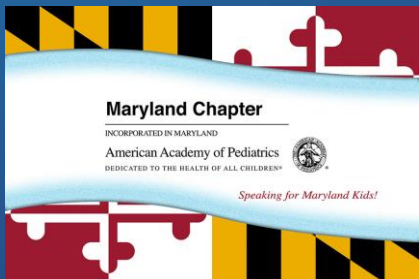


MDAAP/AAP Lead Testing ECHO

February 1, 2023

Session 5: Clinical Management of the Child
with Elevated Blood Lead Levels



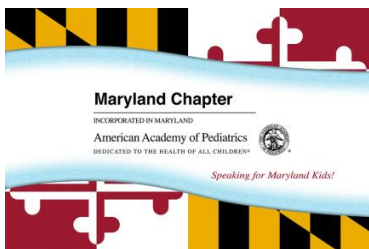
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ACKNOWLEDGMENTS

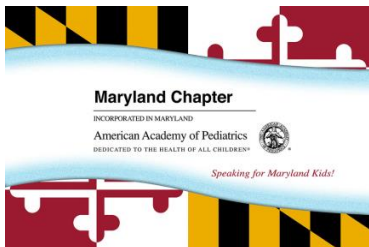
This material was supported by the American Academy of Pediatrics (AAP) and funded (in part) by the cooperative agreement award number 5 NU61TS000296-02-00 from the Agency for Toxic Substances and Disease Registry (ATSDR).

Acknowledgement: The U.S. Environmental Protection Agency (EPA) supports the PEHSU by providing partial funding to ATSDR under Inter-Agency Agreement number DW-75-9587770. The content in this material represents the views of the various contributors. It does not represent the views of the Centers for Disease Control and Prevention (CDC)/ATSDR nor EPA and does not represent endorsement by CDC/ATSDR nor EPA of the purchase of any commercial products or services that are mentioned.



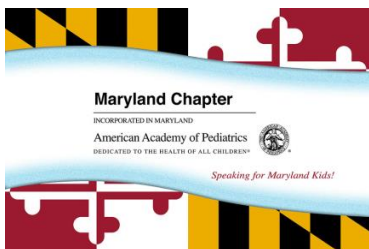
HOUSEKEEPING

- For educational and quality improvement purposes, this teleECHO session will be recorded
 - By participating in this session, you are consenting to be recorded – we appreciate and value your participation
- To protect patient privacy, please do not provide any protected health information (PHI)
- Please mute your microphone when not speaking
- **Please enable your video if possible**
- Chat with Loretta I. Hoepfner in Chatbox if you need technical assistance



AGENDA

- Welcome – Loretta I. Hoepfner
- Lecture Presentation – Mike Ichniowski, MD, FAAP, and Paul Rogers, MD, FAAP
- QI Data Review – Troy Jacobs, MD, FAAP
- Case Presentation – Paul Rogers, MD, FAAP
 - *with special guest:* Clifford Mitchell, MS, MD, MPH (Director, Environmental Health Bureau, Maryland Department of Health)
- Case Discussion – All
- Follow Up and Next Steps – Loretta I. Hoepfner



TODAY'S LECTURE

Clinical Management of the Child with Elevated Blood Lead Levels

Paul T. Rogers MD MBA FAAP

Michael Ichniowski MD FAAP

February 1, 2023



DISCLOSURES

- In the past 12 months, we have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in this CME activity.
- We do not intend to discuss an unapproved/investigative use of a commercial product/device in this presentation.



Prevent further exposure

Test any other children in the house

Work with local health department

Parent education: nutrition, hazard reduction, abatement

Neurodevelopmental assessment, referrals (IEP/HeadStart)

Refer for chelation when indicated

**ROLES FOR THE
PEDIATRIC
PROVIDER IN
MANAGING THE
CHILD WITH EBL**



FOLLOW-UP MEDICAL MONITORING

■ Confirmatory testing

- Capillary testing would be considered the first test to determine if the child has an elevated blood lead level.
- If above 3.5 $\mu\text{g}/\text{dL}$, this should be repeated with a venous sample .
- If venous is below 3.5 $\mu\text{g}/\text{dL}$, lead may still be in the environment, and education on sources of lead is still needed for primary prevention

■ Repeat testing

- If child has had EBLL confirmed by venous testing, all further testing should be by venous sampling.



GUIDELINES FROM MARYLAND DEPARTMENT OF HEALTH FOR FOLLOW-UP BIOMONITORING

Table 1: Recommended Schedule for Obtaining a Confirmatory Venous Sample for a Capillary Fingerstick or Heelstick		Table 2: Schedule for Follow-Up Blood Lead Testing following a Confirmed Blood Lead at or above the Blood Lead Reference Value ^a		
Blood Lead Level (µg/dL)	Time to Confirmation Testing	Venous Blood lead Levels (µg/dL)	Early follow up testing (2-4 tests after identification)	Later follow up testing after BLL declining
≥3.5–9	Within 3 months [*]	≥3.5–9	3 months ^{**}	6–9 months
10–19	Within 1 month [*]	10–19	1–3 months ^{**}	3–6 months
20–44	Within 2 weeks [*]	20–44	2 weeks–1 month	1–3 months
≥45	Within 48 hours [*]	≥45	As soon as possible	As soon as possible

^{*}The higher the BLL on the initial screening capillary test, the more urgent the need for confirmatory testing using a venous sample.

^aSeasonal 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.

^{**}Some case managers or healthcare providers 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.



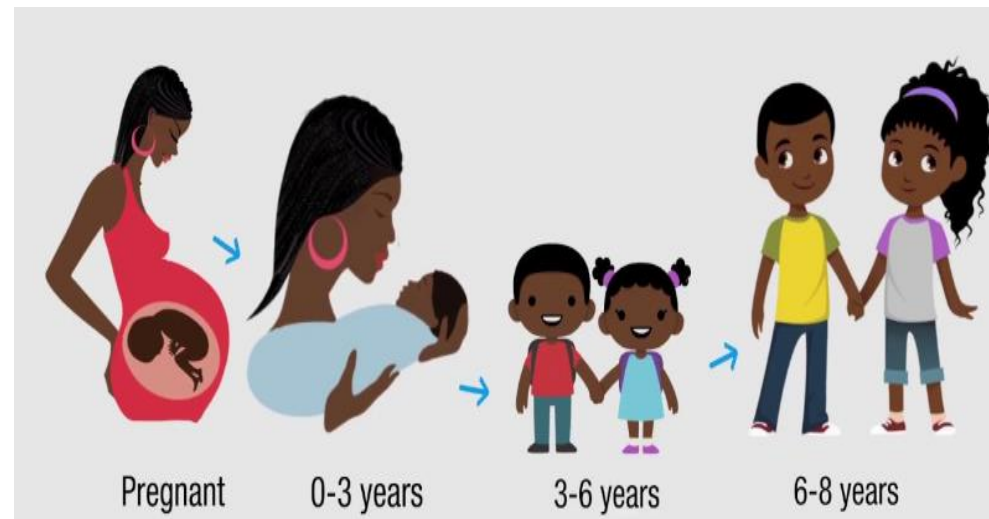
CONFIRMED BLOOD LEVEL IS $< 3.5 \mu\text{g}/\text{dL}$

Provide education about common sources of lead exposure and information on how to further prevent exposure.

During well-child visits, check development to make sure age-appropriate milestones are being met.

During well-child visits, discuss diet and nutrition with a focus on iron and calcium intake.

Conduct follow-up blood lead testing at recommended intervals based on the child's age.



Adopted from CDC Recommended Actions Based on Blood Lead Level
<https://www.cdc.gov/nceh/lead/advisory/acclpp/actions-blls.htm>



CONFIRMED BLOOD LEVEL IS 3.5-19 $\mu\text{g}/\text{dL}$

Follow the recommendations above for BLL < 3.5 $\mu\text{g}/\text{dL}$

Arrange for an environmental investigation of the home for
BLL \geq 5 $\mu\text{g}/\text{dL}$

Rule out iron deficiency anemia

Follow-up venous blood test within 3 months



CONFIRMED BLOOD LEVEL IS 20-44 $\mu\text{g}/\text{dL}$

Follow the recommendations above for BLL of 3.5-19 $\mu\text{g}/\text{dL}$

Perform a complete history and physical exam, assessing the child for signs and symptoms related to lead exposure.

Consider performing an abdominal X-ray to check for radiopaque foreign bodies in child with moderate to severe pica

Contact Maryland Poison Center (1-800-222-1222) for guidance.



CONFIRMED BLOOD LEVEL IS $> 45 \mu\text{g}/\text{dL}$

Follow the recommendation above for BLL of 20-45 $\mu\text{g}/\text{dL}$

Evaluate patient for signs or symptoms of severe lead poisoning, including, confusion, weakness, seizures, coma, nausea, vomiting, and abdominal pain, which requires immediate hospitalization

Consult a medical toxicologist or pediatrician with experience in treating lead poisoning to initiate chelation therapy.

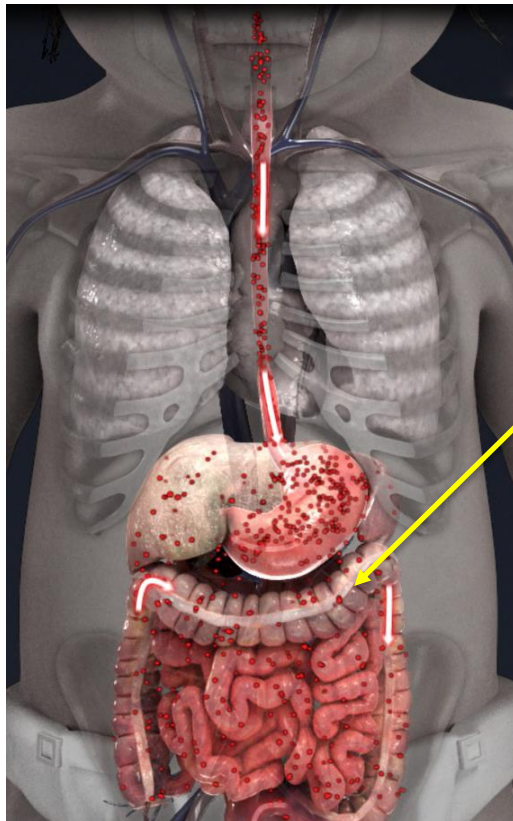
Contact Maryland Poison Center (1-800-222-1222) for assistance with acutely or chronically elevated blood lead levels



<https://mdpoison.com/>



TOXICOKINETICS OF LEAD POISONING

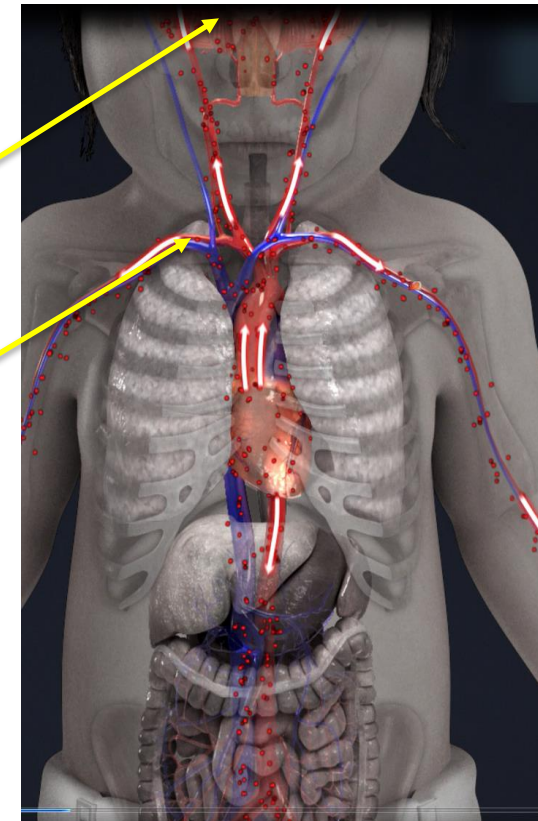


50% of ingested lead absorbed by GI tract

5% of the lead enters the brain

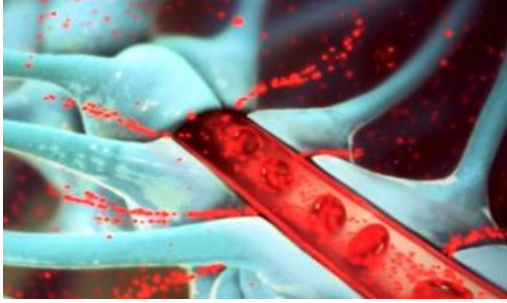
1% of the lead remains in the blood stream

~ 80% of the lead is sequestered in the bones

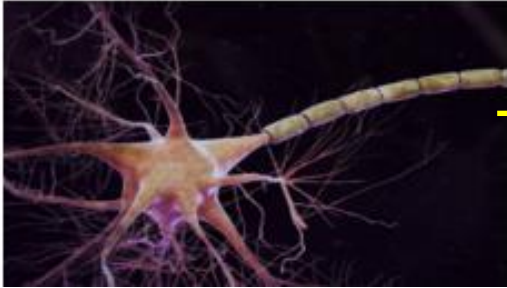


EFFECTS OF LEAD POISONING ON THE DEVELOPING BRAIN

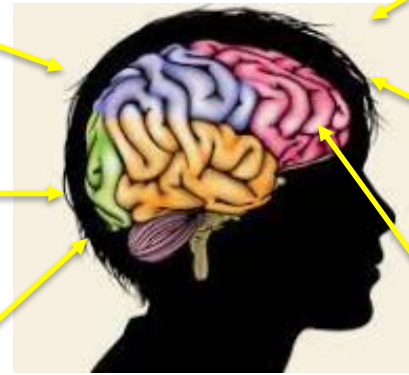
Impairs BBB



Cell Death

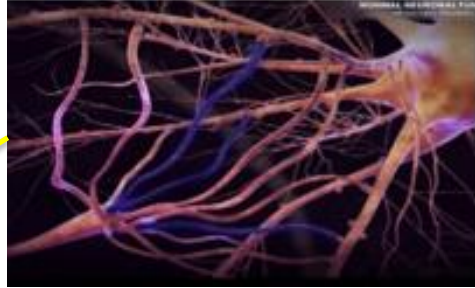


Impairs Glial Cell Function

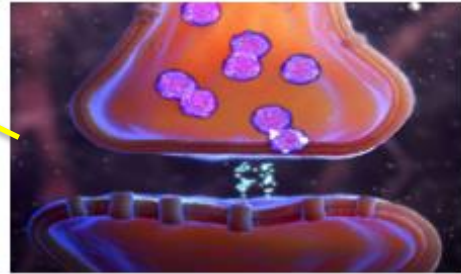


Child < Six Years Old

Disrupts Pruning Process



Impairs Neurotransmitters



Frontal Lobe Particularly Vulnerable



NEUROPSYCHOLOGICAL IMPAIRMENTS DUE TO LEAD POISONING

Loss of IQ points



Learning disabilities

ADHD



Neurobehavior Disorders



EPA ISA 2013: <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=255721>



MEDICAL DISORDERS ASSOCIATED WITH LEAD POISONING

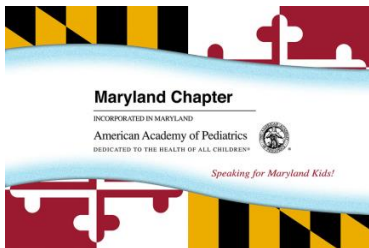
1. Dental caries: consider more frequent dental check-ups
2. Anemia: monitor CBC and Ferritin levels
3. Hypertension: continue to check blood pressure at well visits
4. Delayed puberty: monitor sexual development

5. Hearing loss: hearing screening at well child visits
6. Growth retardation: monitor growth at well child visits
7. Sleep disorders: administer sleep questionnaire at well child visits
8. Death: last death in the US 2006

1. Kumar KNP. Lead exposure and its relation to dental caries in children. Journal of Clinical Pediatric Dentistry. 2013. Vol. 38, No. 1 pp71-74.
2. Hegazy . Relation between anemia and blood lead, copper, and zinc in children BMC Research Notes 2010, 9:133.
3. EPA Integrated Science Assessment for Lead 2013, pg 1-7 at www.epa.com.
4. EPA Integrated Science Assessment for Lead 2013, pg 1-35 at www.epa.com.
5. EPA Integrated Science Assessment for Lead 2013, pg 1-85 at www.epa.com.
6. EPA Integrated Science Assessment for Lead 2013, pg 4.-708 at www.epa.com
7. Liu Early blood lead levels and sleep disturbance in preadolescent . Sleep vol. 38, no. 12 2015.



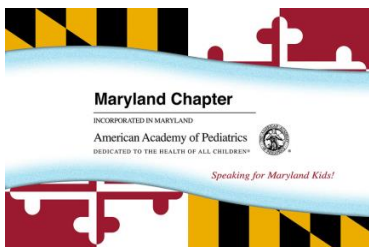
MANAGEMENT OF THE CHILD WITH LEAD POISONING



CHELATION

Recommended for children
with EBL $\geq 45 \mu\text{g/dL}$

Contact Maryland Poison
Control Center
(800) 222-1222



NUTRITIONAL GUIDANCE

Calcium: Milk, orange juice, yogurt, cheese



Vitamin D & C: Sunlight, dairy, tuna, salmon, cod, mushrooms, orange juice, grapefruit juice



Iron: Meats, Fe-fortified cereals, shellfish, lentils, spinach



Magnesium: Cereal, soy milk, peanuts, almonds



See EPA Fight Lead Poisoning With a Healthy Diet

https://www.epa.gov/sites/default/files/2014-02/documents/fight_lead_poisoning_with_a_healthy_diet.pdf



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CASE MANAGEMENT BY THE LOCAL HEALTH DEPARTMENT

MDE or Pediatrician notifies HD of a child with a blood lead level $\geq 3.5 \mu\text{g}/\text{dL}$

Telephone call to family to describe services

Educate family about lead poisoning and management

Refer families when indicated to community services

Home visit when indicated

Coordinate care with child's Pediatrician



Worcester County
Health
Department

List of Local Health Departments in Maryland
<https://www.naccho.org/membership/lhd-directory?searchType=standard&lhd-state=MD>



THE ENVIRONMENTAL INVESTIGATION

1. Interview property owner

2. Visual inspection

3. Test for lead-based paint hazards: XRF and dust swipes



MD threshold $\geq 0.7 \mu\text{g}/\text{dL}$

MD threshold $\geq 10 \mu\text{g}/\text{ft}^2$

See: https://nchealthyhomes.com/wp-content/uploads/sites/6517/2021/08/T8_2021-Lead-SOP-Environmental-Investigation-of-Lead-Poisoning-Hazards-2021.pdf



THE ENVIRONMENTAL INVESTIGATION

4. Water and soil sampling



MD threshold 0 ppb



MD threshold 400 ppm

5. Evaluate other properties child visits:
day care, relatives



6. Summary and recommendations



CONTROLLING LEAD HAZARDS IN THE HOME

Abatement: the elimination of lead-based paint hazards to last 20 years

Interim controls: temporary measures to reduce exposure to lead-based paint hazards



FIGURE 11.3 Window before and after friction treatment.

US Department of Housing and Urban Development publication 2012. Guidelines for the evaluation and control of lead-based paint hazards in housing. 2nd ed. 2012. (http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/lbp/hudguidelines)

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CONTROLLING LEAD HAZARDS IN THE HOME: INTERIM CONTROLS FOR FAMILIES

Shoes off at threshold

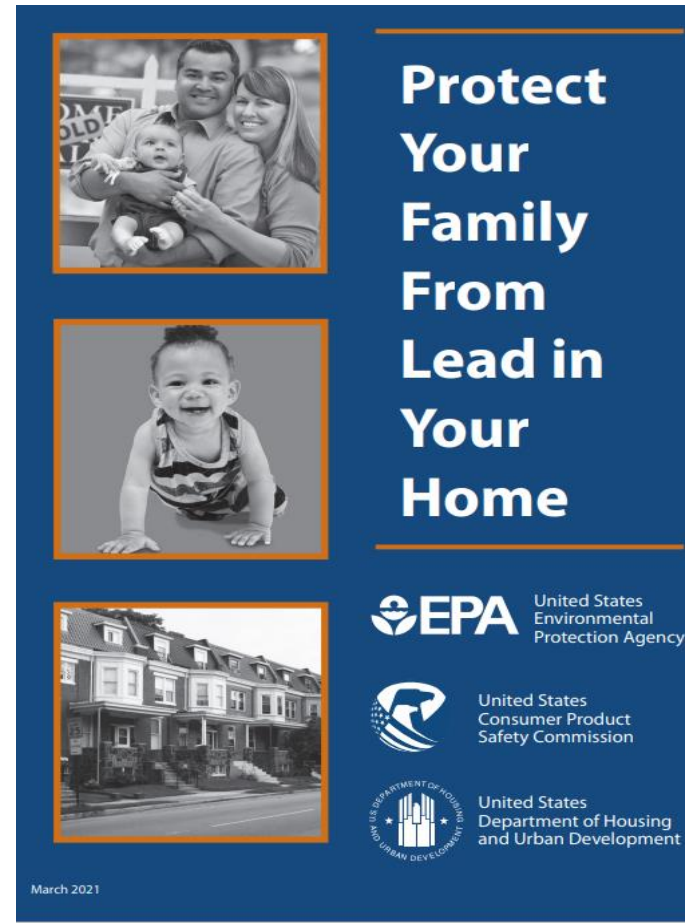
Keep windows closed

Frequent wet mopping/
swiffering around doors/windowsills/
baseboards

Frequent dusting/HEPA vacuum

Frequent hand washing

Wash toys, bottles, pacifiers often



Protect Your Family From Lead in Your Home

EPA United States Environmental Protection Agency

United States Consumer Product Safety Commission

United States Department of Housing and Urban Development

March 2021

<https://www.epa.gov/sites/default/files/2020-04/documents/lead-in-your-home-booklet-color-2020-508.pdf>



CONTROLLING LEAD HAZARDS IN THE HOME: DIY

1. Set up Safely



2. Protect Yourself



3. Minimize Dust

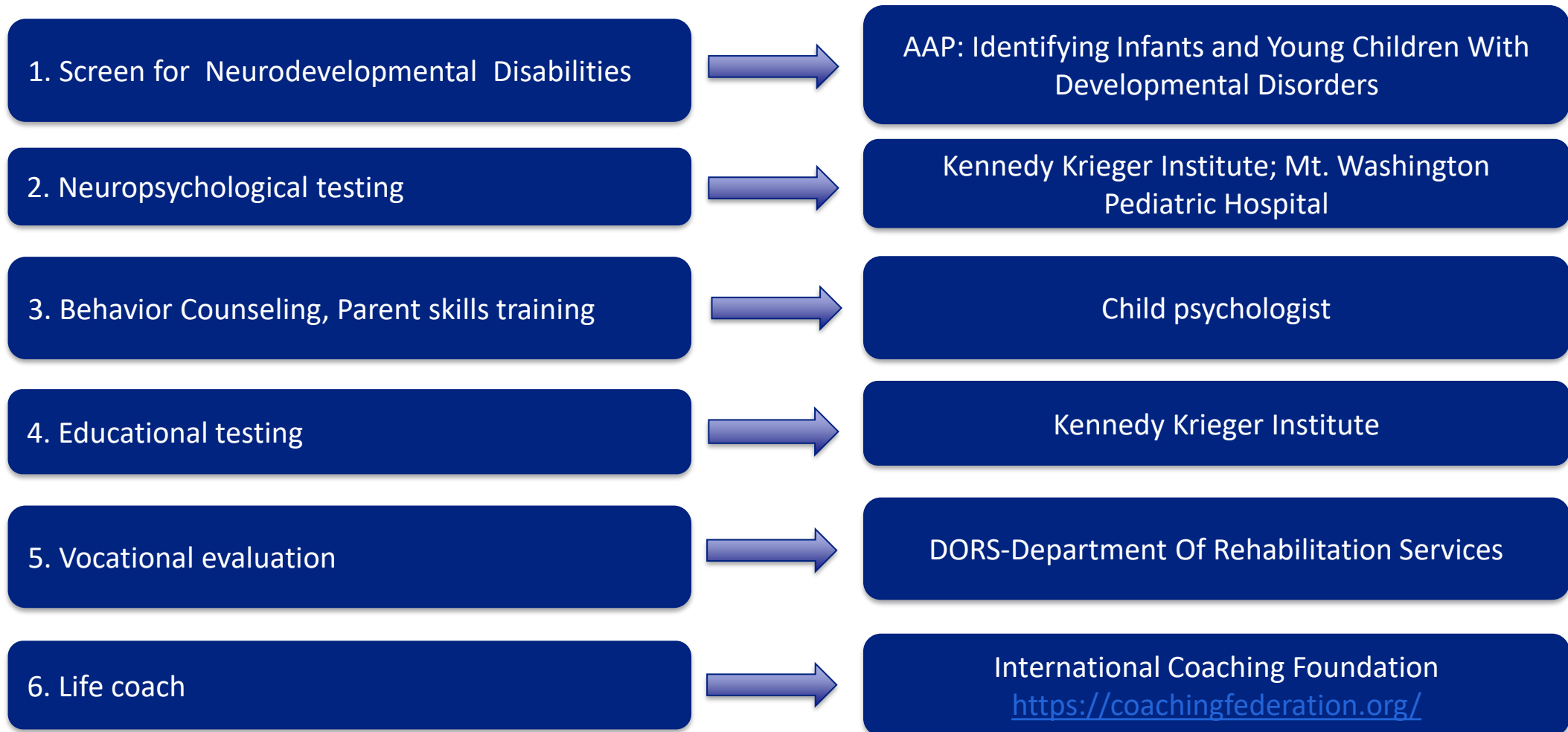
4. Leave Your Work Area Clean



Resource: EPA Lead-Safe Renovations for DIYers
<https://www.epa.gov/lead/lead-safe-renovations-diyers>



NEURODEVELOPMENTAL ASSESSMENT AND MANAGEMENT





RESOURCES



- **Locate Certified Inspection, Risk Abatement, and Abatement Firms:**
<https://cfpub.epa.gov/flpp/pub/index.cfm?do=main.firmSearchAbatement>
- **Lead Hazard Reduction Grant and Loan Program:**
<https://dhcd.maryland.gov/Residents/Pages/lhrglp/default.aspx>
- **Mt. Washington Hospital Lead Treatment Program:** <https://www.mwph.org/health-services/lead-treatment>, Telephone: 410-367-2222
- **Neuropsychological testing:**
 - MWPH Telephone: 410-367-2222
 - Kennedy Krieger Institute Telephone: 443-923-9400
- **Local Infants & Toddlers Program, Child Find, & Early Childhood MH Consultation:**
https://earlychildhood.marylandpublicschools.org/system/files/filedepot/3/referral_form_dev_screeningfinal_1.pdf





RESOURCES – CONTINUED

Item	Website	QR Code
AAP: Identifying Infants and Young Children With Developmental Disorders	https://publications.aap.org/pediatrics/article/145/1/e20193449/36971/Promoting-Optimal-Development-Identifying-Infants?autologincheck=redirected	
MDE, Lead Poisoning Prevention Program	https://mde.maryland.gov/programs/land/leadpoisoningprevention/pages/index.aspx	

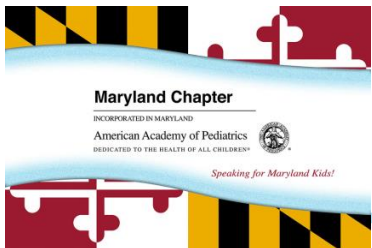
RESOURCES – CONTINUED

Item	Website	QR Code
MDH Lead program	https://phpa.health.maryland.gov/OEHFP/EH/Pages/Lead.aspx	
New MDH programs for children with lead exposure who are enrolled in or eligible for Medicaid/MCHIP	https://phpa.health.maryland.gov/OEHFP/EH/Pages/CHIPEnvCaseMgmt.aspx	

RESOURCES – CONTINUED

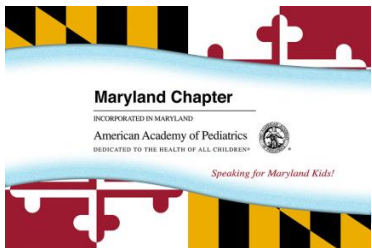
Item	Website	QR Code
AAP: Identifying Infants and Young Children With Developmental Disorders	https://publications.aap.org/pediatrics/article/118/1/405/69580/Identifying-Infants-and-Young-Children-With?autologincheck=redirected	
International Coaching Federation	https://coachingfederation.org/	

QUESTIONS?



QI DATA REVIEW

Troy A. Jacobs, MD, MPH, FAAP

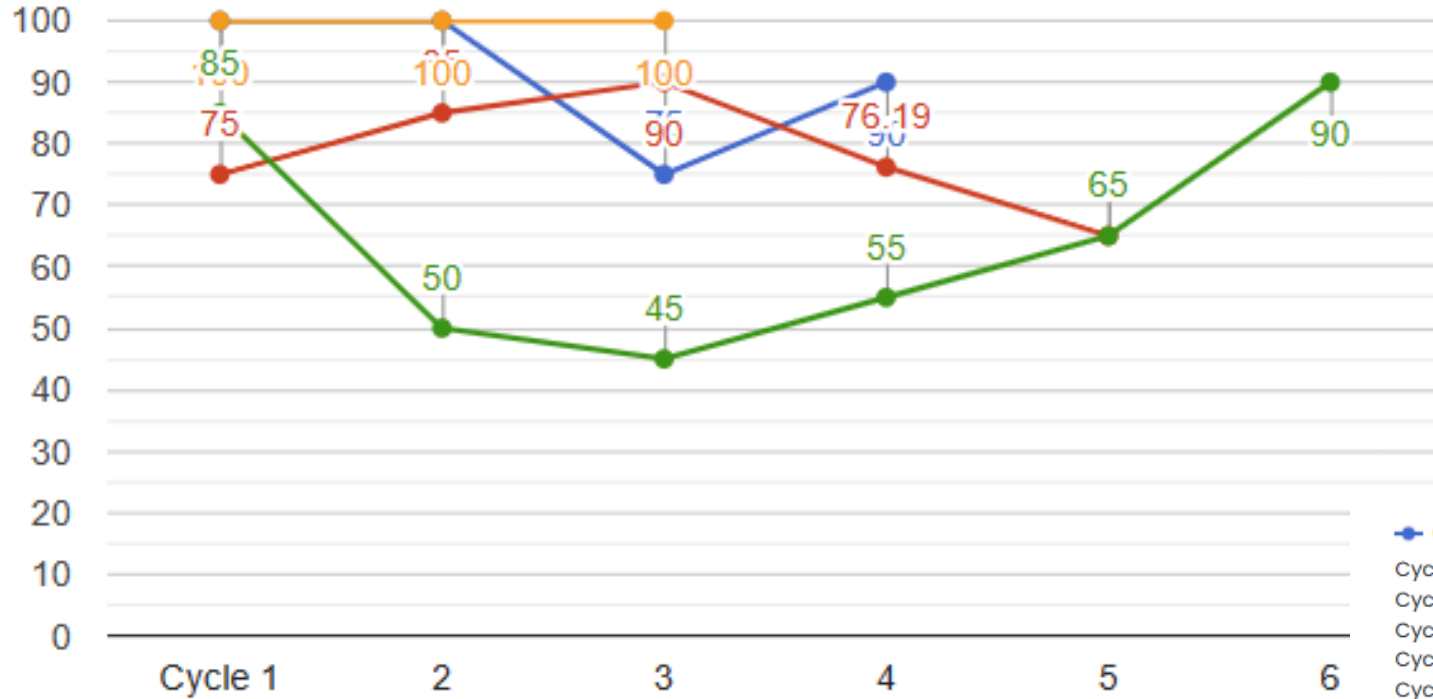


DATA COLLECTION

Data Cycle #	Month of Visit (pull charts from time period listed below)	Date Entry in QIDA
1 (baseline)	August 1-31, 2022	September 28, 2022
2	September 1-30, 2022	October 14, 2022
3	October 1-31, 2022	November 11, 2022
4	November 1-30, 2022	December 9, 2022
5	December 1-31, 2022	January 13, 2023
6	January 1-31, 2023	February 10, 2023
7	February 1-28, 2023	March 10, 2023



Risk Assessment



Greenspring Pediatric Associates

- Cycle 1 (N = 20)
- Cycle 2 (N = 20)
- Cycle 3 (N = 20)
- Cycle 4 (N = 20)
- Cycle 5 (N = 0)
- Cycle 6 (N = 0)

MENCHAVEZ Pediatrics

- Cycle 1 (N = 20)
- Cycle 2 (N = 20)
- Cycle 3 (N = 20)
- Cycle 4 (N = 21)
- Cycle 5 (N = 20)
- Cycle 6 (N = 0)

Sanchez Pediatric Associates

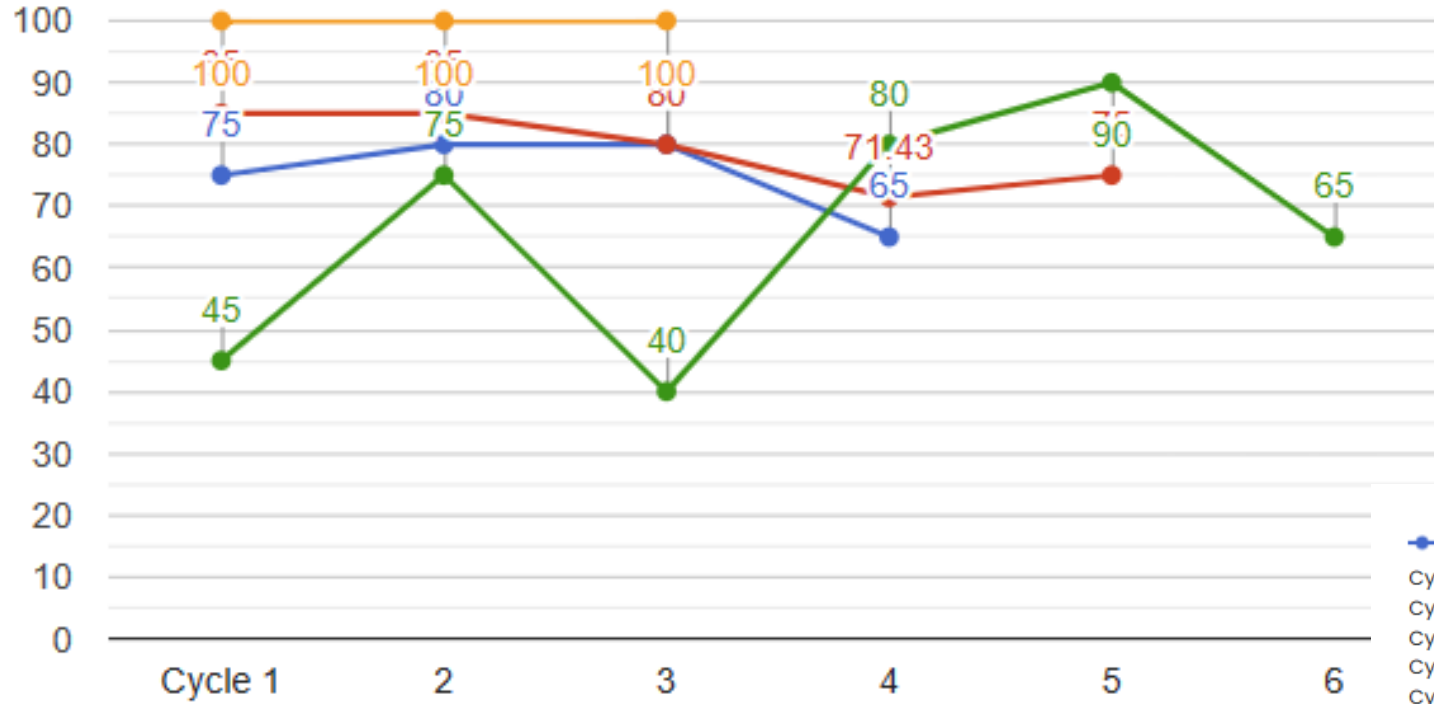
- Cycle 1 (N = 20)
- Cycle 2 (N = 20)
- Cycle 3 (N = 20)
- Cycle 4 (N = 0)
- Cycle 5 (N = 0)
- Cycle 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

- Cycle 1 (N = 20)
- Cycle 2 (N = 20)
- Cycle 3 (N = 20)
- Cycle 4 (N = 20)
- Cycle 5 (N = 20)
- Cycle 6 (N = 20)



Documented Initial Blood Lead Test



Greenspring Pediatric Associates

Cycle 1 (N = 20)
 Cycle: 2 (N = 20)
 Cycle: 3 (N = 20)
 Cycle: 4 (N = 20)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

MENCHAVEZ Pediatrics

Cycle 1 (N = 20)
 Cycle: 2 (N = 20)
 Cycle: 3 (N = 20)
 Cycle: 4 (N = 21)
 Cycle: 5 (N = 20)
 Cycle: 6 (N = 0)

Sanchez Pediatrics

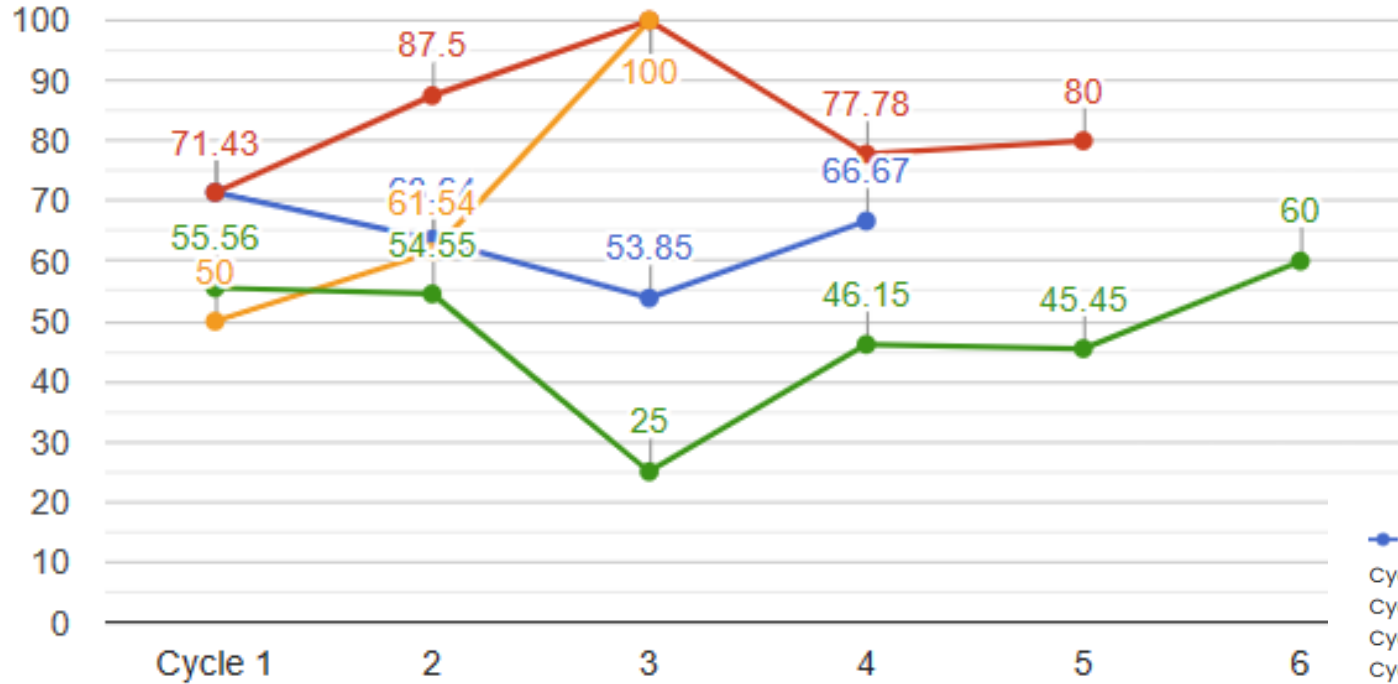
Cycle 1 (N = 20)
 Cycle: 2 (N = 20)
 Cycle: 3 (N = 20)
 Cycle: 4 (N = 0)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

Cycle 1 (N = 20)
 Cycle: 2 (N = 20)
 Cycle: 3 (N = 20)
 Cycle: 4 (N = 20)
 Cycle: 5 (N = 20)
 Cycle: 6 (N = 20)



Blood Lead Testing



Greenspring Pediatric Associates

- Cycle 1 (N = 7)
- Cycle: 2 (N = 11)
- Cycle: 3 (N = 13)
- Cycle: 4 (N = 9)
- Cycle: 5 (N = 0)
- Cycle: 6 (N = 0)

MENCHAVEZ Pediatrics

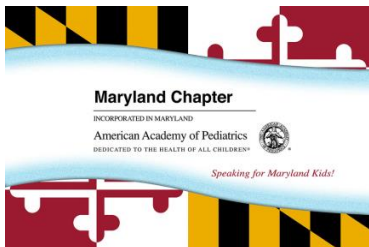
- Cycle 1 (N = 7)
- Cycle: 2 (N = 8)
- Cycle: 3 (N = 4)
- Cycle: 4 (N = 9)
- Cycle: 5 (N = 5)
- Cycle: 6 (N = 0)

Sanchez Pediatrics

- Cycle 1 (N = 4)
- Cycle: 2 (N = 13)
- Cycle: 3 (N = 9)
- Cycle: 4 (N = 0)
- Cycle: 5 (N = 0)
- Cycle: 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

- Cycle 1 (N = 9)
- Cycle: 2 (N = 11)
- Cycle: 3 (N = 8)
- Cycle: 4 (N = 13)
- Cycle: 5 (N = 11)
- Cycle: 6 (N = 5)

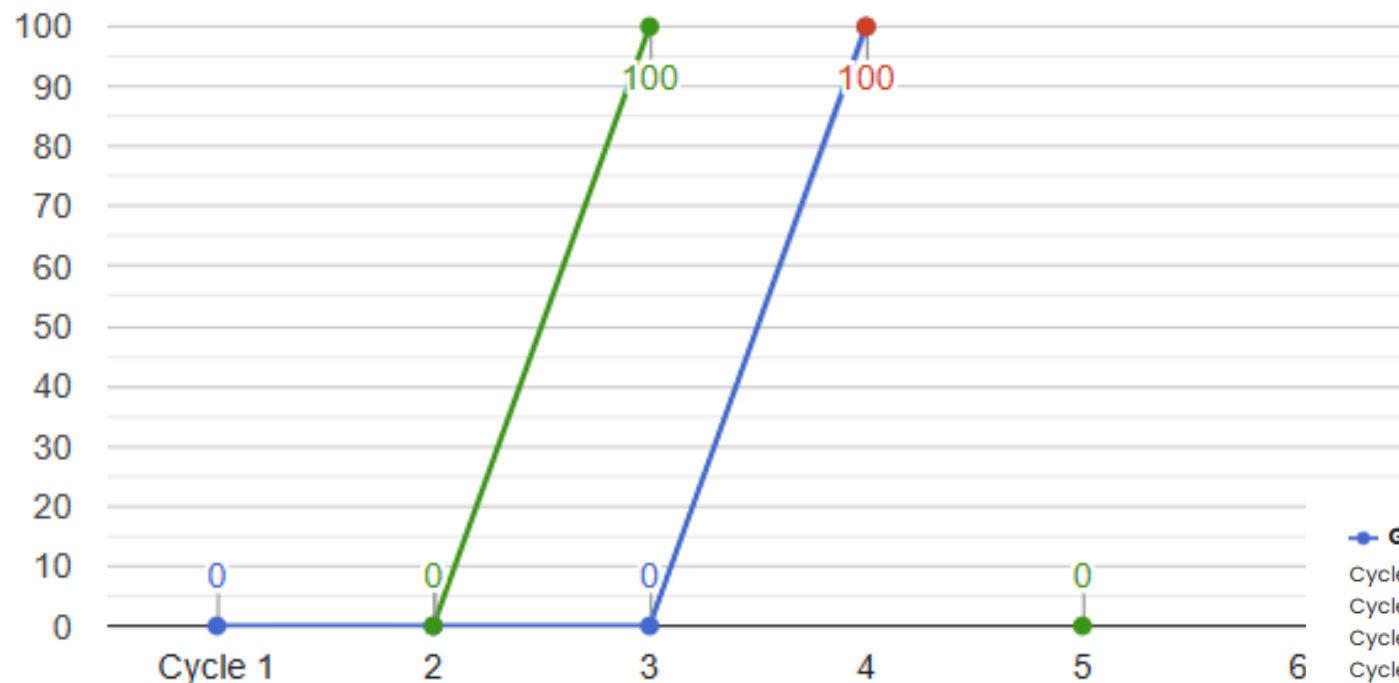


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Blood Lead Results Interpretation (Follow Up Testing)



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Cycle 1 (N = 1)
 Cycle 2 (N = 1)
 Cycle 3 (N = 2)
 Cycle 4 (N = 2)
 Cycle 5 (N = 0)
 Cycle 6 (N = 0)

MENCHAVEZ Pediatrics

Cycle 1 (N = 0)
 Cycle 2 (N = 0)
 Cycle 3 (N = 0)
 Cycle 4 (N = 1)
 Cycle 5 (N = 0)
 Cycle 6 (N = 0)

Sanchez Pediatrics

Cycle 1 (N = 0)
 Cycle 2 (N = 0)
 Cycle 3 (N = 0)
 Cycle 4 (N = 0)
 Cycle 5 (N = 0)
 Cycle 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

Cycle 1 (N = 0)
 Cycle 2 (N = 1)
 Cycle 3 (N = 1)
 Cycle 4 (N = 0)
 Cycle 5 (N = 1)
 Cycle 6 (N = 0)

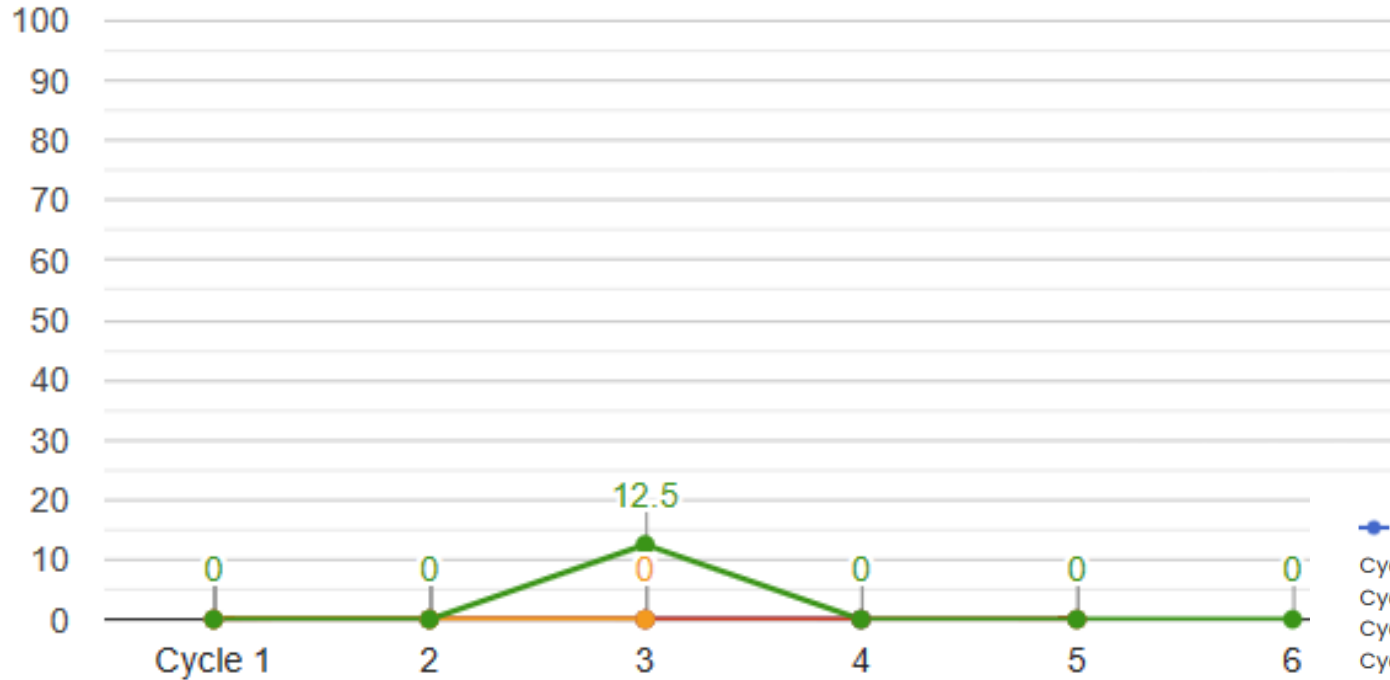


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Care Management



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Cycle 1 (N = 20)
 Cycle: 2 (N = 20)
 Cycle: 3 (N = 16)
 Cycle: 4 (N = 13)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

MENCHAVEZ Pediatrics

Cycle 1 (N = 20)
 Cycle: 2 (N = 17)
 Cycle: 3 (N = 16)
 Cycle: 4 (N = 15)
 Cycle: 5 (N = 15)
 Cycle: 6 (N = 0)

Sanchez Pediatrics

Cycle 1 (N = 20)
 Cycle: 2 (N = 20)
 Cycle: 3 (N = 20)
 Cycle: 4 (N = 0)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

Cycle 1 (N = 20)
 Cycle: 2 (N = 15)
 Cycle: 3 (N = 8)
 Cycle: 4 (N = 16)
 Cycle: 5 (N = 18)
 Cycle: 6 (N = 13)

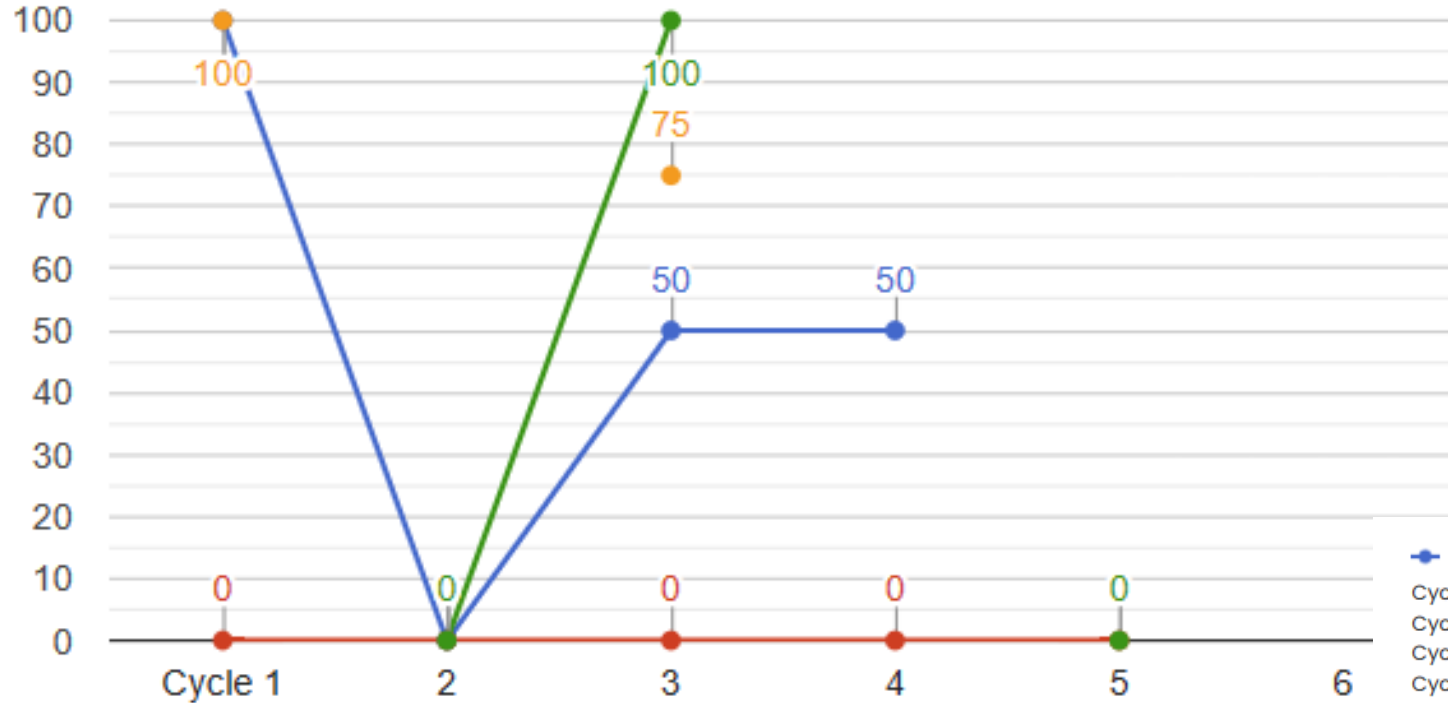


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Counseling Parents



Greenspring Pediatric Associates

- Cycle 1 (N = 1)
- Cycle: 2 (N = 1)
- Cycle: 3 (N = 2)
- Cycle: 4 (N = 2)
- Cycle: 5 (N = 0)
- Cycle: 6 (N = 0)

MENCHAVEZ Pediatricics

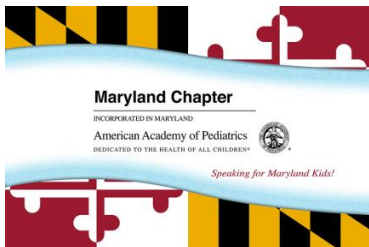
- Cycle 1 (N = 2)
- Cycle: 2 (N = 2)
- Cycle: 3 (N = 1)
- Cycle: 4 (N = 4)
- Cycle: 5 (N = 2)
- Cycle: 6 (N = 0)

Sanchez Pediatricics

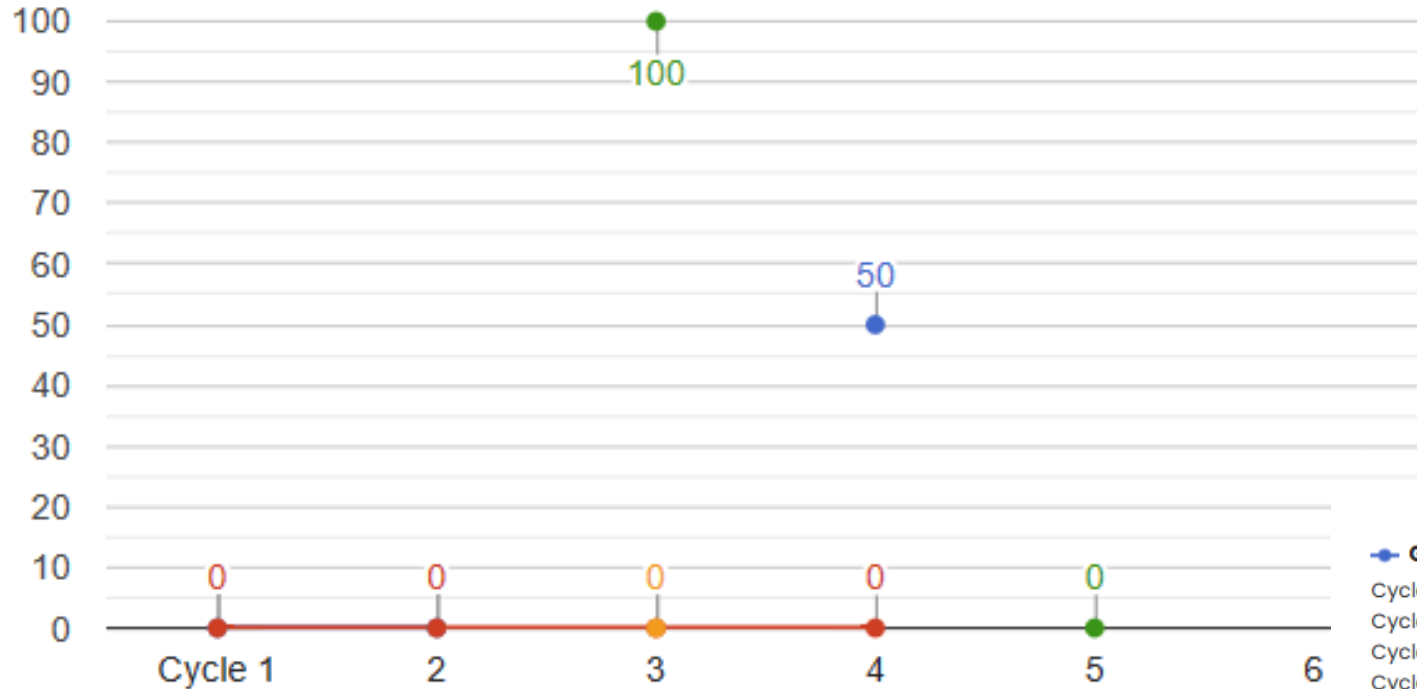
- Cycle 1 (N = 5)
- Cycle: 2 (N = 0)
- Cycle: 3 (N = 4)
- Cycle: 4 (N = 0)
- Cycle: 5 (N = 0)
- Cycle: 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

- Cycle 1 (N = 0)
- Cycle: 2 (N = 1)
- Cycle: 3 (N = 1)
- Cycle: 4 (N = 0)
- Cycle: 5 (N = 1)
- Cycle: 6 (N = 0)



Referral to Academic programming



Greenspring Pediatric Associates

Cycle 1 (N = 1)
 Cycle: 2 (N = 1)
 Cycle: 3 (N = 0)
 Cycle: 4 (N = 2)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

MENCHAVEZ Pediatrics

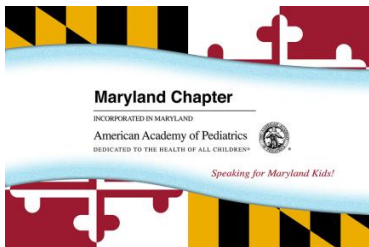
Cycle 1 (N = 2)
 Cycle: 2 (N = 2)
 Cycle: 3 (N = 1)
 Cycle: 4 (N = 4)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

Sanchez Pediatrics

Cycle 1 (N = 0)
 Cycle: 2 (N = 0)
 Cycle: 3 (N = 1)
 Cycle: 4 (N = 0)
 Cycle: 5 (N = 0)
 Cycle: 6 (N = 0)

University of Maryland Shore Medical Group-Pediatrics

Cycle 1 (N = 0)
 Cycle: 2 (N = 0)
 Cycle: 3 (N = 1)
 Cycle: 4 (N = 0)
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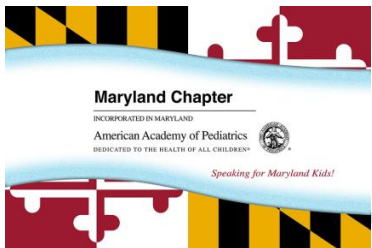


American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



QUESTIONS?



CASE PRESENTATION

Paul Rogers, MD, FAAP

Dana Silver, MD, FAAP



CASE PRESENTATION

C/C: This seven-month-old boy had a venous blood lead level 22 $\mu\text{g}/\text{dL}$. His sister had a venous lead level of 9 $\mu\text{g}/\text{dL}$ drawn one month earlier.

The property: This “Historical Victorian Charmer” was built in 1900 with no recent history of remodeling and is in Hampstead, Carroll County. Father has done some welding, but no other lead hazard exposure identified.

PMHx: Non-contributory



CASE DISCUSSION WITH CLIFF MITCHELL, MS, MD, MPH (DIRECTOR, ENVIRONMENTAL HEALTH BUREAU, MDH)

1. Blood Lead Testing and Reporting
2. Follow-up testing of child with an elevated BLL
3. ImmuNet/Childhood Lead Registry
4. State resources and resources for children with lead poisoning
5. Advice for providers from recent evaluation



BLOOD LEAD TESTING CONSIDERATIONS

- All children in Maryland must be offered testing for blood lead at 12 month and 24 month visits (COMAR 10.11.04)
- Blood lead testing requisitions – must contain information specified in COMAR [26.02.01.02](#)
- All lead tests of children 18 years or younger must be reported to MDE ([COMAR 26.02.01](#))



FOLLOW UP TESTING

Table 1: Recommended Schedule for Obtaining a Confirmatory Venous Sample for a Capillary Fingertick or Heelstick		Table 2: Schedule for Follow-Up Blood Lead Testing following a Confirmed Blood Lead at or above the Blood Lead Reference Value ^a		
Blood Lead Level (µg/dL)	Time to Confirmation Testing	Venous Blood lead Levels (µg/dL)	Early follow up testing (2-4 tests after identification)	Later follow up testing after BLL declining
≥3.5–9	Within 3 months [*]	≥3.5–9	3 months ^{**}	6–9 months
10–19	Within 1 month [*]	10–19	1–3 months ^{**}	3–6 months
20–44	Within 2 weeks [*]	20–44	2 weeks–1 month	1–3 months
≥45	Within 48 hours [*]	≥45	As soon as possible	As soon as possible

^{*}The higher the BLL on the initial screening capillary test, the more urgent the need for confirmatory testing using a venous sample.

^aSeasonal 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.

^{**}Some case managers or healthcare providers 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.

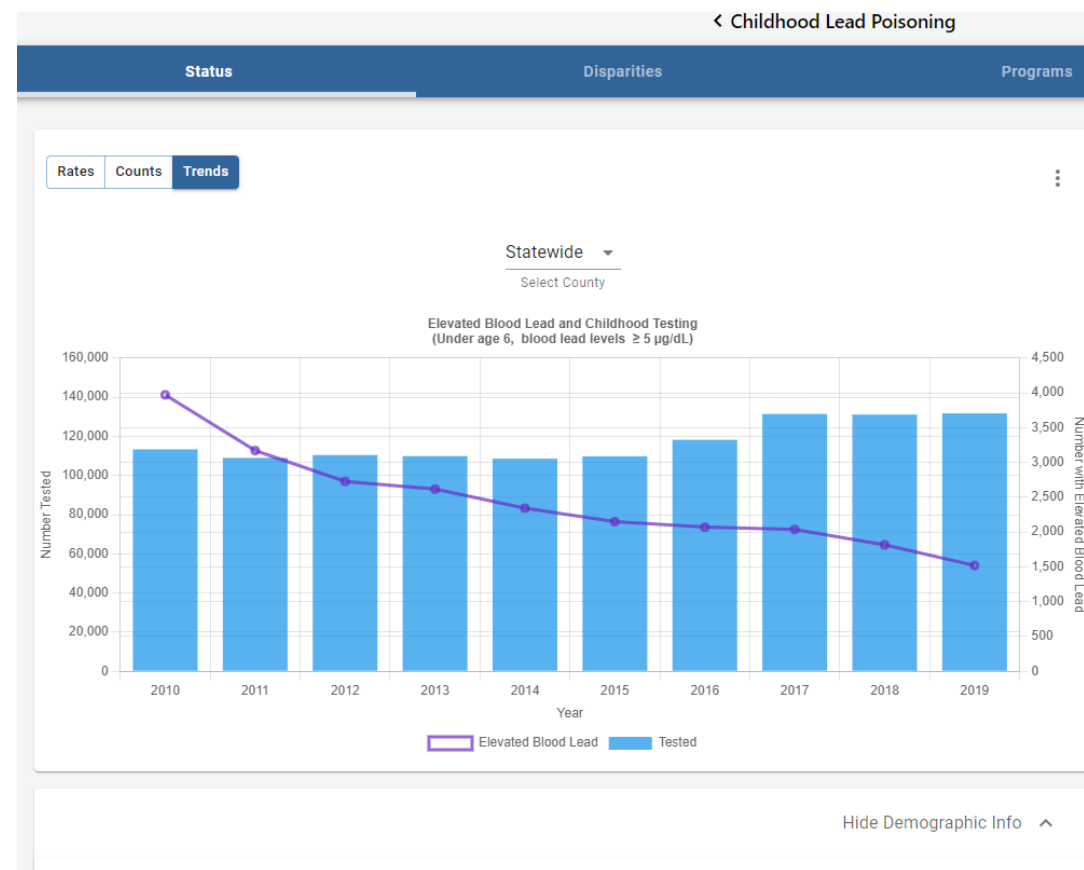
No environmental investigations for BLLs <5 µg/dL until 1/1/2024

https://health.maryland.gov/phpa/OEHFP/EH/Shared%20Documents/Lead/Physician%20follow-up%20Lead%20Letter_01252022.pdf




STATE RESOURCES FOR CHILDREN WITH LEAD POISONING

- Home Visiting Programs in Local Health Departments
- Maryland Department of the Environment
 - [Health Care Provider pages](#), [Parent pages](#)
- Maryland Department of Health
 - [Lead pages](#), [Lead Mapping](#) (Environmental Tracking)
- Lead abatement programs
 - State, local programs
- Non-governmental organizations



IMMUNET/CHILDHOOD LEAD REGISTRY

Welcome logged in as: > Organization: Role: **Standard User** > My Account > Logout

 **ImmuNet:**
Maryland's Immunization Information System
DEPARTMENT OF HEALTH

ANNOUNCEMENTS: NEW
12/11/2022 VFC Blackout and Re-Enrollment
[Click to view more...](#)

Home Resources Contact Us Help

Production Region 28.7.0
.....

Patients
Organization Reports

Blood Lead Test History

Patient Information ImmuNet ID: [REDACTED]

Patient Name (First - MI - Last)	DOB	Gender	Mother's Maiden	Tracking Schedule	Patient ID
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Address: [REDACTED]
Comments: [REDACTED]

Patient Notes (0) [view or update notes](#)

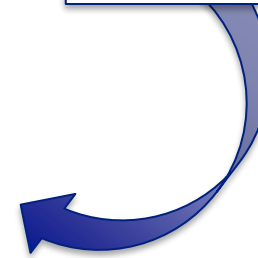
Current Age: [REDACTED]

History [Add Immunization](#) [Patient Demographics](#) [Patient Reports](#) [Print](#) [Print Confidential](#)

Test Collection Date	Test Result	Sample Type	Age on Collection Date (mo.)	Test Provider
[REDACTED]	6 µg/dL	Venous	[REDACTED]	[REDACTED]

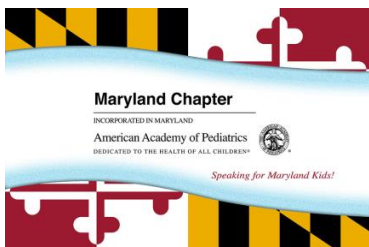
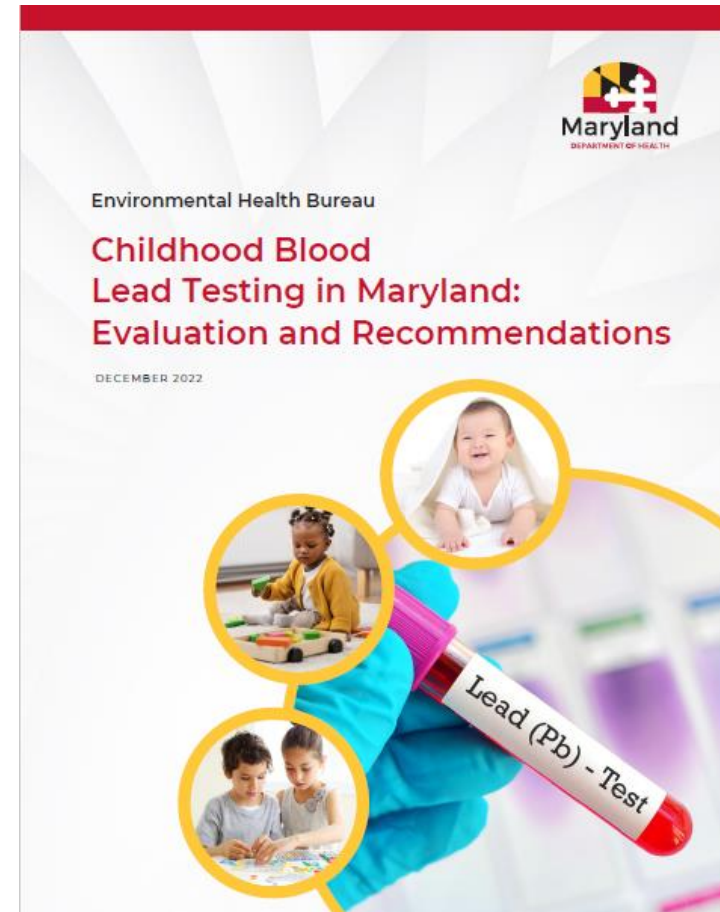
Source of Data: Maryland Department of Environment Lead Poisoning Prevention Program.
For questions about blood lead levels, please contact the Maryland Childhood Lead Registry at (410) 537-3825 or 1-800-633-6101, Ext. 3825.

Lead values available from Childhood Lead Registry – report can be used in place of MDH Form 4620 for parents for pre-kindergarten, kindergarten, and first grade



MDH EVALUATION OF RECENT LEAD TESTING

- Maryland evaluated the impacts of moving from targeted testing to universal testing in 2016
- COVID-19 interrupted improved testing rates, along with the rest of health care



CHILDHOOD LEAD TESTING IN MARYLAND, 2010-2020

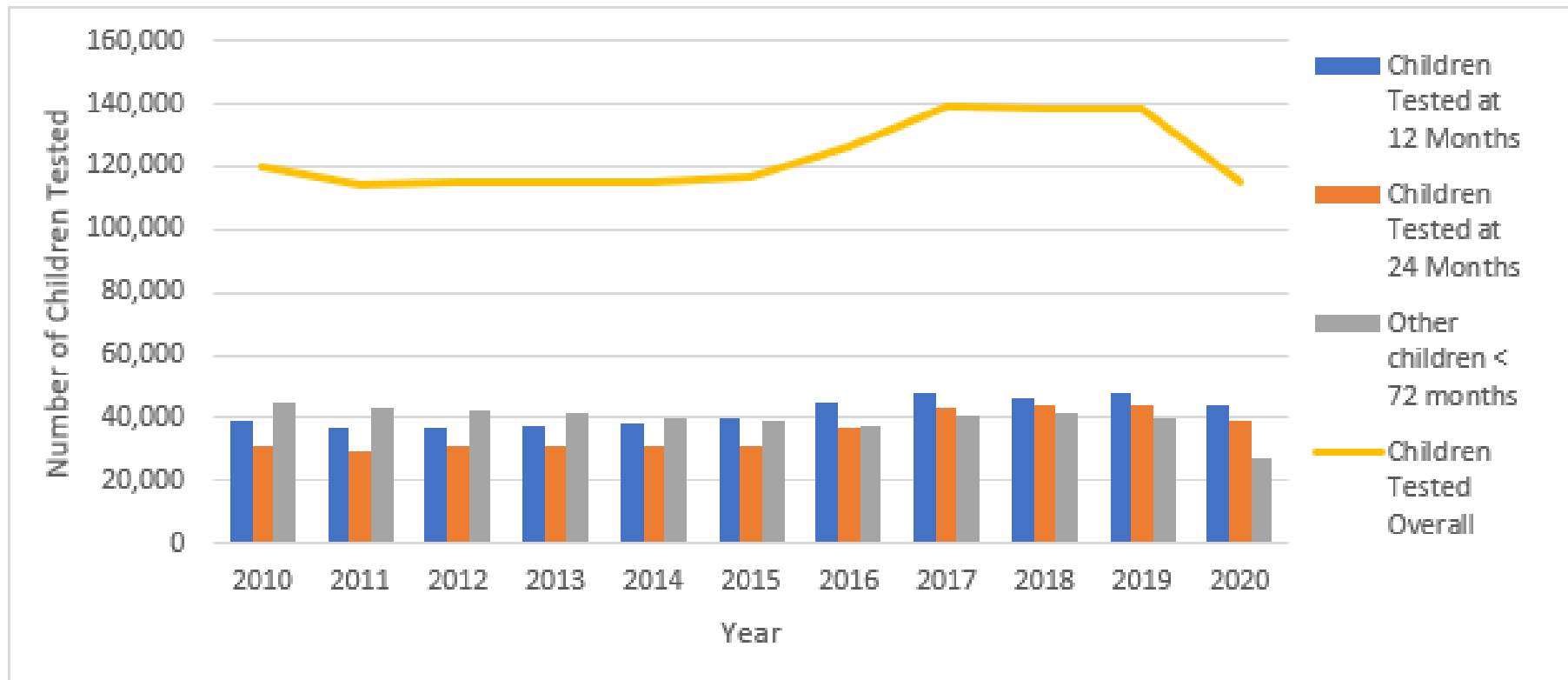
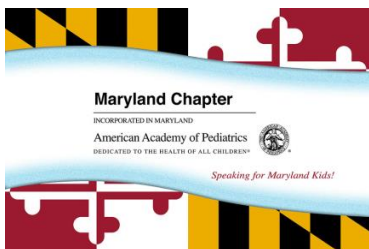


FIGURE 1. Annual number of children tested for blood lead at age 12 months, 24 months, and all other ages less than 72 months, 2010 - 2020.

RECOMMENDATION 1

Maryland should continue the current strategy of defining the entire state as at risk and continue to test all children at 12 and 24 months of age. MDH and MDE should analyze the distribution of blood lead levels from January, 2023 forward in re-evaluating the state's testing strategy. At least three years of data will be required to assess the strategy and impacts of other changes underway in lead poisoning prevention in the state.



RECOMMENDATION 2

MDH and MDE should work with the provider community to increase testing rates, and improve provider reporting of blood lead test results and data on race and ethnicity.

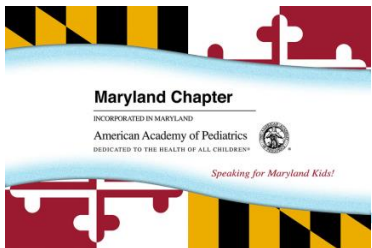


RECOMMENDATION 3

The new BLRV of 3.5 $\mu\text{g}/\text{dL}$ will result in an increase in the number of children who require some clinical and/or case management follow up, and state agencies need to carefully evaluate the messaging, effort, resources, and health equity implications of these changes.

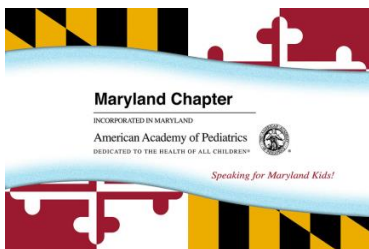


QUESTIONS?



FOLLOW UP AND NEXT STEPS

- You will receive a follow-up email from MDAAP with:
 - PPT slides from today and a recording of the session
 - Link to the post-session SurveyMonkey
- Next Steps:
 - Complete your PDSA form and return to troy_a_jacobs@hotmail.com and loretta@mdaap.org
 - Enter your data into QIDA
 - Complete your Case Presentation form and return to michich23@hotmail.com, mdpaul5381@aol.com, and loretta@mdaap.org
 - Next webinar/Didactic & QI Session #6 on Wednesday, March 1, 2023, at 12-1p ET – Register at https://us02web.zoom.us/meeting/register/tZAsdeitpj4oHtPrLxWgttl8_Ucb4ehgSABr



THANKS FOR TAKING CARE OF OUR MARYLAND KIDS!

