

*Sample Template Policy/Procedure/Protocol for Local Health Departments*

**Lead and Pregnancy Risk**

**Purpose:** This policy is intended to assure that all pregnant women who reside in \_\_\_\_\_ County and seek healthcare from the \_\_\_\_\_ County Health Department, will be offered screening for lead exposure, and if appropriate, blood lead screening and be provided education on lead exposure and its potential dangers based on the 2010 Centers for Disease Control (CDC) Lead and Pregnancy Guidelines. Screening should be facilitated at the earliest contact with the patient using the *Lead and Pregnancy Risk Questionnaire (DHHS 4116E/4116S)*. The results from the questionnaire may suggest further intervention that includes venipuncture specimen collection.

**Policy:** The health department (HD) will ensure that this policy is adhered to with current evidenced-based recommendations by CDC on blood lead testing and follow-up care for pregnant/lactating patients with confirmed elevated blood lead levels. Lead crosses the placenta during pregnancy so maternal exposure can adversely affect both maternal/fetal well-being.

**Responsible Person(s):** It is the responsibility of the HD and its designated personnel to assure that all prenatal patients are screened for risk of lead exposure during the pregnancy, offered blood lead screening if appropriate, and to initiate follow-up for all confirmed “positive” blood lead test results. The designated personnel executing the initial obstetric (OB) history will assure that the patient completes or is assisted in completing the *Lead and Pregnancy Risk Questionnaire*. If the patient responds “yes” or “unsure” to any of the questions on the form, the patient will receive education on lead exposure and its impact on pregnancy.

**Instructions for Testing:** For any “yes” or “unsure” response to questions 1-4 or 6-8, a blood lead screening test is indicated. For Question 5, if the patient answers “yes” or “unsure” to 5(a); then the patient should answer 5(b). If the patient answers “no” to 5(a), then the patient should skip to Question 6. For Question 5, both parts 5(a) and 5(b) require “yes” or “unsure” responses to necessitate a blood lead screening test.

**Procedures:**

1. At the initial OB history appointment, the patient will be educated on lead poisoning prevention, with emphasis on relevant risk factors, and given an *Are You Pregnant? Protect Your Baby from Lead Poisoning* brochure. These are available in English/Spanish at <http://nchealthyhomes.com/lead-poisoning/> or call the Environmental Health Section, 919-707-5854 for orders.
2. Request the patient to complete the Lead and Pregnancy Risk Questionnaire in English (4116E) or Spanish (4116S). This form may be completed by the patient or verbally administered by staff.
3. If there is at least one “yes” or “unsure” box checked off in questions 1 - 4 or 6 - 8 **OR** if both 5(a) and 5(b) are marked “yes or “unsure,” the patient should have a blood lead test and, upon results, be subsequently managed according

4. If the patient agrees to testing, staff will facilitate the following steps for collecting a venous blood lead specimen for analysis at the NC State Laboratory of Public Health (NCSLPH).
  - a. Capillary sample results and results from samples analyzed on a point-of-care blood lead analyzer will not be accepted for prenatal referrals.
  - b. Venipuncture blood specimens are to be collected in a lavender-top tube.
  - c. Ensure that order requisition is **only for lead** and that (*Form DHHS #3707*) accompanies specimen.
  - d. Complete steps in collection that are consistent with internal laboratory processes. Assure that the specimen tube is labeled in accordance with [NCSLPH Label Format Specifications](#).
  - e. Assure that the prenatal box is checked appropriately on (*Form DHHS #3707*) and that the provider's name and NPI is on the form.
  - f. This is a cost-free service for only those patients who seek prenatal care through the health department. The specimen will be drawn at HD and analyzed at the NCSLPH.
  - g. Send all blood lead specimens to the NCSLPH for testing, regardless of the patient's payor source. NCSLPH bills Medicaid directly for the blood lead test with the patient's Medicaid # included on the requisition form. Local health departments should not generate a bill for this test. NCSLPH does not maintain the capability to bill private insurance; therefore, NCSLPH does not request private, third-party insurance data from health departments. The cost of testing specimens on non-Medicaid patients is assumed by the NCSLPH. Currently, the cost of uninsured patient testing is covered by the revenues generated. The NCSLPH will continue to assess cost recovery on an annual basis.
5. Blood lead test results will be available electronically to the provider on record, regardless of the level, via NCSLPH Clinical and Environmental Lab Results (CELR) at <https://celr.ncpublichealth.com/index>. The NCSLPH will call the provider on record if the blood lead level (BLL) result is  $\geq 5.00$   $\mu\text{g}/\text{dL}$ .
6. Results are to be reviewed by the HD provider in a timely manner.
7. Follow-up interventions begin with BLLs  $\geq 5.00$  **micrograms per deciliter ( $\mu\text{g}/\text{dL}$ )**.
8. If the results are  $\geq 5.00$   $\mu\text{g}/\text{dL}$ , a confirmatory venous sample must be drawn and sent to the NCSLPH for analysis. The provider may initiate a referral for a home investigation, if the patient has two consecutive venous blood lead levels  $\geq 5.00$   $\mu\text{g}/\text{dL}$  within a 12-month period.
9. Initiation of Referral for Home Investigation
  - a. HD provider will write an order for recommended follow-up as indicated per CDC guidance.
  - b. **If patient has 2 consecutive venous blood lead test results  $\geq 5.00$   $\mu\text{g}/\text{dL}$  within a 12-month period, the HD provider may initiate a referral for a home investigation.**
  - c. Fax a completed [Environmental Referral Form](#) to the North Carolina Childhood Lead Poisoning Prevention Program (NCCLPPP) using 919-841-4015.

d. For more information contact NCCLPPP at 919-707-5950.

10. Blood lead results should be shared with the patient in a timely manner with recommended follow-up care initiated per agency policy as outlined below.

BBL Results	Frequency of Follow-Up Testing	Recommended interventions according to BLL in Pregnancy
< 5 µg/dL	No confirmatory or follow-up testing necessary	<ul style="list-style-type: none"> <li>• Educate on lead exposure sources and risk reduction</li> </ul>
5-9 µg/dL	Conduct confirmatory testing within 1 month and follow-up testing every 3 months for the duration of the pregnancy until 2 consecutive BLLs are < 5.00 µg/dL  <b>Recommend that the baby's pediatrician be alerted to the maternal elevated blood lead level.</b>	Above actions in addition to: <ul style="list-style-type: none"> <li>• Provide case management</li> <li>• Attempt to determine source of lead exposure (home, work, pica)</li> <li>• Counsel on strategies to reduce exposure</li> <li>• Assess for adequacy of patient's diet</li> <li>• Provide prenatal vitamins and nutritional guidance emphasizing adequate Calcium and Iron intake with Vitamin C to enhance absorption</li> <li>• For occupationally exposed patients (yes to question #6 on questionnaire); review safe work practices: hand washing, showering before going home, proper laundering of work clothes</li> <li>• Provide patient with the following: "Lead Facts" (2 sided) and "Lead and Your Occupation"</li> <li>• If required by employment, encourage wearing a clean/well-fitted respirator</li> <li>• Consider contacting the employer about assistance with safe work practices</li> </ul>
10-24 µg/dL	Conduct confirmatory testing within 1 month and follow-up testing monthly for the duration of the pregnancy until 2 consecutive BLLs are < 5.00 µg/dL	Above actions in addition to: <ul style="list-style-type: none"> <li>• Recommend removal from workplace lead exposure</li> </ul>

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25-44 µg/dL	Confirmatory test within 1-4 weeks and follow-up testing monthly for the duration of the pregnancy until 2 consecutive BLLs are < 5.00 µg/dL	Above actions in addition to: <ul style="list-style-type: none"> <li>• <b>Advise not to breastfeed and discard breastmilk if BLL ≥ 40 µg/dL</b></li> <li>• Testing milk is not recommended</li> </ul>
≥ 45 µg/dL	<p>Confirmatory test within 24 hours and then at frequent intervals for the duration of the pregnancy depending on clinical interventions and trend in BLLs</p> <p>Should be considered and treated as high-risk pregnancy</p> <p>Patient may require having care transferred to a high-risk obstetrical practice</p>	Above actions in addition to: <ul style="list-style-type: none"> <li>• Consult or transfer to a provider specializing in lead poisoning therapy before considering chelation for the patient</li> </ul>

### Contacts:

Any additional questions regarding specimen collection, and/or reporting please contact Kate Koehler, Hemachemistry Unit Manager at (919) 807-8878.

For more information on lead in the home contact Health Hazards Unit, NC Division of Public Health at 919-707-5950.

For occupational health advice contact: Occupational and Environmental Epidemiology Branch, NC Division of Public Health, Raleigh, NC, 919-707-5900.

### Testing of Breastfeeding Patients:

*Encourage breastfeeding until BLL  $\geq$  40 $\mu$ g/dL. Testing milk is not recommended.*

Initial Venous BLL	Perform follow-up venipuncture blood specimen testing during lactation:
5-19 $\mu$ g/dL	Every 3 months, unless infant blood lead levels are rising or fail to decline
20-39 $\mu$ g/dL	Maternal BLL 2 weeks postpartum and then at 1 to 3-month intervals depending on trend in infant BLLs
$\geq$ 40 $\mu$ g/dL	<ul style="list-style-type: none"> <li>• Within 24 hours postpartum and then at frequent intervals depending on clinical interventions and trend in BLLs</li> <li>• Consultation with a clinician experienced in the management of lead poisoning is advised</li> <li>• <b>Advise not to breastfeed. Breastmilk should be discarded</b></li> </ul>

**Quality Assurance:** Compliance with this blood lead screening and follow-up policy will be assessed/assured via the agency's established quality assurance program review process for maternal health.

### References:

- American Academy of Pediatrics & American College of Obstetricians and Gynecologists, *Guidelines for Perinatal Care* 8<sup>th</sup>ed.
- Centers for Disease Control and Prevention, *Guidelines for the Identification and Management of Lead Exposure in Pregnant and Lactating Women*  
<https://www.cdc.gov/nceh/lead/publications/leadandpregnancy2010.pdf>
- Centers for Disease Control and Prevention, *Screening Young Children for Lead Poisoning: Guidance for State and Local Public Health Officials*, Appendix C.2 Capillary Blood Sampling Protocol  
<https://www.cdc.gov/nceh/lead/publications/1997/pdf/c2.pdf>
- North Carolina Department of Public Health, *Maternal Health Agreement Addendum*

### Educational Materials and Resources:

- Lead Facts
  - [http://epi.publichealth.nc.gov/oeo/oii/docs/Lead\\_BloodTestingandPrevention2017.pdf](http://epi.publichealth.nc.gov/oeo/oii/docs/Lead_BloodTestingandPrevention2017.pdf)
- Lead and Your Occupation
  - <http://ehs.ncpublichealth.com/hhccehb/cehu/lead/docs/LeadandYourOccupation-English-Oct13-2017.pdf>
- North Carolina Referral Resources
  - <http://nchealthyhomes.com/countyresources/>
  - [https://nchealthyhomes.com/files/2017/12/PrenatalLeadInvestigationReferralForm\\_FINAL\\_Dec2017.pdf](https://nchealthyhomes.com/files/2017/12/PrenatalLeadInvestigationReferralForm_FINAL_Dec2017.pdf)

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