Together We Can Get 100%: Blood Lead Screening in Vermont







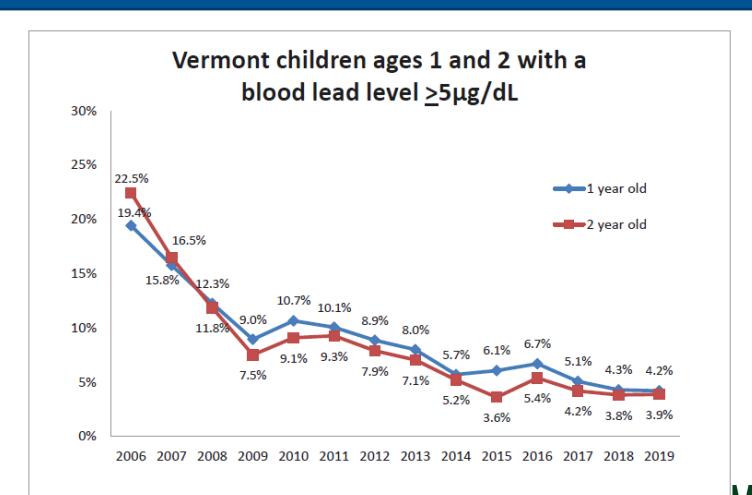
Objectives

- Overview of blood lead levels and screening throughout Vermont
- Outreach activities performed to assess and increase blood lead screening
- Ways to identify children who still need screening
- Address Department of Health's latest changes
 - Blood lead level of concern
 - Supporting materials
- Importance of blood lead screening and reporting





Elevated Blood Lead Levels



Vermont Child Health Improvement Program

UNIVERSITY OF VERMONT LARNER COLLEGE OF MEDICINE



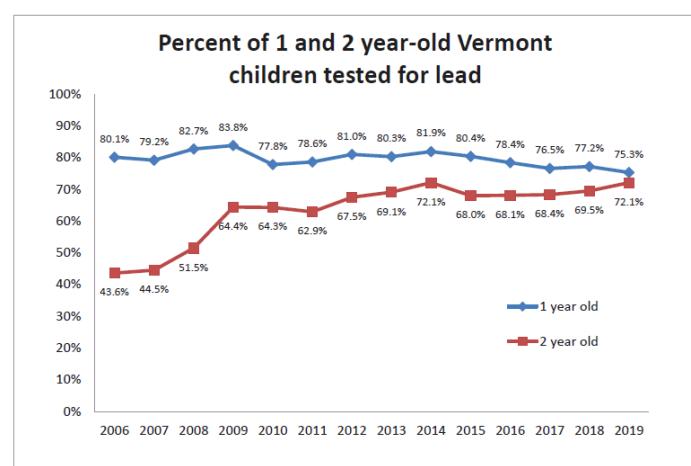
Elevated Blood Lead Levels

- Lead poisoning remains a problem for children in Vermont.
- In 2019, there were 427 children with an elevated blood lead level
 - Greater than or equal to 5 micrograms per deciliter.
 - 355 of those children were ages 1 and 2 year old





Blood Lead Screening







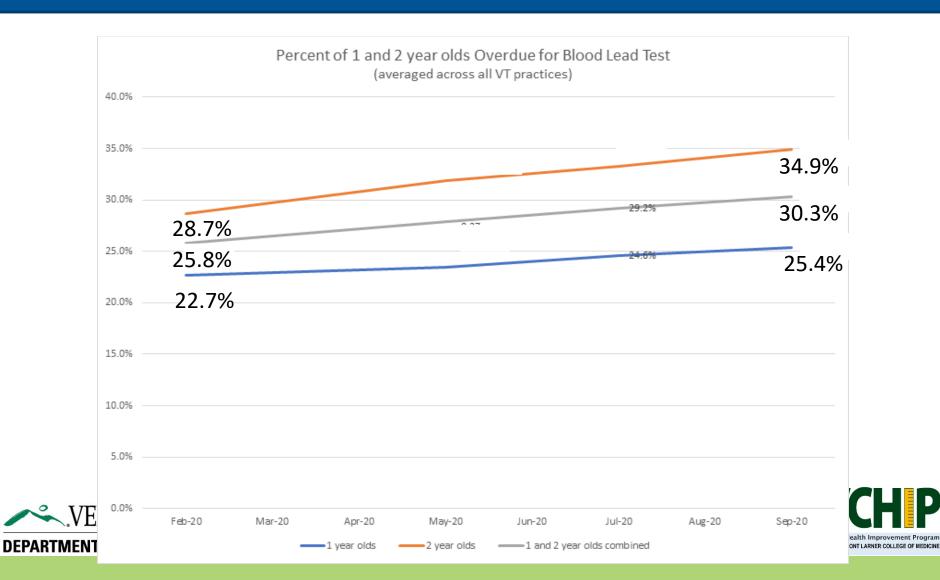
Blood Lead Screening

- The percentage of 1-year-olds tested each year has declined
 - From 82% in 2014 to 75% in 2019
- The percentage of 2-year-olds tested has plateaued in recent years.
 - In 2019, 72% of 2-year-olds were tested for lead.
- Both below 100% screening goal





Screening During Pandemic



Barriers to Screening

- In the past, PCPs have indicated many barriers:
 - Difficulty obtaining blood samples from infants and young children.
 - Parental opposition to testing
 - Inadequate cost reimbursement for lead testing
 - Lack of insurance coverage for the procedure
 - Inaccurate beliefs about who is at risk
 - Especially if the family does not live in a house built prior to 1978.
- More recently, getting patients and families back into the office



- VCHIP partnered with the Department of Health to better understand the barriers to screening.
 - From 2018-2019
 - A survey was created to assess perceived barriers to screening but also reporting
 - The survey was sent to all health care professionals in Vermont who take of children

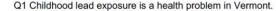


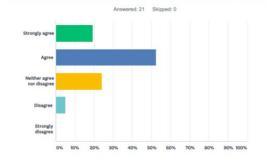


1.	Lead poisoning is a health problem in Vermont.					6.	After obtaining an elevated blood lead level (>5 µg/dL), I feel comfortable counseling my					
	a. Strongly Agree	b. Agree	c. Neutral	d. Disagree	e. Strongly Disagree		patients/families on the next steps in management.					
							a. Strongly Agree b. Agree c. Neutral d. Disagree e. Strongly Disagree					
2.	Universal screening is	an important st	rategy to preve	nt lead poisonin	g in Vermont children.	7	. Do you use a Lead Care II machine to screen for blood lead?					
	a. Strongly Agree	b. Agree	c. Neutral	d. Disagree	e. Strongly Disagree	,	a. Yes b. No (Skip to question 9)					
3.	Universal lead screening	ng of 1 and 2 ye	ar old patients	is performed at	my practice:	8.	. If yes, how often do you report the results to the Vermont Health Department?					
	a. Strongly Agree	b. Agree	c. Neutral	d. Disagree	e. Strongly Disagree		a. Daily b. Weekly c. Bi-Monthly d. Monthly e. No set Schedule					
4.	There are barriers to un	niversal screeni	ng at my practi c. Neutral		e. Strongly Disagree	9.	. I would be interested in peer-to-peer support/training to help my practice achieve high screening rates and better understand the importance of screening.					
	a. 3000g, 10g101				a savings, a single		a. Strongly Agree b. Agree c. Neutral d. Disagree e. Disagree					
What are the barriers to obtaining universal screening of 1 and 2 year old patients at your practice? (Circle all that apply)					r old patients at your							
	a. Difficulty obtaini	a. Difficulty obtaining sample b. Parental opposition to obtaining sample c. Inadequate reimbursement					 I would be interested in receiving support/training by: (Circle all that apply) 					
	b. Parental opposition						a. Site visit from peer					
	c. Inadequate reimb						b. Phone conversation from peer c. E-mail/standard mail resources					
	d. Lack of insurance	d. Lack of insurance coverage for procedure					d. Not interested in support/training					
	e. Feel as though clinicians can determine who is at risk and who is not case by case				is not case by case		e. Other (Please Specify):					
	f. Lead poisoning is		n Vermont				Vermont Child Health Improvement Pro					
)	g. Other (Please Spe	ecify):					INVESTITY OF VERMONT LANGE ON LEGE OF M					



- Providers agreed:
 - Lead exposure is still a problem 70%
 - Universal screening is important 90%
 - There are barriers to screening 50%
 - Comfortable with management 75%
 - Child screened during visits >90%
 - Unsure of reporting schedule 75%
- Unfortunately, the response was less than expected and it was mostly from practices who don't have many patients overdue





ANSWER CHOICES	RESPONSES	
Strongly agree	19.05%	4
Agree	52.38%	11
Neither agree nor disagree	23.81%	5
Disagree	4.76%	1
Strongly disagree	0.00%	0
TOTAL		21





- Outreach efforts continued in 2019 2020
- Directly outreach offered with individualized peer-to-peer support
 - Primarily by phone but also in-person
- Topics Reviewed were:
 - Screening
 - Reporting Procedures
 - Patient Profile (Immunization Registry) Reports





- Identified 22 practices with 50% or more 12 and 24-months old overdue for lead screening based on VDH data
 - 14 with completed outreach
- Summary of Conversations
 - Areas of success:
 - Performing lead screening at the 12 and 24-month recommendation
 - Areas of Improvement:
 - Identifying patients who still require screening
 - Knowledge of/using Patient Profile Reports
 - Reporting Results





- Screening Asymptomatic Children
 - All children at 12 months and 24 months
 - Vermont law requires this
 - Test all children age 6 years or younger who have not previously been tested
 - Refugee
 - Test all children age 6 months to 16 years old upon entry to the US
 - Follow-up test within 3 to 6 months
 - Regardless of initial test result.



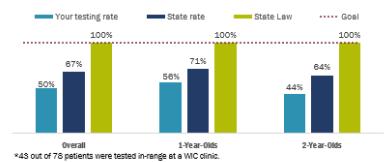


Blood Lead Testing Report

State law requires that <u>all</u> Vermont children are tested for lead at age 1 and again at age 2 and all lead tests are reported to the Department of Health.

How You Compare

Percent of Children with a Blood Lead Test



Your Venous Confirmation Rate 3/4

Capillary tests at or above 5µg/dL must be confirmed with a venous test.

About the data

1-year-olds: Children born in 2018 tested for blood lead between 11 and 22 months of age.

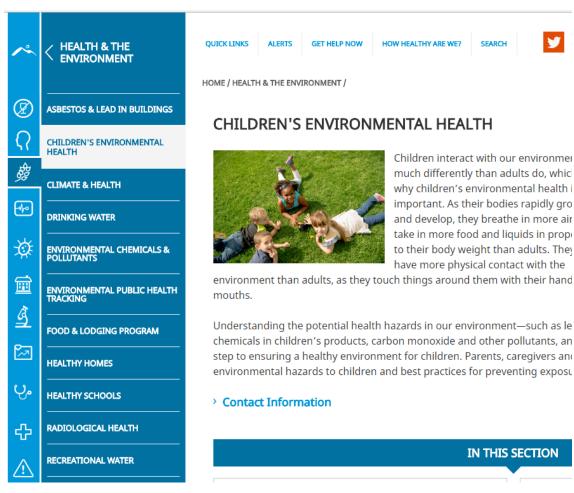
2-year-olds: Children born in 2015 tested for blood lead between 23 and 35 months of age.

Timely confirmation: 1- and 2-year-olds with capillary result at or above 5 µg/dL who received a venous blood lead test within the recommended confirmation timeframe. Use Patient Profile, commonly called the Immunization Registry, to run additional blood lead reports.















IN THIS SECTION

Chemical Disclosure Program for Children's Products (For Manufacturers)

Manufacturers who use chemicals designated by the State of Vermont as Chemicals of High Concern to Children, must report information about these chemicals to the Health Department.

READ MORE ①

Lead Poisoning Prevention Guidance for P

Children who have lead poisoning don't look or act sick. But lead can cause serious health problems.

READ MORE ①

Environmental Health Guide for Parents and Child Care

Children interact with our environment much differently than adults do, which is why children's environmental health is so important.

READ MORE ①

Chemicals in Children's Products

There are many chemicals in our environment. Some of them are in products we all use-including children's products. Children can be more susceptible to some chemicals.

READ MORE ①

Lead Poisoning Prevention Guidance for Health Care Providers

The Healthy Homes Lead Poisoning Prevention Program works with health care providers to ensure that all children are tested for lead.

READ MORE (1)

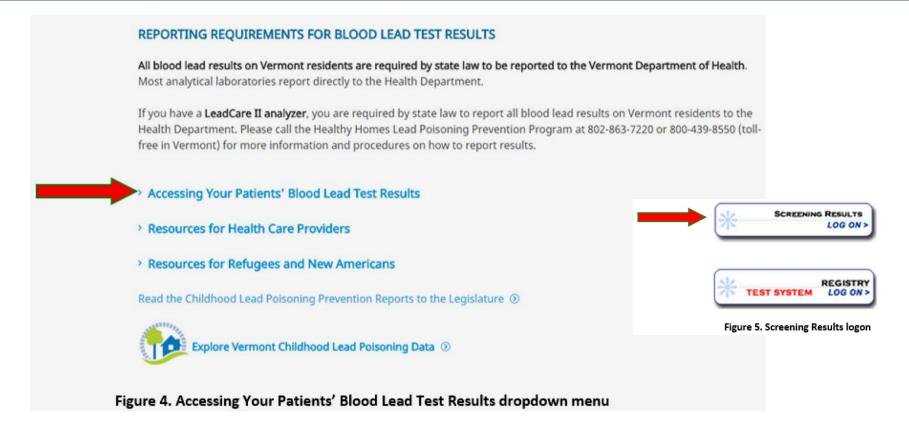








Identifying Patients for Screening Patients







VERMONT DEPARTMENT OF HEALTH								
Screening Tests Needed - as of 8/21/2014 see Instructions at End of Report Due for 12 month screening [age 11 to <13 months]:								
Name	DOB	Age at Date of Report						
Overdue for 12 month screening [age 13 to <23 m	onths]:	·						
Name	DOB	Age at Date of Report						
Due for 24 month screening [age 23 to <25 months	s]:							
Name	DOB	Age at Date of Report						
Overdue for 24 month screening [age 25 to <36 m	onths];							
Name DOB Age at Date of Report								
Page 1 of 3								





Aged 36 to <72 months with no record of a lead screening on or after 11 months of age:

Name	DOB	Age at Date of Report

SCREENING TESTS NEEDED REPORT SUMMARY:

Total number of 1-year-olds in the practice [age 11 to <23 months]: 6

Number of 1-year-olds in the practice who have received the 12 month screening: 3

Number of children <u>currently due</u> for 12 month screening [age 11 to <13 months]: 1

Number of children currently overdue for 12 month screening [age 13 to <23 months]: 2

Total number of 2-year-olds in the practice [age 23 to <36 months]: 2

Number of 2-year-olds in the practice who have received the 24 month screening: 0

Number of children currently due for 24 month screening [age 23 to <25 months]: 2

Number of children currently overdue for 24 month screening [age 25 to <36 months]: 0

Total number of 3- to 6-year-olds in the practice [age 36 to <72 months]: 11

Number of 3- to 6-year-olds with no screening on or after 11 months of age: 6





- Patient Profile (Immunization Registry)
 - Provides reports of all patients assigned to your practice
 - Children 12 months and 24 months who are overdue for screening
 - Children age 6 year or younger who have not previously been tested
 - Requires privileges to gain access to Reports
 - If your practices does not have privileges, please reach out





Reporting Results

- All health care professionals who use their own point-of-care machine to analyze blood samples must report all required information using GlobalScape
 - A secure, web-based file transfer platform
- Send reports on the 1st and 15th of every month.
 - This is required by law.
- Blood lead levels at or above 45 µg/dL must be reported by phone to the Health Department within 24 hours.



Warning! By accessing and using this Government Computer System, you are consenting to system monitoring for law enforcement and other purposes. Unauthorized use of, or access to, this computer system may subject you to criminal prosecution and penalties.

Log in
Secure File Transfer Site
<u>U</u> sername:
Password: Proget Password





Health Alert

- The definition of an elevated blood lead result to any reported level.
 - Data shows there is no safe level of lead
 - Lead is not naturally occurring in the body
 - Levels at and below 5 µg/dL still impair development for our patients





Health Alert

- Giving the Health Department's What Your Child's Lead Test Means to ALL parents or guardians of children when they are being tested for lead
 - Regardless of the test results.
- Educate families on potential sources of lead and ways to reduce or remove exposure
 - Even at low levels that do not require a venous confirmation.







What Your Child's Lead Test Means



How to Protect Your Child From Lead

February 2020

State law requires that all Vermont children are tested for lead at age 1 and again at age 2

There is no safe level of lead in the body. A child can be hurt by lead and still look healthy. Lead can harm a child's growth, behavior, and ability to learn. The only way to find out if your child has been exposed to lead is with a blood test.

Children are usually first tested with a capillary test - a small amount of blood taken from a finger, heel or toe - at their 1- and 2-year-old well child visits.

When children have a capillary test result of 5 µg/dL (micrograms per deciliter) or higher, the result needs to be checked again using blood from a vein (often in the arm). The venous test result is more accurate.

What can you do?

- Getting your child tested for lead is the first step. You did this!
- Schedule a venous test, if needed.
- No matter what your child's blood lead level is, learn how to protect your child from being exposed to lead. Visit healthvermont gov/lead or call the Healthy Homes Lead Poisoning Prevention Program at 802-863-7220 or 800-439-8550.

Capillary Blood Lead Result	When to confin	m with a venous blood test						
0 - 4 μg/dL		Confirmation not required unless other risk factors. There is very little lead in your child's blood. Review sources of lead to keep your child's lead level from rising.						
5 - 9 µg/dL	Take steps to red	month to 3 months. If confirmed, your child has more lead than most children. Take steps to reduce sources of lead. The Health Department will contact you to help you find sources of lead.						
10 - 44 μg/dL	doctor should act growth and develo	week to 1 month. If confirmed, your child's lead level is high. You and your doctor should act quickly to reduce sources of lead and discuss your child's diet, growth and development. The Health Department can visit your home to help you find where lead may be coming from.						
45 - 59 μg/dL	48 hours.	If confirmed, your child will need medical treatment right away. Consult with your doctor and reduce lead sources						
60 - 69 µg/dL	24 hours.	immediately. The Health Department can visit your home to help you find where lead may be coming from.						
70+ µg/dL	Immediately.							
The higher t	he capillary test result,	the more urgent the need to confirm with a venous test.						
Yo	ur child's test result	μg/dL Date						

In Vermont, most lead poisoning comes from swallowing invisible lead dust that comes from peeling and chipping paint. The dust clings to fingers and objects that children put in their mouths. Houses built before 1978 likely have lead paint. Here's what you can do prevent lead poisoning:



Maintain

- Check for chipping, peeling, cracked or disturbed paint.
- Install window well inserts to provide a smooth cleaning surface.
- Use lead-safe work practices such as wet sanding and wet scraping.



Clean

- Use only a vacuum with a HEPA filter, and vacuum slowly.
- Wet mop floors and use wet disposable towels on windowsills and surfaces.
- Leave shoes at the door to avoid tracking in soil that contains lead.
- Wash children's toys often to remove invisible lead dust.



Eat healthy

- Serve children fruits, vegetables and dairy products, as well as iron-rich foods.
- Plant vegetable and other food gardens in lead-free soil.
- Wash children's hands often, especially before meals, naps and bedtime.
- · Serve snacks and meals to children at the table or in their highchairs.

Watch out for other sources of lead

Lead can also be found in soil, water, and products, such as keys, toys, and antiques.



- Have your drinking water tested for lead. Learn more: healthvermont.gov/water/lead
- Run water until cold for cooking, drinking and making formula.
- Keep children from playing in bare soil near roadways and older houses.
- Do not let children play with metal keys.
- Do not store food in open cans or pottery.
- Keep children away from certain hobbies, like making bullets or stained glass.
- Be aware of products that have been recalled by the Consumer Product Safety Commission (www.cpsc.gov).

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Health Alert

- Continue to follow the Pediatric Blood Lead Testing & Case Management Guidelines
 - Outline State law and regulations.







Pediatric Blood Lead Testing Guidelines

February 2020

Any level of lead in the blood is considered elevated.

Criteria for Testing Asymptomatic Children at Well Child Visits

- Test all children at 12 months and 24 months. (Vermont law requires this.)
- Test all children age 36 to 72 months who have not previously been tested.
- For refugees: test all children age 6 months to 16 years old upon entry to the US, with follow-up test within 3 to 6 months, regardless of initial test result.

Other Indications to Test for Lead

- · Ingestion of an object that may contain lead
- · Signs or symptoms consistent with lead poisoning
- . Living in an older home undergoing renovations
- Living with someone who has a blood lead level of 5 µg/dL or greater
- Children at-risk: international adoptees, immigrants, entering foster care or who have pica or special health needs that increase hand-to-mouth behavior

When to Confirm Capillary Blood Lead Tests*

If Capillary Blood Lead Level (µg/dL) is:	Confirm with Venous Test Within:
0 - 4	Not required unless other risk factors
5 - 9	1 - 3 months
10 - 44	1 week - 1 month
45 - 59	48 hours
60 - 69	24 hours
70+	Immediately as an emergency test

When to Follow Up with a Venous Retest*

If Venous Blood Lead Level (µg/dL) is:	Follow-Up	Late Follow-Up (blood lead level declining)		
0 - 4	Venous retest is not required. Follow testing criteria above.			
5-9	3 months	6 - 9 months		
10 - 19	1 - 3 months	3 - 6 months		
20 - 24	1 - 3 months	1 - 3 months		
25 - 44	2 weeks - 1 month	1 month		
45+	Initiate chelation and retest in 7-21 days	As clinically indicated		

^{*}All blood lead tests must be reported to the Vermont Department of Health.



Pediatric Blood Lead Testing Guidelines

February 2020

Clinical Treatment Guidelines for Venous Confirmed Blood Lead Levels							
(For children 8 to 72 month	old)						
	Blood Lead Levels (µg/dL)						
	0-4	5-9	10-44	45-59	60-69	70÷	
MEDICAL EVALUATION							
TREAT AS AN EMERGENCY - potential encephalopathy					X	X	
Check abdominal x-ray	T			x	×	×	
Other diagnostic tests: BUN, CBC, Creatinine, UA and liver enzymes					^	^	
Monitor neurodevelopment (especially language skills and			x	x	×	×	
concentration ability)				X			
Check nutritional status (especially iron and calcium)	Т	x	x	x	x	×	
Rule out iron deficiency and treat if present		_ ^	_ ^	^	^	^	
MEDICAL MANAGEMENT							
Chelation required - recommend the use of succimer per routine	Т						
dosage	1			X	x	×	
Discharge inpatient cases ONLY to LEAD-FREE ENVIRONMENT				x	x	X	
In-home treatment indicated only if:	\top						
Lead-free environment	1			×			
 Highly compliant family 	1				×	×	
 Home health care monitoring 							
Iron supplement if deficient	T						
 Stop iron therapy prior to chelation 	1	X	X	X	X	×	
Educate family on:	\top						
 Potential sources of lead and ways to reduce or remove 	1						
exposure	١.,	١.	١.				
 Dangers of improper lead abatement/remodeling 	X	X	x	X	X	×	
 Encourage high iron/high calcium diet 	1						
The need to retest	\bot						
Provide Health Department's lead poisoning prevention education	x	l x	l x	×	×	×	
materials (translated materials also available)	<u></u>	L^	_ ^_	^	_ ^	_ ^	
FOLLOW UP							
Health Department will offer phone education x							
Health Department will conduct an environmental investigation,						Ţ,	
which is triggered independently when lab test results are received AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA							
Follow venous retesting schedule x					x	X	
Screen other children in the home who are under the age of 6		х	х	x	x	x	

Contact the Health Department at 802-863-7220 or AHS.healthyhomes@vermont.gov

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- Targeted Outreach
 - Track data statewide
 - Determine activities and prevention messages throughout the state
 - Areas with high lead levels with specific educational messages to parents, practices, landlords, homeowners





Childhood Lead Poisoning

Number of Children Tested Before Turning Age 3 in 2016



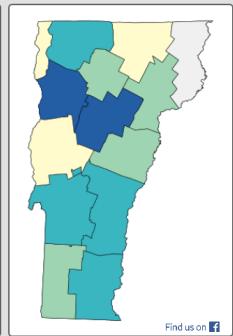
Until 2012, children were identified by CDC as having an elevated blood lead level if a confirmed test result was 10 µg/dL or more. Since 2012, a new reference level of 5 µg/dL, confirmed, has been used by CDC to define elevated blood lead; the new reference level is used in the displays below starting in 2010.

Data Notes

Print

Share

County / State		Number Of Children Born in the Same Year and Tested Before Turning Age 3	Number of Children with Elevated Blood Lead Levels per Vermont Law (any test ≥5µg/dL)	Number of Children with Confirmed Elevated Blood Lead Levels per CDC Guidelines (confirmed ≥5µg/dL)			
	VERMONT	5,631	331	135			
0	ADDISON	230	20	7			
•	BENNINGTON	349	32	7			
•	CALEDONIA	251	15	7			
•	CHITTENDEN	1,581	53	24			
0	ESSEX	*	*	*			
•	FRANKLIN	465	24	*			
•	GRAND ISLE	56	*	*			
•	LAMOILLE	231	6	*			
•	ORANGE	263	21	8			
0	ORLEANS	230	11	* _			
	RUTLAND	488	43	15			
Clear X Filter X							













Targeted Outreach

- Marketing
 - Intended for parents and caregivers of children under 2 years of age to raise awareness about lead poisoning and testing for their children.
- Mailed postcards/packets to families
 - 10-month-old children and 22-month-old children who were born in Vermont
 - Reminding them to have their children tested for lead.
 - Children with elevated blood lead levels
 - Educational materials
 - Follow-up testing recommendations
 - Request form for a free dust wipe kit
 - Enable families to test their homes for lead.
- Environmental investigations/home visits
 - Department of Health case manager will call families with elevated blood lead levels to schedule a home visit primarily to help determine the source of lead.



Cost

- In 2019, public agencies in Vermont spent over 2.5 million dollars to reduce lead hazards and prevent lead poisoning
- The State of Vermont could see a return on investment (ROI) of at least 42 million dollars from reduction in lead hazards.
 - Taking into account the national costs of lead hazard control, reduced health care costs, lifetime earnings, tax revenue, special education costs, behavioral disorders





Department of Health Funding

- Department of health shares data with CDC
 - The data is needed to continue to receive funding
- Requirements to meet yearly benchmarks as part of grant applications.
- CDC aggregates the data nationally and uses it to monitor grant activities





Recommendation

- Nominate a Lead Champion
 - Identify Patients who require screening
 - Perform Outreach
 - Report Results

- Reach out for guidance
 - Matthew.Saia@uvmhealth.org





Summary

- While Elevated blood lead levels have gone down, blood lead screening throughout Vermont has plateaued and decreased more recently
- Outreach has shown practices appear to be screening well but could improve identifying those who need screening and reporting their point-ofcare results
- Patient Profile is a great way to identify children who still need screening
- The definition of an elevated blood lead is any detectable lead level
 - No longer 5 μg/dL.
- Provide "What Your Child's Lead Test Means" to ALL parents or guardians
 of children when they are being tested for lead regardless of the test results.
- Blood lead screening and reporting helps determine activities and prevention messages throughout the state





Questions?



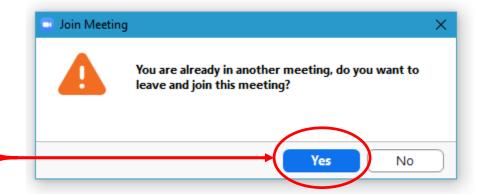




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Up Next

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Don Berwick MD, MPP, FRCP, President Emeritus and Senior Fellow, Institute for Healthcare Improvement



