



BE LESS “GOVERNMENT-Y!”:

*Community-Centered PFAS Risk Communication
in Washington State*



Who Am I?

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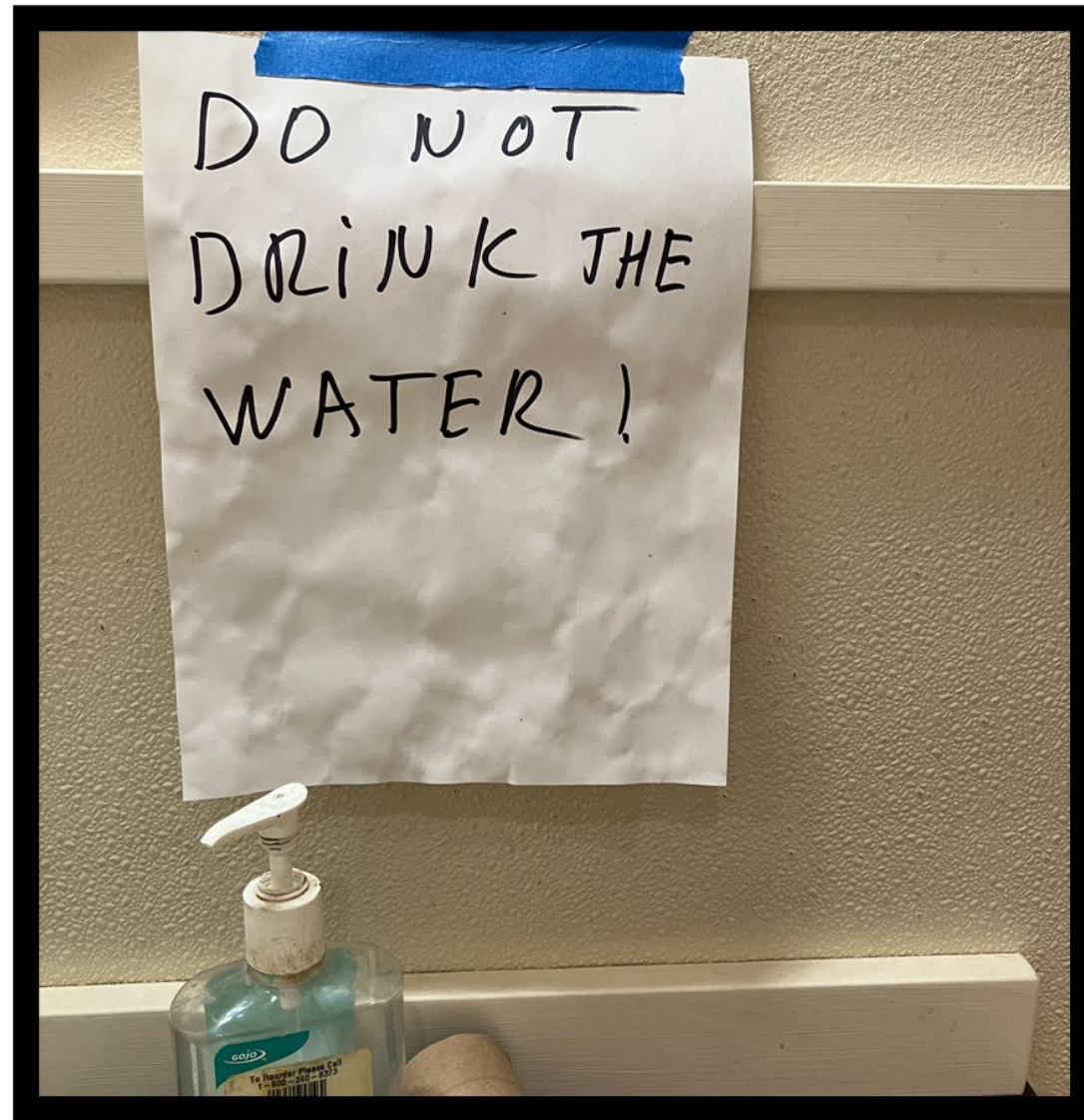
It Takes a Team



Thank you to our partners!



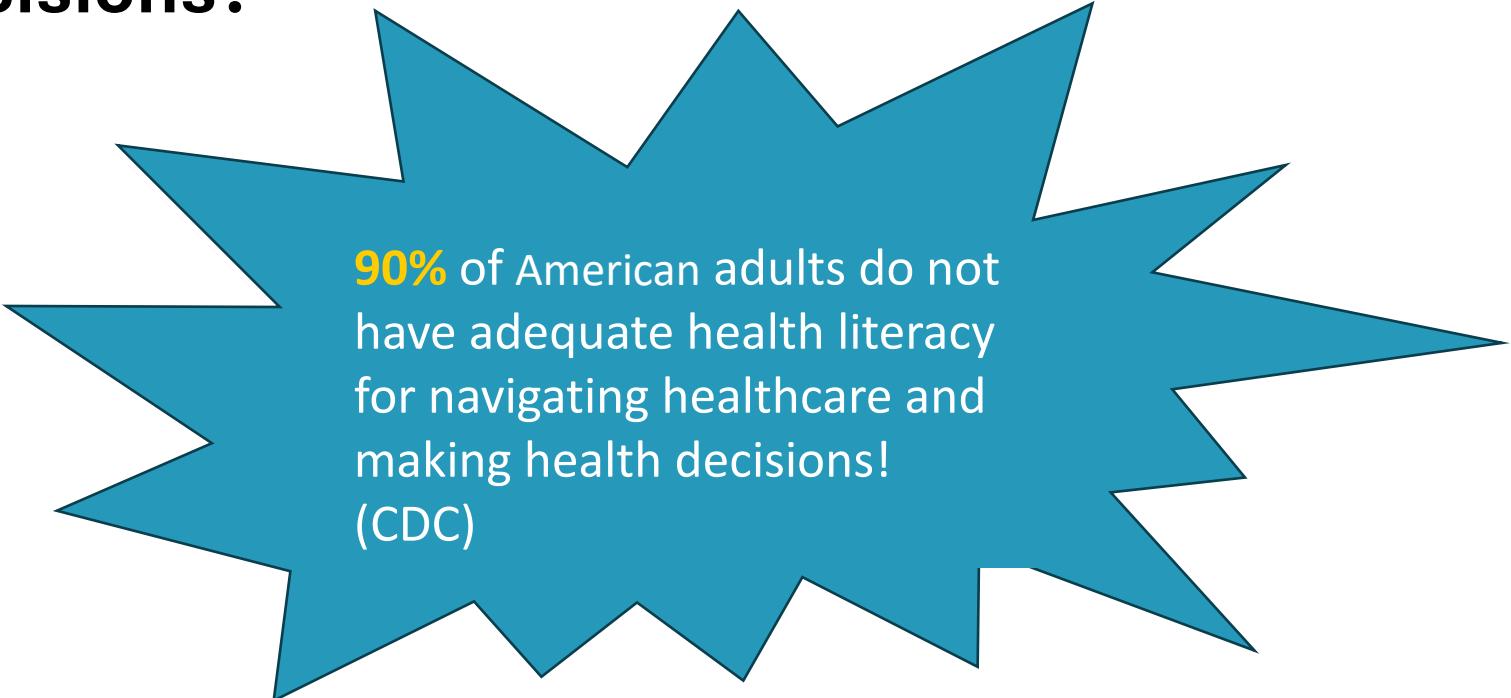
GROUP ACTIVITY



ACTIVITY #1

Q: According to CDC, what percentage of adults in the United States can find, understand, and use health information to make informed health decisions?

- A. 50%
- B. 70%
- C. 10%
- D. 25%



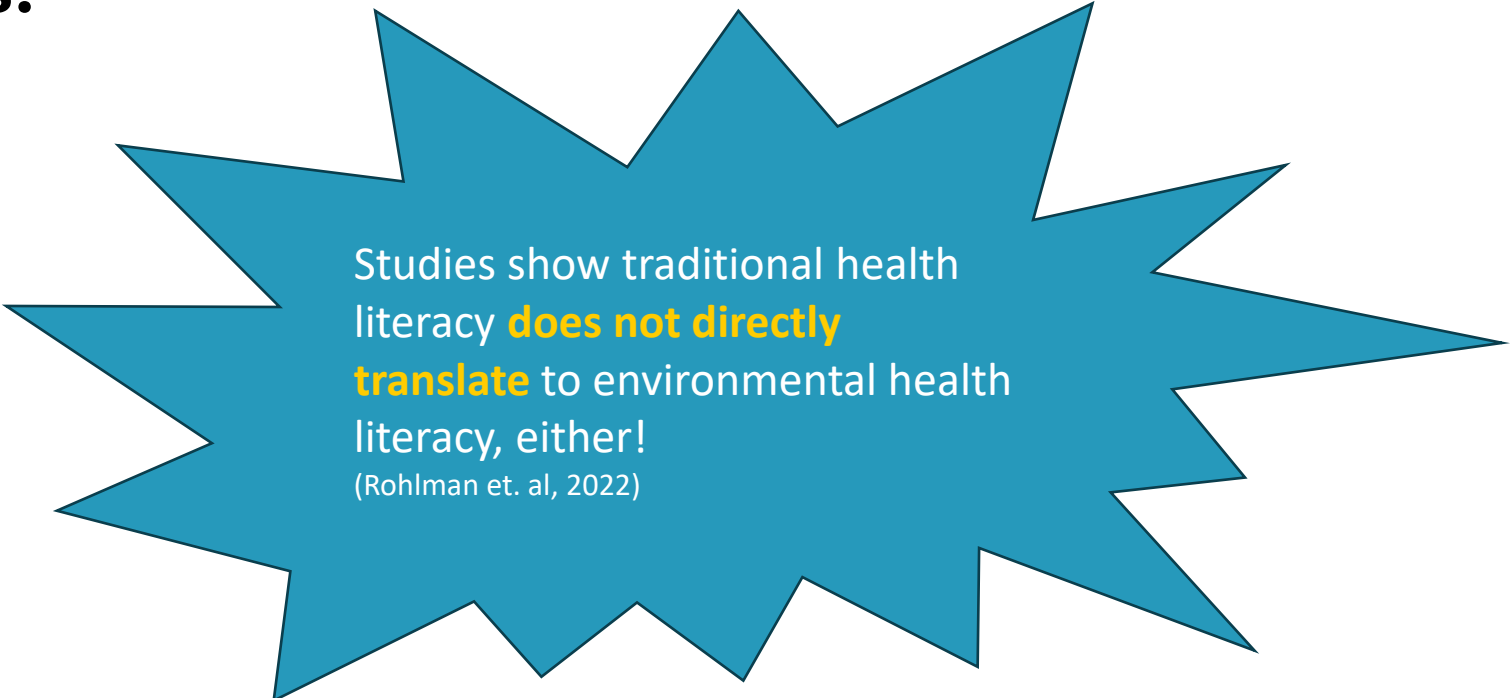
90% of American adults do not have adequate health literacy for navigating healthcare and making health decisions!
(CDC)

ACTIVITY #2

Q: People with good health literacy are also able to find, understand, and use environmental health information to make informed health decisions.

A. True

B. False




Studies show traditional health literacy **does not directly translate** to environmental health literacy, either!
(Rohlman et. al, 2022)

ACTIVITY #3

Q: People with college degrees are better able to understand health numbers and what they mean.

A. True

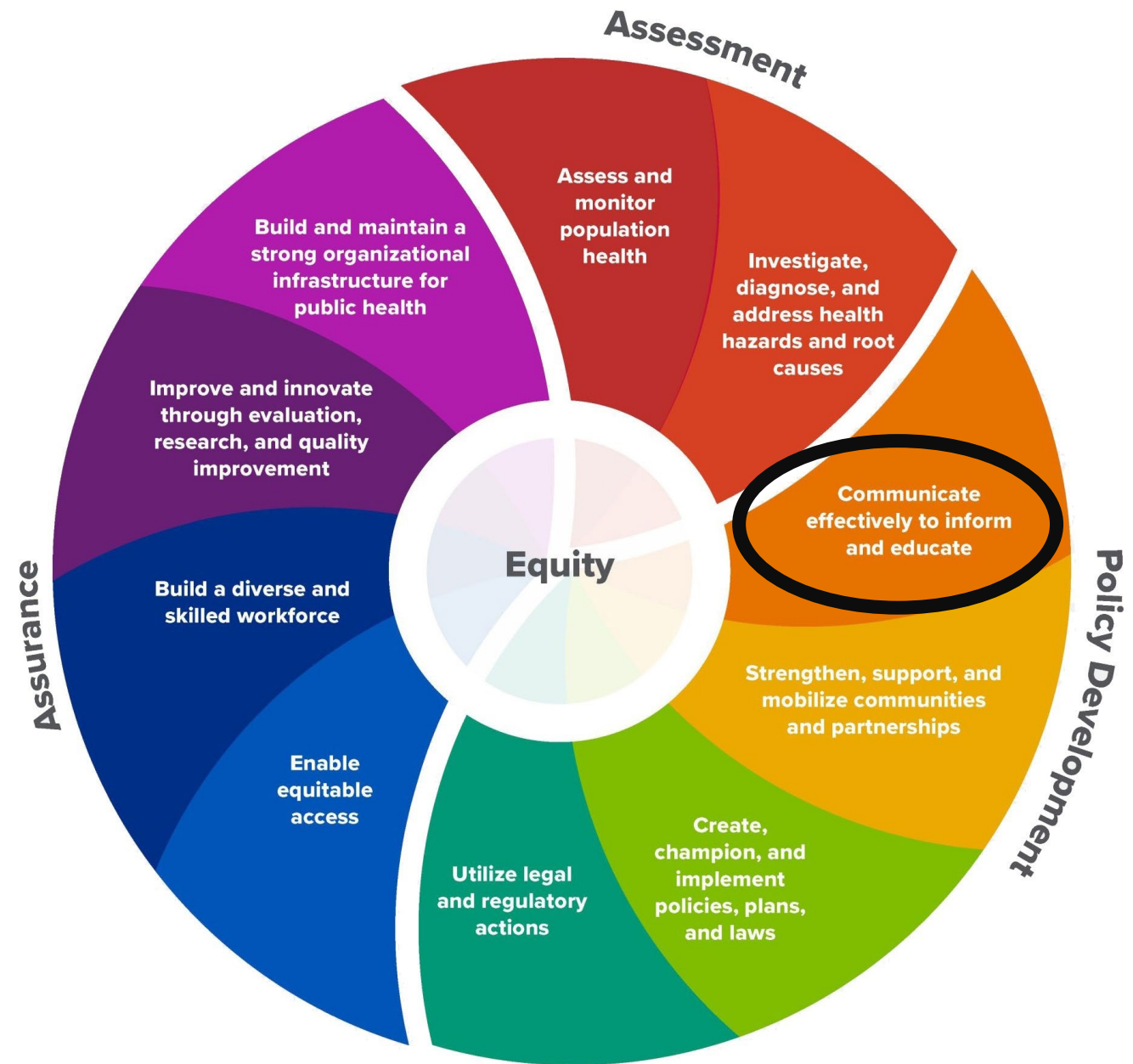
B. False



Recent studies show **only 10% of Americans** – even those with college degrees! – understand health numbers.
(CDC)

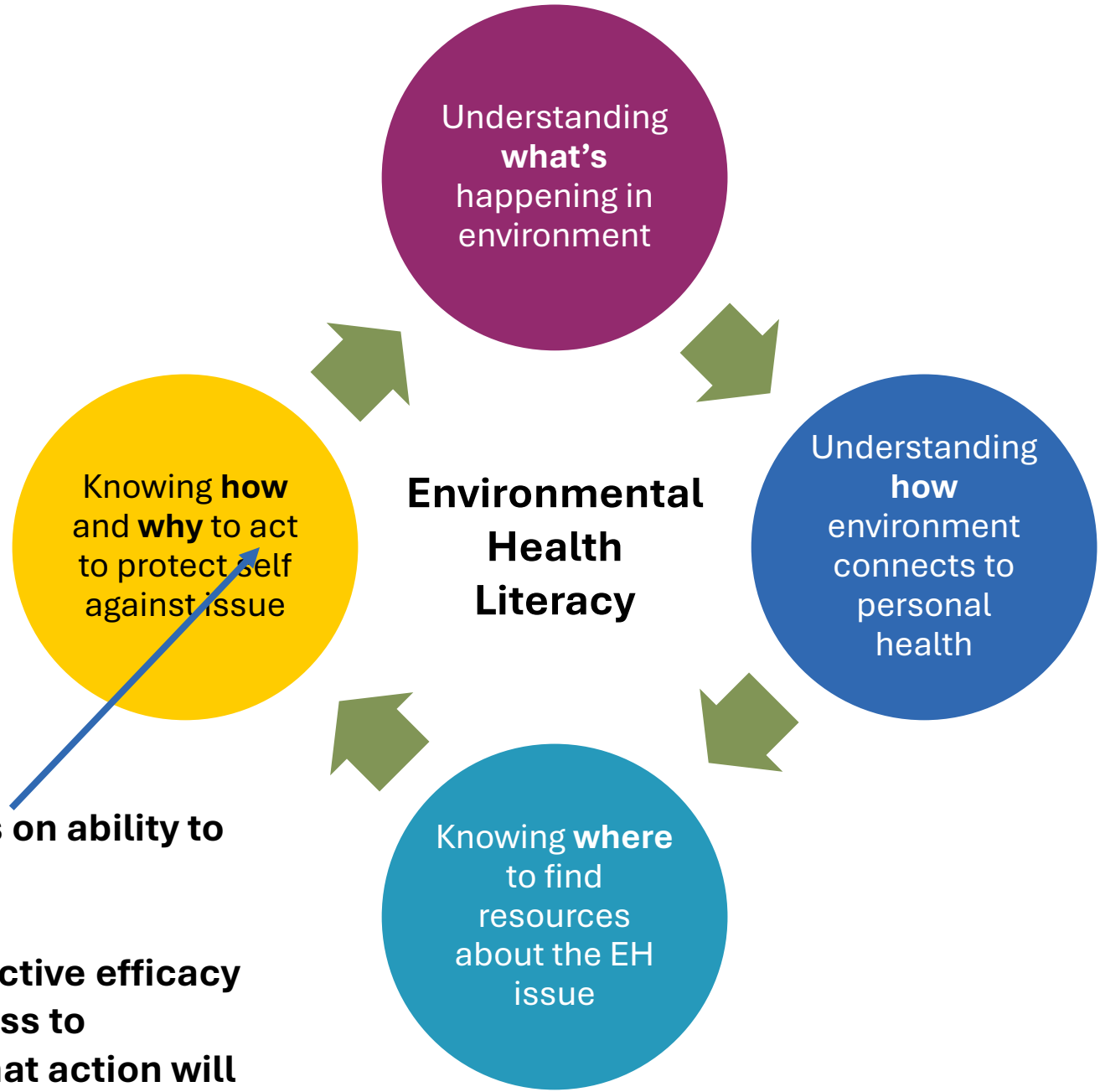
Health Education and Environmental Health Literacy

10 Essential Public Health Services (CDC)



Health Education





Important: emphasis is on ability to act!

Requires self and collective efficacy feeling confident, access to resources, the belief that action will bring solution, etc.

Challenges with Effective Science Communication

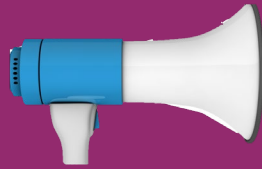
Health Literacy
and Health
Numeracy

Humans are
“Cognitive
Misers”

Information alone is
not enough to make
people care about
issue or change
behaviors

Outreach v. Health Education

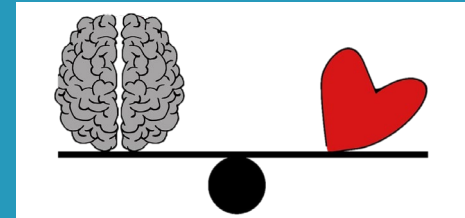
Outreach



Goal: to raise awareness for a specific topic.

- Provides additional information about projects or programs going on in an agency.
 - Usually “one-way street.”
- Sometimes statutorily required.

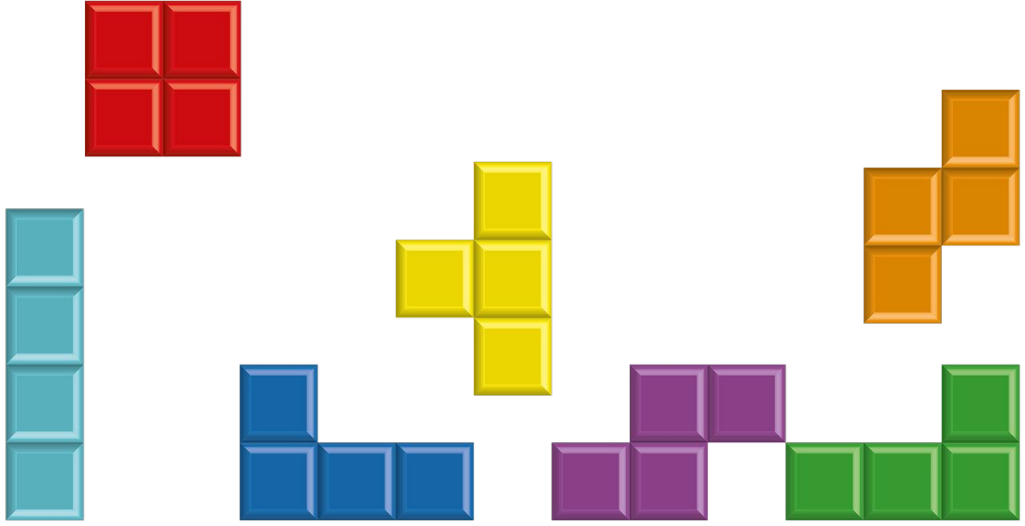
Health Education



Goal: support and improve health outcomes by increasing health literacy.

- Two-way street of communication.
- Data- and theory-based programs and resources centered around a community’s health needs.
 - Behavior change science and social marketing.
- Outreach is just one tool in the Health Education toolkit.

Building Our Foundation for PFAS Health Education



Who is Our Audience?

(There is no such thing as “The General Public”)


Environmental Health Literacy

**Communities
Acutely Impacted by
PFAS in Drinking
Water**

**Washingtonians
Passively Impacted
by PFAS in their Day-
To-Day Lives**

Tailored Messaging

ACUTELY IMPACTED COMMUNITIES



**“The single biggest problem in communication is
the illusion that it has taken place.”**

-George Bernard Shaw



Original Model – Not Successful!

Open House Meeting (“Poster Session”)

Always has set of topic stations with subject matter experts at each station

- Typically, posters or tables.

Agencies anticipate what main questions will be during meeting planning.

- Do not always talk to community members ahead of time about what their questions will be.
- Can be skewed by what agencies WANT to talk about, instead of what community members want and need to know.
- Intent and impact can be misaligned.

Community members “flow” through between stations

- Vince Covello-style design.
- Emphasis on explaining poster and answering questions through 1:1 conversations.
- Helps agencies handle large groups of people and keep meetings “on track” while answering questions.
- Allows community members to “drop in” so people can be on their own schedule and learn about their own interests.

Planning: Perceived and Expressed Needs



**Environmental
Health Literacy**



**Government
Literacy**



To Be Heard



**Agency in
Decision Making**

Perceived Need: a need defined by what people think or feel their needs are.

Expressed Need: a need defined by the number of people who have sought help.

Method for New Model Development



Community Listening Sessions: Centering Community Voices



Local and state officials hear from Selah residents affected by drinking water contamination

SANTIAGO OCHOA Yakima Herald-Republic Feb 5, 2023

Date: Thursday, Feb. 2nd
Time: 5:30PM-8:00PM
Where: Selah Civic Center

East Selah Community PFAS Listening Session

Join Us!

Come meet several agencies who are working to address PFAS at Yakima Training Center! Share your advice on their efforts and any other concerns.

The goals of this meeting are to:

- Get to know local and state folks working on PFAS issues at Yakima Training Center and other locations in Washington.
- Discuss your concerns, ask questions, learn more about ongoing PFAS contamination efforts, and learn how we can work together.
- Learn about Washington State's PFAS State Action Levels, and how to reduce your PFAS exposure.
- Create a community map of where PFAS have been detected in well water.

Invited Guests:

Yakima Health District — Dedicated to providing support to our partners and education and outreach to the public about PFAS and potential resources in mitigating elevated levels of PFAS in private and community drinking water wells in Yakima County.

Washington State Department of Health (DOH) — Protects the health of the people of Washington by preventing or reducing environmental hazards and ensuring safe and reliable drinking water. DOH also regulates public water systems, issues advice for private wells, and supports local health jurisdictions.

Washington State Department of Ecology (ECY) — Responsible for overseeing the investigation and cleanup of contaminated areas and groundwater at the Yakima Training Center.

Did you know...?

Washington state recommends you act to lower PFAS levels in your drinking water, even if your PFAS levels are under 70ppt.

Come to the listening session to learn more!

AGENDA

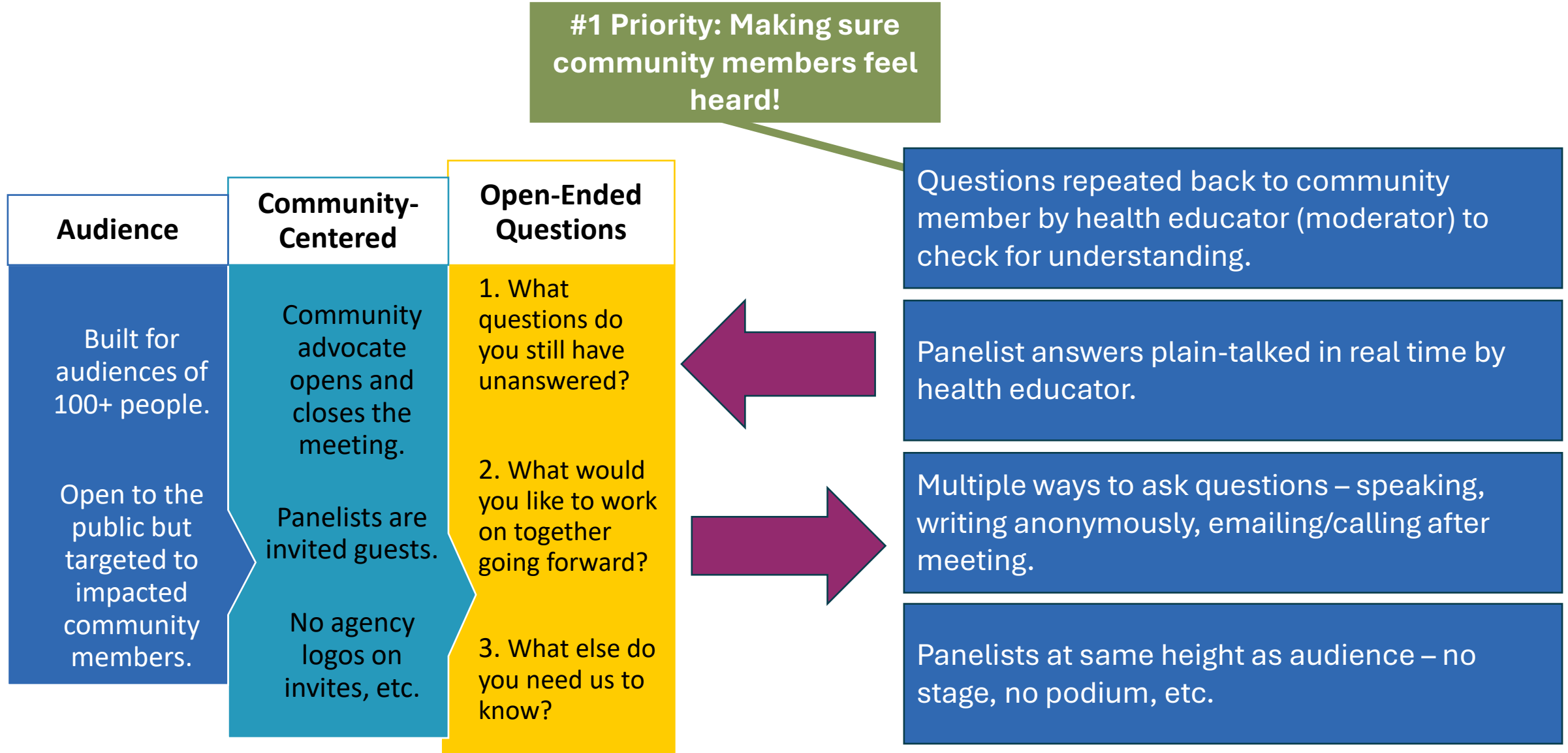
5:30PM—6:00PM: Refreshments and community PFAS detection map activity.

6:00PM—6:15PM: Meeting kickoff with invited guest introductions.

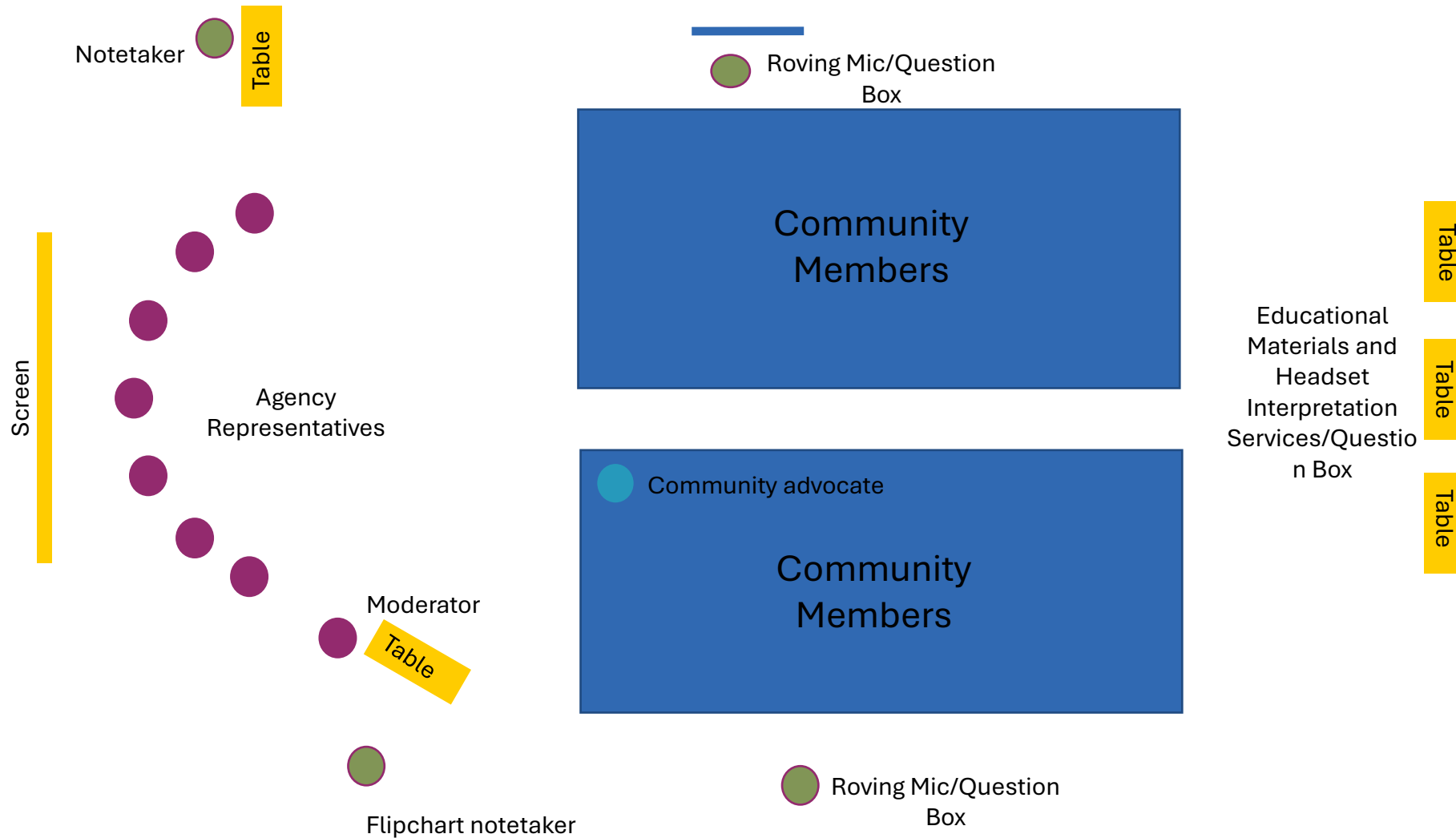
6:15PM—6:30PM: Presentation on Washington's PFAS State Action Levels for drinking water.

6:30PM—8:00PM: Moderated listening session and discussion.

Community Listening Sessions: Theory Applied



Listening Through Setting and Actions: Set Up



Pre-Session Strategy: Panelist Prep

Things to keep in mind...



“Improv Mindset”

“Yes, and...”

“We can’t do that, and here’s the reasons why. We CAN do...will that work?”



“I don’t know” is okay!

Credibility, respect, and trust is earned through transparency about what we don’t know and where our “boulders in the river” are.



Emphasis on listening

This session is not our standard town hall/Q&A – education will be an important component, but the community should “have the mic.”



Give the answer first, THEN the context!

Answer the question FIRST (yes, no, not quite, I don’t know), THEN provide context.

Supporting Resiliency through Transparency: “Boulders in the River”




NON-ACUTELY IMPACTED WASHINGTONIANS

ACTIVITY #4

Q: Awareness of an issue, good risk communication, and morality drive people to change their behaviors.

A. True

B. False



People change their behaviors
**when the benefit and/or
motivator outweighs the
barriers to changing behavior.**

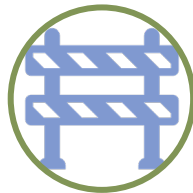
Social Marketing – “Behavior Change for Good”



Do I really understand my target audience and see things from their perspective?



Am I clear about what I would like my target audience to do?



For my target audience, do the benefits of doing what I want them to do outweigh the costs or barriers to doing it?



Am I using a combination of activities to encourage people to achieve the desired action?

Market Research

- Market Research Online Community (called “Health Hub” to participants).
- Run by our social marketing contractor, C+C.
- Recruited group of 645 participants that we send agency social marketing studies to in return for a gift card.
 - Representative of Washington state demographics.
- Participants are pre-screened into groups per the study’s focus/aim.
- Two surveys – Oct. 2022 and June 2024 (same cohort).



Findings – General PFAS Attitudes and Awareness



Minimal knowledge of and familiarity with PFAS

Greater knowledge of PFAS in products than environment



Attitudes of concern, confusion, and sadness

Low knowledge of stop-gap measures for lowering exposure (i.e., POU filters)



Findings – Trust in Health Advice



Issues with trust - dermal exposure health advice

We (DOH/health agencies) aren't the "go to" for advice on PFAS



Possible issues identifying misinformation about PFAS

Data suggests low environmental health literacy

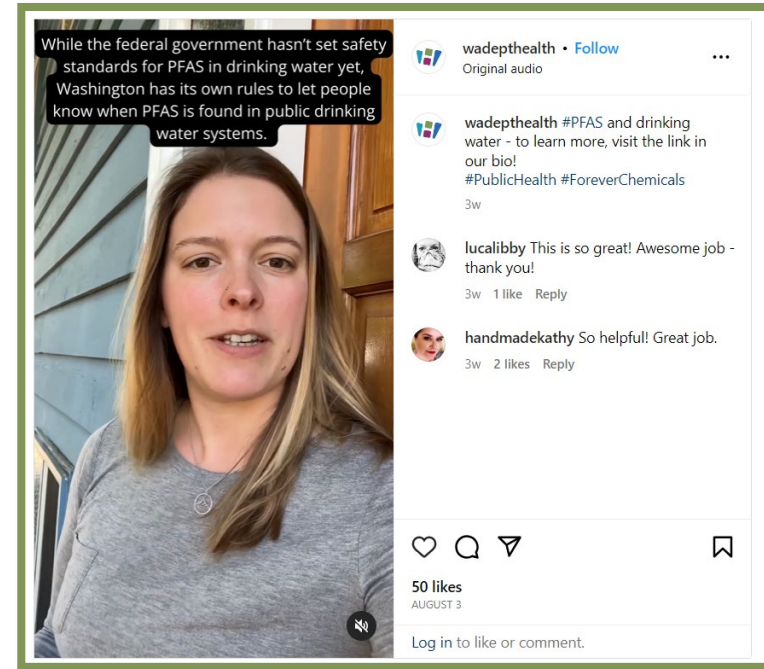
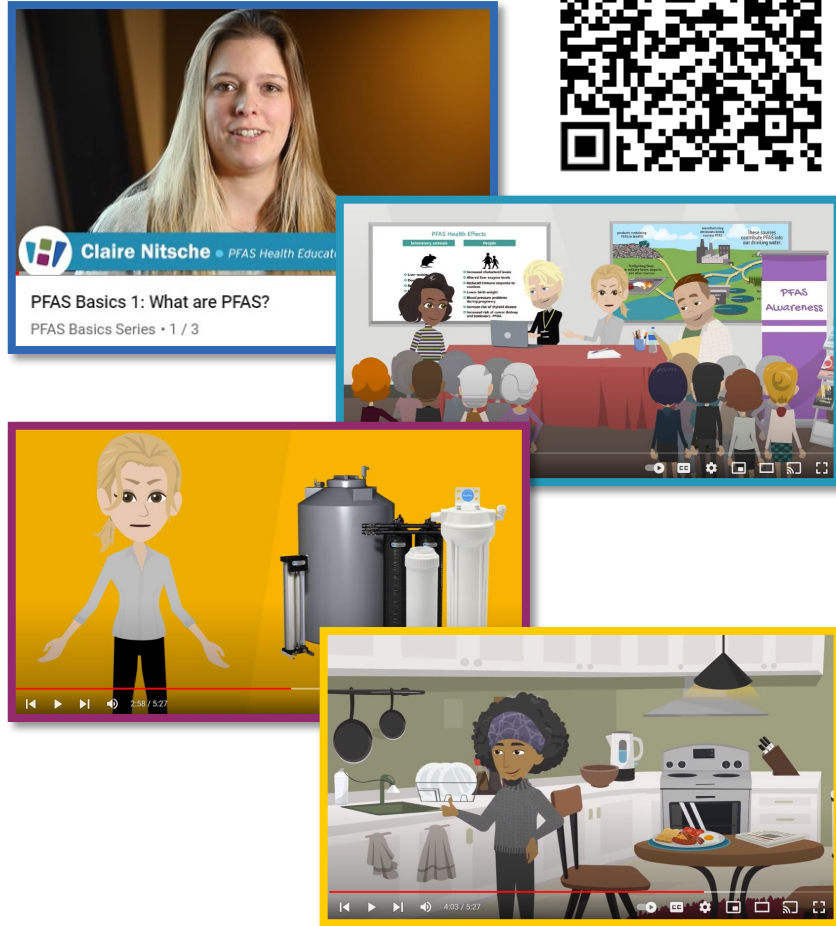


Building Up: Applying What We Learned



PFAS Education Materials – “Be Less Governmenty!”

“PFAS Basics” YouTube Series



“Tiktoxicology”

(Instagram, TikTok, Facebook, LinkedIn, X)





Tangible Risk Communication Tools



“Gain-Framed” (Positive, Action-Centered)
Messaging



Each Sentence Has A Job – Fire It If Isn’t
“Working!”




Health Literacy and Actionability Pre-Testing



Refine-Implement

You are not your target audience – put yourself in their shoes!

Fact Sheet



PFAS—Point of Use Water Treatment

DOH 311-690 | August 2022

Home water treatment to reduce levels of PFAS in drinking water

There are two types of water treatment systems that reduce levels of per- and polyfluoroalkyl substances (PFAS) in drinking water.

- Point of entry (POE) water treatment systems, or whole house treatment systems, treat all the water entering the household plumbing system.
- Point of use (POU) water treatment systems treat the water at a specific location within the house, typically the kitchen sink or primary source of water for drinking and cooking (some also provide water to the refrigerator).

Both approaches have pros and cons to consider before selecting the best treatment option. The type of treatment system chosen should consider:

- Volume of water used in the home.
- Number and location of sites where water is consumed in the home.
- Type and levels of PFAS chemical(s) identified in laboratory testing results.

For information on what system is best for you, talk to the filter retailer nearest you or go to epa.ohio.gov/static/Portals/28/documents/pfas/PFAS-POE-Water-Treatment.pdf.

It is important to choose a treatment system that has been tested and certified to remove PFAS from drinking water. Contact the manufacturer about the effectiveness of PFAS removal and frequency of replacement based on the concentration of PFAS found in your water.

The concentration of PFAS (reported from laboratory testing) determines type of filter required and how often filter material must be replaced.

Certified POU water treatment products to remove PFOA and PFOS

Certified products are either granular activated carbon (GAC) filtration or reverse osmosis (RO) treatment systems. Some of the products certified to treat water at point of use are countertop products or pour through (like a pitcher filter that you fill from the tap yourself as needed).


National Standards Federation (NSF) and the Water Quality Association are independent third-party testing agencies that currently test and certify products designed to remove specific PFAS, PFOA, and PFOS.

Look for products identified as certified to:

- NSF/ANSI Standard 53:** Drinking Water Treatment Units—Health Effects with the claim of "PFOA Reduction" and "PFOS Reduction."
info.nsf.org/Certified/DWTU/Listings.asp?TradeName&Standard=053&ProductType&PlantState&PlantCountry&PlantRegion&submit3=Search&hdModlStd=ModlStd

Page 1 of 4

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Page 1 of 4

- Research has shown it to effectively reduce shorter chain PFAS in addition to the longer chain PFOA and/or PFOS.

Costs

U.S. EPA estimated costs for different types of point of use water treatment systems.

	Approximate Initial Equipment Purchase Cost	Approximate Replacement Treatment Media Cost
Certified Point of Use Granular Activated Carbon (GAC) Filter	\$100 to \$1,200	\$200 to \$300 each year
Certified Point of Use Reverse Osmosis (RO)	\$400 to \$700	\$200 each year

Maintenance is important for proper treatment

- Follow the instructions that come with your system for filter and membrane replacements. Always refer to the manufacturer's recommendations for how and when to maintain your system.
- If a system is not properly maintained water will still flow through it, but the water will not be treated. PFAS do not change the taste, smell, or color of the water and are not indicators of when a system needs maintenance.

More Information

For more information on PFAS, including the health effects of PFAS, PFAS in drinking water, water testing and treatment, and other PFAS activities in Washington, visit doh.wa.gov/community-and-environment/contaminants/pfas.

For more information on treatment systems, visit epa.gov/sciencematters/reducing-pfas-drinking-water-treatment-technologies.

Evaluations of POU and POE water filters for PFAS

- Duke University (2020) summary: northcarolinahealthnews.org/2020/02/06/not-all-in-home-water-filters-completely-remove-toxic-pfas/ and published paper pubs.acs.org/doi/pdf/10.1021/acs.estlett.0c00004.
- State of New Hampshire: des.state.nh.us/nh-pfas-investigation.
- State of Minnesota (2107): health.state.mn.us/communities/environment/hazardous/docs/pfas/poueval.pdf.
- Environmental Protection Agency (2018): www.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/aws2.1131.

PFAS removal from drinking water

- nqa.org/docs/default-source/default-document-library/pfas/pfas-and-private-well-owners-what-you-need-to-know.pdf

Page 3 of 4

Just because it meets your agency standards does not mean it works for your community!

West Plains Cancer Cluster Investigation Findings

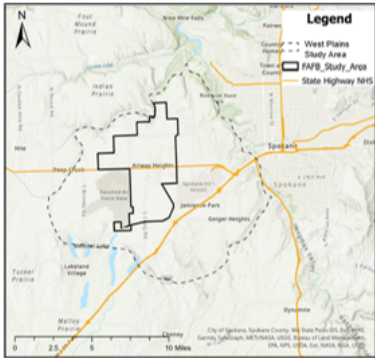
The Washington State Department of Health (DOH) investigated the cancer rates in the City of Airway Heights and West Plains area near Spokane, WA. Community members requested this investigation due to concerns of high cancer rates in areas where drinking water was contaminated with per- and polyfluoroalkyl substances (PFAS). See map outline of study area below.

A cancer rate is the number of people who developed cancer divided by the total number of people who resided in the geographic area in a specific time period.

What We Found

We did not find higher rates of cancer in people who live in the study area compared to those who live in Spokane County and Washington state from 2011-2020.

Rates of all cancer types combined and pancreatic cancer were lower in the study area compared to Spokane County and Washington State. Rates of kidney cancer were not different within the study area compared to Spokane County and Washington State.



Map outline of West Plains study area near Spokane, WA

What We Did

To figure out whether the number of cancer cases in the PFAS-affected area were higher than expected in Spokane County and Washington State, we did the following:

- We looked at the number of people newly diagnosed with cancer during a 10-year period (2011-2020) in the West Plains study area as defined by the local health jurisdiction.
- We compared the numbers within the study area to the number of newly diagnosed cancers in all of Spokane County and Washington State.
- We looked at all reported cancer types combined, as well as two specific cancers of interest: kidney and pancreatic cancers.
- We accounted for age differences by using age-adjusted rates to focus on underlying health risk. This is important because cancer risk generally increases with age.

Page 1 of 3



West Plains PFAS Cancer Cluster Analysis

April 2024

We take cancer concerns seriously.

If you have concerns about cancer cases in yourself or your family, please contact us using the email or phone number on the back of this page.

Please be prepared to answer questions about the type of cancer, your age, and where you live. We may also ask about your job and smoking habits.

We will continue to monitor the situation.

- The Washington State Cancer Registry (WSCR) releases updated information each year that we can analyze.

Talk to your medical provider if you have health concerns about cancer.

- Public health looks at health trends at a community level. The best person to talk about your individual risk for any health condition is your medical provider.

In April 2023, many West Plains community members shared concerns with us about multiple cancer cases, current and past, in areas where drinking water is contaminated with per- and polyfluoroalkyl substances (PFAS). We looked into overall cancer rates on the West Plains. To do this, we followed standard cancer cluster guidelines by looking into overall cancer rates on the West Plains to see if they were higher than we'd expect compared to the state or county.

We have not found unusual cancer rates in the West Plains area at this time.

- We looked at pancreatic cancer, kidney cancer, breast cancer, and testicular cancer from 2011-2020.
- Risk for kidney and testicular cancer has been associated with higher exposure to some PFAS chemicals. Evidence for breast cancer risk is weaker. Pancreatic cancer has been associated with PFAS exposure in animal studies, but not in humans.
- It can take a long time for cancer to develop after any environmental exposure, like PFAS chemicals. However, cancer does not always develop even though exposure to certain PFAS chemicals like perfluorooctane sulfonic acid (PFOS) is associated with cancer risk.

Final Thoughts

Communities are not stakeholders – they are our **most valuable partner and expert.**

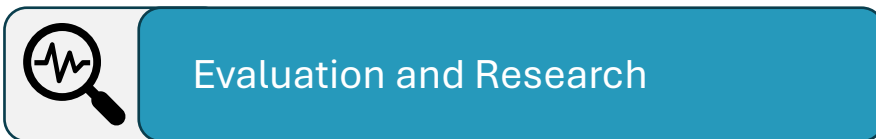
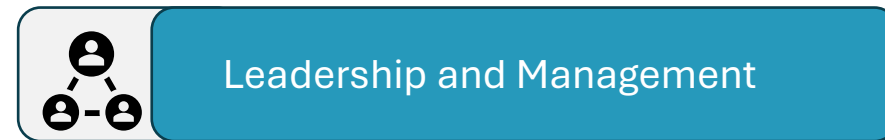
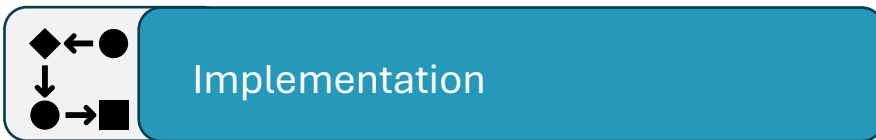
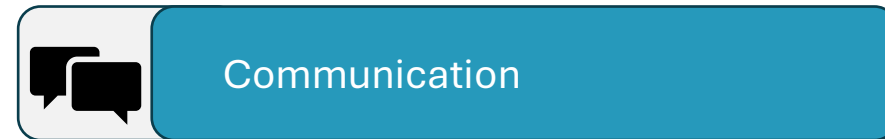
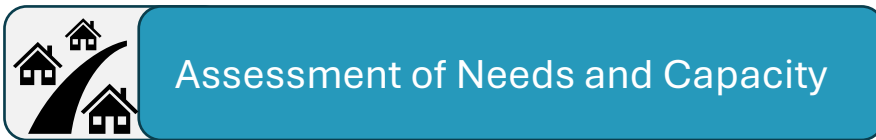
Communities that are part of crafting solutions and resources, are **more likely to use that solution or resource.**

Trust and relationships are the cornerstone of communication.
Don't be a "tourist."

Just because it meets your agency communication standards, **does not mean that document is useable, understandable, or helpful.**

National Commission for Health Education Credentialing (NCHEC) – Health Educator Skillsets to Look For

Eight Areas of Responsibility – Competencies and Sub-Competencies defining role of Health Education Specialists:



Thank You!

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