

EARLY ADOPTERS

State Approaches to Testing School Drinking Water for Lead in the United States



STATE PROFILE **Rhode Island**

Summary of Program Features

Rhode Island initiated a school drinking water lead testing policy in April 2016. This summary is based on a review of program documents collected between January 2018 – June 2018 and communication with Rhode Island state contacts.

School Drinking Water Testing Policy/Program Overview

Policy/Program Feature	Information from Policy/ Program Documents	Additional Information from Communication with State
<i>Background</i>		
Name	Not specified	Center for Drinking Water Quality Lead Testing in Public Schools ¹
Date(s) of Water Policy/Program	April 30, 2016 to April 30, 2017 ²	
Issuing Authority	State legislature ^{2,3}	
Agency Responsible for Program Management	Rhode Island Department of Health ^{2,3}	
Policy or Program	Policy ^{2,3}	
One-time or Surveillance Program	One-time ^{2,3}	
Mandatory/Voluntary for Schools	Not specified	Voluntary ¹
Partnership with Local/Community Water Supplier/System	Other: In some cases, schools worked with a public water supplier ²	
Other Key Partnerships	Not specified	University of Rhode Island Cooperative Extension Nonpoint Education for Municipal Officials (NEMO) ¹
References or Uses the EPA 3Ts	Yes ²	
<i>Program Coverage</i>		
School Type (Public, private, charter)	Public ^{2,3} and charter schools ²	All public schools that responded to project invitation ¹
Grade Levels	Pre-Kindergarten – grade 12; initially intended to include state licensed childcare providers ^{2,3}	
Includes Testing for Lead	Yes ^{2,3}	
Includes Treatment/Remediation	Not specified	No ¹
Schools Eligible to Participate		
All schools	All schools ³	All public schools that responded to project invitation ¹
OR (select all that apply)		
Schools of a certain building age	Not specified	
Schools that serve certain ages/ demographics	Not specified	
Schools that are their own local/ community water supplier	Not specified	
Schools that use local/community water supplier	Schools on community public water systems ²	All public schools that responded to project invitation ¹
Schools that have not received a waiver	Not specified	
<i>Funding</i>		
Funding Source	State government ³	Federal grant ¹
Funding Amount	Not specified	\$137,563 ¹
Covers Sampling at Taps	Yes ²	
Covers Testing in Lab	Yes ^{2,3}	
Covers Treatment/Remediation	Not specified	No ¹

Sampling Information

Policy/Program Feature	Information from Policy/Program Documents	Additional Information from Communication with State
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Background

Sampling/Testing Process One-Time or Recurring	One-time ^{2,3}	
Number of Buildings/Facilities Sampled (All or a Portion?)	All facilities ²	
Types of Taps Sampled	Drinking, ^{2,3} cooking and faucets used by in-school childcare ²	Drinking, cooking and faucets used by in-school childcare ¹
Number of Taps Sampled Per School/Building (All or a Portion?)	A portion (at least three per building) ²	

Initial Sampling at Taps

Stagnation Period	Not specified	Advised minimum of 6 hours ¹
First Draw	Yes ²	
Flushing Period	Not specified	
Second Draw (Flushed Sample)	Not specified	
Additional Initial Samples	Not specified	
Sample Size of Water	Not specified	250 mL ¹
Action Level for Lead	15 ppb ²	15 ppb ¹

Action Required When Samples Exceed Action Level for Lead

Follow-Up Draws	Yes, where initial results were elevated and after suggested actions have been completed ²	Yes, recommended where initial results were elevated and after suggested actions have been completed ¹
Flushing Period	Mentioned, but length is not included ²	
Sample Size of Water	Not specified	
Additional Draws	Not specified	

Testing/Remediation/Communication Information

Policy/Program Feature	Information from Policy/Program Documents	Additional Information from Communication with State
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Testing

Type of Lab Used for Testing	State certified lab ²	
Sample(s) that Require Action if Results are Elevated	Not specified	Recommended if any results are elevated ¹

Remediation

Short-Term Measures	Yes, EPA-approved measures are listed ²	
Long -Term Measures	Yes, EPA-approved measures are listed ²	

Communication

Groups Notified of Test Results	Parents, general public, ² and government ^{2,3}	Results sent directly to schools and posted to publicly available website ¹
Type of Results Shared (outlet level, building level, school level)	Not specified	Outlet level ¹

Sources:

1. Email Communication with Rhode Island Department of Health Contact. June 2018.
2. Rhode Island Department of Health. Testing Drinking Water for Lead at Public Schools and State Licensed Child Care Centers; 2017:1-58. <http://www.health.ri.gov/publications/generalassemblyreports/2017LeadInSchoolDrinkingWater.pdf>. Accessed March 5, 2018.
3. Rhode Island General Assembly. An Act Relating to Waters and Navigation - Lead and Copper Drinking Water Protection Act; 2016. House Bill 8127A. <http://webserver.rilin.state.ri.us/BillText/BillText16/HouseText16/H8127A.pdf>. Accessed February 9, 2018.

Summary of Water Test Results

This report features data collected through Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools, initiated on April 30, 2016. Data provided by the state program on March 12, 2018 documented findings from 862 drinking water samples that were collected from 259 organizations. The state's program was ongoing through April 30, 2017. While many states may collect water quality data from a number of organizations, this state profile is focused on water quality testing completed in public schools serving grades pre-Kindergarten (PK)-12. Summary results reported in this state profile may differ from those reported by the state program due to differences in the types of organizations included and/or the period of test results covered.

Table 1: Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools Results Summary

In Rhode Island, the level of lead found in a drinking water sample that warrants action, or the "action level," is 15 ppb for a water sample of 250mL. This summary describes "first draw" samples taken in Rhode Island's Center for Drinking Water Quality Lead Testing Program. The "first draw" is a sample that is taken from the tap as soon as the water is turned on.

In Rhode Island, data were reported by fixture. Each school reported the date and time of collection, location of fixture, type of fixture, and the result from the draw.

- ◇ In Rhode Island, sixteen percent (16%) of public schools serving grades PK-12 had one or more draws at or above the state's action level for lead.
- ◇ In Rhode Island, six percent (6%) of first draw samples tested from public schools serving grades PK-12 had a lead content that was at or above the state's action level for lead.

	All schools providing drinking water quality testing results	Public schools serving grades PK-12 providing drinking water lead testing results*
<i>School-Level Summary</i>		
Number of schools with test result for lead	228	209
Average (min/max) number of samples taken at each school	3.5 (1, 21)	3.6 (1, 21)
Number (%) of schools with one or more samples at or above the State's "action level"	37 (16%)	33 (16%)
<i>Outlet/Tap-Level Summary</i>		
Number of samples	791	746
Number (%) of samples at or above the State's "action level"	54 (7%)	47 (6%)

* See table 3 for characterization of schools

Table 1a: Rhode Island’s Center for Drinking Water Quality Lead Testing in Public Schools Results Summary *By School Level* among the 209 Public Schools Serving Grades PK-12 Providing Drinking Water Lead Testing Results*

	Primary	Middle	High	Middle/High
<i>School-Level Summary</i>				
Number of schools with test result for lead	130	39	39	1
Average (min/max) number of samples taken at each school	3.4 (1, 21)	3.4 (1, 11)	4.3 (1, 21)	1.0 (1, 1)
Number (%) of schools with one or more samples at or above the State’s “action level”	24 (18%)	2 (5%)	7 (18%)	0 (0%)
<i>Outlet/Tap-Level Summary</i>				
Number of samples	443	133	169	1
Number (%) of samples at or above the State’s “action level”	33 (7%)	3 (2%)	11 (7%)	0 (0%)

* See table 3 for characterization of schools

Table 1b: Rhode Island’s Center for Drinking Water Quality Lead Testing in Public Schools Results Summary *By Metro Status or Locale* among the 209 Public Schools Serving Grades PK-12 Providing Drinking Water Lead Testing Results*

	City	Suburban	Rural
<i>School-Level Summary</i>			
Number of schools with test result for lead	14	161	34
Average (min/max) number of samples taken at each school	5.7 (2, 21)	3.6 (1, 17)	2.4 (1, 5)
Number (%) of schools with one or more samples at or above the State’s “action level”	1 (7%)	27 (17%)	5 (15%)
<i>Outlet/Tap-Level Summary</i>			
Number of samples	80	583	83
Number (%) of samples at or above the State’s “action level”	1 (1%)	40 (7%)	6 (7%)

* See table 3 for characterization of schools

Additional Details on Findings from Rhode Island

School Eligibility for Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools Program

Eligible schools according to available program documents:

- ◇ Public schools serving grades PK—12 that responded to the project invitation

Characteristics of Schools in Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools Program

The National Center for Educational Statistics (NCES) is the primary federal entity for collecting and analyzing educational data in the United States. Each year, the NCES reports a directory of all public schools in the United States and their characteristics in the Common Core of Data.

In order to better understand the characteristics of schools that were being served by Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools program, we matched demographic data on the schools and students available in the NCES Common Core of Data (2015-2016) school directory to the schools present in the data available from the state's drinking water testing program. We matched these schools using the school and district names and other public data sources.

We identified 209 Rhode Island schools with drinking water lead testing data provided by the Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools that were also present in the 2015-2016 NCES Common Core of Data. These 209 schools represent 92% of the 228 schools serving grades PK-12 that had drinking water lead testing results reported in the state program data.



Table 2: Number and Types of Organizations Represented in Rhode Island’s Center for Drinking Water Quality Lead Testing in Public Schools Data¹

Type of Organization	Number	Category Definition
Schools Serving Grades PK-12	228	Sum of all school types serving grades PK-12
Public schools serving grades PK-12 (including public charter), with identifiable school characteristics	209	All public schools with grades PK-12, including public charter schools, with identifying information in the national census of public schools (National Center for Education Statistics (NCES) Common Core of Data, 2015-2016)
Other public schools serving grades PK-12, without identifiable school characteristics	15	All other public schools with grades PK-12, including public charter schools, without identifying information in the national census of public schools (NCES Common Core of Data, 2015-2016)
Non-public schools	4	Private schools
Schools Serving Other Grades/Age Groups	27	Sum of All School Types Serving Other Grades or Age Groups
Child care centers	21	Organizations or schools that primarily serves as a child care center (includes preschool)
Public schools with unknown grades	6	Public schools that have identifying information in the national census of public schools (NCES Common Core of Data 2015-2016) but do not specify the grades that are served
Other organization or facility types	4	Other organization or facility types such as recreation centers, educational administration buildings, afterschool programs
Total number of organizations where data were collected	259	Total number of organizations where data were collected as of April 30, 2017

1. Rhode Island schools with drinking water lead test results provided by the Rhode Island program were matched to the 2015-2016 NCES Common Core of Data database using school and district names and other information provided by Rhode Island’s Center for Drinking Water Quality Lead Testing in Public Schools data or other public data sources (i.e., state school directory, school district websites).

Characteristics of Public Schools in Rhode Island Serving Grades PK-12

In Rhode Island,

- ◇ All public schools serving grades PK-12 were considered eligible to participate in the state’s drinking water testing program for this study.
- ◇ There are 305 public schools serving grades PK-12, according to the National Center for Education Statistics Common Core of Data 2015-2016.
- ◇ Of these, 209 (69%) schools had lead testing findings that were collected via the Rhode Island’s Center for Drinking Water Quality Lead Testing in Public Schools as of April 30, 2017. These 209 schools represent 70% of Rhode Island’s PK-12 students.

Table 3: Number and Characteristics of Rhode Island Public Schools Serving Grades PK-12 (NCES Common Core of Data 2015-16)¹

	Schools Eligible to Participate in the Rhode Island's Center for Drinking Water Quality Lead	Schools with Drinking Water Lead Test Results (April 30, 2016 – April 30,
NUMBER OF SCHOOLS²	305	209 (69%)
<i>School-Level⁴</i>		
Primary	192 (63%)	130(62%)
Middle	54 (18%)	39 (19%)
High	58 (19%)	39 (19%)
Middle/High	1 (<1%)	1 (<1%)
<i>Metro Status/Locale⁴</i>		
City	78 (26%)	14 (7%)
Suburban	190 (62%)	161 (77%)
Town	0	0
Rural	37 (12%)	34 (16%)
NUMBER OF STUDENTS IN GRADES PK-12	140,427	98,120 (70%)
<i>Number (%) of students eligible for free or reduced price meals</i>	65,995 (47%)	41,393 (42%)
<i>Number (%) students by race and ethnicity⁴</i>		
White	83,819 (60%)	66,361 (68%)
Black	11,481 (8%)	6,670 (7%)
Asian	4,561 (3%)	2,966 (3%)
Hispanic	34,039 (24%)	17,501 (18%)
Hawaii Native/Pacific Islander	206 (<1%)	157 (<1%)
American Indian/Alaska Native	984 (1%)	671 (1%)
Two or More Races	5,337 (4%)	3794 (4%)

1. Public schools and their characteristics were identified using the National Center for Education Statistics Common Core of Data 2015-2016, Public Elementary/Secondary School Universe Survey Data, downloaded March 22, 2018 from <https://nces.ed.gov/ccd/pubschuniv.asp>.
2. Only schools identified in the 2015-2016 NCES Common Core of Data database are included here.
3. Rhode Island schools with drinking water lead test results provided by the Rhode Island program were matched to the 2015-2016 NCES Common Core of Data database using school and district names and other information provided by Rhode Island's Center for Drinking Water Quality Lead Testing in Public Schools data or other public data sources (i.e., state school directory, school district websites).
4. Percentages may not add up to exactly 100% due to rounding.

Citation:

Cradock AL, Poole MK, Vollmer LY, Barrett JL, Flax C, Hecht CA. State Approaches to Testing School Drinking Water for Lead in the United States [State Profile: Rhode Island]. Boston, MA: Harvard Prevention Research Center on Nutrition and Physical Activity at the Harvard T.H. Chan School of Public Health; 2019. Available at <https://www.hsph.harvard.edu/prc/projects/school-research/early-adopters>. Address correspondence to Angie Cradock, ScD, MPE at acradock@hsph.harvard.edu.

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