Review of Childhood Blood Lead Levels

FLOYD COUNTY, GILES COUNTY, MONTGOMERY COUTNY, PULASKI COUNTY, AND RADFORD, VIRGINIA

Letter Health Consultation

June 30, 2014

Virginia Department of Health
Division of Environmental Epidemiology
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COMMONWEALTH of VIRGINIA

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Ms. Ana Pomales, MS
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Dear Ms. Pomales:

In February 2014, the Agency for Toxic Substances & Disease Registry (ATSDR) requested the Virginia Department of Health's (VDH) Division of Environmental Epidemiology (DEE) to review childhood blood lead surveillance data on the New River Health District (NRHD) of Virginia between 2009 and 2012. VDH uses the Virginia Electronic Disease Surveillance System (VEDSS) to manage statewide reportable disease data, including elevated blood lead levels (BLLs) of children. The Commonwealth of Virginia recommends that children up to and including 72 months of age be tested for elevated blood-lead levels unless they are determined to be at low risk. Given that some children may be at a higher risk for elevated blood lead levels, additional testing is recommended if a child meets one or more criteria listed in Appendix A. The Commonwealth recognizes the need for early identification of children with elevated blood-lead levels to alert parents and guardians to protect children from lead exposure due to the adverse effects associated with elevated levels. In 2012, the Centers for Disease Control and Prevention (CDC) changed the reference level from 10 micrograms to 5 micrograms per deciliter to identify children at risk. The new level is based on the U.S. population of children ages 1-5 years who are in the highest 2.5% of children when tested for lead in their blood. For surveillance purposes, the Commonwealth of Virginia still defines a confirmed elevated BLL as a venous blood level greater than or equal to 10 micrograms per deciliter (µg/dL), or two elevated capillary or unspecified results within a 12 week period (84 days) for children 15 years of age and younger. This evaluation of VDH BLL data for NRHD is based on county-level surveillance data reported to public health and is not necessarily representative of BLLs of children living close to any particular hazardous waste site in NRHD.

To meet ATSDR's request, DEE reviewed childhood BLLs (2009-2012) for five counties (Giles, Pulaski, Montgomery, Floyd, and Radford Counties) in the NRHD. The data reviewed (Table 1) includes the total number of children tested, and the total number of confirmed elevated BLL cases in each county. The data revealed that 73 children were tested but there was only one elevated BLL

reported on a child in Giles County (in 2012) for the period reviewed. In Pulaski County, 188 children were tested but there were two confirmed elevated BLL cases; one in 2009 and one in 2011. Three hundred and twenty seven (327) children were tested in Montgomery County; confirmed cases (one from each year) were reported in 2009 and 2010. Although 3 and 52 children were tested in Radford and Floyd respectively, there were no reports of elevated BLLs between 2009 and 2012. For this same time period, the annual incidence rate (number of elevated BLLs per 100,000 children) (Table 2) in the New River district ranged from 3.5 to 7.3, while the annual incidence rate for Virginia ranged from 12.2 to 24.0. DEE's review did not indicate that the NRHD experienced more elevated BLLs in children than expected during the time period reviewed.

Surveillance data on elevated blood lead levels by year, health district and region is available by clicking on the following link: VDH Reportable Disease Surveillance Data. For additional information on elevated blood lead levels in children, including who should be tested, how to prevent childhood lead exposure, and how elevated blood levels are detected, visit VDH Frequently Asked Questions: Elevated Blood Lead Levels in Children. For information from CDC about the new reference level, see CDC's Fact Sheet on Blood Lead Levels In Children. Parents who suspect that their child has been exposed to lead are encouraged to contact their pediatrician or reach out to their local public health department. A directory of local health departments is located at Local Health Districts.

I trust that the above information will be of help to you. Should you have any additional questions, please contact Ayat Abdelbaki by phone at 804-864-8194, or email ayat.abdelbaki@vdh.virginia.gov.

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REFERENCES

Centers for Disease Control & Prevention (CDC). (2012). What Do Parents Need to Know to Protect Their Children? Retrieved from: Update_Blood Lead Levels. Accessed May 2014.

Virginia Administrative Code. (2011). Part II Protocol for Identification of Children with Elevated Blood-Lead Levels: 12VAC5-120-30 Schedule for testing & 12VAC5-120-50 Risk factors requiring testing. Virginia Register Volume 18, Issue 16, eff. May 22, 2002; amended, Virginia Register Volume 19, Issue 22, eff. August 13, 2003. Retrieved from: Virginia Administrative Code. Accessed June 2014.

Virginia Department of Health (VDH). (2014). Number of Reported Cases and Rate per 100,000 Population for Selected Diseases by Locality, District, and Region, 2009, 2010, 2011, 2012. Retrieved from: Number of Reported Cases & Rate. Accessed May 2014.

Virginia Department of Health (VDH). (2014). Table 6. Number of Reported Cases and Rate per 100,000 Population for Selected Diseases by Health Planning Region, Virginia: 2009, 2010, 2011, 2012. Retrieved from: 2009Table, 2010Table, 2011Table, 2012Table. Accessed May 2014.

Virginia Electronic Disease Surveillance System (VEDSS). (2014). Accessed May 2014.

Appendix A

Elevated blood lead testing is recommended if a child meets one or more of the following criteria:

1. Eligible for or receiving benefits from Medicaid or the Special Supplemental Nutrition Program for Women, Infants and Children (WIC);

2. Living in a high-risk zip code area;

3. Living in or regularly visiting a house or child care facility built before 1950;

4. Living in or regularly visiting a house, apartment, dwelling or other structure, or a child care facility built before 1978, with peeling or chipping paint or with recent (within the last six months), ongoing, or planned renovations;

5. Living in or regularly visiting a house, apartment, dwelling or other structure in which one or more persons have elevated blood-lead levels;

6. Living with an adult whose job or hobby involves exposure to lead as described in Preventing Lead Poisoning in Young Children (CDC, 1991);

7. Living near an active lead smelter, battery recycling plant, or other industry likely to release lead;

8. The child's parent or guardian requests the child's blood be tested due to any suspected exposure; or

9. A health care provider recommends the child's blood be tested due to any suspected exposure.

Source: § 32.1-46.1 of the Code of Virginia, Virginia Register Volume 18, Issue 16, eff. May 22, 2002; amended, Virginia Register Volume 19, Issue 22, eff. August 13, 2003.

Table 1. Number of Children Tested & Total Confirmed Elevated Blood Lead Levels by County in the New River Health District: 2009-2012

County	Year	Total Tested	Confirmed Elevated	Population (Ages 0-15)
Floyd 24091	2009	8	0	2,711
	2010	18	0	2,741
	2011	11	0	2,963
	2012	15	0	2,908
Giles 24167, 24124, 24147, 24136, 24150, 24134, 24093, 24086, 24128, 24124	2009	19	0	3,187
	2010	18	0	3,268
	2011	21	0	3,292
	2012	15	1	3,173
Pulaski 24084, 24058, 24301, 24324, 24347, 24126, 24129, 24132	2009	58	1	5,872
	2010	56	0	5,848
	2011	42	1	5,907
	2012	32	0	5,818
Radford 24141, 24142, 24143	2009	3	0	2,237
	2010	0	0	2,201
	2011	0	0	1,917
	2012	0	0	1,831
Montgomery 24068, 24061, 24062, 24063, 24073, 24149, 24162, 24138, 24087, 24111, 24060	2009	74	1	14,458
	2010	149	1	14,710
	2011	81	0	13,489
	2012	23	0	12,841

Source: Virginia Electronic Disease Surveillance System (VEDSS), 2014

Table 2. Number of Elevated Blood Lead Level Cases & Rate Among Children (Ages 0-15): 2009-2012
New River, Southwest Region, Virginia

Locality/District/Region	Reported Cases	Rate per 100,000	Population	Year
Giles 24167, 24124, 24147, 24136, 24150, 24134, 24093, 24086, 24128, 24124	0	0.0	17,249	2009
	0	0.0	17,358	2010
	0	0.0	17,286	2011
	1	31.5	17,124	2012
Pulaski 24084, 24058, 24301, 24324, 24347, 24126, 24129, 24132	1	17	34,987	2009
	0	0.0	35,022	2010
	2	33.9	34,872	2011
	0	0.0	34,607	2012
Montgomery 24068, 24061, 24062, 24063, 24073, 24149, 24162, 24138, 24087, 24111, 24060	1	6.9	89,967	2009
	1	6.8	91,023	2010
	0	0.0	94,392	2011
	0	0.0	94,342	2012
Floyd 24091	0	0.0	14,821	2009
	0	0.0	15,013	2010
	0	0.0	15,279	2011
	0	0.0	15,378	2012
Radford 24141, 24142, 24143	0	0.0	16,125	2009
	0	0.0	16,184	2010
	0	0.0	16,408	2011
	0	0.0	16,414	2012
New River Health District	2	7	173,149	2009
	1	3.5	174,600	2010
	2	7.3	178,237	2011
	1	3.8	177,865	2012
Southwest Region	61	25.7	1,328,110	2009
	58	23.9	1,334,963	2010
	46	18.9	1,356,557	2011
	35	14.6	1,353,994	2012
Virginia Total	389	24	7,769,089	2009
	350	21.3	7,882,590	2010
	274	16.7	8,001,024	2011
	201	12.2	8,096,604	2012

Virginia Electronic Disease Surveillance System (VEDSS), 2014
Virginia Department of Health (VDH): Table 6. Number of Reported Cases and Rate per 100,000 Population for Selected Diseases by Health Planning Region, Virginia: 2009, 2010, 2011, 2012. Retrieved from: 2009Table, 2010Table, 2011Table, 2012Table.