



We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.



PFAS AND ADDRESSING UNREGULATED CONTAMINANTS

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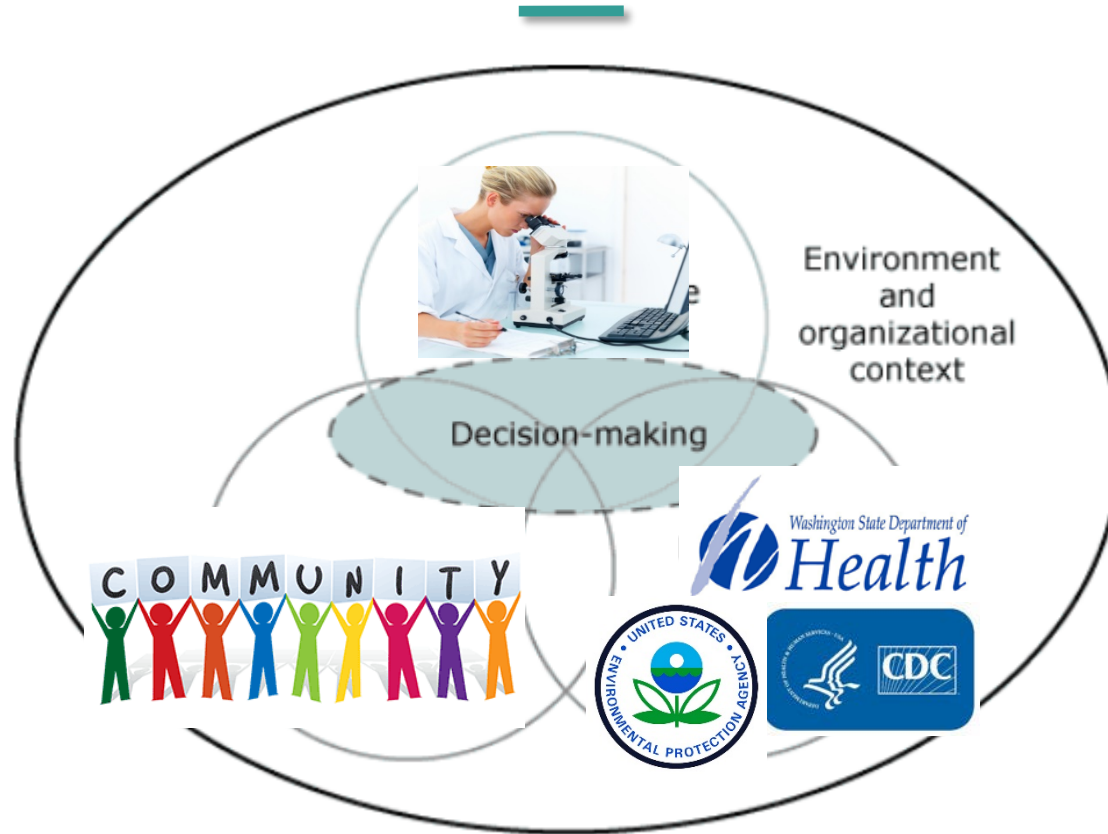


Figure. Domains that influence evidence-based decision making. Source: Satterfield JM et al (2).

Developing a Drinking Water Standard

- Mechanism of regulation
- Chemicals of concern
- Concentration above which to require action

Since we last met...

- Federal Updates
 - EPA to consider MCL for PFAS
 - EPA using rapid assessment tools to develop info for 70 PFAS, will release toxicity values for PFBS and GenX
 - ATSDR Assessment – MRLs for 4 PFAS
- State Updates
 - Interim Chemical Action Plan published
 - Two new PFAS-related laws passed legislature
 - DOH launched voluntary drinking water testing
- Continue to learn from other states

Evolving Science on Health Impacts of PFAS

- Some PFAS may cause:
 - Lower infant birth weight
 - Increased cholesterol levels
 - Endocrine disruption
 - Immune suppression
 - Some types of cancer
- Concern about persistence, mobility and unknown toxicity of many replacement PFAS

Approach to Setting Health Based Standards

- Mechanism for regulation
- Chemicals of concern
 - Occurrence in UCMR3, DOH and military testing
 - Challenge – lack of analytical methods to measure all PFAS in water
- Action levels
 - Start with EPA LHA, incorporate other high quality assessments, new data
 - Challenge – lack of toxicological data to define risk for many PFAS

Approach to Defining Chemicals of Concern

- Focus on PFAS in Washington drinking water
- Current analytical tools won't measure all PFAS
 - Use panel of 14 to screen for impacted water
 - Assume treatment will remove the mixture
- Other industrial sources may have different profiles of PFAS

Evolving Approaches to Action Levels and PFAS Mixtures

- Define action levels if sufficient information
- For similar chemicals, use default levels until more is known
- Use toxicology information from EPA work on 70 PFAS to inform default assumptions
- Assume PFAS in mixtures are additive unless data shows otherwise
- Explore ideas for regulating PFAS as a class or subclasses

PFAS Sampling Project

- Intended to help utilities identify health risk
 - Will also help inform PFAS rule-making
- Candidate sources selected based on risk
 - 311 systems operating 442 sources invited
 - 103 systems operating 164 sources may participate
- If any system exceeds EPA's PFOS/PFOA health advisory level of 70 ppt we will
 - Require public notification ("do not drink")
 - Recommend delivery of bottled water or arrange for an alternate supply
- PFAS communication products
 - FAQs for PWSs and consumers
 - Public notification template
 - Template letters to PWSs

Impacts to Drinking Water Supplies

- PFAS centralized treatment plants
 - Issaquah: \$1 million (GAC)
 - Airway Heights: \$2.6 million (GAC)
 - JBLM: \$11 million
 - Coupeville: (cost unknown)
- Interties with nearby water systems
 - Airway Heights \$0.2 million (Connect to City of Spokane)
 - Individual homes near NAS Whidbey (cost unknown)
- DoD site investigations and interim measures
 - Hydrogeologic investigations, sampling, bottled water, individual home treatment, new individual well (cost unknown—many millions)

Setting Drinking Water Standards

- October 2017: Board accepted DOH recommendation to begin PFAS rule-making
- December 2017: DOH Filed CR 101
- Three questions need to be answered
 - Mechanism for regulation
 - Contaminants of concern
 - Concentration requiring action (and defining the action)
- Mechanism options
 - Maximum Contaminant Level (MCL)
 - State Advisory Level (SAL)

EPA MCL Setting Process



Unregulated Contaminants

- Public input sought in selecting about 30 contaminants for each round of UCMR
- UCMR sampling done every five years
- Includes all systems \geq 10,000 pop plus sampling of smaller systems
- In Washington State, ~130 systems participated in UCMR3



UCMR

- Selected unregulated contaminants are known to have adverse health effects
- Seeks to know if a contaminant occurs in PWSs with frequency and at levels of public health significance
- May or may not have an EPA health advisory level established



MCL

- Set MCL goal (MCLG) based on health effects data for most sensitive population
- Determine analytical capacity and treatment feasibility
- Comprehensive cost-benefit analysis
- Set MCL as close to MCLG as feasible

SAL Setting Process



Detecting an Unregulated Contaminant

- Began in 1991 with unregulated organic chemicals included in routine monitoring
- Expanded in 1996 with UCMR
- Referrals from other state agencies (Ag, Ecology) on emerging contaminants



Toxicological Health Assessment

- Establish concentration \leq RfD (non-cancer) or \leq 1 in 100,000 additional cancer risk (which ever is less)
- No check on analytical capacity or treatment feasibility
- No analysis of PWS cost and societal benefit
- No public input



Establish a State Advisory Level (SAL)

- DOH submits recommendation to the Board
- SAL established by Board approval
- Does not follow the rule-making process
- No history of enforcing an SAL like an MCL

Advantages and Disadvantages

MCL (EPA model)

Advantages

- Specific and enforceable
- Predictable
- Backed up by occurrence data
- Justified by benefit/cost, analytical, and treatment feasibility assessments
- MTCA compatible

Disadvantages

- Less flexible
- More time/resource intensive upfront

SAL

Advantages

- Accommodates community-specific concerns
- Responsive to emerging threats
- Less time/resource intensive upfront

Disadvantages

- Unpredictable for utilities and public/lacks specificity
- May be applied inconsistently
- Subject to challenge if SAL standard is broadly and consistently applied

Next Steps

- Update the Board in August
 - PFAS sampling project data
 - New developments in state and national approach to PFAS standards in drinking water
- Receive direction from the Board on best mechanism
 - Maximum Contaminant Level (MCL)
 - State Advisory Level (SAL)

Next Steps

- Should a PFAS sampling requirement and PFAS standard be:
 - Applied broadly and always result in a DOH requirement to implement a solution (e.g. treatment, intertie, or source abandonment)?
 - Applied broadly and always result in public notice and a DOH recommendation to implement a solution?
 - Applied on an ad hoc or limited basis and maybe result in public notice and a DOH recommendation to implement a solution?

