

PFAS: Where We Are and Where We're Going

Dr. Pat Breysse, Director NCEH/ATSDR
MA State Legislative Taskforce on PFAS
August 3, 2021

Agency for Toxic Substances and Disease Registry (ATSDR)

- **Established by Superfund Act in 1980**
 - Identifies human health effects of hazardous substances
 - Works directly with communities
 - Responds to environmental health emergencies
 - Conducts exposure assessments, public health assessments and studies
 - Provides guidance to health departments and practitioners

- **Key strategies:**
 - Build capacity in states, tribes and localities
 - Monitor and investigate hazardous exposures
 - Develop science-based tools and resources
 - Conduct risk communication activities



Our Role in Addressing PFAS



- Investigate exposure to PFAS and possible health effects associated with PFAS



- Address community health concerns



- Take action on the basis of scientific information



- Provide information to communities and healthcare providers so they may take action

PFAS Background

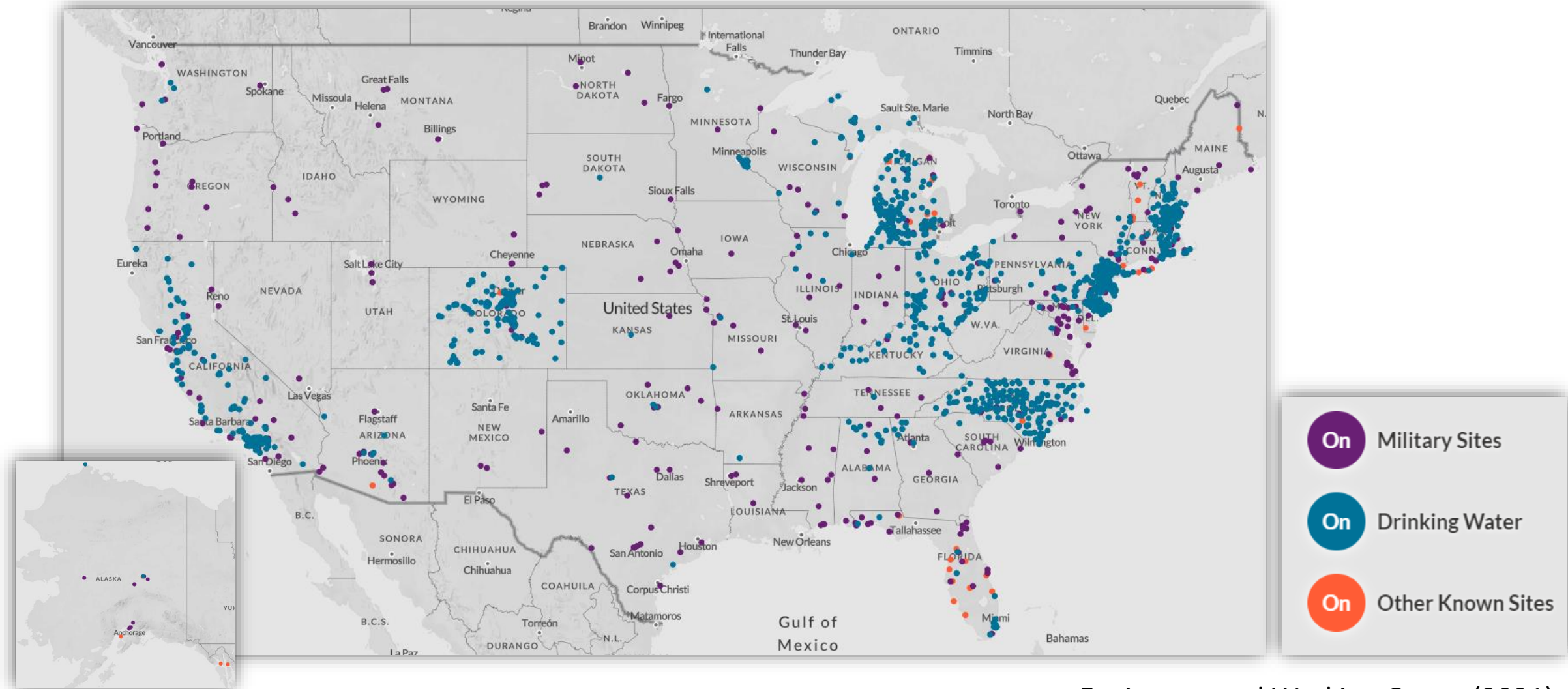
- Class of approximately 5,000 **man-made chemicals** used in a variety of consumer products
- PFAS **do not break down** in the environment or in humans
- Approximately 6 million people have been exposed to PFAS in drinking water above EPA health advisory levels
- In 1999, CDC's NHANES was the first to document **widespread exposure PFAS** in the US (>98%)
- ATSDR has been involved in PFAS exposure investigations since 2010



Sources of PFAS Exposure







- People can be exposed to PFAS by
 - Drinking contaminated municipal water or private well water
 - Eating fish caught from water contaminated by PFAS (PFOS in particular)
 - Accidentally swallowing contaminated soil or dust
 - Eating food that was packaged in material that contains PFAS
 - Using some consumer products such as non-stick cookware, stain resistant carpeting, and water repellant clothing.

PFAS Contamination: 2,337 Locations in 49 States

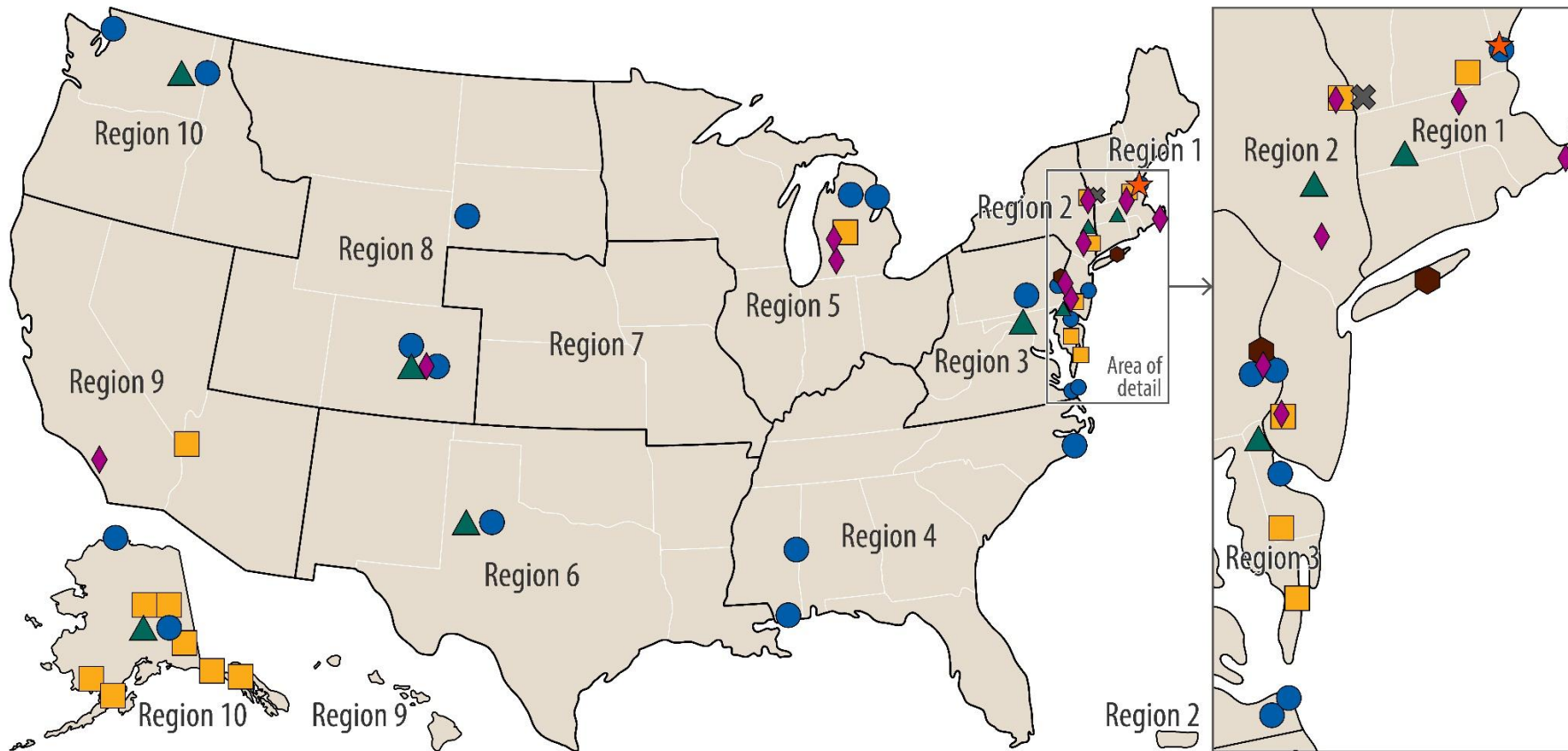


Environmental Working Group (2021)

Research involving humans suggests that high levels of certain PFAS may lead to the following:

-  Increased cholesterol levels
-  Changes in liver enzymes
-  Small decreases in infant birth weights
-  Decreased vaccine response in children
-  Increased risk of high blood pressure or pre-eclampsia in pregnant women
-  Increased risk of kidney or testicular cancer

ATSDR has 28 active PFAS projects, including 9 research studies in addition to its site-based activities nationwide



- ATSDR or state lead (funded under cooperative agreement)
- ATSDR or state lead (cooperative agreement) and Department of Defense site
- ✕ ATSDR support of site work conducted by a state not funded by the cooperative agreement program
- ◆ ATSDR-funded Multi-site Study locations
- ▲ PFAS Exposure Assessment Site
- ◆ PFAS Exposure Assessment Technical Tools (PEATT) Pilot Site
- ★ ATSDR-led health study (Pease Site)

LONG-TERM OBJECTIVES

- 1 Understand the where, how, and to what degree exposure is occurring in affected communities
- 2 Examine the relationship between PFAS exposure and health effects
- 3 Identify and implement strategies to prevent and/or reduce exposure

Exposure Assessments

Overview:

- 2018 NDAA tasked ATSDR with conducting exposure assessments in no fewer than eight former/current military sites with high levels of PFAS in the drinking water
- ATSDR has enrolled participants and collected biological (i.e., blood and urine) samples at all sites
- ATSDR also funded two exposure assessments in Pennsylvania and New York to pilot the PFAS Exposure Assessment Technical Tools (PEATT)

Objectives:

- Determine serum PFAS concentrations in the community and understand how they compare to the general population
- Generate information about risk factors for exposures to PFAS through drinking water, food pathways, and contact with contaminated soil
- Communicate and engage with community members to encourage participation and enhance transparency



1. Berkeley County, WV
2. Bucks & Montgomery Counties, PA
3. El Paso County, CO
4. Fairbanks North Star Borough, AK
5. Hampden County, MA
6. Lubbock County, TX
7. New Castle County, DE
8. Orange County, NY
9. Spokane County, WA
10. Westhampton, NY

POPULATION



Over 2,000 adults and children living in 10 selected sites

PFAS Exposure Assessments Progress



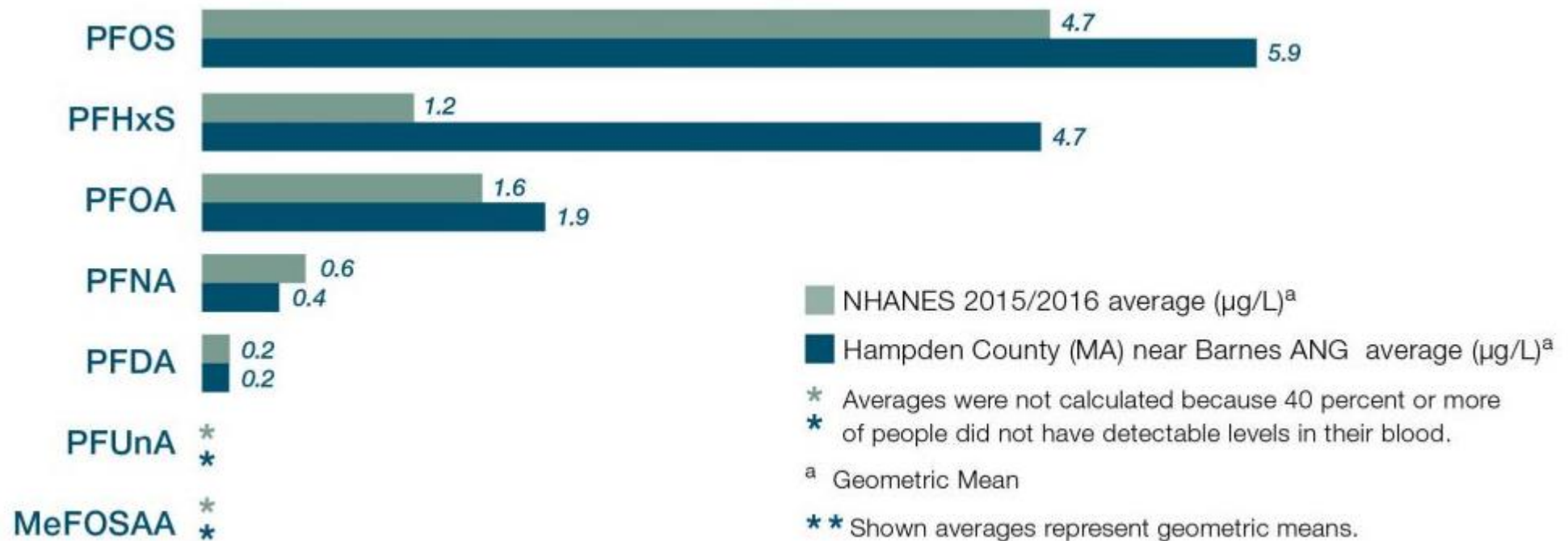
Hampden County, MA
Berkeley County, WV
New Castle County, DE
Spokane County, WA
Lubbock County, TX
Fairbanks North
Star Borough, AK
El Paso County, CO
Orange County, NY

For site-specific information visit:

<https://www.atsdr.cdc.gov/pfas/activities/assessments.html>

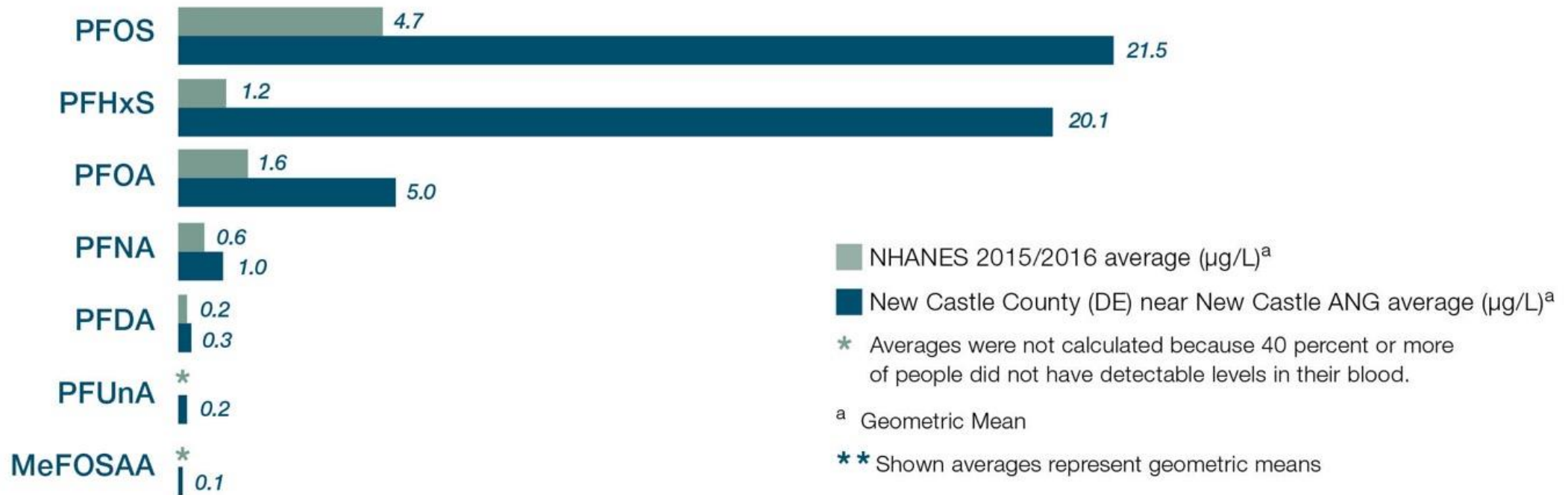
PFAS Levels in Blood Compared to National Averages

Hampden County, MA



PFAS Levels in Blood Compared to National Averages

New Castle County, DE



Multi-Site Study

Objectives:

- Study association between health outcomes and PFAS exposure
- Improve understanding of risks associated with PFAS exposure

Outcomes:

- The Multi-site Health Study will look at many health endpoints:
 - lipid metabolism
 - kidney function
 - thyroid disease
 - liver disease
 - glycemic parameters and diabetes
 - immune response

Pease Study:

- Serves as first site in multi-site health study
- Lessons learned from Pease Study will improve multi-site health study protocol



1. Pease International Tradeport, Portsmouth, NH
2. Anaheim and Orange County, CA
3. Ayer, MA
4. Belmont/Rockford area, MI
5. El Paso County, CO
6. Greater Hoosick Falls, NY
7. Hyannis, MA
8. Montgomery and Bucks Counties, PA
9. Newburgh, NY
10. Parchment/Cooper Township, MI
11. Paulsboro and West Deptford, NJ

POPULATION



Seek to enroll 6,000 adults and 2,000 children exposed to PFAS through drinking water

Additional NCEH/ATSDR PFAS Activities

- Collaboration with EPA on **Non-Drinking Water** Sources of Exposure
- Impact of **PFAS exposure on COVID-19** susceptibility and illness
 - NCEH/ATSDR is collaborating with the CDC Influenza/Epi Task Force Healthcare Provider/First Responder COVID-19 study to support this sub-study
- Impact of **PFAS exposure** on susceptibility to **viral infection**, including, but not limited to, **COVID-19**
 - NCEH/ATSDR is planning this questionnaire-based assessment
- **PFAS Clinical Guidance** and **NASEM engagement**
- Conduct analysis using previously collected data to **look for associations between PFAS exposure and cancer**

Tools and Resources from ATSDR

- Toxicological Profile for Perfluoroalkyls
- PFAS clinical guidance
- PFAS Exposure Assessment Technical Tools (PEATT)
- PFAS fact sheets
- ATSDR Community Stress Resource Center

Available on PFAS website:
www.atsdr.cdc.gov/pfas



Discussion

For more information, contact NCEH/ATSDR
1-800-CDC-INFO (232-4636)

TTY: 1-888-232-6348 www.atsdr.cdc.gov www.cdc.gov

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