

Childhood Lead Poisoning

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Childhood lead poisoning is a major preventable environmental health problem, which may cause irreversible adverse effects particularly in children ≤ 6 years of age, including developmental problems, lower I.Q., behavioral problems, attention deficit disorder, learning problems, language delay, anemia, damage to kidneys and nervous system and, rarely, death.^{1,2,3,4} Lead exposure in pregnant females could lead to adverse health effects in their unborn children, such as pre-term birth, decreased gestational maturity, lower birth weight, reduced postnatal growth, increased incidence of minor congenital anomalies, and early neurologic or neurobehavioral deficits.^{2,5}

The Centers for Disease Control and Prevention (CDC) reported findings from the latest National Health and Nutrition Examination Survey (NHANES), 2002:

There has been a decline in the elevated blood lead levels (EBLLs) prevalence from 77.8% to 1.6% between 1976 and 2002.⁶

The 1.6% estimate translates to approximately 310,000 U.S. children ≤ 6 years of age with EBLLs.^{2,6}

Although there is no safe level of lead in the blood, the CDC has set the level of concern for children at 10 $\mu\text{g}/\text{dL}$ at which specific interventions should be implemented to reduce the blood lead levels.⁷

The most common risk factor for childhood lead poisoning is residential lead-based paint, which is used in almost all housing units built prior to 1950, and lead contaminated dust and soil.^{1,4} Lead in residential paint was banned in 1978, which means that all houses built before 1950 and many built between 1950 and 1978 have lead-based paint. According to the U.S. Department of Housing and Urban Development (HUD), deteriorated leaded paint and elevated levels of lead-contaminated house dust are present in an estimated 24 million U.S. housing units, and 1.2 million of these units are homes occupied by low-income families with young children.^{2,6}

There is a definite consensus that young Medicaid-eligible children living in older houses are at increased risk of lead poisoning and, therefore, the Centers for Medicare & Medicaid Services (CMS) requires testing all Medicaid-eligible children for lead poisoning at 12 and 24 months of age, or between the ages of

36 months and 72 months if they have not previously been tested. ^{1,7,8} According to the CDC-reported findings of the latest NHANES, 2002:

- Medicaid-eligible children account for 60% of children \leq 6 years of age who had EBLLs $210 \mu\text{g}/\text{dL}$ and 83% of children under the age of 6 years with levels $220 \mu\text{g}/\text{dL}$.⁴

- The findings also indicated that 81% of Medicaid-eligible children \leq 6 years of age have never received a blood lead test.⁴

The Oklahoma Childhood Lead Poisoning Prevention Program (OCLPPP) coordinates statewide efforts to reduce childhood lead poisoning by providing outreach, education, case management, screening, blood lead testing, case management and surveillance services to young Oklahoman children and their families.

The OCLPPP recommends testing all SoonerCare (Oklahoma Medicaid program) children at 12 and 24 months and any child 16 years of age who has not previously been tested, which is in accordance with the CMS blood lead testing requirements. However, data suggest that the majority of SoonerCare children are not getting the blood lead testing to which they are entitled. As of December 31, 2007:

- There were 159,372 SoonerCare children \leq 6 years of age in Oklahoma. These were the children born between December 31, 2001 and December 31, 2007.

- Only 36,016 (22.6%) SoonerCare children were tested for blood lead from 2001 through 2007.

According to the latest data from the CMS for the fiscal year (FY) 2005:

- There were 6,887,817 Medicaid-eligible children \leq 6 years of age in the U.S. Of these children 1,245,822 (18.1%) received a blood lead test (Table 1).

- There were 186,531 SoonerCare children \leq 6 years of age in Oklahoma. Of these children 13,494 (7.2%) received blood lead test (Table 1).

The OCLPPP proposes to increase the SoonerCare blood lead testing rate in the future and is constantly exploring ways to achieve this goal. Some of the new projects in the pipeline include:

- Conducting a SoonerCare provider survey to determine barriers to blood lead testing and follow-up in Oklahoma. The survey is available at <http://lpp.health.ok.gov>.

- Mailing physician report cards to SoonerCare providers

to allow them to track their blood lead testing performance and compare it with that of other physicians.

The OCLPPP encourages all SoonerCare providers to partner with them as they work in collaboration to eliminate childhood lead poisoning in Oklahoma. □

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References

- ¹ American Academy of Pediatrics, Committee on Environmental Health. Lead exposure in children: prevention, detection, and management. *Pediatrics*.2005;116:1036-1046
- ² Gary R, Peggy N, Christina B, Michele F, Mark H. Screening for Elevated Lead Levels in Childhood and Pregnancy: An Updated Summary of Evidence for the US Preventive Services Task Force. *Pediatrics*.2006;118:1867-1895
- ³ Centers for Disease Control and Prevention. Fatal Pediatric Lead Poisoning - New Hampshire, 2000. *JAMA*. 2001;286:38-39
- ⁴ Centers for Disease Control and Prevention. Surveillance for Elevated Blood Lead Levels Among Children: United States, 1997-2001. *MMWR Morb Mortal Wkly Rep*. 2003;52:1-21 6
- ⁵ Centers for Disease Control and Prevention. Lead Exposure Among Females of Childbearing Age: United States, 2004. *MMWR Morb Mortal Wkly Rep*. 2007;56:397-400
- ⁶ Centers for Disease Control and Prevention. Blood Lead Levels: United States, 1999-2002. *MMWR Morb Mortal Wkly Rep*. 2005;54:513-515
- ⁷ Centers for Disease Control and Prevention: General Lead Information: Questions and Answers. Available at: <http://www.cdc.gov/nceh/lead/faq/about.htm>. Accessed August 20, 2008
- ⁸ Centers for Medicare and Medicaid Services. Medicaid and Early and Periodic Screening, Diagnostic, and Treatment (EPSDT). Available at: http://www.cms.hhs.gov/medicaidearlyperiodicscrn/02_benefits.asp.

Medical Records

According to the Board of Licensure, the statutory rate physicians may charge for medical records is \$1 for the first page of copy and \$.50 for each additional page. X-rays and other images may be charged at cost not to exceed \$5 each. □