


NH Health **WISDOM**

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all
Department of Health and Human Services



Connecting NH to Health Data

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Bureau of Public Health Statistics and Informatics
Division of Public Health Services
October 20, 2017

Outline

- Introduce NH Health WISDOM Data Portal
 - Data Sources
 - Data Visualizations
 - Future content
 - Future functionality
- Live Demo
- Q&A

NH Health WISDOM

- WISDOM Acronym: *W*eb-based *I*nteractive *S*ystem for *D*irection & *O*utcome *M*easures
- Created to increase access to public health data and improve understanding of public health programs
 - Aggregates public health information in one easy-to-use website
 - Contains access to hundreds of indicators and tens of millions of data points

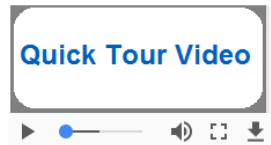
<https://wisdom.dhhs.nh.gov/>

WISDOM Landing Page



WISDOM

Connecting NH to Health Data



State Health Improvement Priorities

- Asthma
- Cancer
- Healthy mothers and babies
- Heart disease and stroke
- Injury prevention
- Misuse of alcohol and drugs
- Obesity/Diabetes
- Tobacco

State Initiatives

- NH Environmental Public Health Tracking Program
- Perfluorochemical (PFC) Blood Testing and Community Exposure
- Health Equity
- NH Youth Risk Behavior
- Occupational Health Surveillance Program

<https://wisdom.dhhs.nh.gov/>

WISDOM Integrated Data

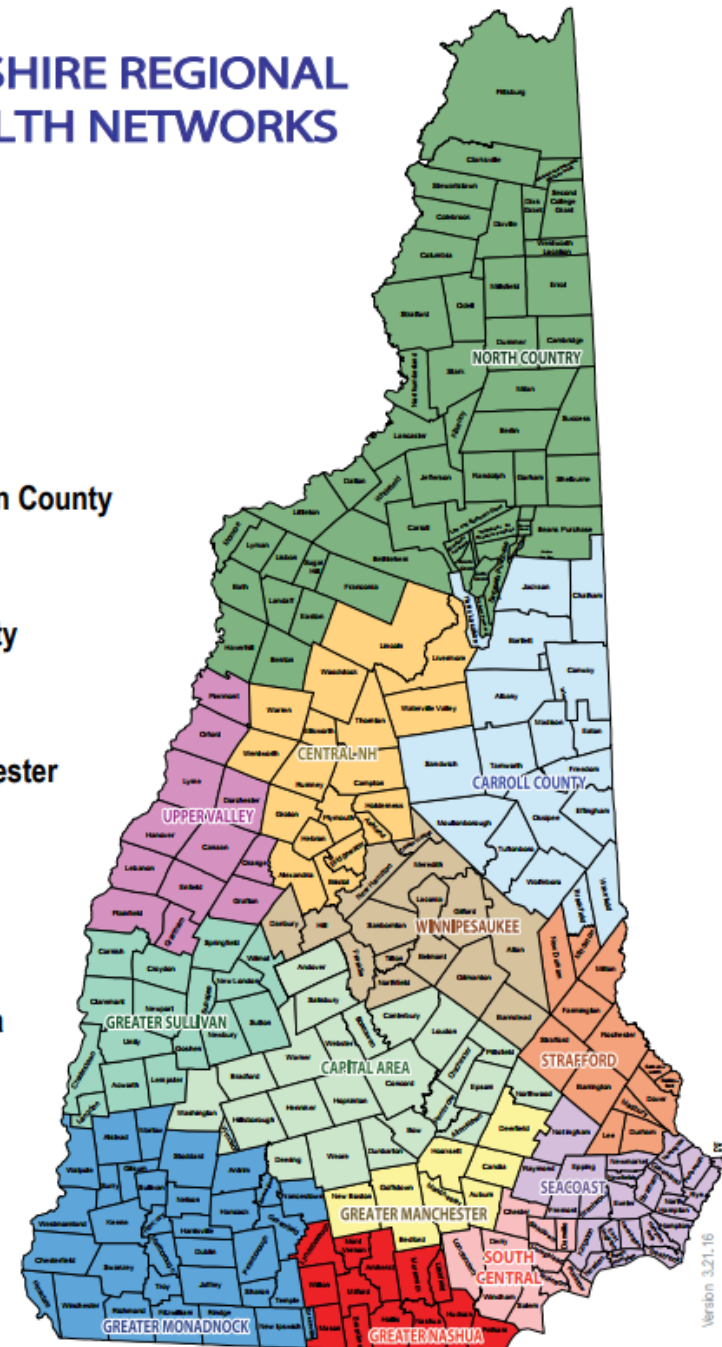
Data	Years Available
Air Quality (PM 2.5 and Ozone)	1999-2014 (Monitor only)
Behavioral Risk Factor Surveillance Survey (BRFSS)	2005-2015
Birth Conditions	2003-2010
Childhood Lead testing	2000-2013
National Survey on Drug Use and Health (NSDUH)	2003-2015
NH Hospital Discharge Data Set (In-State)	2000-2009; 2012-2015
NH Hospital Discharge Data Set (Out-of-State)	2000-2009
NH Population (Claritas)	2005-2017
NH State Cancer Registry (NHSCR)	2000-2014
NH Vital Records Birth Certificate	2000-2014
NH Vital Records Death Certificate	2000-2014
Pediatric Nutrition Surveillance System (PedNSS)	2007-2013
Third Grade Survey	2009, 2014
Youth Risk Behavior Surveillance System (YRBSS)	2007, 2009, 2011, 2013, 2015, 2017
Occupational Health Data	Varies based on dataset
PFC blood test results	2015-2016 (Varies based on location)

End-Users of WISDOM

- Programs within DPHS
- Regional PH Networks
- Local Health Departments
- Academic Partners
- Policy Makers
- General Public

NEW HAMPSHIRE REGIONAL PUBLIC HEALTH NETWORKS

- North Country
- Upper Valley
- Central NH
- Carroll County
- Greater Sullivan County
- Winnepesaukee
- Strafford County
- Capital Area
- Greater Manchester
- Seacoast
- Greater Monadnock
- Greater Nashua
- South Central



THESE REGIONS ARE USED FOR PUBLIC HEALTH PLANNING AND THE DELIVERY OF SELECT PUBLIC HEALTH SERVICES.

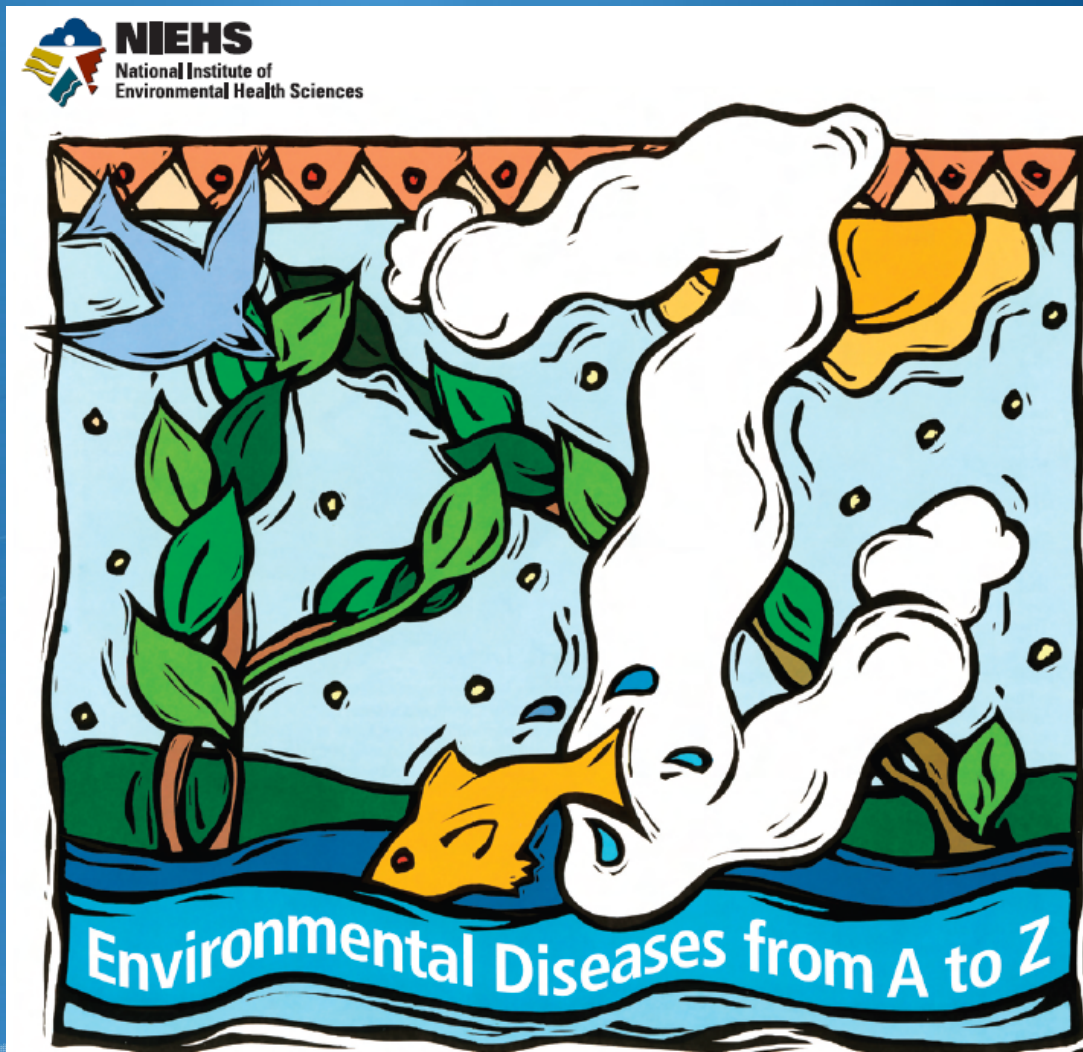
Environmental Diseases

National Institute of Environmental Health Sciences

- Asthma
- Birth Defects
- Cancer
- Heart Disease
- Occupational
- Kidney Disease
- Lead Poisoning
- Reproductive Health
- Skin Cancer
- Tooth Decay
- Waterborne Disease

Additional:

- Obesity/Diabetes
- Vector-borne Disease (Lyme)



Asthma

Asthma hospital visits (emergency dept.)

Age-adjusted rate; Female, Male; all ages; 2000-2015; NH hospitals only

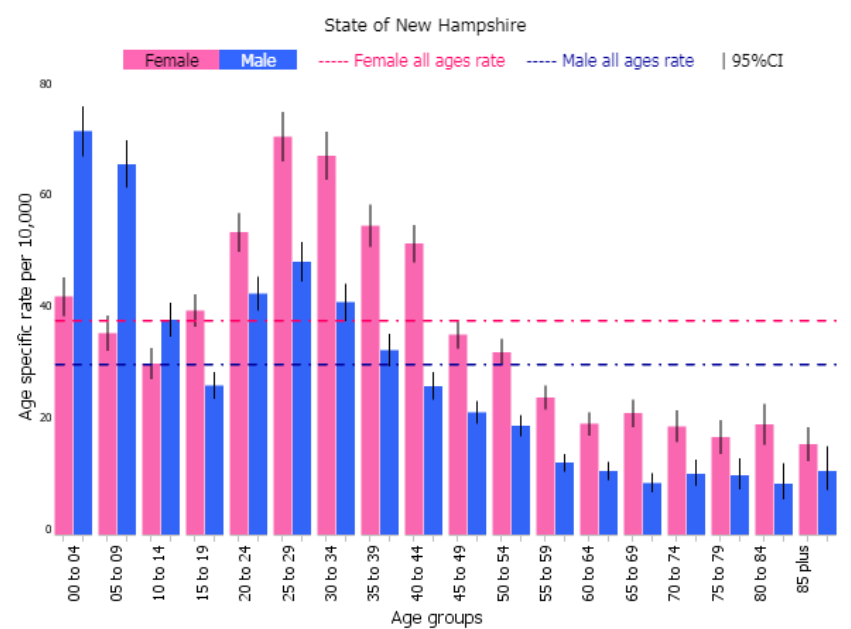


Due to data quality issues, the 2010 and 2011 data are not available.

Source: wisdom.dhhs.nh.gov

Asthma hospital visits (emergency dept.)

Age specific rate; Female, Male; all ages; 2012-2015 (4-year); NH hospitals only



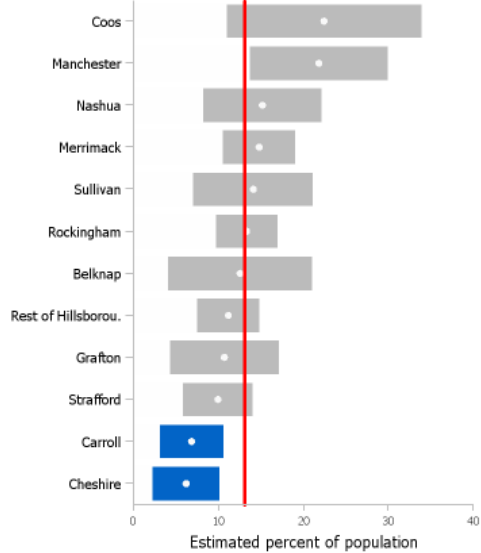
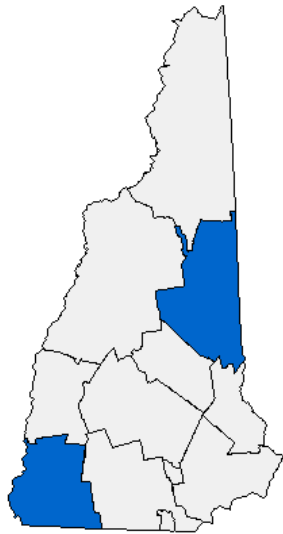
* Rates and counts are not displayed if fewer than 5 events are reported.

Source: wisdom.dhhs.nh.gov

Asthma

Asthma prevalence (adults)

Percent of adults who currently have asthma; Female
County with Manchester and Nashua; 2015



Significantly lower than state

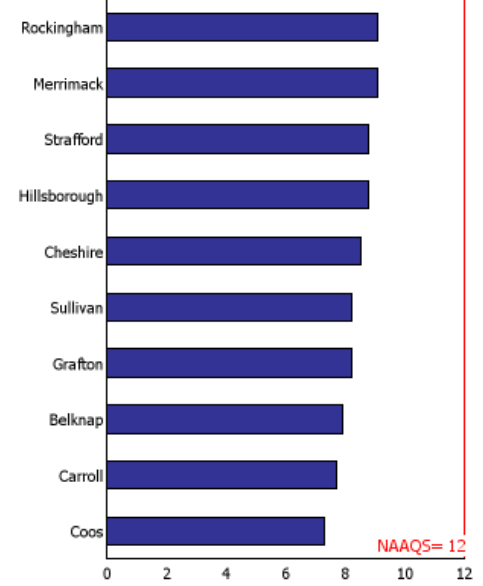
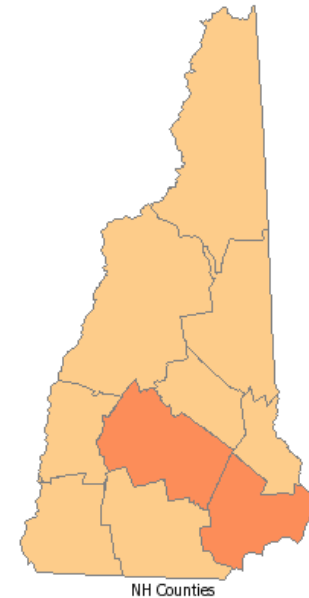
No difference than state

Significantly higher than state

Note: * State rate is computed with NH-specific ranked weight to compare with sub-state regions.
• Source: wisdom.dhhs.nh.gov

Fine particulates (PM2.5) - Annual levels

Annual PM2.5 level; 2011; Monitor and Modeled



NAAQS= 12

Annual PM 2.5 level (ug/m3)


0-3 No Data

• Source: wisdom.dhhs.nh.gov

Cancer

NH Health **WISDOM**

Home Asthma NH Environmental Public Health Tracking Program Cancer

 Cancer

Data

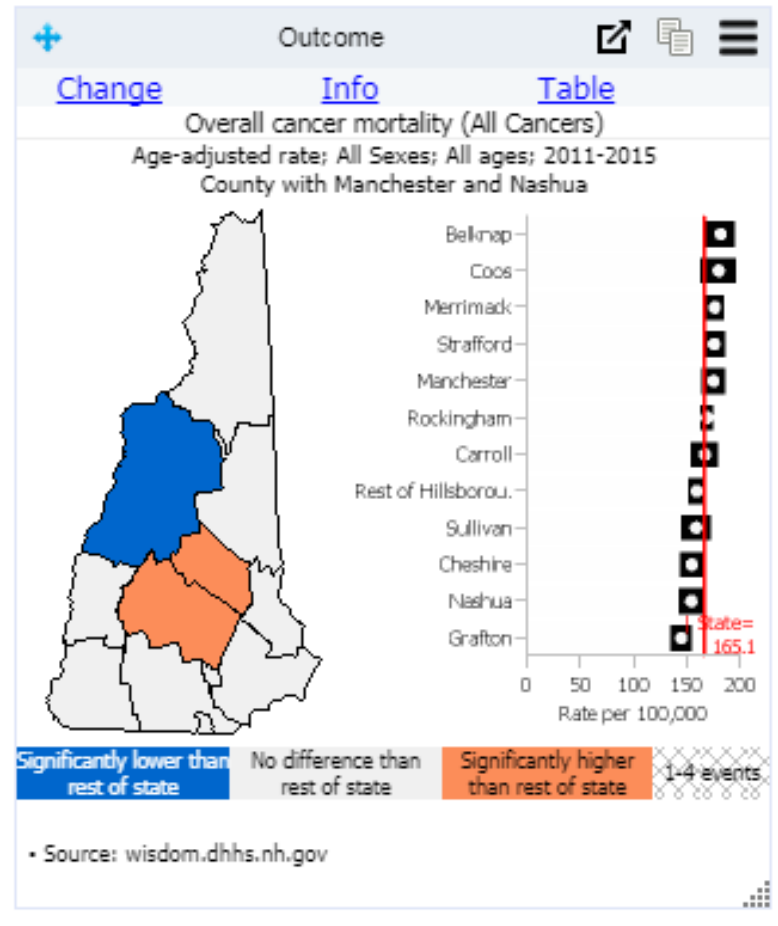
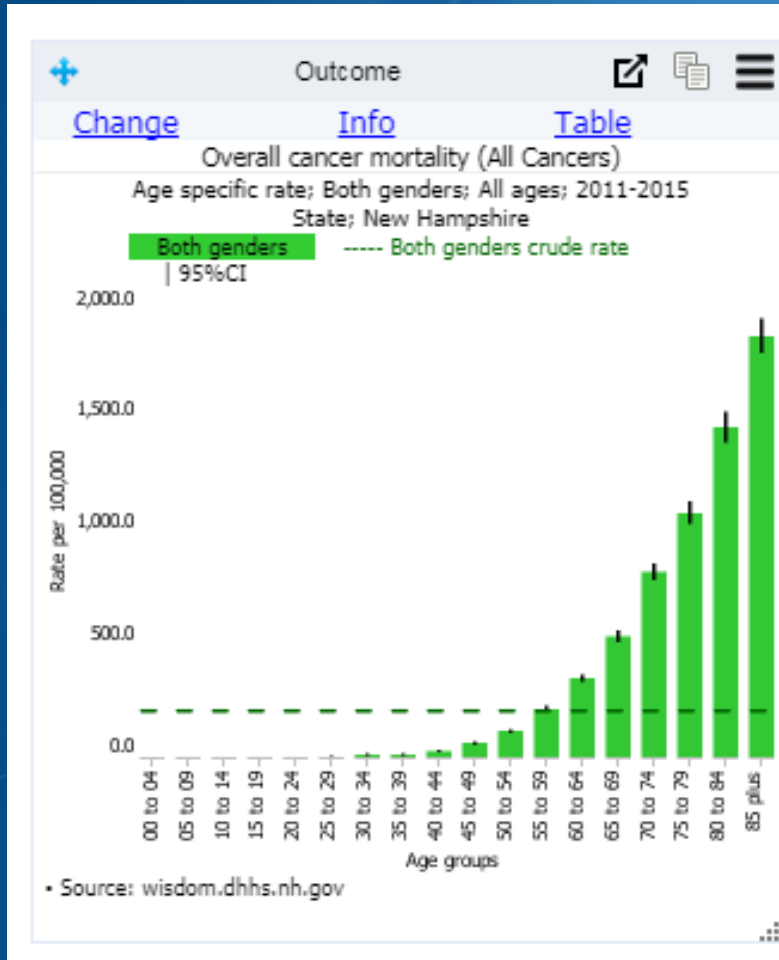
Interactive Dashboards

- [All Cancers](#)
- [Bladder](#)
- [Brain and Other Central Nervous System](#)
- [Breast*](#)
- [Cervical*](#)
- [Colorectal*](#)
- [Esophagus](#)
- [Hodgkin Lymphoma](#)
- [Kidney and Renal Pelvis](#)
- [Larynx](#)
- [Leukemia](#)
- [Liver and Intrahepatic Bile Duct](#)
- [Lung*](#)
- [Melanoma*](#)
- [Mesothelioma](#)
- [Multiple Myeloma](#)
- [Non-Hodgkin Lymphoma](#)
- [Oral Cavity & Pharynx](#)
- [Ovarian](#)
- [Pancreatic](#)
- [Prostate*](#)
- [Stomach](#)
- [Testicular](#)
- [Thyroid](#)
- [Uterine](#)

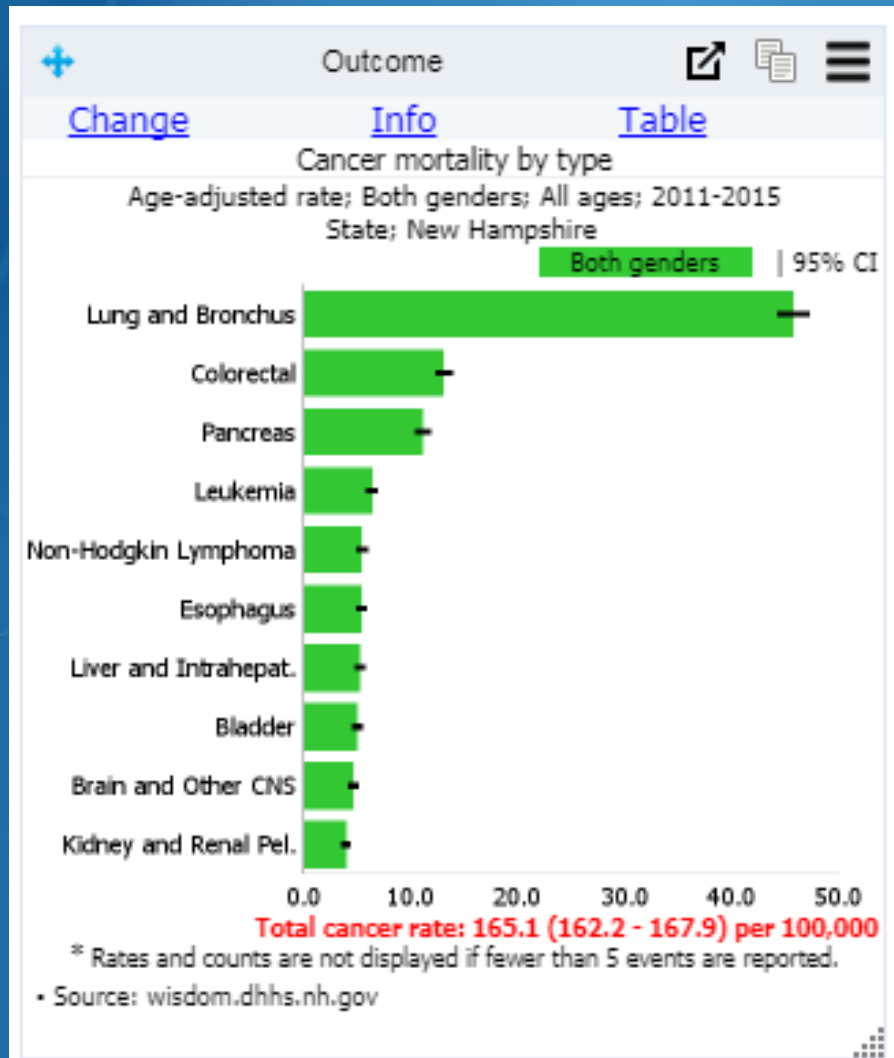
Community Profile

- [Breast \(female\) cancer community profile](#)
- [Colorectal cancer community profile](#)
- [Melanoma of skin community profile](#)
- [Cervical cancer community profile](#)
- [Lung cancer community profile](#)
- [Prostate cancer community profile](#)

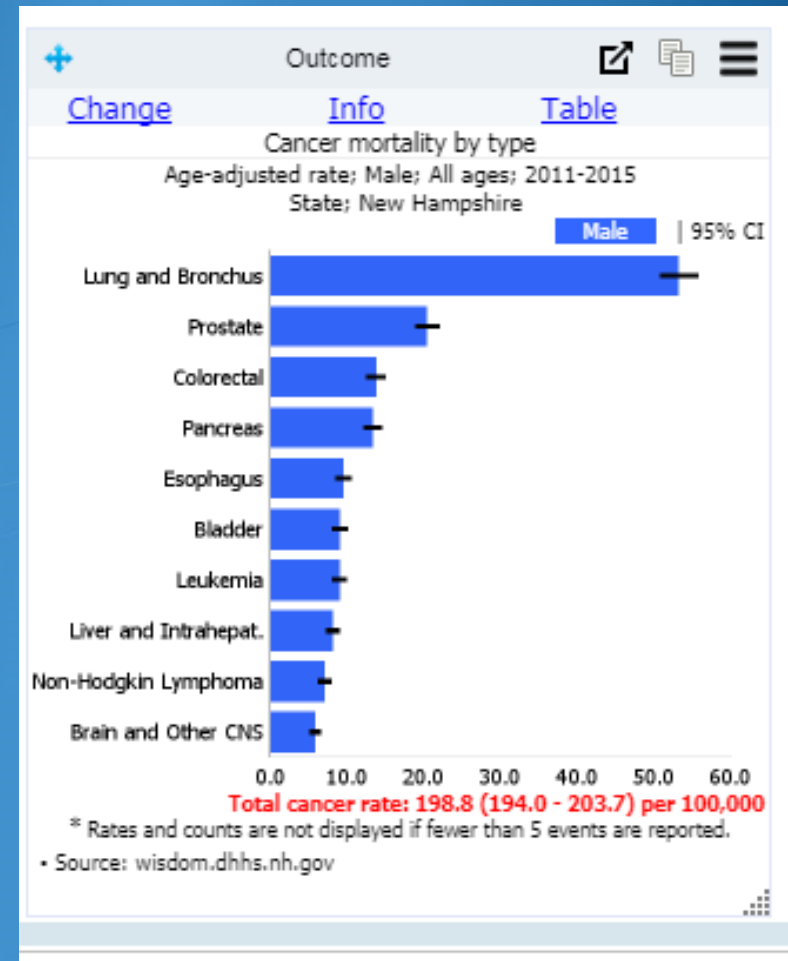
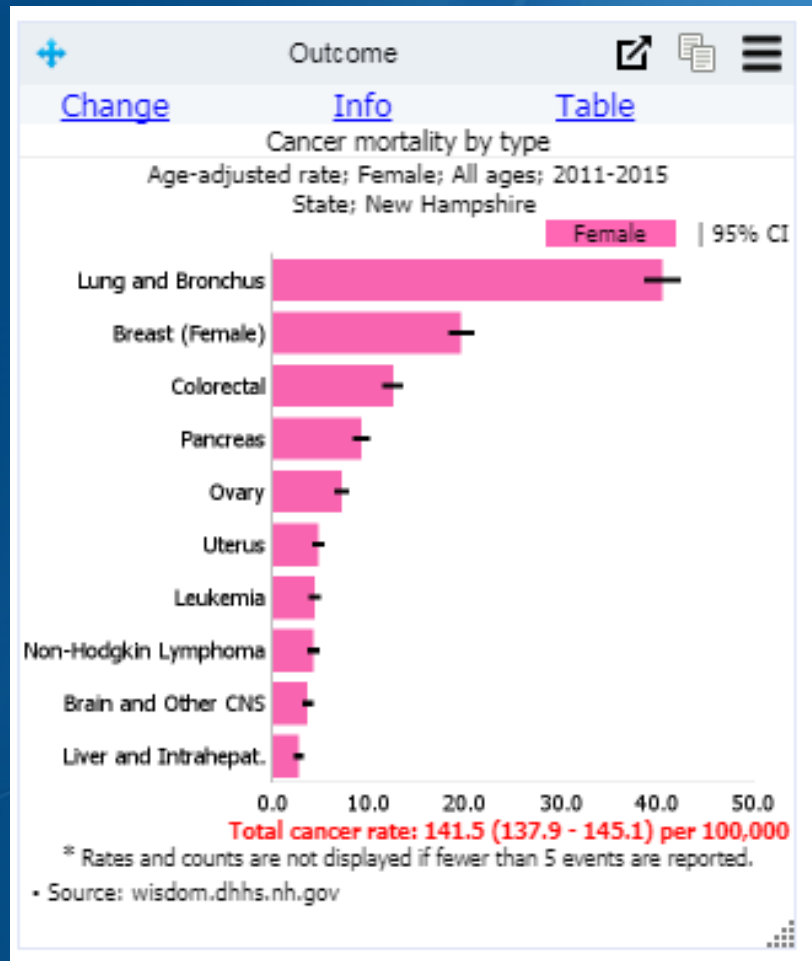
Overall Cancer Mortality



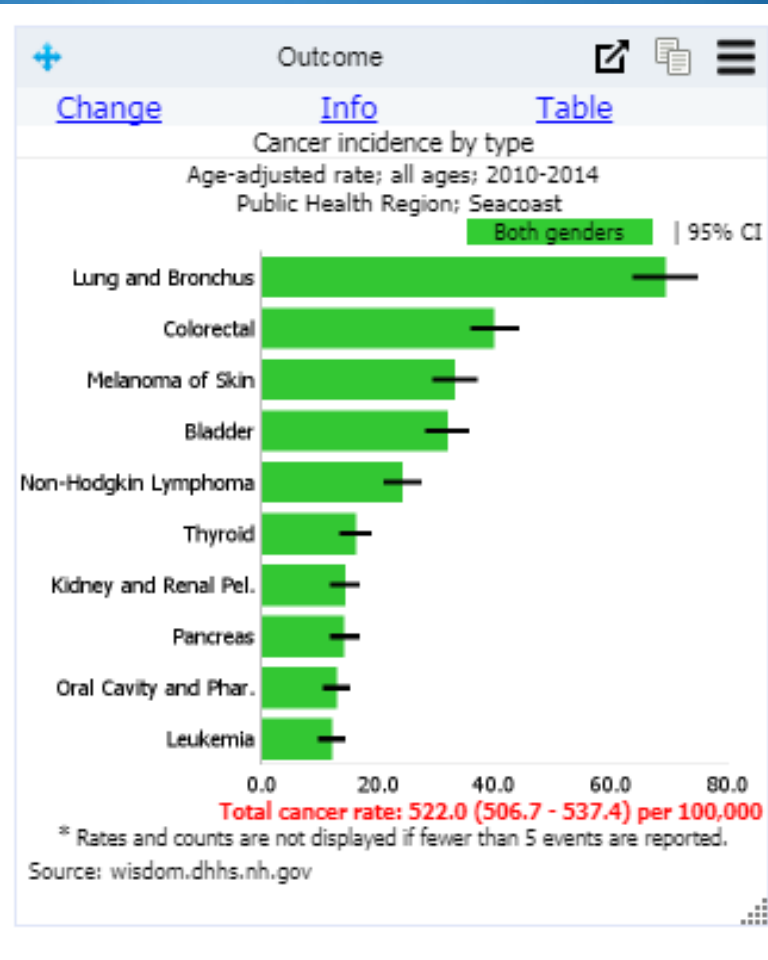
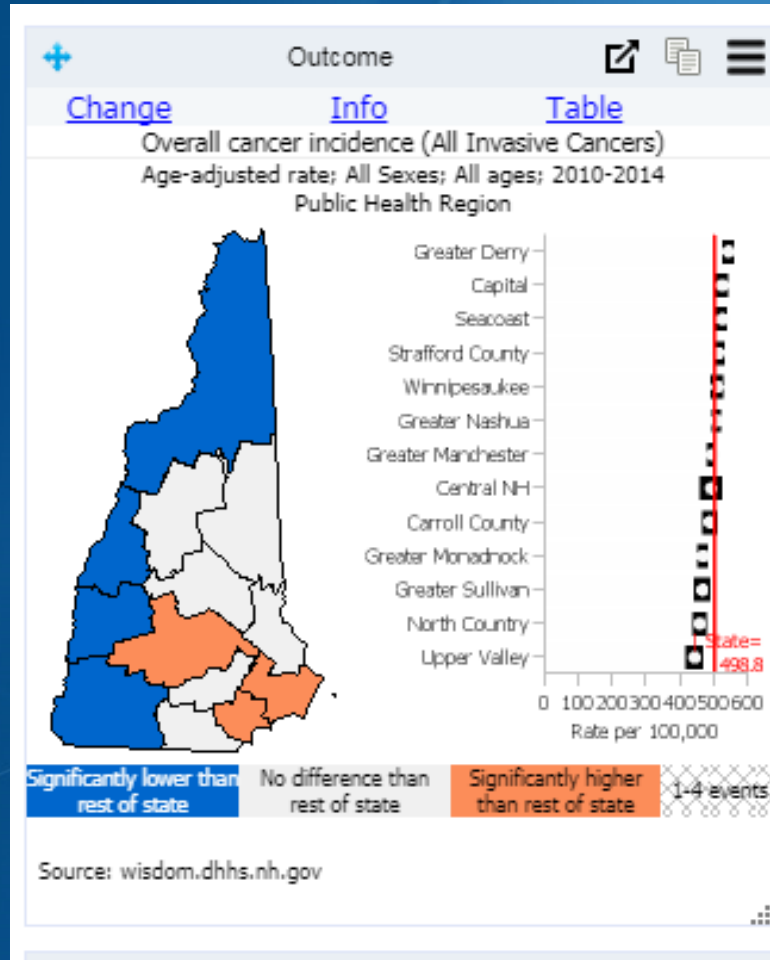
Overall Cancer Incidence by Type Across Years



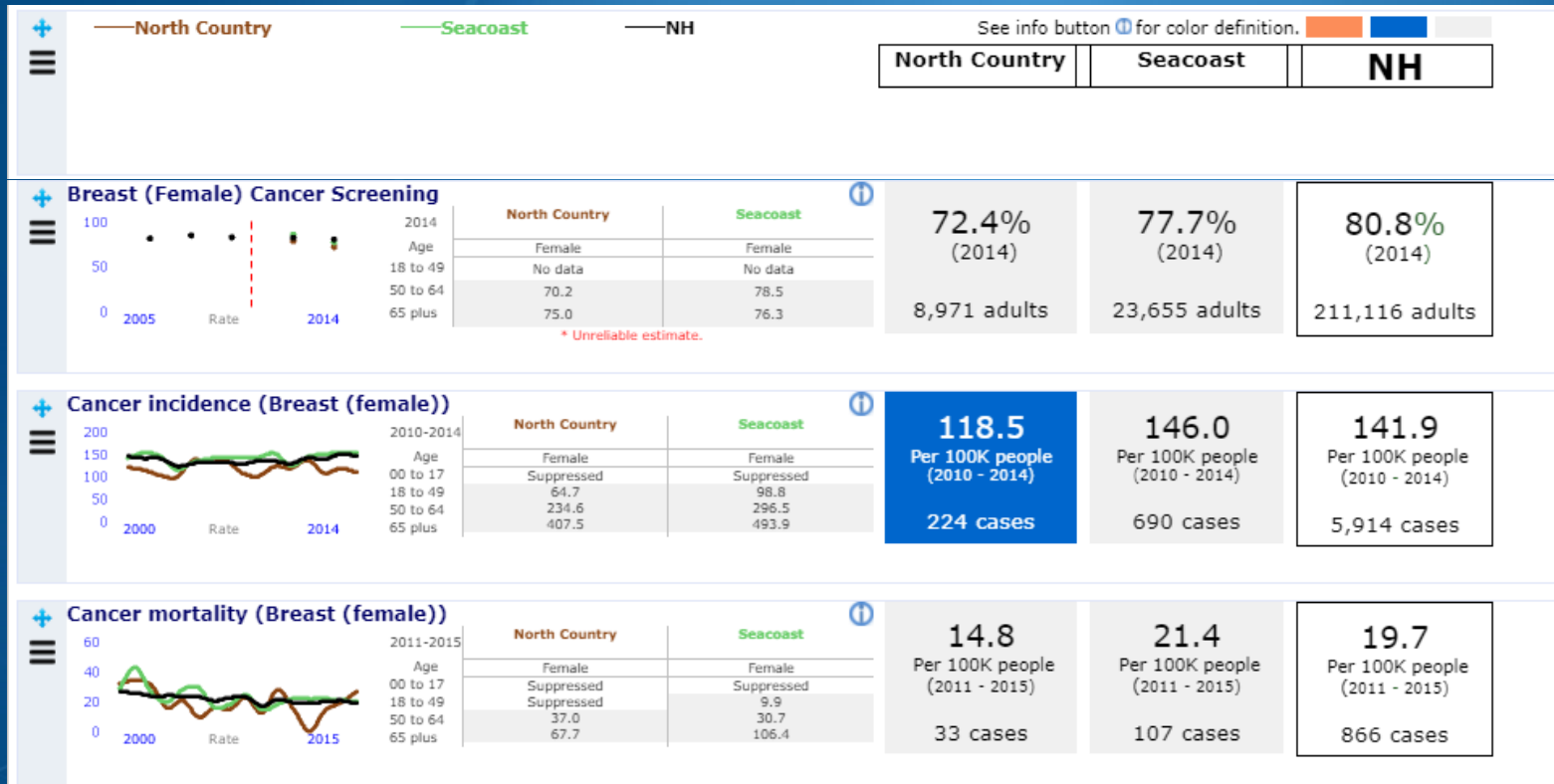
Overall Cancer Incidence by Type Across Years (Female vs. Male)



Cancer Across the Public Health Networks



Cancer Community Profiles



Studying known exposures: Arsenic and Bladder Cancer



NEWS RELEASES

Monday, May 2, 2016


Elevated bladder cancer risk in New England and arsenic in drinking water from private wells

A new study has found that drinking water from private wells, particularly dug wells established during the first half of the 20th century, may have contributed to the elevated risk of bladder cancer that has been observed in Maine, New Hampshire, and Vermont for over 50 years. Other risk factors for bladder cancer, such as smoking and occupational exposures, did not explain the excess risk in this region. The study, by researchers at the National Cancer Institute (NCI), part of the National Institutes of Health, and colleagues at the Geisel School of Medicine at Dartmouth, Hanover, New Hampshire; the departments of health for Maine, New Hampshire, and Vermont; and the U.S. Geological Survey, appeared May 2, 2016, in the Journal of the National Cancer Institute.

Institute/Center

[National Cancer Institute \(NCI\)](#)

Contact

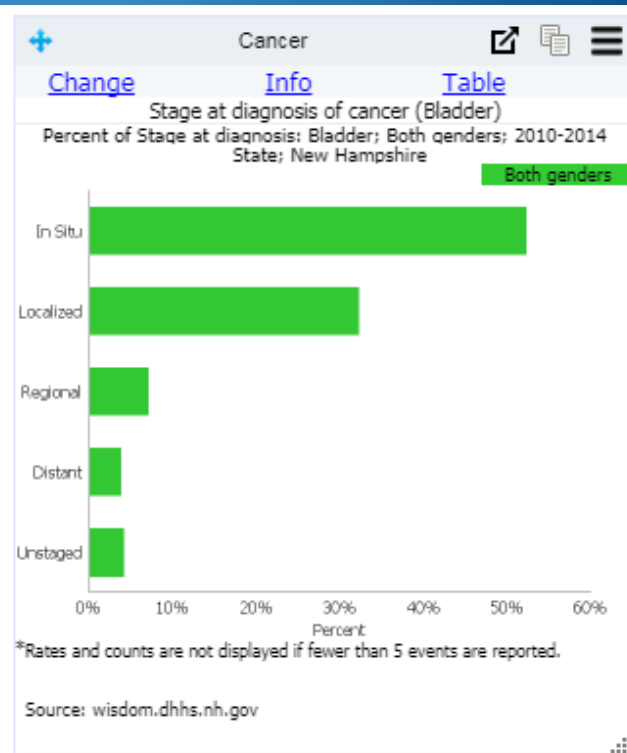
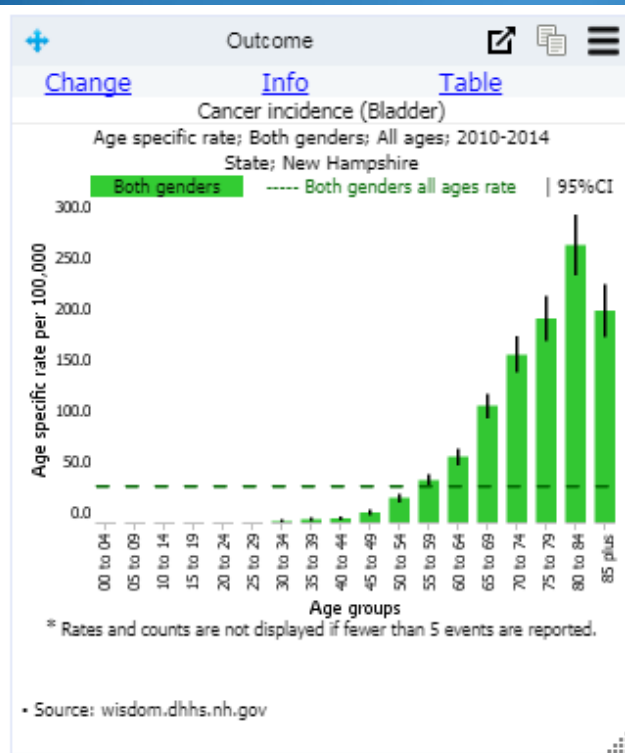
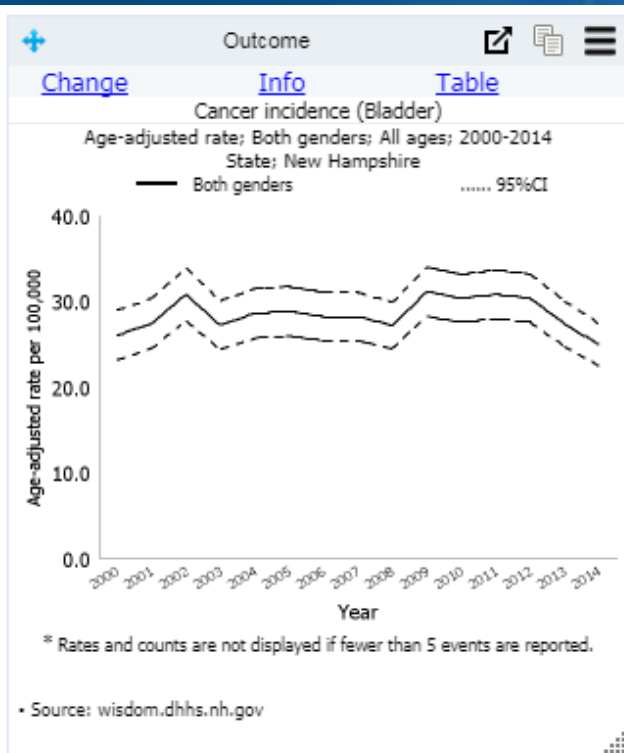
[NCI Press Officers](#) 
301-496-6641

Connect with Us

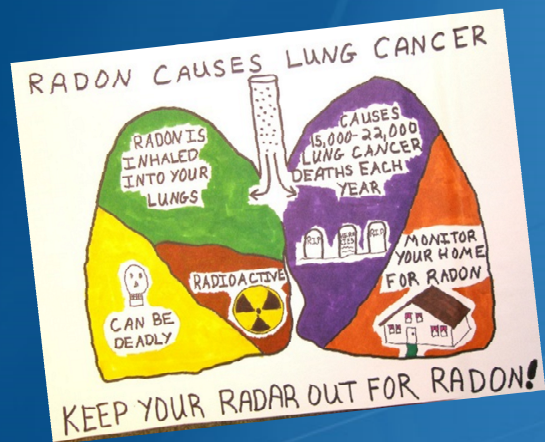
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Bladder Cancer



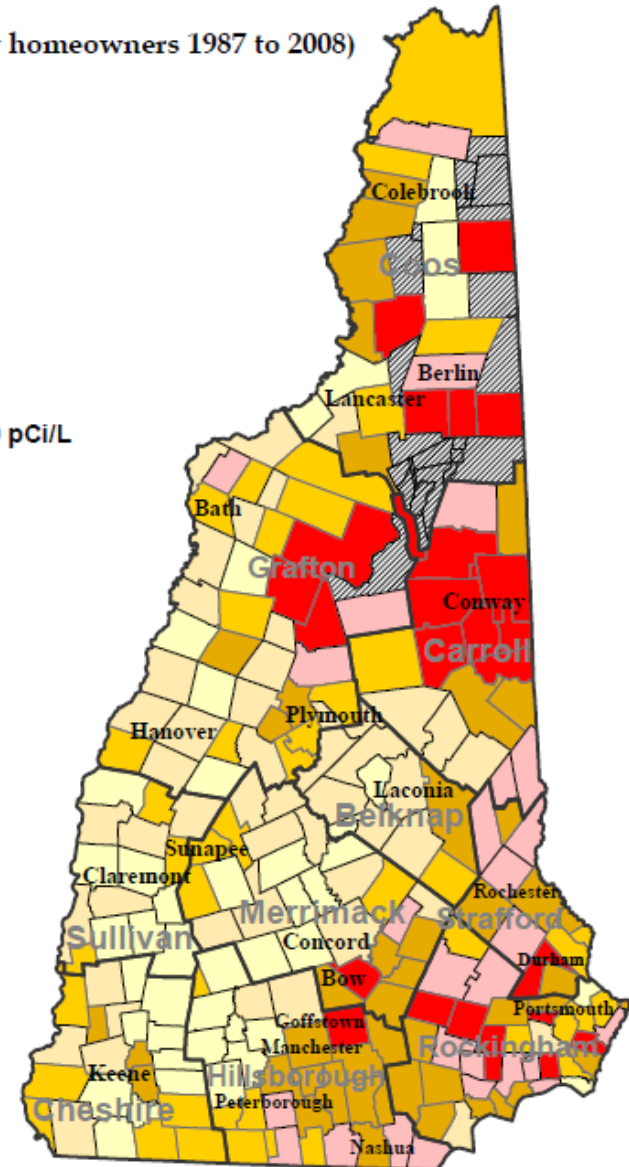
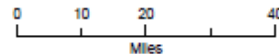
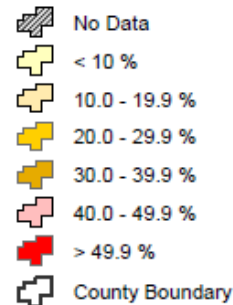
Studying known exposures: Radon and Lung Cancer



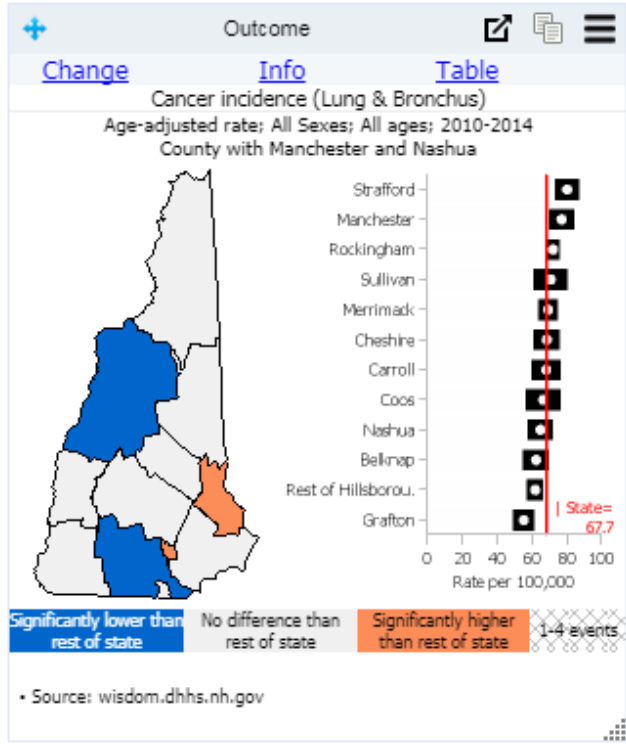
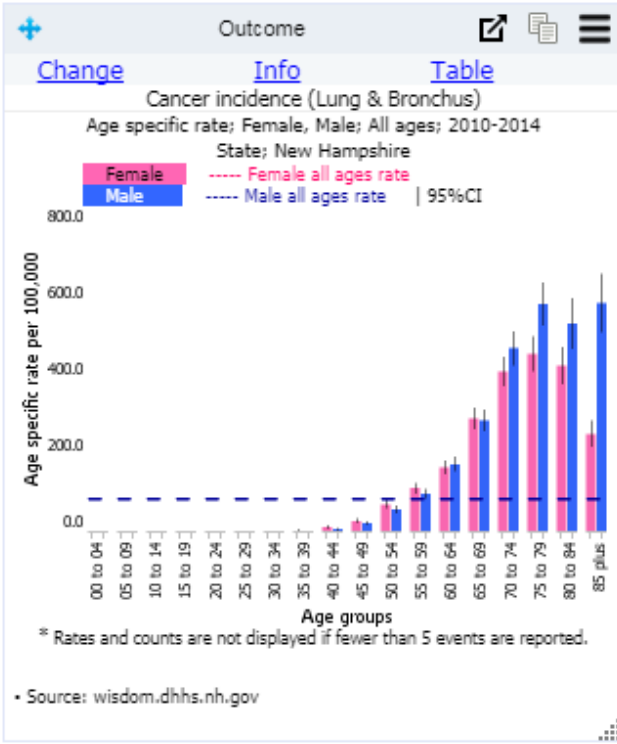
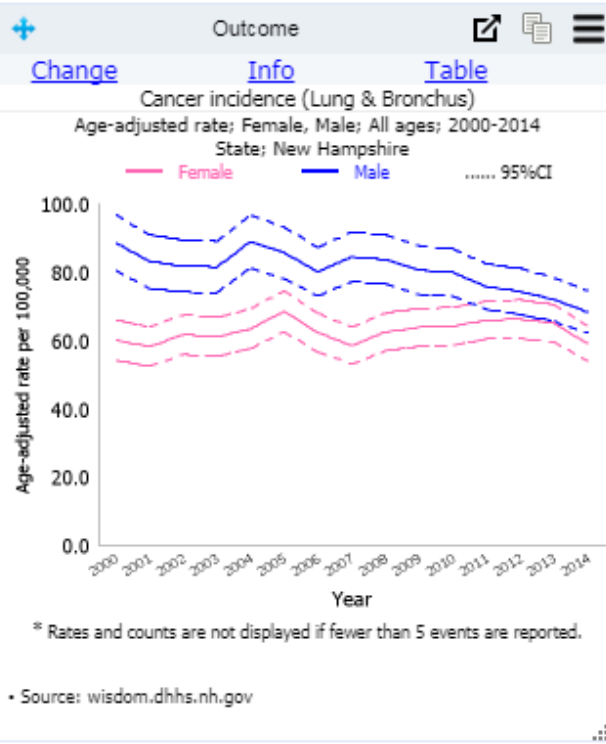
Percent of Tested Homes at or Above The Radon Action Level of 4.0 pCi/L

(24,000 homes tested by homeowners 1987 to 2008)

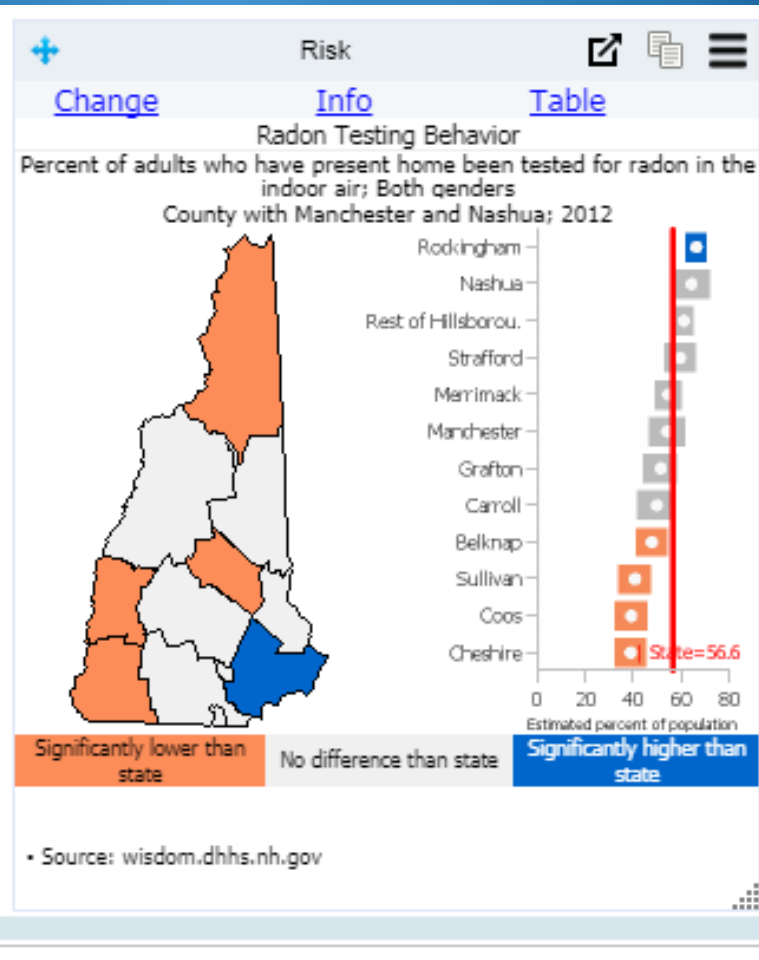
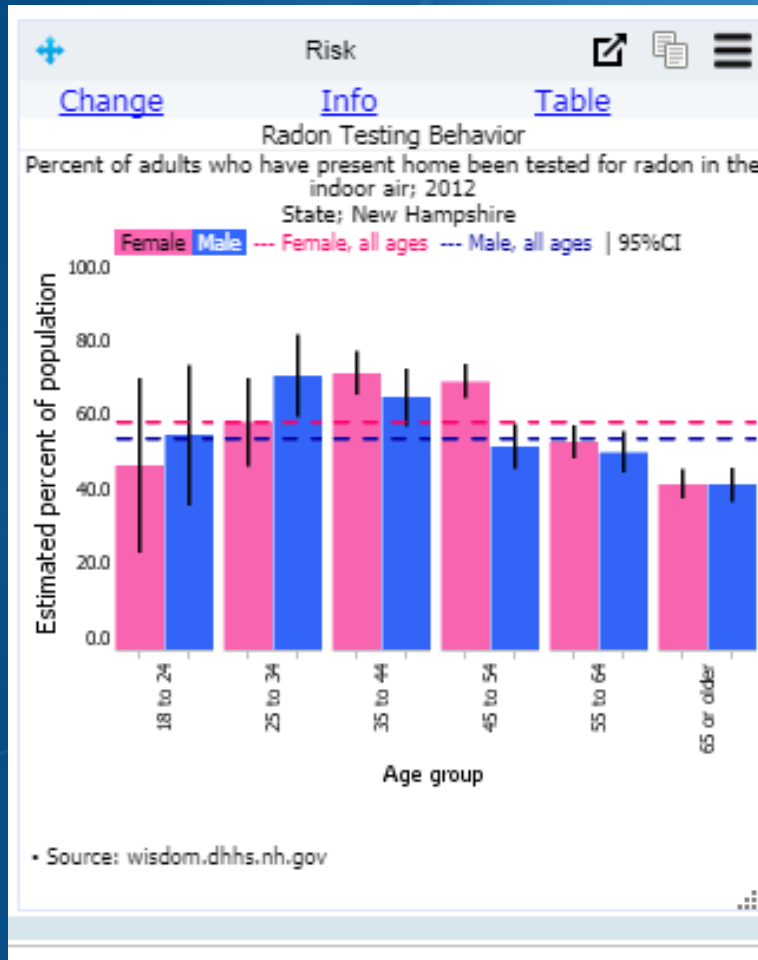
% of Tests at or Above 4.0 pCi/L



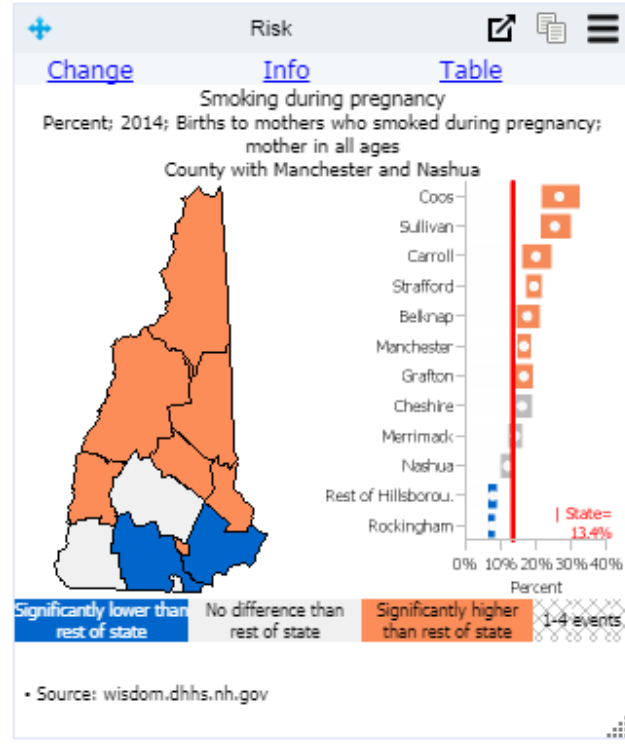
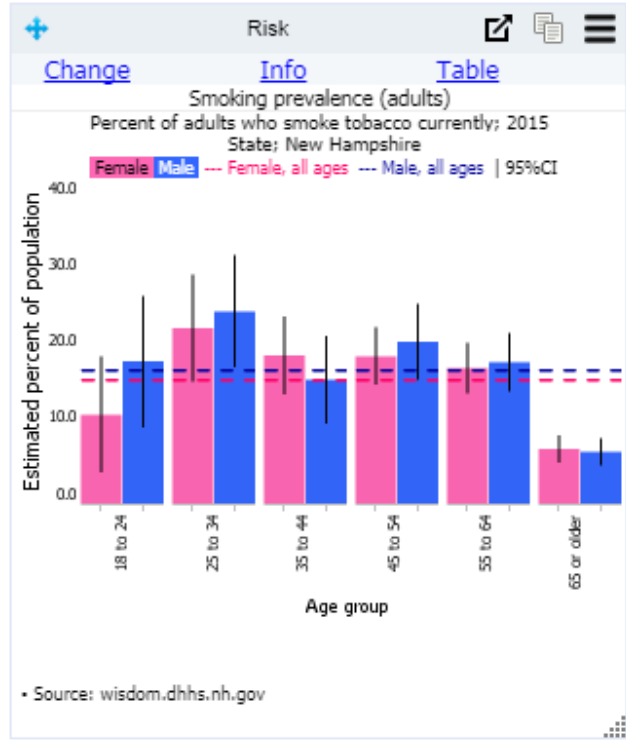
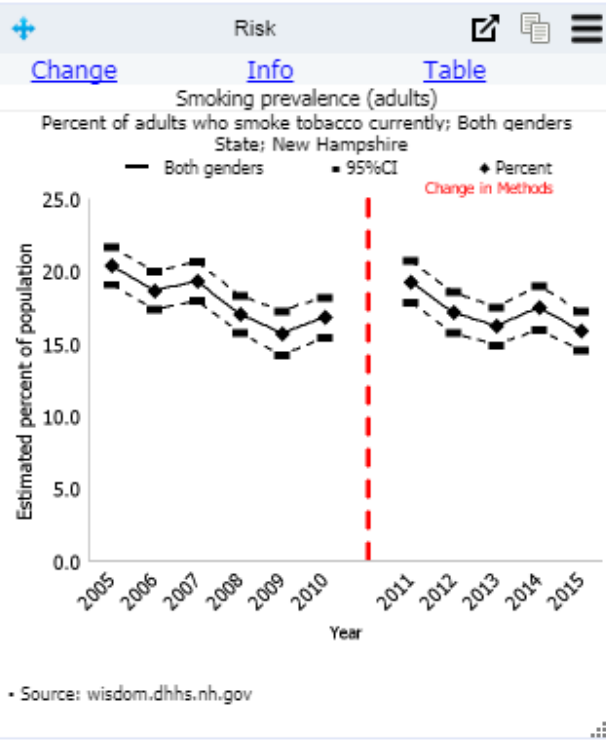
Lung Cancer



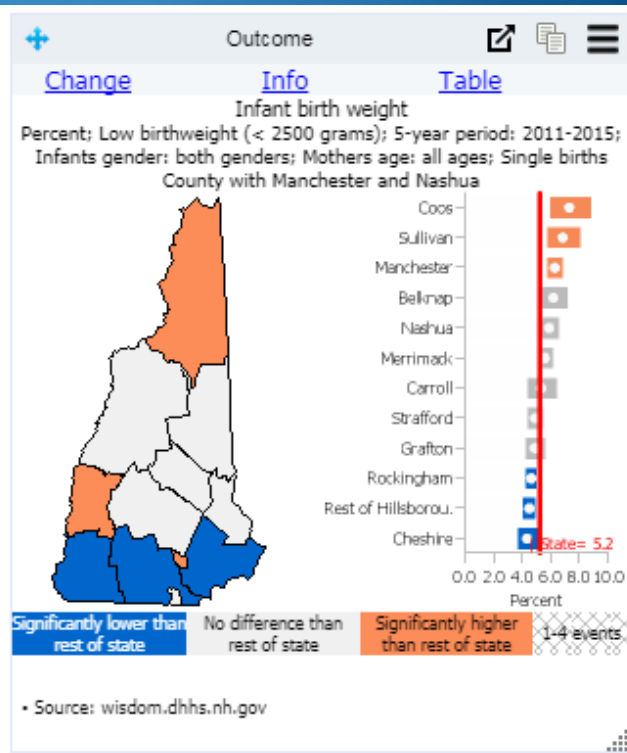
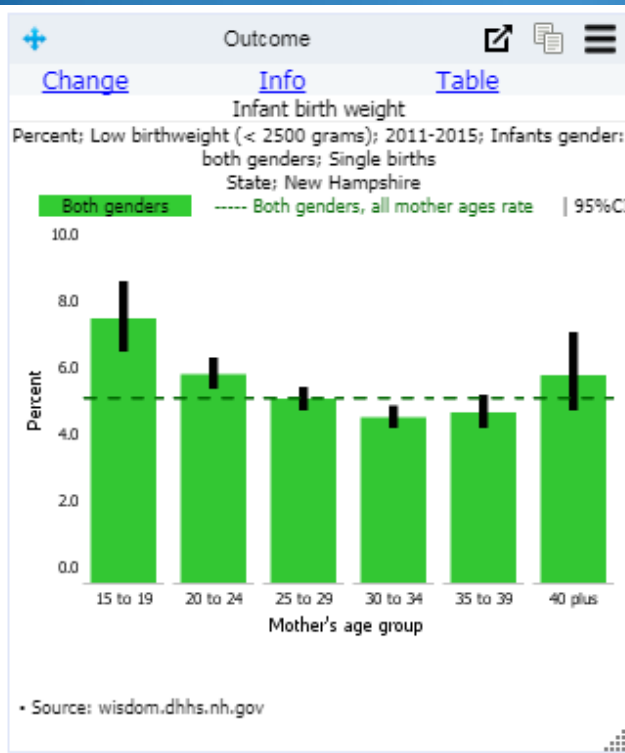
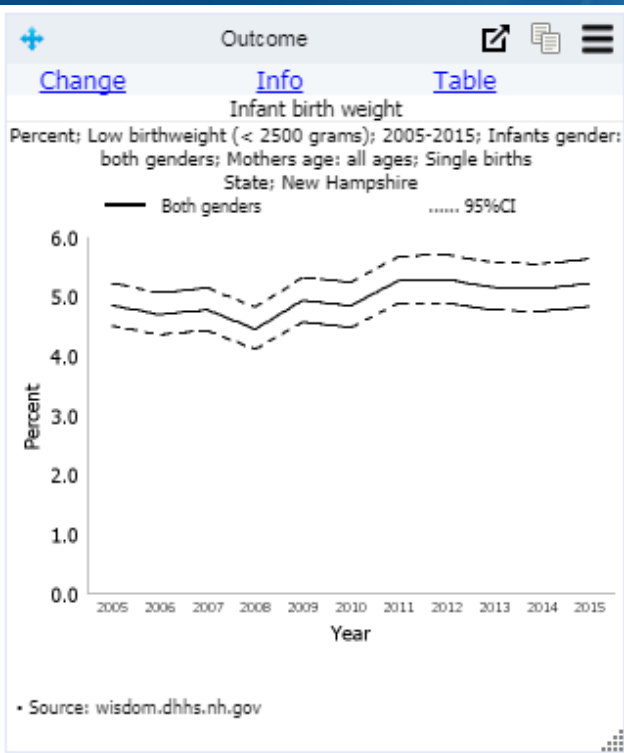
Lung Cancer (and Radon)



Lung Cancer (and Radon & Smoking)



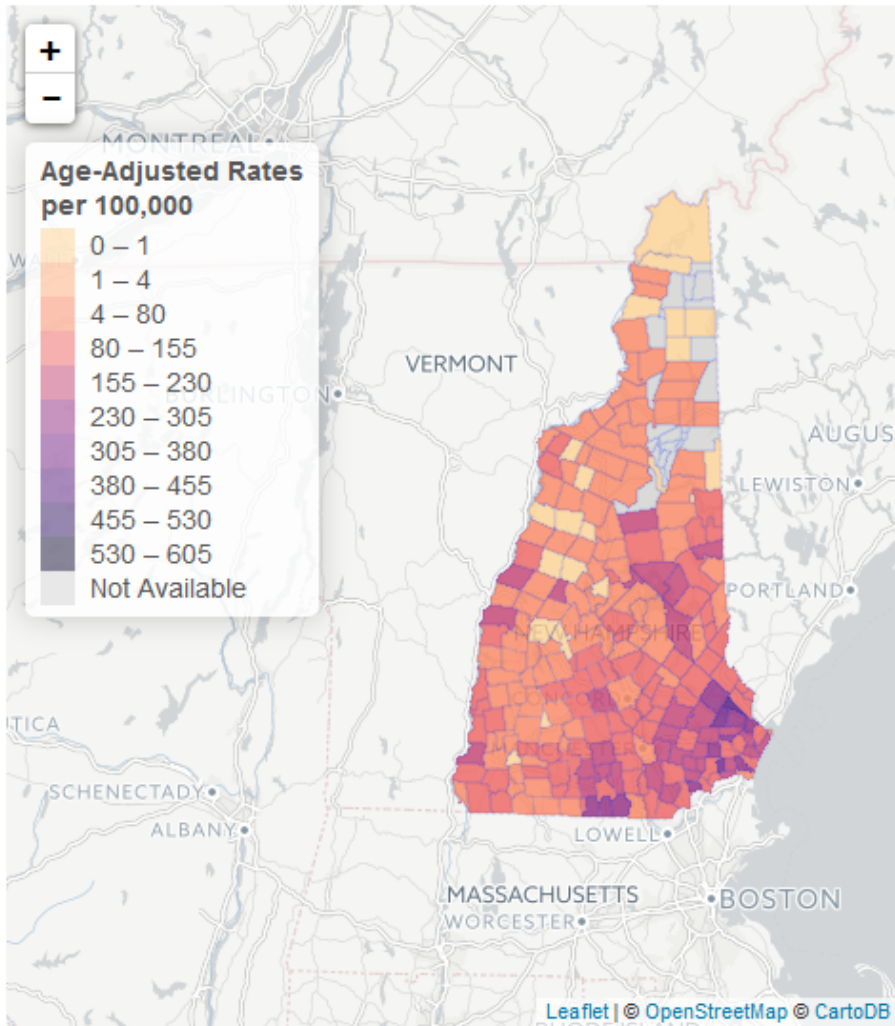
Reproductive Health – Low Birthweight



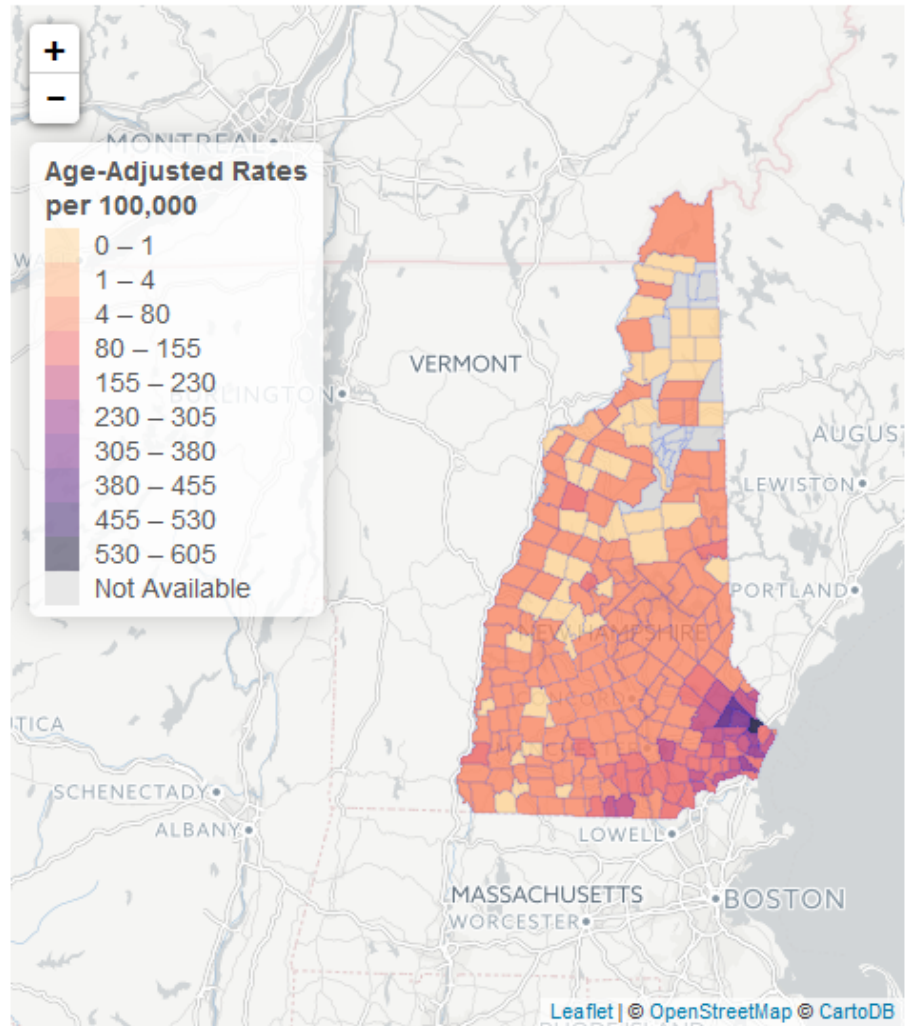
Vector-borne Disease – Lyme Disease

Outcome

Lyme Disease Incidence by Town 2010-2014
(Confirmed & Probable Age-Adjusted Rates)



Lyme Disease Incidence by Town 2005-2009
(Confirmed & Probable Age-Adjusted Rates)



Emerging Concerns - PFCs



Perfluorochemical (PFC) Blood Testing and Community Exposure

Data

Interactive Dashboards

[Pease PFC Blood Testing Program \(2015\)](#)

[Pease PFC Blood Testing Program \(2016\)](#)

[Southern New Hampshire PFC Blood Testing Program](#)

NH Health WISDOM performs best when using Google Chrome, Mozilla Firefox, Microsoft Edge or Internet Explorer 11.

About PFCs

How are people exposed to PFCs?

PFCs are synthetic chemicals that have been widely used to make a range of household and commercial products including stain resistant furniture, carpeting, and clothing; water-repellant fabrics; and grease-resistant food packaging. Because of this widespread use, most people have been exposed to these chemicals in their everyday lives, usually through oral ingestion, and when tested, almost all people have detectable levels of PFCs in their blood. If someone's drinking water has these chemicals, their blood levels are likely higher than the average U.S. resident.

How long do PFCs stay in the body?

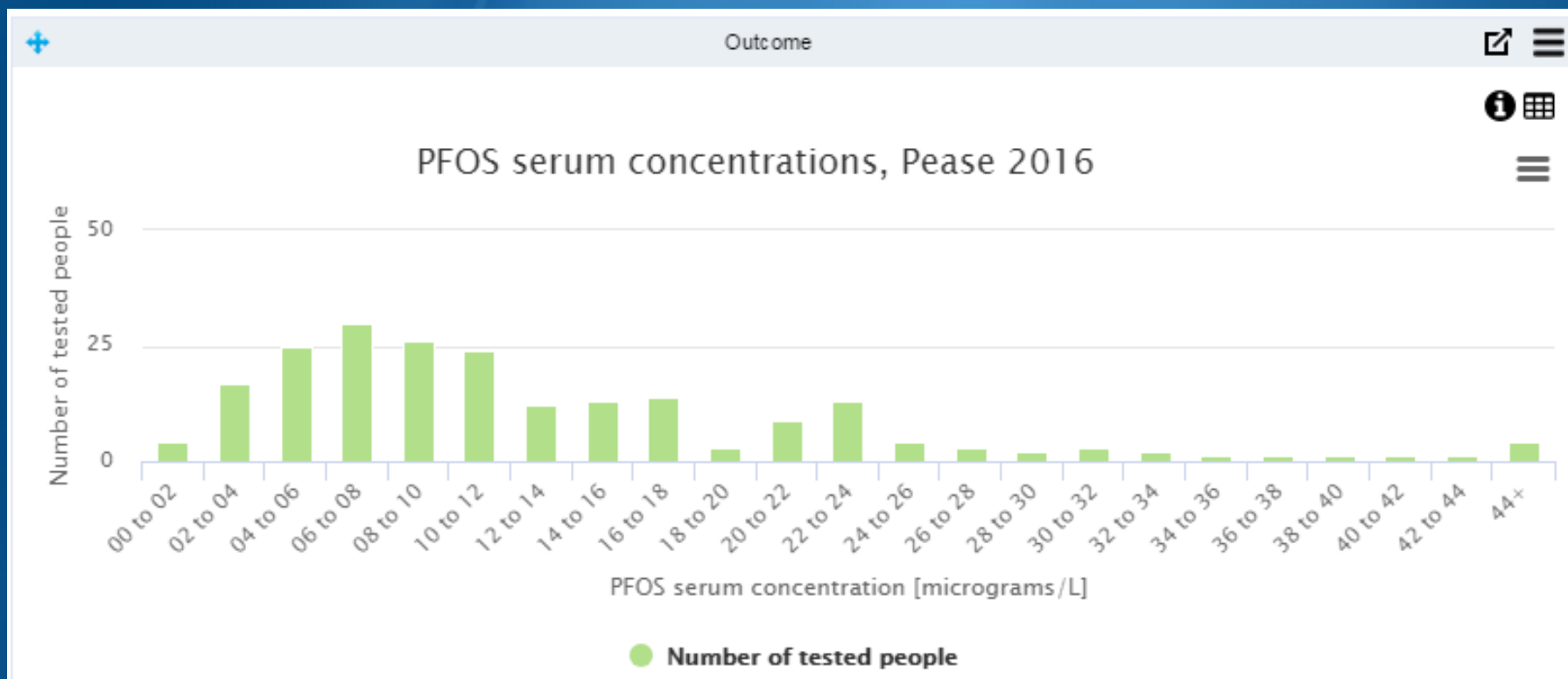
Some PFCs remain in a person's blood for a very short amount of time, whereas others can remain for years. Once exposures are removed, PFCs, such as perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), decline naturally in a person's blood by about half every 4-5 years; perfluorohexane sulfonic acid (PFHxS) declines by about half every 7-8 years. There is no known medical procedure to remove PFCs from your body more quickly than occurs naturally over time.

Are there health effects known to be associated with PFCs?

Some human health studies have found associations between PFC exposure and health effects and others have not, therefore conclusions cannot be made with certainty about any health effects caused by PFCs at this time. Because of this uncertainty, further research is necessary, and a variety of potential health effects in humans are currently being studied. Studies include how PFCs might affect growth and development, liver function, hormone levels, cholesterol levels, and occurrence of some types of cancers. **More information can be found on the Department of Health and Human Services [website](#).**

If you have additional questions, contact the DHHS Public Inquiry Line at (603)271-9461 or at PFCtesting@dhhs.nh.gov.

Monitoring Exposure in Blood



Outcome

Average PFOS serum concentrations Comparison of Pease 2016 to general U.S. population

	Number of people	5th percentile of serum concentrations [µg/L]	Average of serum concentrations [µg/L]	95th percentile of serum concentrations [µg/L]
Pease 2016 group to date	210	3.0	10.2	29.5
U.S. population (NHANES 2011-2012)	1904	1.4	6.3	24.8

- Among people tested so far in the Pease 2016 group, the average PFOS level is 3.9 µg/L higher than the general U.S. population. This may change as more serum test results are returned.

Future Directions

- Scale
 - Explore validity of data at finer geographic scales (e.g., Town).
 - **This will require high-quality address data!**
- Content Development
 - Integrate more exposure data (e.g., air quality data; well water data; hazardous waste sites)
 - Integrate additional health data (e.g., PRAMS survey; biomonitoring data)
 - **This will require additional resources (staff, funding, etc.)**
- Integration
 - Launch Environmental Health Task Force to bring together experts across DPHS and DES
 - **This will require DoIT Support!**

WISDOM Demo

<https://wisdom.dhhs.nh.gov/>

Thank You!

Questions? Comments? Feedback?

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