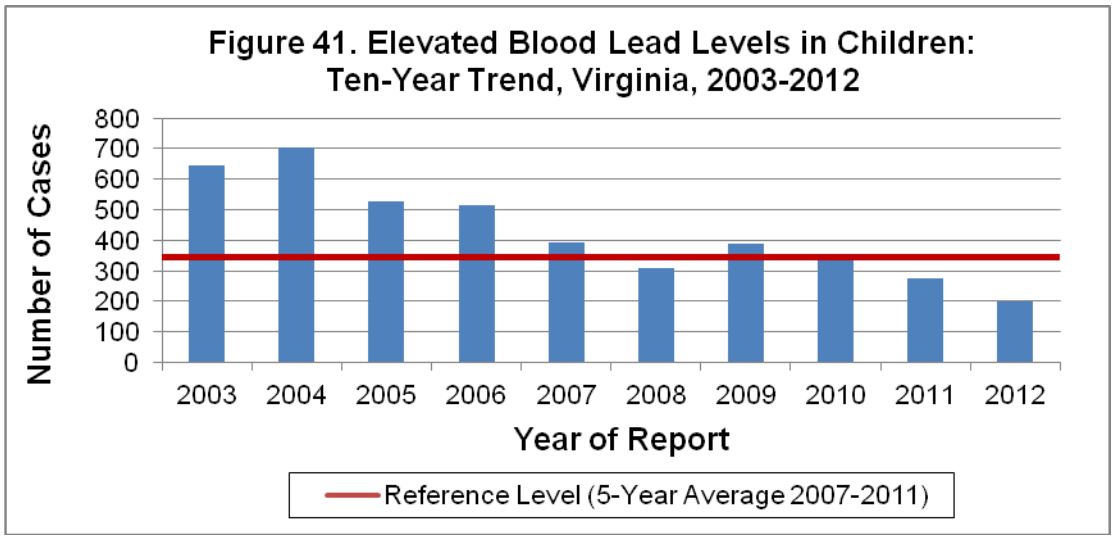
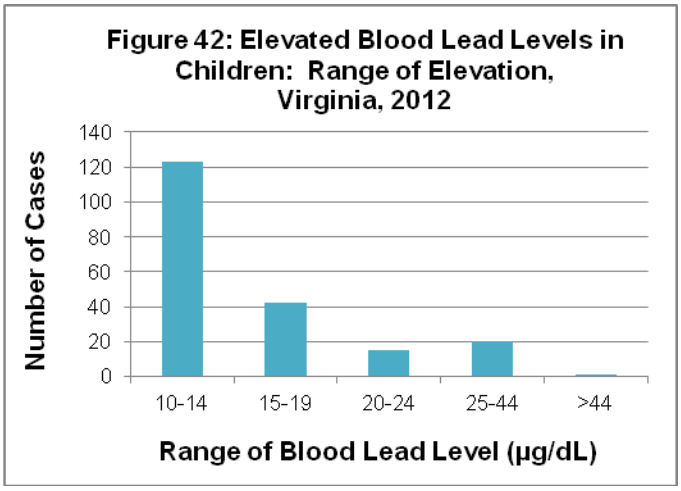
Lead - Elevated Blood Levels in Children

Agent: Lead (metal)
Mode of Transmission: Chewing objects painted with lead paint; ingestion of contaminated dust, soil or water; or using glassware, healthcare products or folk remedies containing lead.
Signs/Symptoms: Even at low levels, lead in children can cause nervous system damage, learning disabilities, behavior problems, muscle weakness, decreased growth, hearing damage, or anemia.
Prevention: Ingestion of lead-contaminated materials and use of lead-containing objects should be avoided. Education of healthcare professionals and parents is important in detecting and reducing lead exposure.
Other Important Information: Elevated blood lead levels at or above 10 micrograms per deciliter (µg/dL) are reportable in children aged 15 years or younger in Virginia. The primary source of lead for children is exposure to deteriorated paint in housing built before 1978. There is a need for increased awareness of additional sources of lead exposures, including improper renovation of older homes; imported toys manufactured with lead paints or components; candies popular among some ethnic groups; traditional Hispanic, Indian, and Middle Eastern folk remedies; and ceramics from foreign countries which use lead glazes.



In 2012, there were 201 newly reported cases of elevated blood lead levels in children. This is a 27% decrease from the 274 cases reported in 2011, and a 41% decrease from the five-year average of 342.8 cases per year (Figure 41). The overall decline in the number of reported cases since 2004 is the result of both lower incidence and better data quality. The continued improvement in reporting of specimen type (e.g., capillary or venous) by physicians and laboratories has enhanced interpretation of test findings, reduced ambiguity, and yielded more accurate information on the number of children with confirmed elevated blood lead levels.

Based on the guidance in place in 2012, blood lead levels in the 10-14 µg/dL range were considered above normal, but only required lead awareness education and follow-up monitoring. Blood lead levels in the 15-19 µg/dL range required nutritional and environmental education, as well as additional testing to ascertain if the blood lead level was increasing or remained elevated. Blood lead levels greater than 20 µg/dL required greater degrees of case management, the initiation of an environmental investigation to identify and eliminate lead hazards, and the possibility of medical intervention. Among the 201 children reported with elevated blood lead levels in 2012, 123 (62%) had confirmed blood lead levels in the 10-14 µg/dL range, 42 (21%) had levels in the 15-19 µg/dL range, 15 (7%) had levels in the 20-24 µg/dL range, 20 (10%) had levels in the 25-44 µg/dL range, and 1 (<1%) had a level above 44 µg/dL (Figure 42).



By age, the majority (91%) of elevated blood lead levels and the highest incidence rate occurred in those aged 1-9 years (184 cases, 19.9 per 100,000), followed by infants (14 cases, 13.8 per 100,000). Rates were lower in 10-15 year olds (0.5 per 100,000). Forty-two percent of reports were missing race data. However, among reports with race information, the black population had an incidence rate two times that of the white population (11.3 versus 5.4 per 100,000, respectively), while the "other" race population had an intermediate incidence rate of 9.5 per 100,000. Females and males had similar incidence rates (12.3 and 12.1 per 100,000, respectively). Geographically, incidence rates ranged from a high of 22.3 per 100,000 in the central region to a low of 6.1 per 100,000 in the northern region, resulting in a statewide incidence rate of 12.2 per 100,000 for children less than sixteen years of age.