



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
File:

August 7, 2018

NEW GUIDELINES: CHILDHOOD LEAD POISONING PREVENTION

Dear Health Care Provider:

Aloha! The Department of Health (DOH) has new guidelines for screening and testing young children for lead exposure. The updated guidelines, lead risk screening questionnaire, and reference list are enclosed. They are also available on the DOH website at [health.hawaii.gov/cshcn/leadpp](http://health.hawaii.gov/cshcn/leadpp).

During 2017, 195 Hawaii children were identified with elevated blood lead levels (BLL)  $\geq 5$  mcg/dL (reference level for initiating follow-up). The 195 children included 152 children with BLL 5-9 mcg/dL, 30 children with BLL 10-14, and 13 children with BLL  $\geq 15$ .

Lead exposure can impact learning, behavior, development, hearing, and speech. This can cause lower IQ, decreased attention, and underperformance in school. **There is no safe level of lead in blood.**

Hawaii's updated guidelines are based on:

- Medicaid requires testing of all children with Medicaid coverage at specified well-child visits (Early Periodic Screening, Diagnosis and Treatment [EPSDT] requirement).
- American Academy of Pediatrics (AAP)/Bright Futures recommends lead testing/screening at specified well-child visits. AAP also recommends BLL testing for children in areas with higher proportions of elevated BLL and older homes.
- Centers for Disease Control and Prevention (CDC) recommends blood lead testing as the best method to screen children for lead exposure.
- **Analysis and mapping of Hawaii data to identify high risk zip codes in Hawaii.**

The new Hawaii guidelines include:

- Lead risk screening questionnaire:
  - All children 6 months to 6 years of age
- Blood lead level testing:
  - All children with Medicaid coverage (*required*)
  - All children in high risk zip codes
  - All other children who may be at risk based on lead risk screening questions
- Follow-up of BLL  $>5$  mcg/dL:
  - Confirm/retest with venous samples
  - Identify possible lead sources and counsel on ways to reduce lead exposure
  - Refer children with BLL  $\geq 15$  mcg/dL to a Public Health Nurse for a home visit and further public health follow-up

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The guidelines will be reviewed and updated annually based on Hawaii data. Your testing and screening contribute to updating these local guidelines.

Please test/screen young children in your practice for lead exposure. Help support our effort to assure that Hawaii's young children are healthy and lead-free.

If you have any questions, you may contact Dr. Patricia Heu, Chief, Children with Special Health Needs Branch, at (808)733-9058 or e-mail her at [patricia.heu@doh.hawaii.gov](mailto:patricia.heu@doh.hawaii.gov). Mahalo!

Sincerely,



BRUCE S. ANDERSON, Ph.D.  
Director of Health

Enclosures



## Guidelines for Health Care Providers BLOOD LEAD TESTING/SCREENING For Children under Age 6 Years

### WELL CHILD VISITS:

At well child visits for ages 6 months to 6 years, use the *Lead Risk Screening Questionnaire*.

Test children for blood lead levels at ages 9-12 months and 2 years when:

- ✓ Child has **QUEST (Medicaid)** health insurance (**REQUIRED**); or
- ✓ Child lives in a **high risk area** for lead exposure (see zipcodes below); or
- ✓ Answer is **YES** or **DO NOT KNOW** to **one or more** lead risk screening questions.

### Other Indications:

- Age 3-6 years: Test if risk changes, based on lead risk screening questions.
- Immigrants (including international adoptions): Test for blood lead upon arrival to the United States, then as above for Well Child Visits.
- Refugee children age 6 months to 16 years: Test for blood lead at entry to United States, then as above for Well Child Visits. For those age 6 months to 6 years old, repeat blood lead testing 3 to 6 months after children are placed in permanent residences.

### Note:

- Initial blood lead level can be either capillary or venous.
- Any elevated capillary blood lead level 5 mcg/dL and higher requires follow-up with a venous sample.



### Geographic Areas at High Risk for Lead Exposure By Zipcodes

Oahu		Hawaii			Molokai	Kauai	
96786	96819	96704	96743	96774	96729	96703	96754
96792	96822	96710	96749	96776	96748	96705	96756
96797	96826	96718	96750	96777	96757	96741	96765
96813	96848	96719	96755	96778	96770	96746	96769
96815	96854	96720	96760	96780		96747	96796
96816	96857	96726	96764	96781		96751	
96817		96727	96771	96783		96752	
		96728	96772	96785			
		96737	96773				

*High risk geographic areas are based on standardized risk scores for:*

- Rate of elevated blood lead levels
- Percent of housing built before 1960
- Percent of individuals below the poverty level

*For practical purposes, high risk geographic areas (census tracts) were "converted" to zipcodes.*



LEAD RISK SCREENING QUESTIONS FOR AGES 6 MONTHS TO 6 YEARS  
**Is Your Child At Risk for Lead Poisoning?**  
**Do You Have Concerns about Lead Exposure?**

Check  answer  
**YES DO NOT KNOW NO**

**Child**

1. Does your child have QUEST health insurance?  YES  DO NOT KNOW  NO
2. Does your child live in one of the zipcodes below?  YES  DO NOT KNOW  NO

Oahu		Hawaii			Molokai	Kauai	
96786	96819	96704	96743	96774	96729	96703	96754
96792	96822	96710	96749	96776	96748	96705	96756
96797	96826	96718	96750	96777	96757	96741	96765
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96816	96857	96726	96764	96781		96751	
96817		96727	96771	96783		96752	
		96728	96772	96785			
		96737	96773				

3. Does your child have a brother, sister, or playmate who was exposed to lead?  YES  DO NOT KNOW  NO
4. Does your child often chew dirt, paint chips, or things that are not food?  YES  DO NOT KNOW  NO
5. Was your child born outside the United States or did your child come from another country within the past 1 year?  YES  DO NOT KNOW  NO
6. Are you concerned that your child may be exposed to lead?  YES  DO NOT KNOW  NO

**Home or Child Care Center**

7. Does your child live in a home or receive child care in a building built before 1978?  YES  DO NOT KNOW  NO

**Jobs or Hobbies**

8. Does anyone who spends time with your child have a job or hobby in:  YES  DO NOT KNOW  NO
- Making fishing sinkers / fishing activities / boat repair
  - Remodeling / repainting / fixing the home
  - Automotive repair / car batteries
  - Making ceramics or pottery using lead glaze
  - Painting / electrical / plumbing / soldering / welding

**Food and Water**

9. Does your family cook and/or serve food using ceramic dishes or pottery made in other countries that are handmade, brightly decorated, or old?  YES  DO NOT KNOW  NO
10. Does your family have a rainwater catchment system?  YES  DO NOT KNOW  NO

**ACTION!**



If you answered YES or DO NOT KNOW to any question, talk with your child's doctor about a simple blood lead test.

Prevent children from coming in contact with lead.

## Recommended Follow-up by Blood Lead Levels

	Blood Lead Level (mcg/dL)					
	<5	5-9	10-14	15-19	20-44	≥45
Anticipatory guidance about lead exposure Routine lead testing/screening at well-child visits	✓					
Follow-up blood lead level (BLL) test						
○ If original sample is capillary, obtain <u>venous</u> BLL:		In 1-3 months	In 1-4 weeks	In 1 week	In 1 week	As soon as possible
○ If original sample is venous, retest with <u>venous</u> BLL		In 1-3 months	In 1-4 weeks*	In 1-4 weeks*	In 1-4 weeks*	As soon as possible
Environment/Nutrition**:						
○ History to identify possible lead sources		✓	✓	✓	✓	✓
○ Review brochure <i>Keep Your Keiki Lead-Free</i> : <ul style="list-style-type: none"> <li>▪ Counsel on reducing lead exposure</li> <li>▪ Counsel on calcium- and iron-rich foods</li> </ul>						
○ Contact PHN for home visit when <u>venous</u> BLL is ≥15 mcg/dL				✓	✓	✓
Development:						
○ Developmental screening/assessment		✓	✓	✓	✓	✓
○ Refer child age 0-3 years to early intervention services				When two BLLs are ≥15 mcg/dL, 3 months apart	✓	✓
○ Child age 0-3 who is <u>not</u> referred to early intervention services: Refer to early childhood development programs/services, such as in “Lead-Related Resource List”		✓	✓	✓		
○ Child age 3-5 years: Refer to early childhood development programs/services, such as in “Lead-Related Resource List”		✓	✓	✓	✓	✓
Lab work		Iron status	Iron status	Iron status	Iron status; hemoglobin or hematocrit	Iron status; hemoglobin or hematocrit
Abdominal X-ray (with bowel decontamination if indicated)					✓	✓
Chelation						✓
Consult with PEHSU (Pediatric Environmental Health Specialty Unit) or Poison Center					Consult for questions on medical management	Consult for assistance with medical management
BLL monitoring per “Schedule for Follow-Up Blood Lead Testing”		✓	✓	✓	✓	✓

\*The higher the initial BLL, the more urgent the need for confirmatory testing.

\*\*Consider other children in family who may be exposed

## Schedule for Follow-Up Blood Lead Testing

Venous BLL (mcg/dL)	Early follow-up testing (2-4 tests after identification, or until BLL declining)	Later follow-up testing after BLL declining
<b>≥5–9</b>	3 months*	6–9 months
<b>10–19</b>	1–3 months*	3–6 months
<b>20–24</b>	1–3 months*	1–3 months
<b>25–44</b>	2 weeks–1 month	1–months
<b>≥45</b>	As soon as possible	As soon as possible

*\*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.*

BLL (mcg/dL)	PUBLIC HEALTH FOLLOW-UP Hawaii State Department of Health (DOH)
<b>&lt;5</b>	<ul style="list-style-type: none"> <li>• General distribution of a brochure for families, “Keep Your Keiki Lead-Free”, <a href="http://health.hawaii.gov/cshcn/home/leadpp/">http://health.hawaii.gov/cshcn/home/leadpp/</a></li> </ul>
<b>5-14</b>	<ul style="list-style-type: none"> <li>• HEER calls child’s physician office:               <ul style="list-style-type: none"> <li>○ Advises about confirmatory or repeat <u>venous</u> blood test and timing.</li> <li>○ Advises about DOH HI-CLPPP website and/or contacting the DOH RN, if physician requests further information.</li> <li>○ Mails brochure (“Keep Your Keiki Lead-Free”) to physician.</li> </ul> </li> </ul>
<b>15-19</b>	<ul style="list-style-type: none"> <li>• HEER calls child’s physician office: Advises about confirmatory or repeat <u>venous</u> BLL. Discusses PHN referral.</li> <li>• PHN does home visit to identify potential sources of lead exposure – interview, visual survey, education, coordination of follow-up.</li> <li>• PHN consults with IRHB/HEER for guidance.</li> <li>• If two venous BLLs are ≥15 mcg/dL when 3 months apart: CSHNB may assist with contracted lead environmental investigation (<i>for income-eligible families, depending on available state funds</i>).</li> </ul>
<b>≥20</b>	<ul style="list-style-type: none"> <li>• HEER – same action as for BLL 15-19 mcg/dL</li> <li>• PHN – same action as for BLL 15-19 mcg/dL</li> <li>• For venous BLL ≥20 mcg/dL: CSHNB may assist with contracted lead environmental investigation (<i>for income-eligible families, depending on available state funds</i>).</li> </ul>

CSHNB = Children with Special Health Needs Branch  
 HEER = Hazard Evaluation and Emergency Response Office  
 PHN = Public Health Nurse

## MEDICAL MANAGEMENT GUIDELINES



### American Academy of Pediatrics

- Prevention of Childhood Lead Toxicity. Pediatrics 2016;138(1):e20161493.  
<http://pediatrics.aappublications.org/content/early/2016/06/16/peds.2016-1493>
- Recommendations for Preventive Pediatrics Health Care.  
[https://www.aap.org/en-us/documents/periodicity\\_schedule.pdf](https://www.aap.org/en-us/documents/periodicity_schedule.pdf).

### Centers for Disease Control and Prevention

- Lead Poisoning Prevention in Newly Arrived Refugee Children  
[https://www.cdc.gov/nceh/lead/publications/refugeetoolkit/refugee\\_tool\\_kit.htm](https://www.cdc.gov/nceh/lead/publications/refugeetoolkit/refugee_tool_kit.htm)
- International Adoption and Prevention of Lead Poisoning  
<https://www.cdc.gov/nceh/lead/tips/adoption.htm>
- Recommended Actions Based on Blood Lead Level: Summary of Recommendations for Follow-up and Case Management of Children Based on Confirmed Blood Lead Levels  
[https://www.cdc.gov/nceh/lead/acclpp/actions\\_blls.html](https://www.cdc.gov/nceh/lead/acclpp/actions_blls.html)

### Pediatric Environmental Health Specialty Unit (PEHSU)

- Recommendations on Medical Management of Childhood Lead Exposure and Poisoning, June 2013  
<https://www.pehsu.net/Library/facts/medical-mgmt-childhood-lead-exposure-June-2013.pdf>
- Interpreting and Managing Low Blood Lead Levels: Supplemental Information for Clinicians  
[http://deohs.washington.edu/sites/default/files/documents/Interpreting\\_and\\_Managing\\_Low\\_Blood\\_Lead\\_Levels\\_Suppl\\_to\\_Natl\\_FS\\_Health\\_Prof\\_Factsheet\\_2013.pdf](http://deohs.washington.edu/sites/default/files/documents/Interpreting_and_Managing_Low_Blood_Lead_Levels_Suppl_to_Natl_FS_Health_Prof_Factsheet_2013.pdf)

## LEAD-RELATED RESOURCE LIST

*DOE=Department of Education; DOH= Department of Health; DHS= Department of Human Services*

TOPIC	RESOURCE/REFERRAL												
<b>HEALTH</b>													
Medical management of elevated blood lead level (BLL) $\geq 5$ mcg/dL	<p><b>Western States Pediatric Environmental Health Specialty Units (PEHSU)</b> (415) 206-4083 Toll Free: (866) 827-3478</p> <p><b>Hawaii Poison Center – Poison Help Line</b> 1-800-222-1222</p>												
Assistance with follow-up for child with QUEST health plan	<p><b>QUEST Health Plan EPSDT Coordinators:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">AlohaCare</td> <td style="width: 50%;">(808) 356-5955</td> </tr> <tr> <td>HMSA</td> <td>(808) 948-6586</td> </tr> <tr> <td>Kaiser Permanente</td> <td>(808) 282-3334</td> </tr> <tr> <td>‘Ohana</td> <td>(808) 675-7375</td> </tr> <tr> <td>UnitedHealthCare</td> <td>(808) 535-1045</td> </tr> </table>	AlohaCare	(808) 356-5955	HMSA	(808) 948-6586	Kaiser Permanente	(808) 282-3334	‘Ohana	(808) 675-7375	UnitedHealthCare	(808) 535-1045		
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Home visit for child with venous BLL $\geq 15$ mcg/dL	<p><b>DOH/Public Health Nurses</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">East Honolulu: (808) 733-9220</td> <td style="width: 50%;">West Hawaii: (808) 322-1500</td> </tr> <tr> <td>West Honolulu: (808) 832-5757</td> <td>Maui: (808) 984-8260</td> </tr> <tr> <td>Central Oahu: (808) 453-6190</td> <td>Molokai: (808) 553-7880</td> </tr> <tr> <td>Leeward Oahu: (808) 675-0073</td> <td>Lanai: (808) 565-7114</td> </tr> <tr> <td>Windward Oahu: (808) 233-5450</td> <td>Kauai: (808) 241-3387</td> </tr> <tr> <td>East Hawaii: (808) 974-6025</td> <td></td> </tr> </table>	East Honolulu: (808) 733-9220	West Hawaii: (808) 322-1500	West Honolulu: (808) 832-5757	Maui: (808) 984-8260	Central Oahu: (808) 453-6190	Molokai: (808) 553-7880	Leeward Oahu: (808) 675-0073	Lanai: (808) 565-7114	Windward Oahu: (808) 233-5450	Kauai: (808) 241-3387	East Hawaii: (808) 974-6025	
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<b>NUTRITION/FOOD</b>													
Nutritional counseling; assistance with adequate nutrition	<p><b>DOH/Special Supplemental Nutrition Program for Women, Infants and Children (WIC)*</b></p> <p>Oahu: (808) 586-8175 Neighbor Islands: 1-888-820-6425 <a href="http://health.hawaii.gov/wic/">http://health.hawaii.gov/wic/</a></p>												
Assistance with adequate nutrition	<p><b>DHS/Supplemental Nutrition Assistance Program (SNAP)*</b> <a href="http://humanservices.hawaii.gov/bessd/snap/">http://humanservices.hawaii.gov/bessd/snap/</a></p>												

TOPIC	RESOURCE/REFERRAL
<b>HOME/HOUSING</b>	
Information on elevated BLL and home lead assessments	<b>DOH/Hazard Evaluation and Emergency Response Office (HEER)</b> (808) 586-4249 <a href="http://eha-web.doh.hawaii.gov/eha-cma/Org/HEER/">http://eha-web.doh.hawaii.gov/eha-cma/Org/HEER/</a>
Information on lead hazard identification and contractors	<b>DOH/Lead-Based Paint Program</b> (808) 586-5800 <ul style="list-style-type: none"> <li>Provides information on lead hazard identification or if a contractor may be hired to repair or renovate a pre-1978 home.</li> </ul>
Information on lead and drinking water	<b>DOH/Safe Drinking Water Branch</b> Oahu: 586-4258 Hawaii: 974-4000 Ext 64258 Kauai: 274-3141 Ext 64258 Maui: 984-2400 Ext 64258 Molokai/Lanai: (800) 468-4644, Ext 64258 <ul style="list-style-type: none"> <li>Information on public water systems.</li> <li>Information on how to make a home rainwater catchment system safe for domestic use; subsidized testing for lead and copper. <a href="http://health.hawaii.gov/sdwb/raincatchment/">http://health.hawaii.gov/sdwb/raincatchment/</a></li> </ul>
Lead-based paint in child care facility	<b>DHS/Child Care Licensing</b> <a href="http://humanservices.hawaii.gov/bessd/child-care-program/child-care-licensing/reporting-child-care-complaints-and-investigations/">http://humanservices.hawaii.gov/bessd/child-care-program/child-care-licensing/reporting-child-care-complaints-and-investigations/</a> <ul style="list-style-type: none"> <li>Requires that lead-based paint shall not be used on surfaces accessible to children.</li> </ul>
Federally-assisted/ owned housing	<b>Hawaii Public Housing Authority – Property Management &amp; Maintenance</b> (808) 832-4693 <ul style="list-style-type: none"> <li>Follow-up on lead issues. Federal law mandates lead-free units.</li> </ul>
Recalled items which have lead	<b>Consumer Product Safety Commission (CPSC)</b> <a href="https://www.cpsc.gov/Recalls">https://www.cpsc.gov/Recalls</a> (search “lead”)
<b>EARLY CHILDHOOD DEVELOPMENT</b>	
Developmental screening	<b>DOH/Hi‘ilei Hawaii</b> (808) 733-4971 <a href="http://health.hawaii.gov/cshcn/hiileihawaii/">http://health.hawaii.gov/cshcn/hiileihawaii/</a> <ul style="list-style-type: none"> <li>Provides developmental screening (ASQ-3) for children up to age 5 years (via mail or online). No cost to families.</li> </ul>
Early intervention services for children age 0-3 years with developmental delays including biological risk	<b>DOH/Early Intervention – Referral Line</b> Oahu: (808) 594-0066 Toll-free: 1-800-235-5477 <a href="http://health.hawaii.gov/eis/home/eiservices/">http://health.hawaii.gov/eis/home/eiservices/</a> <ul style="list-style-type: none"> <li>Eligible if venous BLL <math>\geq</math>20 mcg/dL, or two venous BLL <math>\geq</math>15 mcg/dL are three months apart.</li> </ul>
Special education for children/youth age 3-22 years	<b>DOE/Special Education – Operation Search</b> Oahu: (808) 305-9810 Toll-free: 1-800-297-2070 <a href="http://www.hawaiipublicschools.org/TeachingAndLearning/SpecializedPrograms/SpecialEducation/Pages/home.aspx">http://www.hawaiipublicschools.org/TeachingAndLearning/SpecializedPrograms/SpecialEducation/Pages/home.aspx</a>
Head Start/Early Head Start	<b>Head Start/Early Head Start</b> <a href="https://www.benefits.gov/benefits/benefit-details/1906">https://www.benefits.gov/benefits/benefit-details/1906</a> <ul style="list-style-type: none"> <li>For low-income families. Early Head Start – for women, infants, and toddlers to age 3 years. Head Start – for children age 3-4 years.</li> </ul>
Pre-Kindergarten	<b>Executive Office on Early Learning (EOEL) Public Pre-Kindergarten</b> <a href="http://earlylearning.hawaii.gov/eoel-public-pre-kindergarten-program/">http://earlylearning.hawaii.gov/eoel-public-pre-kindergarten-program/</a> <ul style="list-style-type: none"> <li>Provides high-quality early learning experiences for students in year prior to kindergarten.</li> </ul>
Child care subsidies	<b>DHS/Child Care Connection Hawaii &amp; Preschool Open Doors*</b> <a href="http://humanservices.hawaii.gov/bessd/child-care-program/ccch-subsidies/">http://humanservices.hawaii.gov/bessd/child-care-program/ccch-subsidies/</a>

\*Programs have income eligibility requirement