Prenatal Lead Exposure Risk Assessment by Vermont Maternity Care Providers

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Amy Berkman, Brendon Kinsley, Margaret Johnston, Rose Leu, Niketu Patel, Maia Sakradse, George Zhang, Dr. Wendy Davis, M.D. (UVM Larner College of Medicine), Dr. Matthew Bradstreet, Ph.D. (Vermont Department of Health)

**Background**

One percent of women of childbearing age in the US (15-44 years) have blood lead levels greater than or equal to 5 µg/dL. Lead levels greater than 5 µg/dL are associated with maternal hypertension during pregnancy, neural tube and cardiac defects in infants, low birth weight, prematurity, and spontaneous abortion. It is unknown whether Vermont maternity care providers conduct lead risk assessment and blood lead screening among pregnant patients or provide education regarding risks associated with prenatal lead exposure. Houses built before 1978 have a high risk of containing lead-based paint. VT has a particularly high proportion of older houses (Figure 3).

**Survey aims:**

- Gain understanding of current lead screening practices by Vermont maternity care providers and develop recommendations for disseminating lead screening information.
- Identify current practices and barriers associated with prenatal lead risk assessment.
- 22 question survey was designed to assess:
  - % of VT maternity providers doing lead assessment and blood lead screening in pregnant patients
  - Frequency of blood lead level testing and threshold for concern of health risks to the fetus
  - Lead risk assessment guidelines currently in use
  - Provider’s perceived importance of lead exposure risk assessment during pregnancy
  - Providers perceived benefit of statewide guidelines to improve prenatal lead risk assessment
  - Best methods of guideline distribution

**Participants:**

- 41 active maternity care providers in VT (OB/GYN physicians, family physicians who practice obstetrics, certified nurse midwives, professional midwives) completed an online survey.

**Methods**

- **Figure 1:** Do you currently conduct risk assessments for lead exposure with all of your pregnant patients?
- **Figure 2:** Do you think that having statewide guidelines provided by the Vermont Department of Health would encourage you to begin (or continue) risk assessment for prenatal lead exposure?
- **Figure 3:** Age of Housing Stock in Vermont

**Results**

- Participants' responses to the survey questions were analyzed to identify current practices and barriers associated with prenatal lead risk assessment.
- A comprehensive lead risk assessment and blood lead screening questionnaire was developed.
- The majority of survey respondents believed that statewide guidelines provided by the Vermont Department of Health would encourage them to begin or continue risk assessment for prenatal lead exposure.

**Discussion**

- **Recommendations**
  - Developing and disseminating prenatal guidelines for lead risk assessment, testing and follow up.
  - Guidelines should include the 10 risk assessment questions shown on the graph entitled “Lead Risk Assessment Questions” for topics covered.
  - Disseminate guidelines in multiple formats to increase uptake:
    - Grand Rounds
    - E-mail
    - Webinars
  - Assess patient preferences for dissemination of educational materials

**References**