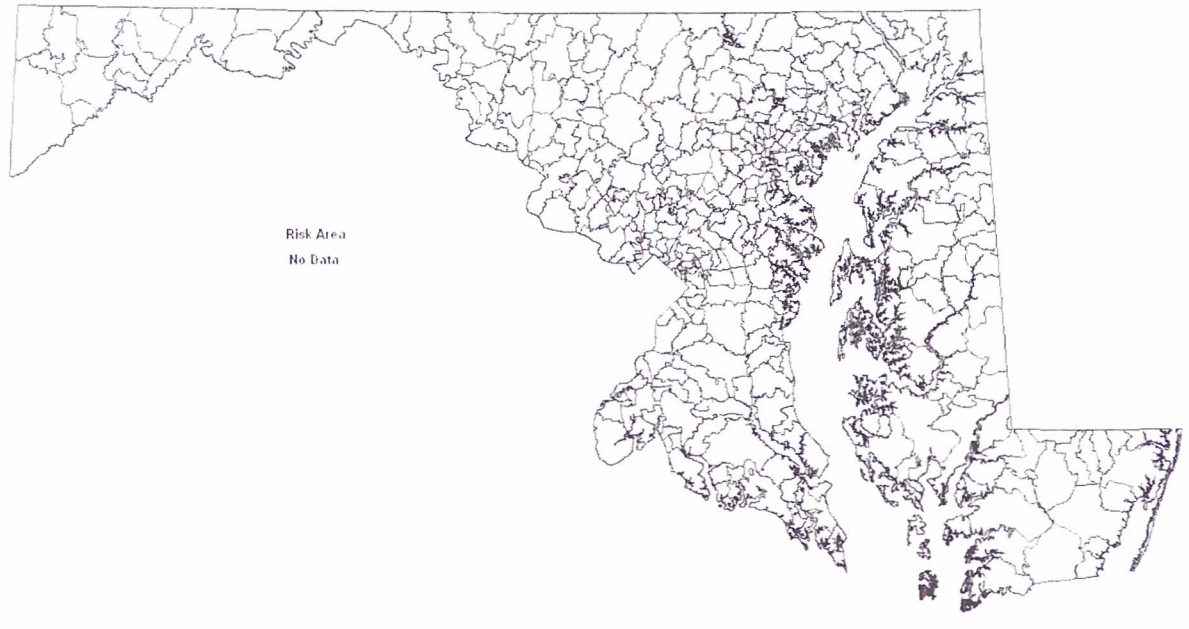


Figure A-4.5. ZIP Codes Capturing a Cumulative 75% of Children Expected to Have a Blood Lead Level ≥5mcg/dL, Maryland

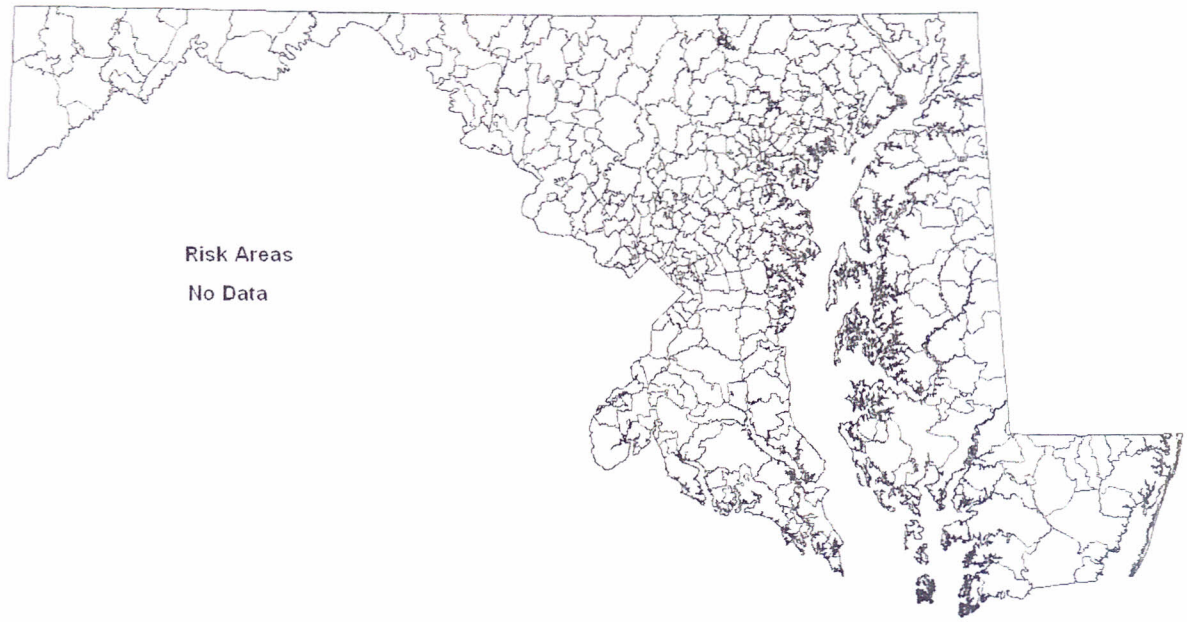


Figure A-4.6. ZIP Codes Capturing a Cumulative 50% of Children Expected to Have a Blood Lead Level ≥5mcg/dL, Maryland

Comparison of At-Risk and Non-Risk Areas

In all cases (90%, 75% and 50% capture areas), more children tested from "at-risk" areas were: black (23%, 25%, 26%); resided in properties built before 1950 (16%, 19%, 34%); and resided in a probable rental properties (16%, 17%, 23%; Tables A-4.4, A-4.5, A-4.6). All of these characteristics were significantly associated with residence in a "risk area." Results of these Chi-Square analyses are summarized in Table A-4.7. Limited demographic information from the U.S. Census Bureau was included for further comparison of the risk and non-risk ZIP codes (Tables A-7.4, A-7.5, A-7.6). Risk areas had a higher percentage of black residents and renter-occupied housing compared to non-risk areas.

Table A-4.4. Characteristics of Tested Children from Risk (90% of Expected) and Non-Risk Areas, Maryland 2005-2009

Characteristics	90% Expected		Outside Area	
	n	%	n	%
Total Children Tested 05-09	349,983	88.4	44,614	11.6
Characteristics of Children in Area				
Sex				
Female	169,998	48.6	21,419	48.0
Male	176,084	50.3	22,529	50.5
Unknown	3,901	1.1	666	1.5
Age (years)				
<1	34,415	9.8	4,436	9.9
1	112,489	32.1	15,386	34.5
2	91,582	26.2	11,655	26.1
3	39,382	11.3	4,473	10.0
4	41,040	11.7	4,608	10.3
5	31,069	8.9	4,053	9.1
Median Age	2.0	-	2.0	-
Race				
White	67,833	19.4	17,241	38.6
Black	80,234	22.9	4,085	9.2
Other*	10,388	3.0	1,032	2.3
Unknown	191,528	54.7	22,256	49.9
Ethnicity				
Hispanic	38,473	11.0	2,431	5.4
Non-Hispanic	131,872	37.7	17,557	39.4
Unknown	179,638	51.3	24,626	55.2
Year Child's Home Built				
Pre 1950	57,566	16.4	4,240	9.5
1950 to <1978	62,005	17.7	8,246	18.5
1978 or After	75,054	21.4	15,119	33.9
Unknown	155,358	44.4	17,009	38.1
Median Year Built	1965	-	1982	-
Probable Rental Property**				
Yes	56,832	16.2	4,885	10.9
No	146,604	41.9	22,817	51.1
Unknown	146,547	41.9	16,912	37.9
Sample Type				
Capillary	43,919	12.5	7,980	17.9
Venous	276,552	79.0	32,616	73.1
Unknown	29,512	8.4	4,018	9.0
Blood Lead Levels				
≤ 4	322,359	92.1	42,430	95.1
5 - 9	24,299	6.9	2,023	4.5
≥10	3,325	1.0	161	0.4

*Other = Sum of Other, Indian/Alaskan, Hawaiian/Pacific Islander and Multiple Race.
** Probable Rental Property = property assumed to be rental because the owner of the property resided at a different address than the property.

Table A-4.5. Characteristics of Tested Children from Risk (75% of Expected) and Non-Risk Areas, Maryland 2005-2009

Characteristics	75% Expected Cases		Outside Area	
	n	%	n	%
Total Children Tested 05-09	266,627	67.6	127,970	32.4
Characteristics of Children in Area				
Sex				
Female	129,654	48.6	61,763	48.3
Male	134,120	50.3	64,493	50.4
Unknown	2,853	1.1	1,714	1.3
Age (years)				
<1	24,294	9.1	14,577	11.4
1	86,163	32.3	41,712	32.6
2	70,734	26.5	32,503	25.4
3	30,275	11.4	13,580	10.6
4	31,525	11.8	14,123	11.0
5	23,632	8.9	11,490	9.0
Median Age	2.0	-	2.0	-
Race				
White	44,074	16.5	41,000	32.0
Black	67,109	25.2	17,210	13.4
Other*	7,343	2.8	4,077	3.2
Unknown	148,101	55.5	65,683	51.3
Ethnicity				
Hispanic	29,952	11.2	10,952	8.6
Non-Hispanic	99,211	37.2	50,218	39.2
Unknown	137,464	51.6	66,795	52.2
Year Child's Home Built				
Pre 1950	49,883	18.7	11,923	9.3
1950 to <1978	44,503	16.7	25,748	20.1
1978 or After	44,894	16.8	45,279	35.4
Unknown	127,347	47.8	45,020	35.2
Median Built Year	1958	-	1981	-
Probable Rental Property**				
Yes	45,788	17.2	15,929	12.4
No	100,831	37.8	68,590	53.6
Unknown	120,008	45.0	43,451	34.0
Sample Type				
Capillary	29,987	11.2	21,912	17.1
Venous	214,251	80.4	94,917	74.2
Unknown	22,389	8.4	11,141	8.7
Blood Lead Levels				
≤ 4	242,505	91.0	122,284	95.6
5 - 9	21,028	7.9	5,294	4.1
≥10	3,094	1.2	392	0.3

*Other = Sum of Other, Indian/Alaskan, Hawaiian/Pacific Islander and Multiple Race.
** Probable Rental Property = property assumed to be rental because the owner of the property resided at a different address than the property.

Table A-4.6. Characteristics of Tested Children from Risk (50% of Expected) and Non-Risk Areas, Maryland 2005-2009

Characteristics	50% Expected Cases		Outside Area	
	n	%	n	%
Total Children Tested 05-09	109,930	27.9	284,667	72.1
Characteristics of Children in Area				
Sex				
Female	53,336	48.5	138,081	48.5
Male	55,238	50.2	143,375	50.4
Unknown	1,356	1.2	3,211	1.1
Age (years)				
<1	6,993	6.4	31,858	11.2
1	37,054	33.7	90,821	31.9
2	32,098	29.2	71,139	25.0
3	12,673	11.5	31,182	11.0
4	11,923	10.8	33,725	11.8
5	9,188	8.4	25,934	9.1
Median Age	2.0	-	2.0	-
Race				
White	21,972	20.0	63,102	22.2
Black	28,702	26.1	55,617	19.5
Other*	2,152	2.0	9,268	3.3
Unknown	57,104	51.9	156,680	55.0
Ethnicity				
Hispanic	3,603	3.3	37,301	13.1
Non-Hispanic	41,646	37.9	107,783	37.9
Unknown	64,681	58.8	139,583	49.0
Year Child's Home Built				
Pre 1950	37,009	33.7	24,797	8.7
1950 to <1978	11,170	10.2	59,081	20.8
1978 or After	8,066	7.3	82,107	28.8
Unknown	53,685	48.8	118,682	41.7
Median Built Year	1930	-	1977	-
Probable Rental Property**				
Yes	25,635	23.3	36,082	12.7
No	33,095	30.1	136,326	47.9
Unknown	51,200	46.6	112,259	39.4
Sample Type				
Capillary	12,779	11.6	39,120	13.7
Venous	86,788	78.9	222,380	78.1
Unknown	10,363	9.4	23,167	8.1
Blood Lead Levels				
≤ 4	92,476	84.1	272,313	95.7
5 - 9	14,911	13.6	11,411	4.0
≥10	2,543	2.3	943	0.3

*Other = Sum of Other, Indian/Alaskan, Hawaiian/Pacific Islander and Multiple Race.
** Probable Rental Property = property assumed to be rental because the owner of the property resided at a different address than the property.

Table A-4.7. Chi-Square (X^2) Analysis, Comparison of Demographic Characteristics of Risk and Non-Risk Areas for 3 Proposed Risk-Area Definitions (90%, 75%, and 50% Capture Areas)

Risk Area Definition	Statistics	Race	Ethnicity	Year Home Built	Rental Property
Area Capturing 90% of Expected	X^2	9418.21	1151.86	3352.29	1322.14
	*df**	2	1	2	1
	p value	<.0001	<.0001	<.0001	<.0001
Area Capturing 75% of Expected	X^2	14483.70	687.22	15008.98	4200.17
	*df**	2	1	2	1
	p value	<.0001	<.0001	<.0001	<.0001
Area Capturing 50% of Expected	X^2	2015.29	6438.84	55137.43	11554.68
	*df**	2	1	2	1
	p value	<.0001	<.0001	<.0001	<.0001

*df, degrees of freedom

Targeting Strategy Option 2 (Target Testing Based on Updated MD Targeting Model)

The second option for a targeting strategy, an update of the targeting model used in the 2000 and 2004 MD lead targeting plans, was based on census tracts rather than ZIP codes. The U.S. Census demographic variables from the American Community Survey (ACS) used in the model were not available at the ZIP code level for the time period of interest (2005-2009). Census tracts were excluded from the analysis if the records contained either "0" or had no data (i.e., missing) for the number of households (n=23), number of families (n=28), number of houses (n=23), or number of children less than 6 years old (n=31). Census tracts were also excluded from if the median housing value was $0 or missing (n=39). After these census tracts were removed, 1,179 census tracts were retained for analysis.

Lead testing data from the CLR excluded children who did not live in the State and children 6 years of age or older. In addition, if a child was tested more than once in a single year, only the highest test result was used, as noted in previous sections. An additional 10% of remaining records were excluded because they could not be geocoded and, therefore, residential census tract was unknown. This data set was then used to determine the total number of tests for individual children per year per census tract (5-year total, n=469,603 tests) and the total number of individual children tested during the 5-year period per census tract (n=355,740 children). In all cases, the highest venous test was used first. If no venous sample was available, the highest result from an unknown sample was used, and if no venous or unknown sample was available, the highest capillary blood lead test result for the given time period was retained.

When merged by census tract, the CLR and U.S. Census data had 1,179 census tracts in common (Table A-4.8)). The merged data set contained 12 census tracts in which the average annual testing rate from 2005-2009 exceeded 100% or was less than 1%. In areas where very few children are tested, the proportion of test results at or above the reference level is based on a small number of test results and is highly influenced by a single test result. A testing rate greater than 100% indicates that more children were tested in a given census tract than were reported to be living there according to the 2005-2009 ACS. Areas with a testing rate exceeding 100% are likely due to address misclassification or some other error. The proportion of children with a blood lead level at or above the reference level (outcome of interest) is unreliable for census tracts with extremely high or low testing rates; therefore these 12 census tracts, containing 2,381 children tested, were excluded from further analysis. After cleaning and variable preparation 1,167 census tracts, including a total of 346,201 test results for individual children, were retained for analysis (Table A-4.9).

Analysis of Lead Testing Data

The average annual testing rates for children in the 1,179 census tracts ranged from 2 to 90% (Table A-4.8). In a majority of census tracts (46%), the testing rates were 20% or less of the children in the census tract. Table 8 shows the distribution of blood lead levels for 346,201 individual children less than 6 years of age with known census tracts of residence who were tested for blood lead in MD from 2005-2009.

Table A-4.8. Number of Census Tracts in the Analysis Data Set by Percent of Children Tested, Maryland 2005-2009

Percent of Children Screened	Number of Census Tracts	Percent of Census Tracts
0 to 0.9	2*	0.2
1 to 20	536	45.5
21 to 40	499	42.3
41 to 60	98	8.3
61 to 80	27	2.3
81 to 100	7	0.6
Over 100	10*	0.8

* Excluded from further analyses

Table A-4.9. Number of Individual Children < 6 Years Old Tested per Year, by Blood Lead Level, in the 1,167 Census Tracts Included in Models, Maryland, 2005-2009

Pb Result	Year of Blood Lead Test					Total Children Screened
	2005	2006	2007	2008	2009	
0-4	59,130	58,661	61,517	62,843	77,940	320,091
5-9	5,712	6,254	4,576	3,214	3,252	23,008
10+	1,017	751	528	428	378	3,102
Total	65,859	65,666	66,621	66,485	81,570	346,201

* Highest BLL per Child from 2005-2009. The highest BLL from a venous sample, if no venous then unknown sample type, if no unknown then capillary sample result retained

From 2005-2009, a total of 26,110 individual children tested had a blood lead level at or above the CDC reference level of 5 mcg/dL, of whom 3,102 (12%) had a blood lead level of 10 mcg/dL or greater. Of the 1,167 census tracts included in the analysis, 1,156 (99%) had at least one child with a blood lead level of 5mcg/dL or above, and 11 (0.9%) census tracts did not have any reported children with a blood lead level at or above reference (Table A-4.10).

Table A-4.10. Census Tracts by Number of Individual* Children with a Blood Lead Level ≥5mcg/dL, Maryland 2005-2009

Number of Blood Lead Test Results ≥5µg/dL	Number of Census Tracts in Model	Total Children With Blood Lead Levels ≥5µg/dL, 2005-2009	Total Children ≤5 Years Old In Tracts**
0	11	0	1,946
1 to 50	1,031	14,444	384,831
51 to 100	84	5,890	33,560
101 to 150	33	4,114	10,968
151 to 200	4	735	1,108
201 to 250	3	643	902
251 to 300	1	284	230
Total	1,167	26,110	433,545

* Highest annual BLL per Individual Child from 2005-2009. The highest BLL from a venous sample, if no venous then unknown sample type, if no unknown then capillary sample result retained.

** Total population of children per census tract based on the 2005-2009 American Community Survey 5-Year Estimate

Many of the covariates in the independent variables were strongly and positively correlated with each other, as might be expected (Table A-4.11). Because many of the covariates

were markers of poverty, the percentage of families below poverty level with children less than 5 years old, percentage of female-headed households with children less than 6, and percentage of households with public assistance income were combined into a poverty scale to be included in the model (as in Sargent, 1995 and Center for Health Development and Management, 2000).

Table A-4.11. Pearson's Correlation Coefficient Values* for Data Set Covariates

	% Female Headed House	% Public Assist. Income	% Families in Poverty	Median House Value	% Houses Pre 50	% Houses 50-79	% Black	% Rental	% Vacant	Median Income	% Screened	% Results ≥5µg/dL
% Female Headed House	-	0.33 <.0001	0.43 <.0001	-0.34 <.0001	0.17 <.0001	0.02 0.4803	0.37 <.0001	0.47 <.0001	0.26 <.0001	-0.42 <.0001	0.16 <.0001	0.28 <.0001
% Public Assist. Income	0.33 <.0001	-	0.46 <.0001	-0.44 <.0001	0.43 <.0001	-0.09 0.0016	0.45 <.0001	0.42 <.0001	0.50 <.0001	-0.48 <.0001	0.34 <.0001	0.62 <.0001
% Families in Poverty	0.43 <.0001	0.46 <.0001	-	-0.38 <.0001	0.36 <.0001	-0.07 0.0107	0.30 <.0001	0.43 <.0001	0.43 <.0001	-0.45 <.0001	0.17 <.0001	0.50 <.0001
Median House Value	-0.34 <.0001	-0.44 <.0001	-0.38 <.0001	-	0.39 <.0001	0.03 0.2943	-0.41 <.0001	-0.39 <.0001	-0.39 <.0001	0.79 <.0001	-0.41 <.0001	-0.51 <.0001
% Pre 50 House	0.17 <.0001	0.43 <.0001	0.36 <.0001	-0.39 <.0001	-	-0.34 <.0001	0.14 <.0001	0.24 <.0001	0.48 <.0001	-0.41 <.0001	0.41 <.0001	0.69 <.0001
% 50-79 house	0.02 0.4803	-0.09 0.002	-0.07 0.01	0.03 0.29	-0.34 <.0001	-	0.10 0.0004	0.06 0.0450	-0.26 <.0001	-0.03 0.2503	0.06 0.0267	-0.28 <.0001
% Black	0.37 <.0001	0.45 <.0001	0.30 <.0001	-0.41 <.0001	0.14 <.0001	0.10 0.0004	-	0.43 <.0001	0.31 <.0001	-0.41 <.0001	0.34 <.0001	0.43 <.0001
% Rental	0.47 <.0001	0.42 <.0001	0.43 <.0001	-0.39 <.0001	0.24 <.0001	0.06 0.0450	0.43 <.0001	-	0.37 <.0001	-0.63 <.0001	0.34 <.0001	0.34 <.0001
% Vacant	0.26 <.0001	0.50 <.0001	0.43 <.0001	-0.39 <.0001	0.48 <.0001	-0.26 <.0001	0.31 <.0001	0.37 <.0001	-	-0.47 <.0001	0.37 <.0001	0.66 <.0001
Median Income	-0.42 <.0001	-0.48 <.0001	-0.45 <.0001	0.79 <.0001	-0.41 <.0001	-0.03 0.2503	-0.41 <.0001	-0.63 <.0001	-0.47 <.0001	-	-0.46 <.0001	-0.52 <.0001
% Screened	0.16 <.0001	0.34 <.0001	0.17 <.0001	-0.41 <.0001	0.41 <.0001	0.06 0.0267	0.34 <.0001	0.34 <.0001	0.37 <.0001	-0.46 <.0001	-	0.46 <.0001
% Results ≥5µg/dL	0.28 <.0001	0.62 <.0001	0.50 <.0001	-0.51 <.0001	0.69 <.0001	-0.28 <.0001	0.43 <.0001	0.34 <.0001	0.66 <.0001	-0.52 <.0001	0.46 <.0001	-

* Pearson's r value (correlation coefficient) is a measure of association indicating the degree to which two variables have a linear relationship, in which one variable varies directly with the other. This value, r, ranges from -1 to +1 with +1 representing a perfect positive linear relationship, and -1 representing a perfect negative linear relationship.

The outcome measure for the logistic regression model was "at-risk" or "non-risk" census tract. Because no standard definition of an "at-risk" census tract was identified considering the reference level of 5mcg/dL, four possible definitions were evaluated based on the distribution of blood lead levels at or above reference in MD. Census tracts were defined as "at-risk" if the percentage of blood lead test results greater than or equal to 5mcg/dL was at or above the 25th (3%), 50th (5%), 75th (9%), and 90th (17%) percentiles. The characteristics of risk and non-risk areas for each of these definitions were then compared (Table A-4.12). Results from the two sample t-test indicated that all measured characteristics of the risk and non-risk tracts were significantly different ($p<0.05$) across all outcome measures (data not shown).

Crude ORs and adjusted ORs for testing rates were calculated for each of the four outcome measures identified; each of the covariates was statistically significant across the different outcome measures (Table A-4.13). Similar to the findings in earlier versions of the MD Lead Targeting Plan, census tracts with a higher percentage of pre-1950 housing still showed a strong association with risk, and the magnitude of the correlation increased as the outcome

Figure A-4.8. Predicted Risk Areas, Model 2: Modeled risk area defined as a census tract with ≥5% of tests at or above the reference level

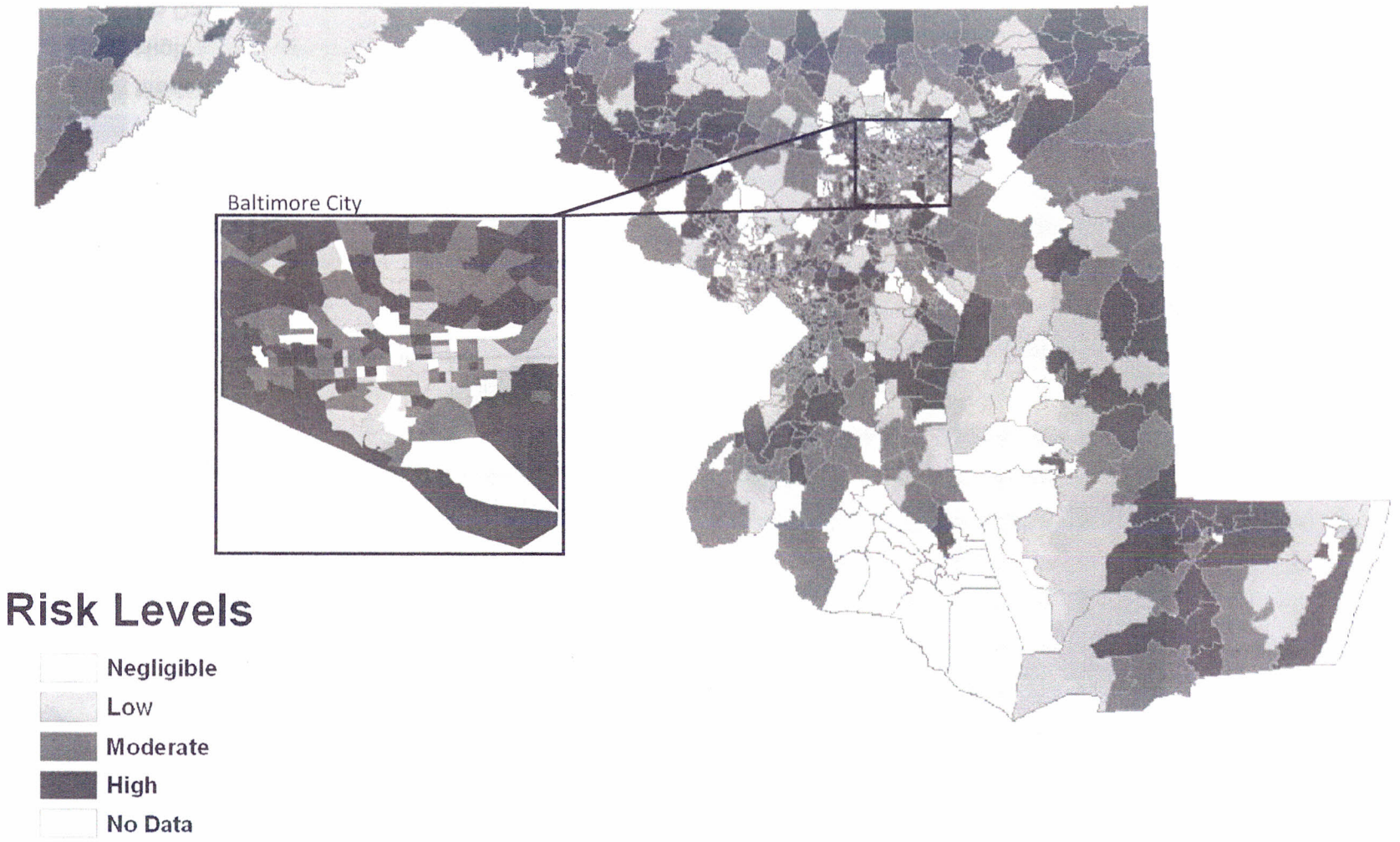


Figure A-4.7. Predicted Risk Areas, Model 1: Modeled risk area defined as a census tract with ≥3% of tests at or above the reference level

Table A-4.15. Number and Percentage of Census Tracts and Children for Each Level of Risk*, by Model

	Risk Level**	Number of Census Tracts	Percent of Census Tracts	Predicted Number Children at Risk	Total Number of Children Living in Tracts
Original Model Assumed ≥12% of tests 10mcg/dL	**High**	46	4.0	266 - 666	-
	Moderate	77	6.7	73 - 265	-
	Low	288	20.7	13 - 72	-
	Negligible	790	68.6	0 - 12	-
Model 1 ≥3% of tests at or above RL*	**High**	421	36.1	276 - 1,179	249,657
	Moderate	414	35.5	153 - 275	126,913
	Low	231	19.8	81 - 152	43,588
	Negligible	101	8.7	8 - 81	13,387
Model 2 ≥5% of tests at or above RL*	**High**	347	29.7	179 - 746	174,945
	Moderate	384	32.9	83 - 178	136,873
	Low	255	21.9	36 - 83	74,067
	Negligible	181	15.5	1 - 36	47,660
Model 3 ≥9% of tests at or above RL*	**High**	184	15.8	136 - 618	64,995
	Moderate	293	25.1	37 - 136	109,028
	Low	327	28.0	11 - 37	136,601
	Negligible	363	31.1	0 - 11	122,921
Model 4 ≥17% of tests at or above RL*	**High**	76	6.5	157 - 494	25,491
	Moderate	103	8.8	44 - 154	22,833
	Low	179	15.3	4 - 43	58,246
	Negligible	809	69.3	0 - 4	326,975

* RL= Reference Level; CDC defines this as 5mcg/dL

** Risk Level Definitions:

High Risk = 40% to 100% of the highest number of children predicted to be at risk;

Moderate Risk = 11% to 39.9% of the highest number of children predicted to be at risk;

Low Risk = 2% to 10.9% of the highest number of children predicted to be at risk; and

Negligible Risk = 0% to 1.9% of the highest number of children predicted to be at risk.

Table A-4.14. Comparison of Possible 2013 Maryland Targeting Plan Models

Model Variables	2000 Model* "Original"		Outcome 1 (≥3% Tests ≥RL*)		Outcome 2 (≥5% Tests ≥RL)		Outcome 3 (≥9% Tests ≥RL)		Outcome 4 (≥17% Tests ≥RL)	
	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value
Percent Pre 1950 Housing	0.0162	0.0001	0.0369	<.0001	0.0458	<.0001	0.0488	<.0001	0.0724	<.0001
Poverty Scale	0.5229	0.0001	0.2076	0.2121	0.2992	0.0362	0.7182	<.0001	1.0174	<.0001
Median Housing Value	-0.0114	0.0001	-4.15E-06	<.0001	-0.000007	<.0001	-0.00000869	<.0001	-0.00001	<.0001
Percent 1950-1979 Housin	0.00206	0.0381	-0.00453	0.2124	-0.01260	0.0018	-0.0201	0.0019	-0.0216	0.2320
Percent of Screening	0.0389	0.0001	0.0170	0.0235	0.0121	0.0653	0.0285	0.0004	0.0489	<.0001
Intercept	-4.7097	0.0001	1.6512	<.0001	1.2534	0.0005	-0.3646	0.4979	-4.0775	0.0063
Area Under ROC Curve†	-		0.792		0.865		0.936		0.982	
Conclusion	Not Available		Very Good		Very Good		Excellent		Excellent	
Hosmer and Lemeshow §	-		p=0.0986		p=0.0399		P=0.3816		p=0.8120	
Conclusion	Not Available		Fail to Reject H0, no evidence of poor fit		Reject H_0, conclude poor fit		Fail to Reject H0, no evidence of poor fit		Fail to Reject H0, no evidence of poor fit	
Somers' D¶	0.82		0.583		0.731		0.872		0.965	
AIC ††	Not Available		1108.087		1077.236		640.321		236.747	
SC §§	Not Available		1138.46		1107.609		670.694		267.120	

* The outcome definition for the Original 2000 Maryland model is based on BLL ≥10µg/dL, however the percentage of elevated BLLs used to define a "Risk Area" in this model is unknown. It is assumed to be 12%, based on common practice when the model was developed.

** Reference level. In 2011 CDC defined the reference level for children's' exposure to lead as 5µg/dL.

† Receiver Operating Characteristic (ROC) Curve. The area under the ROC curve gives a quantitative indication of each model's ability to distinguish between risk and non-risk census tracts and ranges from 0.5 (worst) to 1.0 (ideal).

§ The Hosmer and Lemeshow test is a statistical test for goodness of fit for logistic regression models. It assesses whether or not observed rates match expected rates in subgroups of the modeled population.

¶ Somer's D is used to determine the strength and direction of relation between the predicted and actual values of the dependent variable. Its values range from -1.0 (all pairs disagree) to 1.0 (all pairs agree).

†† Akaike Information Criterion (AIC) is used for the comparison of models on the same sample. The model with the smallest AIC is considered the best. The AIC value itself is not meaningful.

§§ Schwarz Criterion (SC) is used to compare between models on the same sample. This measure penalizes for the number of predictors in the model and the model with the smallest SC is considered best. The value itself is not meaningful.

Predicting At-Risk Census Tracts

Logistic regression models were used to assess the risk of a child in a given census tract for having a blood lead level at or above reference, then used to estimate the number of children in that census tract with a blood lead level at or above reference. This analysis was performed for each of the outcomes described. Predicted probabilities based on each of the outcomes modeled ranged from 0 to 0.99, depending on the outcome modeled. When these were applied to the census tract population, the number of children expected to have a blood lead level at or above reference ranged from 0 to 1,179 children (Table A-4.15). Maps were prepared that displayed the level of risk for each census tract in Maryland (Figures A-4.7 – A-4.10).

Table A-4.13. Community Characteristics by Adjusted‡ Odds Ratios, for 4 Possible of Risk Area Definitions (≥3%, ≥5%, ≥9% and ≥17% of Test Results ≥5mcg/dL)

Census Tract Characteristics	Aggregated Groups	Number of Tracts	Number of Children ≤5 Years Old in Population	Outcome 1 ≥ 3% of Tests ≥5µg/dL (25th Percentile)		Outcome 2 ≥ 5% of Tests ≥5µg/dL (50th Percentile)		Outcome 3 ≥ 9% of Tests ≥5µg/dL (75th Percentile)		Outcome 4 ≥ 17% of Tests ≥5µg/dL (90th Percentile)	
				Odds Ratio	(95% CI)	Odds Ratio	(95% CI)	Odds Ratio	(95% CI)	Odds Ratio	(95% CI)
Percent of Rental Units	0 - 16.3	394	144,318	1.00		1.00		1.00		1.00	
	16.4 - 38.4	372	144,252	1.18	0.86 , 1.62	1.50 *	1.10 , 2.04	2.80 **	1.76 , 4.44	6.42 *	1.88 , 21.96
	38.5 - 97.7	401	144,975	1.61 *	1.13 , 2.29	1.99 **	1.46 , 2.72	5.41 **	3.48 , 8.40	20.70 **	6.38 , 67.18
Percent of Vacant Housing Units	0 - 3.9	357	143,877	1.00		1.00		1.00		1.00	
	4.0 - 7.6	345	145,081	1.08	0.79 , 1.49	1.27	0.91 , 1.76	2.01 *	1.16 , 3.51	5.17	0.58 , 45.97
	7.7 - 85.7	465	144,587	2.58 **	1.81 , 3.67	4.05 **	2.95 , 5.55	9.78 **	6.01 , 15.92	84.34 **	11.37 , 625.61
Percent Families Below Poverty w/ Children ≤ 5	0	493	157,170	1.00		1.00		1.00		1.00	
	0.1 - 4.9	371	165,498	1.08	0.80 , 1.46	1.02	0.76 , 1.36	1.19	0.80 , 1.77	1.98	0.92 , 4.27
	5.0 - 77.7	303	110,877	2.33 **	1.58 3.42	2.89 **	2.11 , 3.95	4.77 **	3.33 , 6.84	12.92 **	6.80 , 24.53
Percent Female Headed Households w/ Children < 6	0 - 1	436	143,957	1.00		1.00		1.00		1.00	
	1.1 - 3.7	338	144,778	1.12	0.82 , 1.55	0.92	0.68 , 1.25	0.94	0.62 , 1.43	1.19	0.60 , 2.38
	3.8 - 41.4	393	144,810	1.92 *	1.37 , 2.70	1.97 **	1.47 , 2.65	2.90 **	2.04 , 4.12	4.30 **	2.46 , 7.49
Percent Housing Units Built from 1950 to 1979	1.4 - 29.8	350	144,430	1.00		1.00		1.00		1.00	
	29.9 - 50.2	413	144,417	1.54 *	1.09 , 2.18	1.00	0.73 , 1.35	0.58 *	0.41 , 0.83	0.31 **	0.19 , 0.51
	50.3 - 96.6	404	144,698	0.70 *	0.50 , 0.97	0.35 **	0.25 , 0.48	0.14 **	0.09 , 0.22	0.02 **	0.01 , 0.06
Percent Housing Units Built Before 1950	0 - 4.9	291	144,284	1.00		1.00		1.00		1.00	
	5.0 - 18.1	348	144,596	1.69 *	1.22 , 2.34	2.55 **	1.69 , 3.85	5.35 *	1.57 , 18.24	†	--
	18.2 - 91.7	528	144,665	5.51 **	3.79 , 8.01	13.60 **	9.13 , 20.25	61.82 **	19.47 , 196.33	†	--
Median Value of Housing Units	Low - 258,700	479	143,927	1.00		1.00		1.00		1.00	
	258,701 -	343	145,113	0.22 **	0.14 , 0.33	0.16 **	0.12 , 0.22	0.14 **	0.09 , 0.21	0.04 **	0.01 , 0.12
	368,801 - High	345	144,505	0.14 **	0.10 , 0.22	0.10 **	0.07 , 0.14	0.07 **	0.04 , 0.12	0.02 *	0.00 , 0.15
Percent of Black Population	0 - 9.8	433	144,491	1.00		1.00		1.00		1.00	
	9.9 - 34.3	344	144,175	0.89	0.65 , 1.21	0.83	0.61 , 1.13	1.09	0.73 , 1.63	0.80	0.35 , 1.82
	34.4 - 100	390	144,879	2.30 **	1.58 , 3.35	1.53 *	1.13 , 2.08	2.43 **	1.69 , 3.48	5.29 **	2.89 , 9.66
Percent On Public Assist Income	0 - 0.5	388	144,203	1.00		1.00		1.00		1.00	
	0.6 - 1.8	353	144,809	1.39 *	1.02 , 1.91	1.94 **	1.41 , 2.67	1.30	0.81 , 2.08	2.43	0.80 , 7.38
	1.9 - 24.4	426	144,533	2.66 **	1.87 , 3.79	3.68 **	2.69 , 5.03	5.79 **	3.88 , 8.64	17.06 **	6.70 , 43.45
Median Household Income	Low - 59,610	469	144,048	1.00		1.00		1.00		1.00	
	59,611-	366	143,688	0.20 **	0.13 , 0.30	0.21 **	0.16 , 0.29	0.14 **	0.10 , 0.21	0.02 **	0.01 , 0.10
	86,453 - High	332	145,809	0.11 **	0.07 , 0.17	0.09 **	0.06 , 0.14	0.03 **	0.01 , 0.06	†	--

* p<.05

** p<.0001

† '0' cells in the tables therefore OR cannot be calculated

‡ Adjusted for percentage of children screened

The Model

Based on these analyses and the 2000 and 2004 MD Targeting Models, the 2013 Maryland Models include the following variables: percentage of pre-1950 housing, median housing value, the constructed poverty scale, the percentage of homes built from 1950-1979 and the average annual percentage of children tested. Models were prepared for each of the four outcome variables described (Table A-4.14). For the more restrictive outcome measures, where risk areas were defined by increasing percentages of tests above the reference level, the area under the ROC curve, Hosmer-Lemeshow test, Somers' D statistic, AIC and SC were all indicative of a better fitting model. Characteristics of the risk and non-risk tracts generally became more homogeneous within each group as the definition of risk area became more restrictive.

measure (the proportion of lead tests above the reference level of 5mcg/dL) increased. Census tracts with greater than 18% old (pre-1950) housing were 6 times more likely to have at least 3% (25th percentile) of lead test results at or above the reference level, 14 times more likely to have at least 5% (50th percentile) of test results at or above reference, and 62 times more likely to have at least 9% (75th percentile) of test results at or above reference compared to census tracts with less than 5% old housing, adjusted for testing rates.

Table A-4.12. Mean* Values of Select Census Tract Characteristics, Risk** Compared to Non-Risk Tracts, Maryland 2005-2009

	All Census Tracts	Outcome 1 ≥3% of Tests At or Above CDC Reference† (25th Percentile)		Outcome 2 ≥5% of Tests At or Above CDC Reference (50th Percentile)		Outcome 3 ≥9% of Tests At or Above CDC Reference (75th Percentile)		Outcome 4 ≥17% of Tests At or Above CDC Reference (90th Percentile)	
Characteristics		Non-Risk	Risk	Non-Risk	Risk	Non-Risk	Risk	Non-Risk	Risk
n children ‡	*433,545*	143,293	290,252	273,482	160,063	357,931	75,614	405,868	27,677
total n (%) tracts	*1,167*	*314 (27%)*	*853 (73%)*	*636 (55%)*	*531 (45%)*	*888 (76%)*	*279 (24%)*	*1,052 (90%)*	*115 (10%)*
Median House Value ($)	293,100	372,050	255,700	356,050	213,200	337,300	160,900	315,750	99,800
Median Income ($)	66,797	88,026	59,137	81,053	51,383	75,919	41,098	71,049	31,319
% Rental Properties	31.0	25.2	33.1	26.7	36.1	27.1	43.3	28.7	51.4
% Vacant Properties	9.0	5.1	10.4	5.7	12.9	6.4	17.4	7.3	24.7
% Poverty	3.9	2.0	4.6	2.2	5.9	2.4	8.5	2.9	12.8
% Female Headed Households	3.4	2.4	3.8	2.6	4.3	2.8	5.4	3.0	6.6
% Housing built before 1950	23.0	10.8	27.4	12.3	35.8	15.0	48.3	18.6	63.2
% Housing built 1950-1979	43.0	45.4	42.2	46.3	39.1	45.8	34.2	44.8	26.6
% Residents Black	30.9	15.7	35.4	23.9	39.2	25.4	48.4	26.7	68.6
% Public Assistance Income	2.1	1.0	2.5	1.1	3.3	1.3	4.6	1.6	6.9
% Tested	25.0	19.1	27.2	20.8	30.0	22.0	34.6	23.2	41.7

* Mean values presented, unless otherwise indicated

** Similar to the approach used in prior publications (CDC, 1997), 'Risk" is designated based on a percentage of tests at or above the reference. The prior studies were based on the action level of 10µg/dL and so we assess several levels. Based on CDC 1997 recommendations, tracts with ≥ 12% of blood lead test results ≥ 10 µg/dL were considered high risk areas for lead exposure and poisoning in children

† The CDC Reference level is 5 µg/dL

‡ Number of Children ≤5 years old from the 2005-2009 American Community Survey

APPENDIX 5. Potential Costs of Testing Targeting Options

This section deals exclusively with the costs of implementing the lead testing strategies, not with potential benefits. The projected costs of the three options presented in this document are complex, and depend on numerous assumptions. One overarching complexity is the change in the global health care system brought about by implementation of the Affordable Care Act (ACA). This includes a significant increase in Medicaid enrollment and insurance coverage, in general, as well. The increase in Medicaid coverage for children means that even without any change in "at-risk" ZIP codes, more children should be tested by their providers. Other potential results of the ACA could be changes in hospitalization costs for children diagnosed with elevated blood lead levels, although it is impossible to predict what those changes might be. The cost estimates presented are therefore necessarily simplified and subject to considerable uncertainty.

The three options were compared as to their relative costs of implementation, using current reimbursement rates provided to the Department by health care providers and organizations involved in lead prevention, as well as directly from Medicaid. The cost comparison included "typical" costs for blood lead testing, costs of follow-up, and an estimate of the percentage of capillary tests that would be confirmed by venous testing, based on the following assumptions (Table A-5.1):

- 13% of elevated capillary tests (≥10 mcg/dL) would be less than 10 mcg/dL when repeated by venous testing (false positives)
- Reimbursement rate for blood lead test is $15 - $25
- A "typical" environmental investigation for a child with a confirmed elevated blood lead (≥10 mcg/dL) would cost approximately $370 if performed by a public agency or $630 if conducted by a private firm.

In the first option, based on the distribution of test results at or above the reference level observed from 2005-2009, the different selection areas would potentially "miss" children estimated to be "at-risk." To capture 100% of expected children with blood lead levels at or above the reference, all areas would have to be targeted (universal testing). Capturing 90% of expected children with blood lead levels at or above the reference would involve targeting 173 "at-risk" ZIP codes. Adoption of this strategy would result in an estimated 126,016 1- and 2-year old children receiving a lead test the first year, with 10,042 (8.0% of tests) of these estimated to have a blood lead level at or above the reference level. This approach would "miss" an estimated 972 1- and 2-year old children living in non-targeted ZIP codes who, although not tested, would still be expected to have a blood lead level at or above the reference level. If, instead of 90%, the goal were to identify 75% of children expected to have a blood lead level at or above the reference level, 95 ZIP codes would be targeted as "at-risk." This strategy would result in an estimated 91,201 1- and 2-year old children receiving a blood test, identifying an

Targeting Strategy Option 3 (Universal Testing)

The third option for a targeting strategy would be universal testing for all children of appropriate age in MD. This strategy would require that all children be tested at one year and two years of age, regardless of place of residence or any other consideration. This strategy would be recommended for a period of *three years*, enough time to develop a more complete understanding of the actual distribution of blood lead levels throughout the State. This strategy requires no modeling or data analysis. Table A-4.16 lists the estimated number of 1- and 2-year old children living in each county and Baltimore City, based on the 2010 U.S. Census.

Table A-4.16. Estimated Number* of 1- and 2-Year Old Children to be Tested under a Universal Testing Strategy, by County

County	Number
Allegany	1,362
Anne Arundel	13,884
Baltimore	19,316
Calvert	1,939
Caroline	905
Carroll	3,529
Cecil	2,602
Charles	3,791
Dorchester	815
Frederick	5,857
Garrett	603
Harford	5,921
Howard	6,880
Kent	393
Montgomery	25,559
Prince George's	23,489
Queen Anne's	1,054
St. Mary's	2,969
Somerset	530
Talbot	795
Washington	3,592
Wicomico	2,486
Worcester	930
Baltimore City	16,836
Total	146,037

* Based on the 2010 U.S. Census

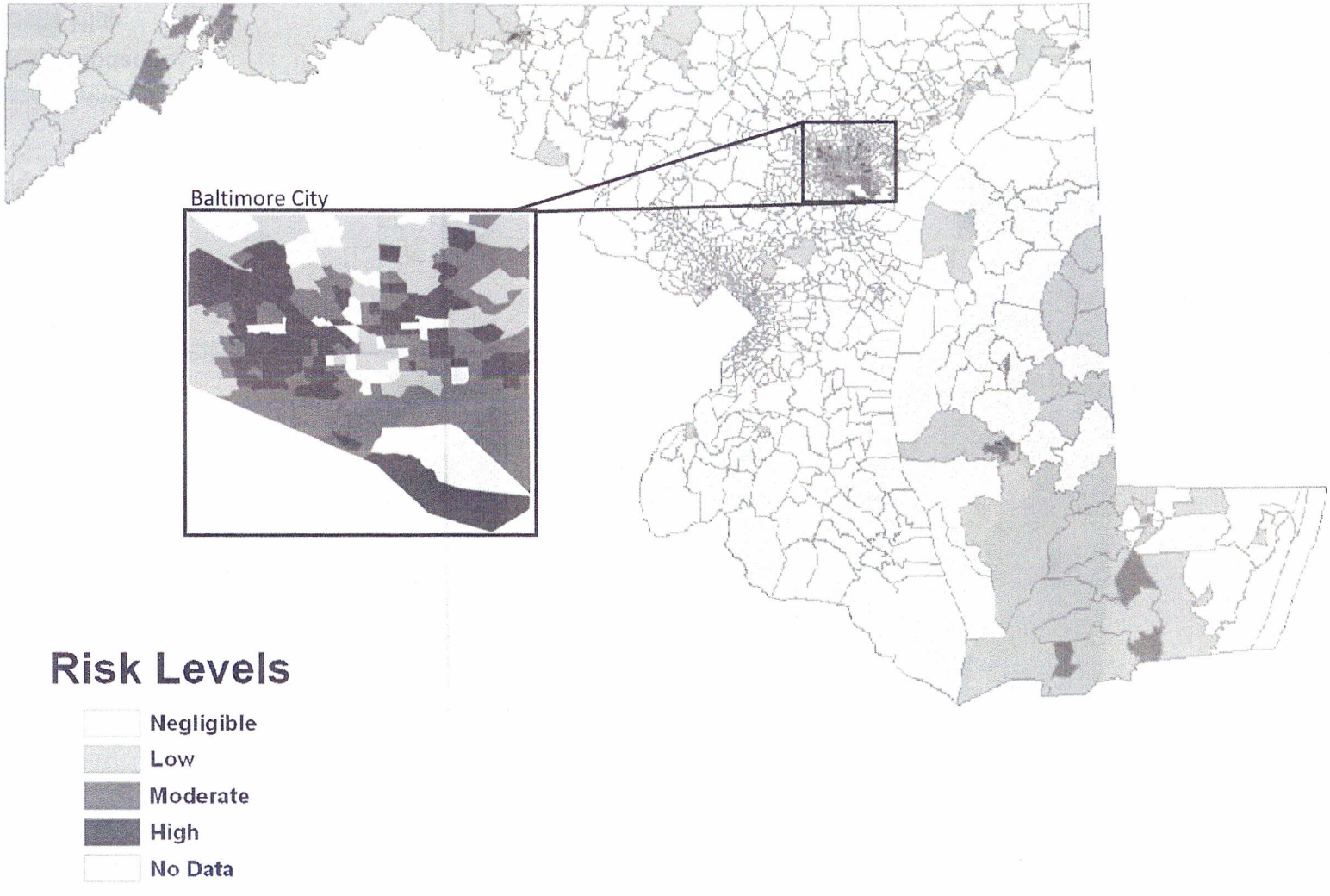


Figure A-4.10. Predicted Risk Areas, Model 4: Modeled risk area defined as a census tract with ≥17% of tests at or above the reference level

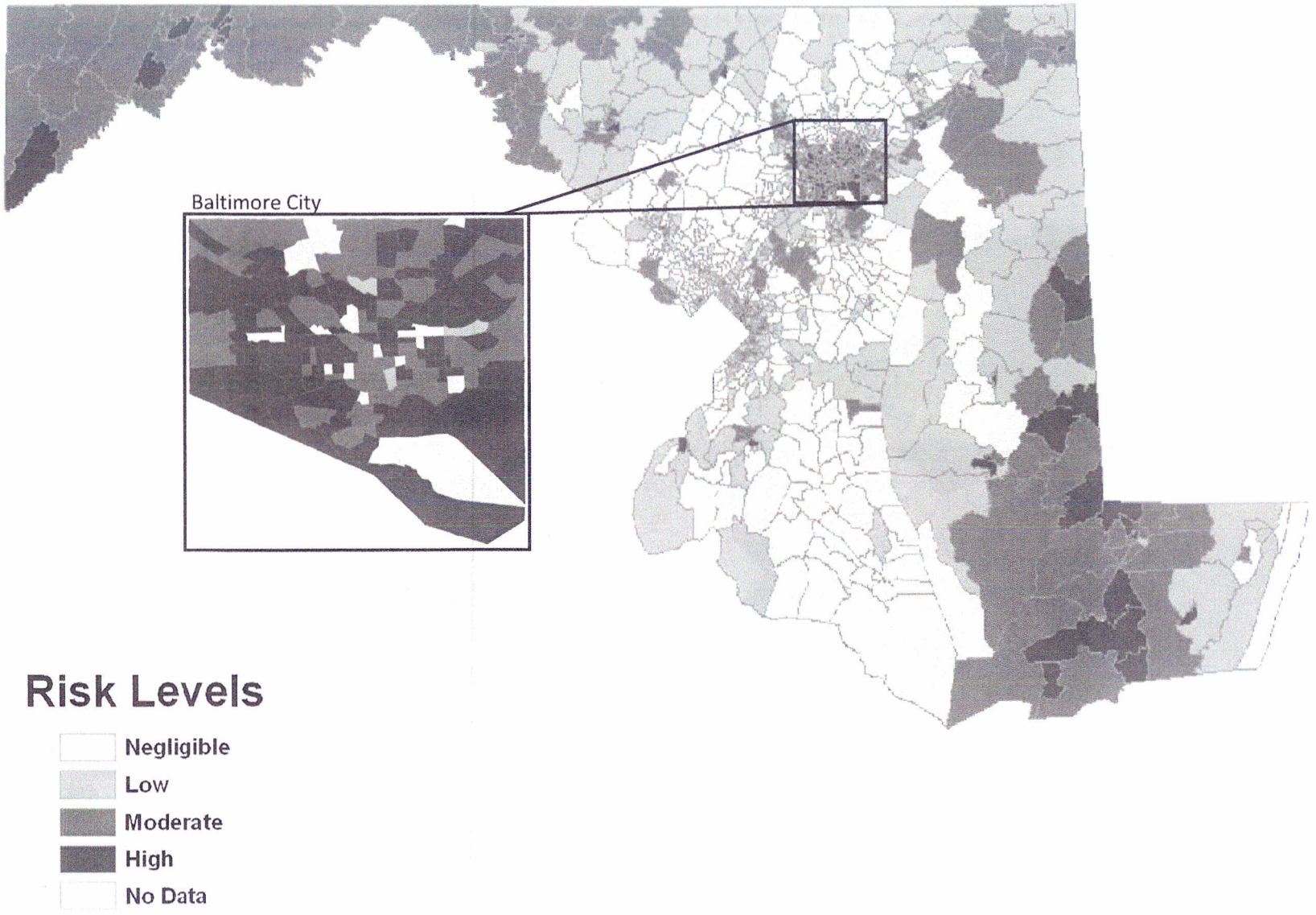


Figure A-4.9. Predicted Risk Areas, Model 3: Modeled risk area defined as a census tract with ≥9% of tests at or above the reference level

≥10ug/dl follow-up X 1 year	Estimated number of children with EBL ≥ 10mcg/dL	follow-up Cost per Year	Total Follow-up Testing Cost		≥10ug/dl follow-up X 1 year	Estimated number of children with EBL ≥ 10mcg/dL	follow-up Cost per Year	Total Follow-up Testing Cost
Venous	1,040	$44	$45,427		**Venous**	1,040	$76	$79,529
Capillary	60	$42	$2,497		**Capillary**	60	$76	$4,588
MDE Inspection X1	1,100	$715	$786,500		**MDE Inspection X1**	1,100	$715	$786,500
MDE Case Coordination X1 year	1,100	$56	$61,193		**MDE Case Coordination X1 year**	1,100	$56	$61,193
Nurse visit X1	1,100	$49	$53,625		**Nurse visit X1**	1,100	$49	$53,625
Cost of ≥10ug/dl follow-up			$949,242		**Cost of ≥10ug/dl follow-up**			$985,435
Total Estimated Cost			**$2,577,901**		**Total Estimated Cost**			**$3,853,697**

Table A-5.2. Low and high range estimates for targeting strategy option 1.

Option 1* - Low Range					Option 1* - High Range			
	Estimated number of 1 and 2 year old children to be tested	Cost/Test	Total Screening Test Cost			Estimated number of 1 and 2 year old children to be tested	Cost/Test	Total Screening Test Cost
Venous	79,983	$15	$1,164,552		Venous	79,983	$25	$2,038,767
Capillary	11,218	$14	$155,594		Capillary	11,218	$25	$285,947
Cost of Screening	91201		$1,320,146		Cost of Screening	91201		$2,324,713
5-9ug/dl Follow-up X 1 year	Estimated number of children with EBL 5 - 9µg	follow-up Cost per Year	Total Follow-up Testing Cost		5-9ug/dl follow-up X 1 year	Estimated number of children with EBL 5 - 9µg	follow-up Cost per Year	Total Follow-up Testing Cost
Venous tests	6,159	$44	$269,025		Venous	6,159	$76	$470,979
Capillary tests	949	$42	$39,488		Capillary	949	$76	$72,570
Cost of 5-9ug/dl follow-up	7,108		$308,513		Cost of 5-9ug/dl follow-up	7,108		$543,549

Table A-5.1. Crude Projected Cost Analysis, Three Targeting Strategy Options, Maryland

Targeting Strategy Option	Estimated number of 1- and 2-year old children to be tested	Estimated number of children with EBL ≥10mcg/dL§	Estimated number of children with EBL 5 - 9mcg/dL§	Cost of Testing¶	Costs of Follow Up for EBL ≥10mcg/dL††	Cost of Follow Up for EBL 5 – 9mcg/dL§§	Total Estimated Cost
Option 1 – Target testing based on the distribution of 2005-2009 test results, by ZIP Code*	91,201 (79,983 Venous, 11,218 Capillary)	1,100 (1,040 Venous, 60 Confirmed Capillary)	7,108 (6,159 Venous, 949 Confirmed Capillary)	$1,320,146 - $2,324,713	$949,242 – $985,435	$308,513 - $543,549	$2,577,901 - $3,853,697
Option 2 – Target testing based on an updated MD Targeting Model**	108,245 (92,008 Venous, 16,237 Capillary)	1,148 (1,104 Venous, 44 Confirmed Capillary)	8,051 (6,809 Venous, 1,242 Confirmed Capillary)	$1,564,844 - $2,759,165	$990,702 - $1,028,436	$349,097 - $615,660	$2,904,642 - $4,403,261
Option 3 – Universal testing	146,037 (124,131 Venous, 21,906 Capillary)	1,548 (1,489 Venous, 59 Confirmed Capillary)	10,862 (9,186 Venous, 1,676 Confirmed Capillary)	$2,111,184 - $3,722,483	$1,335,895 - $1,386,776	$470,983 – $830,617	$3,918,061 – $5,939,876

* This estimate was prepared considering the area containing 75% of children expected to be "at-risk," representing the "middle" estimate.

** This estimate was prepared based on model 3, with the modeled outcome of interest "risk area" defined as a census tract with ≥9% of tests at or above the reference level.

§ Represents venous test results and confirmed capillary results. 90% of capillary tests are assumed to be true positives in these analyses.

¶ The Cost per Test is based on Maryland Medicaid 2013 Clinical Diagnostic Laboratory Fee Schedule, with a low range of reimbursement assumed to be: Venous sample = $12.37 +$2.19 = $14.56; Capillary test =:$12.37 + $1.50= $13.87. The high range is assumed to be: Venous sample = $22.49 + $3.00 = $19.64; Capillary sample = $22.49 + $3.00 = $19.64.

†† Based on estimates of follow-up testing (3 tests/year), home inspection and testing ($715), nurse home visit ($48.75), case coordination ($55.63).

§§ Cost per Year: 3 follow-up tests per year (test q3 months), following the initial screening test.

See Appendix B, Tables 29a-c for details.

estimated 8,320 (9.1% of tests) children and "missing" an estimated 2,445 children expected to have a blood lead level at or above the reference level. Finally, a strategy based on identifying 50% of expected children with blood lead levels at or above the reference would target 32 ZIP codes as "at-risk." This strategy would result in an estimated 32,580 children being tested, identifying 5,274 (16.2% of tests) children estimated to have a blood lead level at or above the reference level and "missing" 4,925 children expected to have a blood lead level at or above the reference level.

Using the most conservative assumptions for the second targeted testing approach, census tracts with 3 or more percent of test results at or above the reference level were identified as "at-risk." The results of this model identified 421 "high" risk census tracts with a total of 179,681 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL; 414 census tracts as "moderate" risk areas with a total of 86,740 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL; 231 "low" risk census tracts with a total of 26,837 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL; and 4 "negligible" risk census tracts with a total of 5,631 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL. For the least conservative model, a risk area was defined as a census tract with greater than or equal to 17% of blood lead tests at or above the reference level. The results identified 76 "high" risk census tracts with a total of 19,570 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL; 103 census tracts as "moderate" risk areas with a total of 9,303 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL; 179 "low" risk census tracts with a total of 2,874 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL; and 809 "negligible" risk census tracts with a total of 614 children less than 6 years of age predicted to have a blood lead level ≥5mcg/dL. Details of the cost analysis are presented in Tables A-5.2 – A-5.4.

Capillary	59	$ 42	$2,455	Capillary	59	$76	$4,512
MDE Inspection X1	1,548	$715	$1,106,820	MDE Inspection X1	1,548	$715	$1,106,820
MDE Case Coordination X1 year	1,548	$56	$86,115	MDE Case Coordination X1 year	1,548	$56	$86,115
Nurse visit X1	1,548	$49	$75,465	Nurse visit X1	1,548	$49	$75,465
Cost of ≥10ug/dl follow-up			$1,335,895	Cost of ≥10ug/dl follow-up			$1,386,776
Total Estimated Cost			**$3,918,061**	Total Estimated Cost			**$5,939,876**

Table A-5.4. Low and high range estimates for targeting strategy option 3.

Option 3 - Low Range					Option 3 - High Range			
	Estimated number of 1 and 2 year old children to be tested	Cost per Test	Total Screening Test Cost			Estimated number of 1 and 2 year old children to be tested	Cost per Test	Total Screening Test Cost
Venous	124,131	$15	$1,807,347		Venous	124,131	$25	$3,164,099
Capillary	21,906	$14	$303,836		Capillary	21,906	$25	$558,384
Cost of Screening	146,037		$2,111,184		Cost of Screening	146,037		$3,722,483
5-9ug/dl follow-up X 1 year	Estimated number of children with EBL 5 - 9µg	follow-up Cost per Year	Total Follow-up Testing Cost		5-9ug/dl follow-up X 1 year	Estimated number of children with EBL 5 - 9µg	follow-up Cost per Year	Total Follow-up Testing Cost
Venous	9,186	$44	$401,244		Venous	9,186	$76	$702,453
Capillary	1,676	$42	$69,738		Capillary	1,676	$76	$128,164
Cost of 5-9ug/dl follow-up	10,862		$470,983		Cost of 5-9ug/dl follow-up	10,862		$830,617
≥10ug/dl Follow-up X 1 year	Estimated # of children with EBL ≥ 10mcg/dL	follow-up Cost per Year	Total Follow-up Testing Cost		≥10ug/dl follow-up X 1 year	Estimated # of children with EBL ≥ 10mcg/dL	follow-up Cost per Year	Total Follow-up Testing Cost
venous	1,489	$ 44	$65,040		venous	1,489	$76	$113,864

venous	1,104	$44	$48,223	venous	1,104	$76	$84,423
Capillary	44	$42	$1,831	Capillary	44	$76	$3,365
MDE Inspection X1	1,148	$715	$820,820	MDE Inspection X1	1,148	$715	$820,820
MDE Case Coordination X1 year	1,148	$56	$63,863	MDE Case Coordination X1 year	1,148	$56	$63,863
Nurse visit X1	1,148	$49	$55,965	Nurse visit X1	1,148	$49	$55,965
Cost of ≥10ug/dl follow-up			$990,702	Cost of ≥10ug/dl follow-up			$1,028,436
Total Estimated Cost			**$2,904,642**	Total Estimated Cost			**$4,403,261**

Table A-5.3. Low and high range estimates for targeting strategy option 2.

Option 2** - Low Range					Option 2** - High Range			
	Estimated number of 1 and 2 year old children to be tested	Cost per Test	Total Screening Test Cost			Estimated number of 1 and 2 year old children to be tested	Cost per Test	Total Screening Test Cost
Venous	92,008	$15	$1,339,636		Venous	92,008	$25	$2,345,284
Capillary	16,237	$14	$225,207		Capillary	16,237	$25	$413,881
Cost of Screening	108,245		$1,564,844		Cost of Screening	108,245		$2,759,165
5-9ug/dl follow-up X 1 year	Estimated number of children with EBL 5 - 9µg	follow-up Cost per Year	Total Follow-up Testing Cost		5-9ug/dl follow-up X 1 year	Estimated number of children with EBL 5 - 9µg	follow-up Cost per Year	Total Follow-up Testing Cost
Venous	6,809	$44	$297,417		Venous	6,809	$76	$520,684
Capillary	1,242	$42	$51,680		Capillary	1,242	$76	$94,976
Cost of 5-9ug/dl follow-up	8,051		$349,097		Cost of 5-9ug/dl follow-up	8,051		$615,660
≥10ug/dl follow-up X 1 year (3 tests)	Estimated number of children with EBL ≥ 10mcg/dL	follow-up Cost per Year	Total Follow-up Testing Cost		≥10ug/dl follow-up X 1 year (3 tests)	Estimated number of children with EBL ≥ 10mcg/dL	follow-up Cost per Year	Total Follow-up Testing Cost

APPENDIX 7. Supplemental Data Tables

Table A-7.1. Targeted Areas Containing 90% Expected "At-Risk" Children

Zip Codes with 90% of Expected					
Allegany	Baltimore City	Cecil	Howard, *Cont.*	Prince Georges, *Cont.*	Somerset
21502 *	21201 *	21901	21043	20708	21817 *
21532 *	21202 *	21911	21044	20710 *	21853 *
	21205 *	21921	21045	20712 *	
Anne Arundel	21206 *		21046	20715	Talbot
20724	21209 *	Charles	21075	20716	21601
21012	21210 *	20601		20720	
21037	21211 *	20602	Kent	20721	Washington
21060 *	21212 *	20603	21620 *	20722 *	21713 *
21061 *	21213 *	20640 *		20735	21722 *
21108	21214 *	20646	Montgomery	20737 *	21740 *
21113	21215 *		20814	20740 *	21742 *
21114	21216 *	Dorchester	20815 *	20743 *	21783 *
21122	21217 *	21613 *	20817	20744	21795 *
21144	21218 *	21643 *	20832	20745	
21226 *	21223 *		20850	20746 *	Wicomico
21401	21224 *	Frederick	20852	20747	21801 *
21403	21225 *	21701 *	20853	20748 *	21804 *
	21229 *	21702	20854	20770 *	21826 *
Baltimore Co.	21230 *	21703 *	20866	20772	21875 *
21030	21231 *	21771	20871	20774	
21093 *	21239 *	21788	20874	20781 *	Worcester
21117	Calvert		20876	20782 *	21811 *
21133 *	20657	Garrett	20877	20783 *	21842 *
21136	20678	21550 *	20878	20784 *	21851 *
21204 *			20879	20785 *	21863 *
21207 *	Caroline	Harford	20886		
21208 *	21629 *	21001 *	20901		
21219 *	21632 *	21009	20902	Queen Annes	
21220 *		21014	20903	21617 *	
21221 *	Carroll	21015	20904		
21222 *	21048	21040 *	20906	Saint Marys	
21227 *	21074	21047	20910	20619	
21228 *	21102	21050	20912	20636	
21234 *	21157	21078 *		20650	
21236 *	21158		Prince Georges	20653	
21237 *	21784	Howard	20705	20659	
21244 *	21787 *	20723	20706		
21286 *	21791 *	21042	20707		

* Zip Code Considered "At Risk" in the 2004 Targeting Plan

records of 702 inspections for different sites/children, representing an estimated 570 unique children (in some cases, there were multiple addresses inspected for a single child). Upon preliminary analysis, several limitations to these data were identified. These data represented only a small subset of the population of the children in the State—from 2005-2009, investigations were performed only for cases with a blood lead level at or above 15mcg/dL. Since this data set captured exposure information only for those children with the most elevated blood levels, it may not accurately represent lead exposures for all children in the State. Further, this data set provided no information on the source of exposure for children with blood lead levels from 5 to 14mcg/dL. Due to this limitation, the investigations data set was unable to be utilized in any of the targeting models assessed.

The records in the enforcements data set also did not contain an identifier that allowed them to be directly matched to a record in STELLAR. Therefore, matching the two data sets was based on the open text fields containing the child's name and/or address information. A child with records at different addresses or with different names or name spellings may not be identified as matching. Due to the limitations previously identified, this match was not attempted.

The data in this system may be used as anecdotal information; however, due to the limited subset of children for whom this information in available, the difficulties matching records to individual children in STELLAR, and other characteristics of this system, further attempts to utilize this data source for any quantitative analysis were abandoned.

Table A-6.6. Lead Exposure Sources* Identified by MDE Investigations, 2005-2009

Source Identified	Non-Paint Source	Defective Paint	Blinds	Dust	Ceramics	Hobbies	Industry	Make-up	Occupation	Renovations	Soil	Toys	Other**
Yes	375	81	42	252	15	3	1	19	18	29	40	25	159
No	327	621	660	450	687	699	701	683	684	673	662	667	-

* Multiple sources may have been identified at one address. Also, multiple addresses may have been inspected for a single child.

** "Other" includes Other (155), Bullets (1), Sinkers (3)

- **Baltimore City STELLAR, Baltimore City Health Department, Obtained from MDE:** Baltimore City utilizes their own version of STELLAR and captures additional environmental information on cases for which they perform an investigation. While Baltimore City accounts for the largest number of individuals with elevated blood lead levels, this data set still represents only a subset of children in the state and not the state overall.

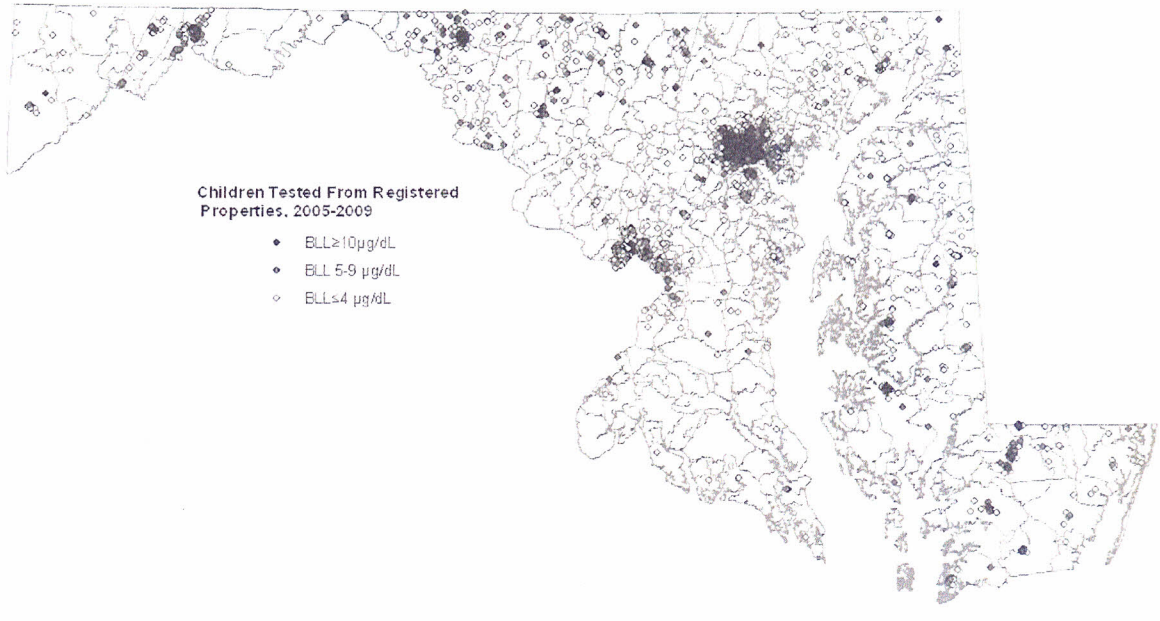
- **Medicaid Data:** A list of Medicaid enrolled children would have been used to determine the percentage of children in the project data set who had received a lead test. Unfortunately, we were unable to obtain this information for these analyses.

data sets. This limitation could potentially lead to error when retrospectively estimating the number of properties registered annually.

The addresses provided were matched to the addresses of children tested in the CLR by ZIP code, street name, and street number. This match was done separately for each year (i.e. addresses of children tested in 2005 were matched to the addresses of properties registered in 2005, and so on). Therefore, only properties registered in the year a child was tested would have matched. Annually, 2.3-3.3% of individual addresses with children tested matched to a property in the Rental Registry.

This data set was used to identify additional rental properties in the CLR-DAT file. Blood lead levels of individual children from registered rental properties were mapped (Figure A-6.3), but no further uses for this data set were identified.

Figure A-6.3. Children from Registered Rental Properties and Blood Lead Levels, Maryland 2005-2009 *(all children)*



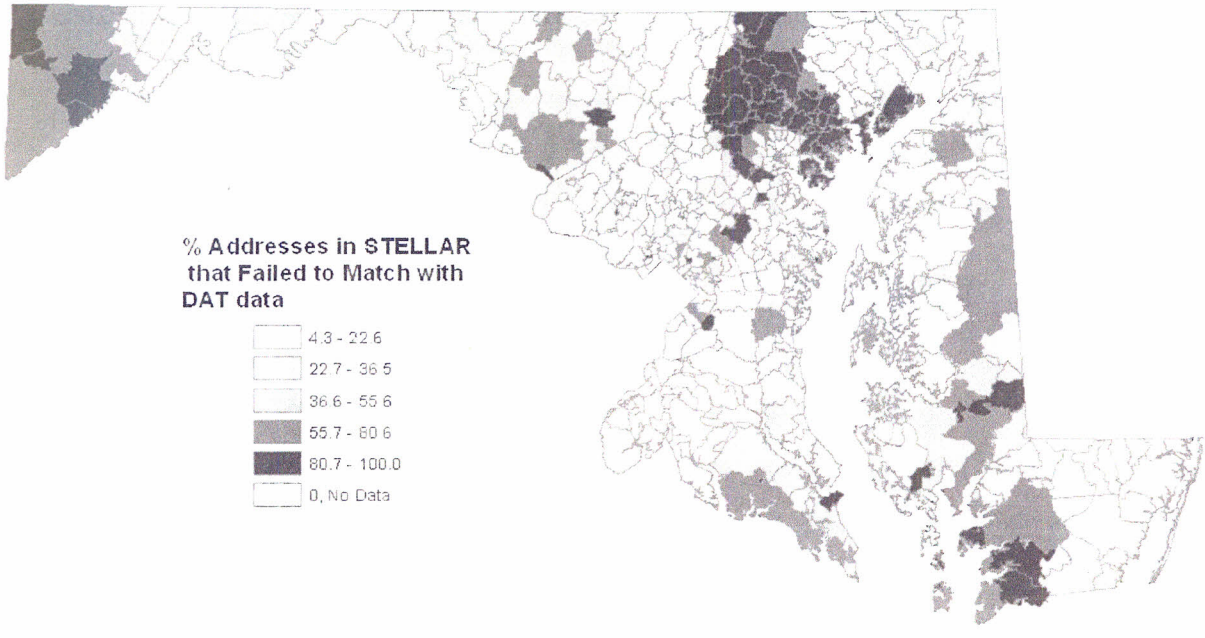
- **Environmental Investigations Enforcement Database, MDE:** This data set was investigated to provide further information on sources of exposure for children with elevated blood lead levels. As efforts have succeeded in reducing exposures to children from pre-1950 rental housing, other sources, including owner-occupied housing, imported potteries, home remedies, or other exposures have become more prevalent. The MDE enforcements data contained information on the source(s) of lead exposure identified for investigated cases (Table A-6.6).

  Data sets containing records of all enforcements investigations from 2005-2009 were obtained from the Lead Poisoning Prevention Program's Lead Enforcement Division at MDE. This data contained

Table A-6.5. CLR - DAT Merge Results

Merge Approach	Matches	
	N	%
Attempt 1: Latitude/Longitude Merge	334,742	57.1
Attempt 2: Address Field Merge	312,721	53.3
Attempt 3: Combination of 1 & 2	345,353	58.9

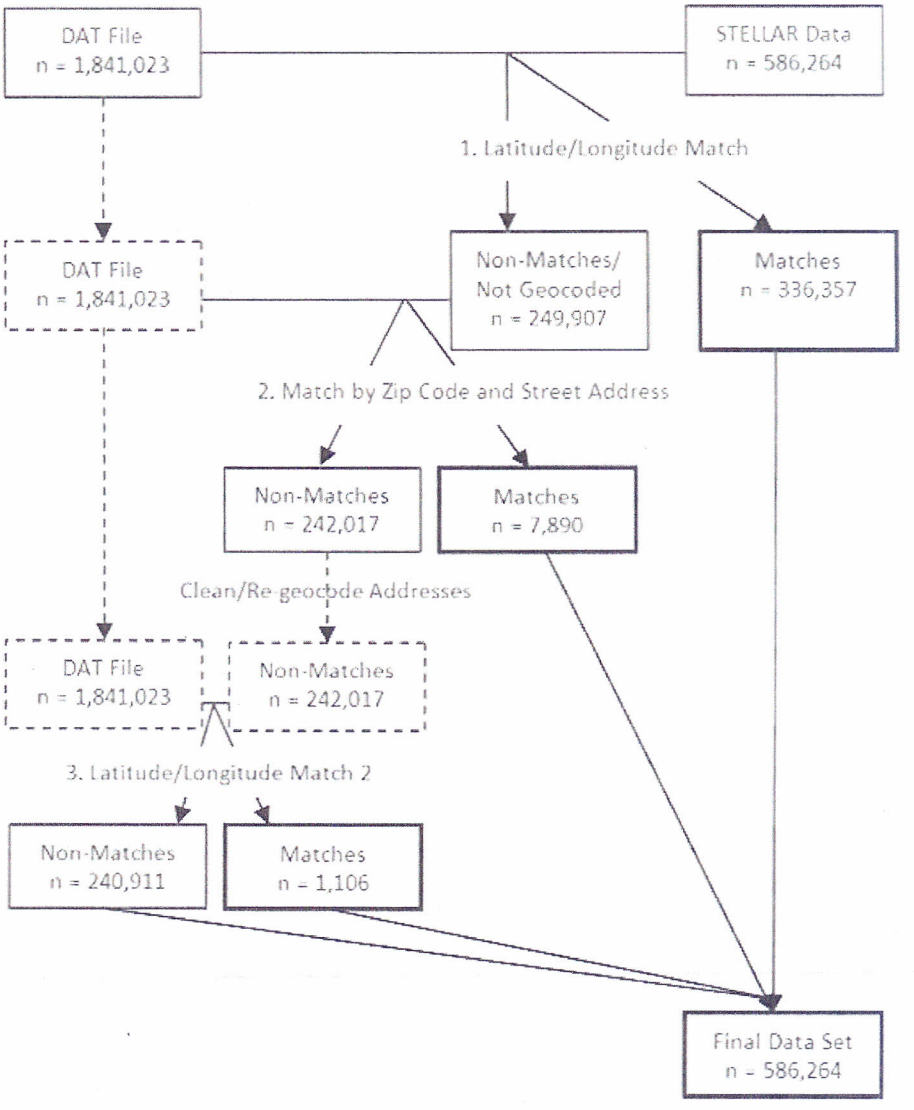
Figure A-6.2. Percent of Childhood Lead Registry Addresses that Failed to Match to a DAT Address Record, by ZIP Code, Maryland 2005-2009



- **Rental Registry, MDE**: Information on registered rental properties in the State was obtained from MDE and used to determine the percentage of children in the CLR residing in registered rental properties and to assess the blood lead levels of these children.

  Excel files of properties annually registered with MDE's Rental Registry from 2005-2009 were obtained from MDE. These files included the address, construction year, and identification number for all registered properties. The data sets provided had one noted limitation: only those properties currently registered as of September 2012 were included. If a property had been registered between 2005-2009 and later removed in a subsequent year, it was not included in the provided

Figure A-6.1. CLR - DAT Merge Process



non-residential properties, some may not been captured by the exclusion criteria used and remained in the data set.

Following discussions with representatives at the DAT, the project team concluded that it would not be possible to use the DAT files to create a detailed summary of the housing stock in MD, as there was no way to definitively identify occupied residential properties or renter- versus owner-occupied properties using the fields available in the data set. Limited information on the construction year was merged with the CLR data in order to provide more specific information on the age of properties inhabited by individual children who had received a blood lead test in MD. Variables merged into the project data set are summarized in Table A-6.4. Further attempts at using these data were abandoned.

The DAT file was matched with the CLR data set using a multi-tiered approach, first by matching based upon geocoded latitude and longitude (57 % of overall data matched), and then matching the remaining observations by the address fields ZIP code, street number, and street name (1.4 % of overall data matched). Finally, the address fields for the remaining fields were cleaned and re-geocoded in Centrus, and a final merge by latitude and longitude was done (0.20 % of remaining addresses matched). This approach resulted in an overall 58.9% match of CLR records to an address in the DAT file. The processes for this merge are outlined in Figure 11, and Table 23 summarizes the overall results for the three data matching methods. The percentage of STELLAR addresses in each ZIP code that failed to match to a DAT record was mapped to assess whether there appeared to be a geographic pattern to addresses that failed to match (Figure A-6.2).

Table A-6.4. DAT Data Fields

Description	Field Name	Source	Notes
Property Latitude	N_LAT	DAT*	Geocoded property addresses in Centrus
Property Longitude	N_LON	DAT*	Geocoded property addresses in Centrus
Year property was built	YEARBUILT	DAT	
Rental property estimate	RENTALest	DAT*	Assume rental property if owner's mailing address is different that the property address
* Fields added to data set. These were not included in the original file but were created using fields from the file.			

Table A-6.3. 2010 Decennial Census Data Fields (Continued)			
Description	**Field Name**	**Source**	**Notes**
Males/females 4 years old	M4/F4	2010 Census	2010 Population of Children <5 years old
Males/females 5 years old	M5/F5	2010 Census	2010 Population of Children <5 years old
Total number males ≤5 years old	MLE5	2010 Census*	MLE5= MLT1+M1+M2+M3+M5+M5
Total number females ≤5 years old	FLE5	2010 Census*	FLE5= FLT1+F1+F2+F3+F5+F5
Total number children ≤5 years old	TotLE5	2010 Census*	TotLE5= MLE5+ FLE5

* Fields added to data set. These were not directly exported from FactFinder, but were created/calculated using fields from the data sets downloaded.
SF= Summary File

2. Exploratory Data Sets

The following data sets were evaluated as potential data sources to be used in assessing and revising the MD lead targeting plan. Due to noted limitations, these sources were used only to provide limited descriptive information on children in the CLR or were eliminated from these analyses.

- **Department of Assessments & Taxation (DAT) Real Property Data, 2011, Obtained from MDE:** The State DAT Real Property database contains records of all residential and non-residential properties in MD and is created and intended to be used for taxation purposes. The variables in this file, including year of construction and property use, and the feasibility of merging the data with the CLR data, were explored to determine whether this data set could be used as a more robust source of information on the housing characteristics in MD. The file was used for two purposes: (1) to provide a detailed summary of housing characteristics in the State and (2) to provide specific housing information on all children in the CLR. This would allow a comparison of blood lead levels by the specific housing characteristics of individual children.

  Data files from DAT were obtained from MDE, which receives updated files from DAT on a monthly basis. The files were stored as '.txt' files by MDE, and the project team contacted the DAT for the data schematic to enable further use of these data. Fields in this data set on the year of construction, the most recent transfer date, owner occupancy, and property use were investigated further.

  The files used were received by MDE in 2011. The .txt files were converted to SAS data sets, and efforts were made to eliminate non-residential properties (e.g. parking garages, undeveloped land, boat slips, etc.). Following data set cleaning, the file was geocoded in Centrus to include latitude, longitude, and census tract for each property. Of the 1,841,023 records remaining after cleaning, 1,463,558 (79.5%) were successfully geocoded in Centrus. Although attempts were made to remove

Table A-6.3. 2010 Decennial Census Data Fields

Description	Field Name	Source	Notes
Number residents white	White	2010 SF1	P3: RACE
Number residents black	Black	2010 SF1	P3: RACE
Number residents other race	OthRace	2010 SF1*	P3: RACE—Sum of Other, Indian/Alaskan, Hawaiian/Pacific Islander and Multiple Race
Number residents all races (total)	AllRaces	2010 SF1	P3: RACE
Percent residents white	pWhite	2010 SF1*	pWhite=(nWhite/nAllRaces)*100
Percent residents black	pBlack	2010 SF1*	pBlack=(nBlack/nAllRaces)*100
Percent residents other race	pOther	2010 SF1*	pOther=(nOther/nAllRaces)*100
Number occupied housing units	OccupiedUnit	2010 SF1	H3: OCCUPANCY STATUS
Number vacant housing units	VacantUnit	2010 SF1	H3: OCCUPANCY STATUS
Number housing units	TotalUnit_V	2010 SF1	H3: OCCUPANCY STATUS
Percent occupied housing units	pOccupied	2010 SF1*	pOccupied=(OccupiedUnit/TotalUnit_V)*100
Percent vacant housing	pVacant	2010 SF1*	pVacant=(VacantUnit/TotalUnit_V)*100
Number owner occupied housing units	OwnerOccUnits	2010 Demographic Profile	DP21: HOUSING TENURE
Number rental housing units	pRentrOc	2010 Demographic Profile	DP21: HOUSING TENURE
Number housing units	TotalUnits_R	2010 Demographic Profile	DP21: HOUSING TENURE
Percent owner occupied housing	pOwnerOcc	2010 Demographic Profile*	pOwnerOc=(OwnerOccUnits/TotalUnits_R)*100
Percent rental housing	pRentrOc	2010 Demographic Profile*	pRentrOc=(RenterOccUnits/TotalUnits_R)*100
Males/females <1 year old	MLT1/FLT1	2010 Census	2010 Population of Children <5 years old
Males/females 1 year old	M1/F1	2010 Census	2010 Population of Children <5 years old
Males/females 2 years old	M2/F2	2010 Census	2010 Population of Children <5 years old
Males/females 3 years old	M3/F3	2010 Census	2010 Population of Children <5 years old

Table A-6.2. American Community Survey Data Fields –CONTINUED

Description	Field Name	Source	Notes
Percent housing units built pre-1950	PercPre50	ACS*	PercPre50=(Npre50/nAllHouses)*100
Median value of housing units	MedHousVal	ACS	B25077: MEDIAN VALUE (DOLLARS)
Number of black persons	nBlack	ACS	B02001: RACE
Total number of persons (all races)	nAllRaces	ACS	B02001: RACE
Percent black population	PercBlack	ACS*	PercBlack=(nBlack/nAllRaces)*100
Number households with public assistance income	PA_INCn	ACS	B19057: PUBLIC ASSISTANCE INCOME IN THE PAST 12 MONTHS FOR HOUSEHOLDS
Total number of households	TotalHHn	ACS	B19057: PUBLIC ASSISTANCE INCOME IN THE PAST 12 MONTHS FOR HOUSEHOLDS
Percent households with public assistance income	PercPaInc	ACS*	PercPaInc = (PA_INCn/TotalHHn)*100
Median household income	MedianInc	ACS	B19013: MEDIAN HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2009 INFLATION-ADJUSTED DOLLARS)

* Fields added to data set. These were not directly exported from FactFinder but were created/calculated using fields from the data sets downloaded.

- **2010 Decennial Census, U.S. Census Bureau:** A limited selection of demographic characteristics of ZIP codes is available from the 2010 U.S. Census tables. These characteristics were used for comparing the ZIP codes identified as risk and non-risk under targeting strategy option 1 (identification of expected risk areas based on observed test results). Excel files of select demographic characteristics by ZIP code were downloaded using the U.S. Census American FactFinder web tool. These files were prepared and merged into the ZIP code level-aggregated project data set based on ZIP code. Table A-6.3 summarizes the Census variables included in this data set.

Table A-6.2. American Community Survey Data Fields

Description	Field Name	Source	Notes
Census Tract ID Number	CensusTract	ACS	
Total number of residents ≤ 5 years old	LE5yo	ACS*	B09001: POPULATION UNDER 18 YEARS BY AGE
Number of renter-occupied housing units	nRenterOcc	ACS	B25002: OCCUPANCY STATUS
Number of occupied housing units	nOccupied	ACS	B25032: TENURE BY UNITS IN STRUCTURE
Percent Rental Housing	PercRental	ACS*	PercRental=(nRenterOcc/nOccupied)*100
Number of vacant housing units	nVacant	ACS	B25002: OCCUPANCY STATUS
Total number of housing units	nAllHouses	ACS	B25032: TENURE BY UNITS IN STRUCTURE
Percent vacant housing units	PercVacant	ACS*	PercVacant=(nVacant/nAllHouses)*100
Total number of families	TotalFam	ACS	B17006: POVERTY STATUS IN THE PAST 12 MONTHS OF RELATED CHILDREN UNDER 18 YEARS BY FAMILY TYPE BY AGE OF RELATED CHILDREN UNDER 18 YEARS
Sum of all family types below poverty with children <5 years old	povWChLT5	ACS*	Sum (married couple, male-headed household, female-headed household) below poverty with children less than 5 years old (B17006)
Percent of families below poverty level with children >5	PercPov	ACS*	PercPov=(povWChLT5/TotalFam)*100
Number female-headed households with children >6	FHHn	ACS	B11004: FAMILY TYPE BY PRESENCE AND AGE OF RELATED CHILDREN UNDER 18 YEARS
Percent female-headed households with children >6	PercFHH	ACS*	PercFHH=(FHHn/TotalFam)*100
Number housing units built from 1970 - 1979	Npre50	ACS*	B25034: YEAR STRUCTURE BUILT [Sum number built 1939 and before and from 1940-1949]
Number housing units built pre-1950	N50_79	ACS*	B25034: YEAR STRUCTURE BUILT [Sum number built 1950-1959, 1960-1969 and 1970-1979]
Percent housing units built from 1970 - 1979	Perc50_79	ACS*	Perc50_79=(N50_79/nAllHouses)*100

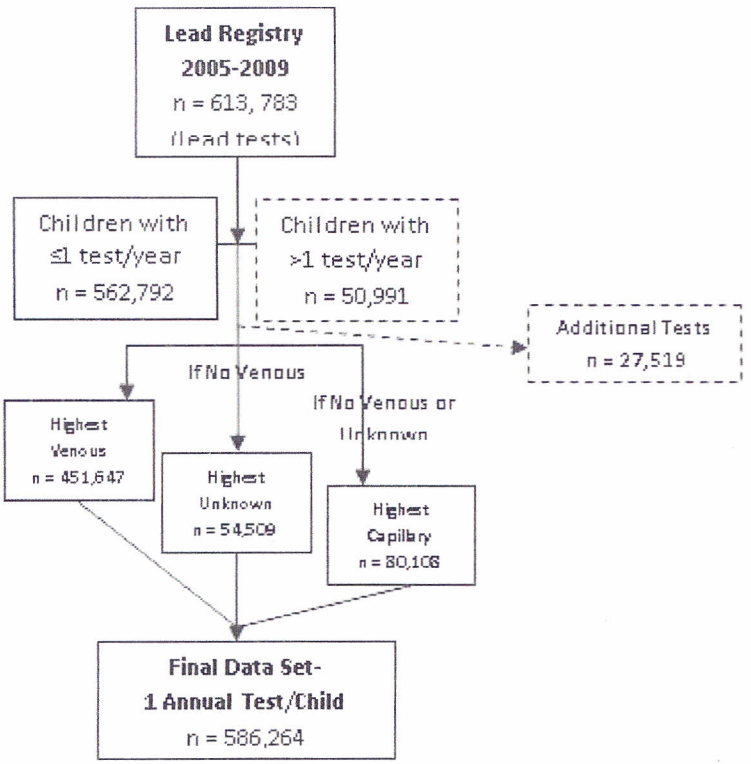
Table A-6.1. STELLAR Data Fields

Description	Field Name	Source	Notes
Stellar Id Number	CHILD_ID	STELLAR	Unique identifier for each child
Child's Address:			
- Street	ASSEMADDR	STELLAR	
- State	ADDRSTATE	STELLAR	
- City	ADDR_CITY	STELLAR	
- ZIP Code	ADDR_ZIP	STELLAR	
- County	ADDR_CNTY	STELLAR	
Child's Date of Birth	DOB_CHILD	STELLAR	
Child's Age (years)	SampleAgeY	STELLAR*	Calculated: sample date - DOB
Address-Latitude	LATITUDE	STELLAR*	Geocoded CLR addresses in Centrus
Address-Longitude	LONGITUDE	STELLAR*	Geocoded CLR addresses in Centrus
Address-Census Tract	CENSUSTRAC	STELLAR*	Geocoded CLR addresses in Centrus
Result (Blood Lead Level)	PBB_REST	STELLAR	
Child's race	RACE	STELLAR	
Date Test Sample Drawn	SAMP_DATE	STELLAR	
Sample Year	SampYear	STELLAR*	Year extracted from sample date
Sample (Venous, Capillary)	SAMP_TYPE	STELLAR	
Lab Id	LAB_ID	STELLAR	
Child's Sex	SEX	STELLAR	
Total number of tests per year for an individual child	count1	STELLAR*	Count number of records per child per year

* Fields added to data set. These were not exported from STELLAR but were created using fields from STELLAR.

- **American Community Survey (ACS), U.S. Census Bureau:** All demographic information utilized in the logistic regression analyses was obtained from the U.S. Census Bureau's ACS through the American FactFinder web tool. Excel files of select demographic characteristics by census tract were downloaded, modified, and utilized in the logistic regression model. The specific table for each of the variables is indicated under 'Notes' in the table. Variables were merged with a census tract level-aggregated CLR data set based on census tract ID number. Table A-6.2 summarizes the fields included in this data set.

Figure A-6.1. STELLAR Data Set Processing



APPENDIX 6. Detailed Description of Data Sources

1. Data Sets

The following data sets were used to assess the current picture of lead testing in MD and to make recommendations for revising the targeting plan. The STELLAR database was used to generate descriptive summary tables on the characteristics of children tested in MD. These fields were also aggregated by county, ZIP code, and census tract to be used for analysis in targeting strategies 1 and 2.

- **Systematic Tracking of Elevated Lead Levels & Remediation (STELLAR) Database, MDE CLR:** The STELLAR database stores the results of all childhood blood lead tests in the State and includes information on actual blood lead level, as well as geographic and demographic information. Records of all tests performed in the 5-year period from January 1, 2005 through December 31, 2009 were extracted from the STELLAR database. Records for children receiving a blood lead test in multiple years, or who had multiple tests within a given year, were counted only once for each year in which they were tested. The record of venous test with the highest blood lead level annually was retained for each child who had multiple tests in a given year. For children with more than one test, of which there was no venous result, the highest result where the test type was "unknown" was retained. Unknown test types were retained as a second priority because some proportion of these is likely to be venous tests. Finally, for children who received multiple tests in a given year, none of which were venous or "unknown," the highest capillary result was retained. This selection process resulted in a total of 586,264 individual records in the project data set (Figure A-6.1). Note the resulting data set contains no more than one test per year for each of the 5 years included, for children of all ages. In later analyses, these individual records were further restricted to include only children less than 6 years of age and aggregated to determine a total incidence for the 5-year period. Table A-6.1 summarizes the variables included in this initial project data set.

Cost Projection Assumptions for tables A-5.2 – A-5.4 – Low Range

1) Cost per Test: Based on Maryland Medicaid 2013 Clinical Diagnostic Laboratory Fee Schedule.
   Venous : $12.37 +$2.19 = $14.56
   Capillary :$12.37 + $1.50= $13.87
2) Cost per Year: 3 follow-up tests per year (i.e., a test every 3 months), following the initial screening test.
3) Inspection by MDE inspection is done if blood lead level is ≥10mcg/dL
4) Follow-up testing process is constant, (i.e., all capillary testing or all venous testing)
5) Nurse visit is done in coordination with MDE investigation; of note, MD law requires only for levels ≥15mcg/dL , but majority of counties perform visits in conjunction with MDE.
6) Excludes physician visit costs since tests are likely performed in conjunction with routine preventive care visits.
7) Total Estimated Cost: Σ Cost Tests + Cost 10 mcg/dL (follow-up) + Cost 5-9 mcg/dL (follow-up)
8) 100% utilization of Health Department and MDE services with no loss to follow-up.

* This estimate was prepared considering the area containing 75% of children expected to be "at risk," representing the "middle" estimate.

** This estimate was prepared based on model 3, with the modeled outcome of interest "risk area" defined as a census tract with ≥9% of tests at or above the reference level.

Cost Projection Assumptions for tables A-5.2 – A-5.4 – High Range

1) Cost per Test: Based on Medicare 2013 Clinical Diagnostic Laboratory Fee Schedule.
   Venous: $22.49 + $3.00=$19.64
   Capillary: $22.49 + $3.00=$19.64 (*code 36416 is N/A to medicare)
2) Cost per Year: 3 follow-up tests per year (i.e., a test every 3 months), following the initial screening test.
3) Public MDE inspection is done if blood lead level is ≥10mcg/dL
4) Follow-up testing process is constant, (i.e., all capillary testing or all venous testing)
5) Nurse visit is done in coordination with MDE investigation; of note, MD law requires only for levels ≥15mcg/dL, but majority of counties perform visits in conjunction with MDE.
6) Excludes physician visit cost since tests are likely performed in conjunction with routine preventive care visits.
7) Total Estimated Cost: Σ Cost Tests + Cost 10 mcg/dL follow-up + Cost 5-9 mcg/dL follow-up
8) 100% utilization of Health Department and MDE services.

* This estimate was prepared considering the area containing 75% of children expected to be "at risk," representing the "middle" estimate.

** This estimate was prepared based on model 3, with the modeled outcome of interest "risk area" defined as a census tract with ≥9% of tests at or above the reference level.

Table A-7.3. Targeted Areas Containing 50% Expected "At-Risk" Children

Zip Codes with 50% of Expected					
Allegany	**Baltimore City**	**Baltimore City, *Cont.***	**Cecil**	**Howard**	**Somerset**
21502 *	21202 *		21921	-	-
	21205 *	21225 *		**Kent**	**Talbot**
Anne Arundel	21206 *	21229 *	**Charles**	-	-
-	21212 *	21230 *	-	**Montgomery**	**Washington**
Baltimore	21213 *	21231 *	**Dorchester**	-	21740 *
21207 *	21214 *	21239 *	21613 *	**Prince Georges**	21742 *
21221 *	21215 *			-	
21222 *	21216 *	**Calvert**	**Frederick**	**Queen Annes**	**Wicomico**
21227 *	21217 *	-	-	-	21801 *
21228 *	21218 *	**Caroline**	**Garrett**	**Saint Marys**	21804 *
21234 *	21223 *	-	-	20653	
21244 *	21224 *	**Carroll**	**Harford**		**Worcester**

* Zip Code Considered "At Risk" in the 2004 Targeting Plan

Table A-7.4. Comparison of ZIP Codes containing 90% of Expected Children with Blood Lead Levels ≥5mcg/dL to other ZIP Codes

Characteristics		90% Expected Cases Area		Outside Area	
		n	%	n	%
Total Zip Codes		173	38.4	277	61.6
Total Children In ≤5 Zip Codes*		374,621	86.0	61,018	14.0
Zip Code Characteristics					
Sex, Total Children*					
	Female	183,725	49.0	29,882	49.0
	Male	190,896	51.0	31,136	51.0
Age (years), Total Children*					
	<1	62,224	16.6	9,062	14.9
	1	62,271	16.6	9,546	15.6
	2	63,745	17.0	9,978	16.4
	3	63,355	16.9	10,437	17.1
	4	61,860	16.5	10,740	17.6
	5	61,166	16.3	11,255	18.4
Race, by Median Percent**					
	White	-	63.3	-	88.5
	Black	-	22.0	-	6.1
	Other	-	8.4	-	4.0
Median Percent Occupied**					
	Occupied	-	93.3	-	90.8
	Vacant	-	6.7	-	9.2
Median Percent Rentals***					
	Owner Occupied	-	67.3	-	83.2
	Renter Occupied	-	66.2	-	16.8

* 2010 Population of children ≤5 years old
** 2010 Census, Summary File 1
*** 2010 Census, Demographic Profile

Table A-7.2. Targeted Areas Containing 75% Expected "At-Risk" Children

Zip Codes with 75% of Expected					
Allegany	**Baltimore, *Cont.***	**Calvert**	**Harford**	**Prince George's**	**Saint Marys**
21502 *	21236 *	20657	21009	20706	20653
21532 *	21237 *		21040 *	20707	20659
	21244 *	**Caroline**		20708	
		21632 *	**Howard**	20716	
Anne Arundel	**Baltimore City**		20723	20737 *	**Somerset**
21061 *	21201 *	**Carroll**	21043	20743 *	21853 *
21113	21202 *	21157	21044	20744	
21122	21205 *	21158	21045	20745	
21144	21206 *			20746 *	**Talbot**
21226 *	21209 *	**Cecil**	**Kent**	20747	21601
21401	21211 *	21921	-	20748 *	
	21212 *			20770 *	
	21213 *	**Charles**	**Montgomery**	20772	**Washington**
Baltimore	21214 *	-	20850	20774	21740 *
21117	21215 *		20874	20782 *	21742 *
21133 *	21216 *	**Dorchester**	20877	20783 *	
21136	21217 *	21613 *	20878	20784 *	**Wicomico**
21207 *	21218 *		20901	20785 *	21801 *
21208 *	21223 *	**Frederick**	20902		21804 *
21220 *	21224 *	21702	20903	**Queen Annes**	
21221 *	21225 *	21703 *	20904	-	
21222 *	21229 *		20906		**Worcester**
21227 *	21230 *	**Garrett**	20910		21811 *
21228 *	21231 *	-	20912		21851 *
21234 *	21239 *				

* Zip Code Considered "At Risk" in the 2004 Targeting Plan

APPENDIX 8. Acronyms and Abbreviations

mcg/dL – micrograms/deciliter

ACS – American Community Survey

CDC – U. S. Centers for Disease Control and Prevention

CLR – Childhood Lead Registry

DAT – Maryland State Department of Assessment and Taxation

DHMH – Maryland Department of Health and Mental Hygiene

MDE – Maryland Department of the Environment

STELLAR – Systematic Tracking of Elevated Lead Levels and Remediation

Table A-7.5. Comparison of ZIP Codes containing 75% of Expected Children with Blood Lead Levels ≥5mcg/dL to other ZIP Codes

Characteristics	75% Expected Cases Area		Outside Area	
	n	%	n	%
Total Zip Codes	95	21.1	355	78.9
Total Children In ≤5 Zip Codes*	267,247	61.3	168,392	38.7
Zip Code Characteristics				
Sex, Total Children*				
Female	135,988	50.9	82,348	48.9
Male	131,259	49.1	86,044	51.1
Age (years), Total Children*				
<1	45,481	17.0	25,805	15.3
1	45,301	17.0	26,516	15.7
2	45,900	17.2	27,823	16.5
3	44,912	16.8	28,880	17.2
4	43,288	16.2	29,312	17.4
5	42,365	15.9	30,056	17.8
Race, by Median Percent**				
White		- 51.6		- 87.0
Black		- 28.9		- 6.5
Other		- 9.1		- 4.4
Median Percent Occupied**				
Occupied		- 93.1		- 92.4
Vacant		- 6.9		- 7.6
Median Percent Rentals***				
Owner Occupied		- 61.2		- 81.9
Renter Occupied		- 38.8		- 18.1

* 2010 Population of children ≤5 years old
** 2010 Census, Summary File 1
*** 2010 Census, Demographic Profile

Table A-7.6. Comparison of ZIP Codes containing 50% of Expected Children with Blood Lead Levels ≥5mcg/dL to other ZIP Codes

Characteristics	50% Expected Cases Area		Outside Area	
	n	%	n	%
Total Zip Codes	32	7.1	418	92.9
Total Children In ≤5 Zip Codes*	95,116	21.8	340,523	78.2
Zip Code Characteristics				
Sex, Total Children*				
Female	46,904	49.3	166,703	49.0
Male	48,212	50.7	173,820	51.0
Age (years), Total Children*				
<1	16,308	17.1	54,978	16.1
1	16,207	17.0	55,610	16.3
2	16,373	17.2	57,350	16.8
3	16,042	16.9	57,750	17.0
4	15,250	16.0	57,350	16.8
5	14,936	15.7	57,485	16.9
Race, by Median Percent**				
White		- 54.4		- 84.9
Black		- 37.6		- 8.2
Other		- 6.8		- 4.9
Median Percent Occupied**				
Occupied		- 90.1		- 92.8
Vacant		- 9.9		- 7.2
Median Percent Rentals***				
Owner Occupied		- 57.2		- 80.7
Renter Occupied		- 42.8		- 19.3

* 2010 Population of children ≤5 years old
** 2010 Census, Summary File 1
*** 2010 Census, Demographic Profile