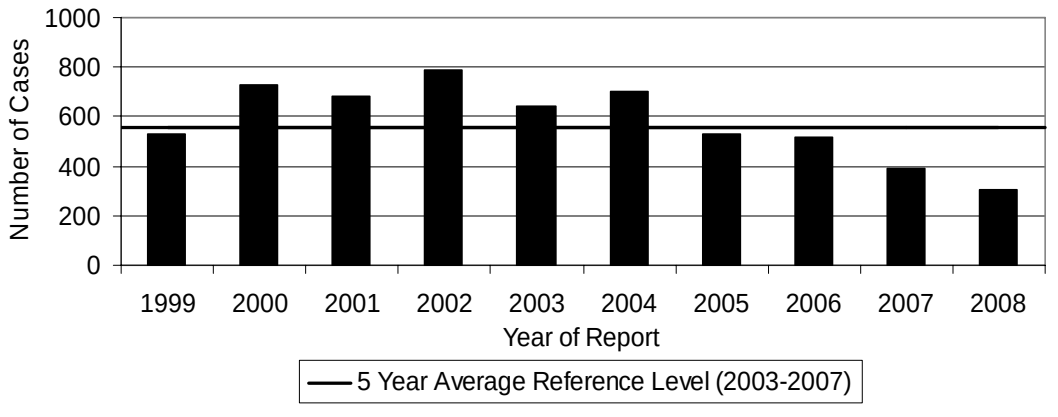
Lead - Elevated Blood Levels in Children

Agent: Lead (metal)
Mode of Transmission: Chewing objects painted with lead paint; ingesting 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: Avoid ingestion of lead-contaminated materials and use of lead-containing objects. Education of healthcare professionals and parents is important in reducing and detecting lead exposure.
Other Important Information: The primary source of lead for children is exposure to deteriorated paint in housing built before 1978. There is an increased awareness of new sources of lead exposures, including improper renovation of older homes; imported toys; candies popular among some ethnic groups; traditional Hispanic, Indian, and Middle Eastern folk remedies; and ceramics from foreign countries.

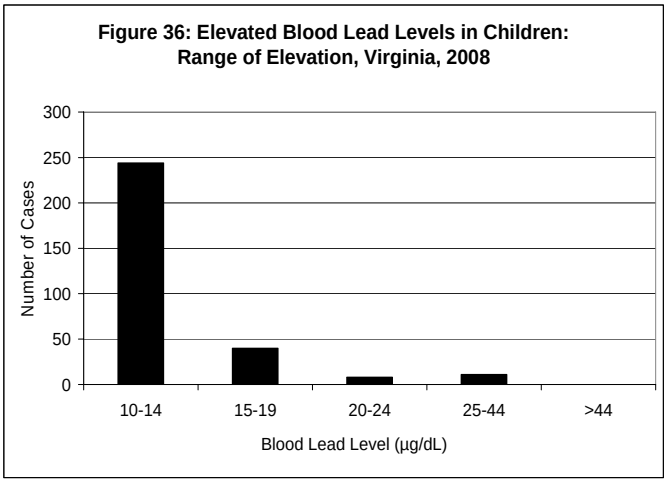
Virginia law requires reporting of elevated blood lead levels (≥10 μg/dL) in children age 15 years or younger. In 2008, there were 307 reported cases of elevated blood levels in children less than 16 years of age. This is a significant decrease (45%) from the five year average of 556.4 cases per year (Figure 35). This decrease in cases can partially be attributed to improved reporting of specimen type (e.g., capillary or venous) by physicians and laboratories. This has improved the ability to interpret test findings and has resulted in more accurate information on the number of children with confirmed elevated lead levels.

Figure 35. Elevated Blood Lead Levels in Children: Ten Year Trend, Virginia, 1999-2008



Blood lead levels in the 10-14 μg/dL range are above normal, but only require lead awareness education and follow-up monitoring. Blood lead levels in the 15-19 μg/dL range require nutritional and environmental education, as well as more frequent testing to ascertain if the blood lead level is increasing. Blood lead levels greater than 20 μg/dL

require greater degrees of case management, the initiation of an environmental investigation to identify and eliminate lead hazards, and the possibility of medical intervention. Among children reported with elevated blood lead levels in 2008, 244 cases (79%) fell in the 10-14 µg/dL range, 40 cases (13%) fell in the 15-19 µg/dL range, 8 cases (3%) fell in the 20-24 µg/dL range, and 11 cases (4%) fell in the 25-44 µg/dL range. No child was reported with a confirmed lead level greater than 44 µg/dL (Figure 36).



The majority of elevated blood lead levels (90%) and the highest incidence rate occurred in 1-9 year olds (278 cases, 30.6 per 100,000). This was followed by infants (20.3 per 100,000) and 10-15 year olds (1.3 per 100,000). Fifty-three percent of reports were missing race data. Among reports with a race, the black population had an incidence rate seven times that of the white population (25.2 versus 3.6 per 100,000, respectively), while the "other" population had an incidence rate of 7.9 per 100,000. The male population had a slightly higher incidence rate than the female population (19.4 and 18.6 per 100,000, respectively). The central region had the highest incidence rate of elevated blood lead levels in children, with 41.0 per 100,000. This was followed by the southwest, eastern and northwest regions with incidence rates ranging from 20.5 to 14.6 per 100,000. The northern region had the lowest rate at 8.4 per 100,000.