



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Safe Drinking Water

# **Proposed Rulemaking Chapter 109 (Safe Drinking Water) Disinfection Requirements Rule**

**Stakeholder Meeting  
March 9, 2016**

# History of Rulemaking

- This proposed rulemaking was originally included in the Pre-Draft Proposed Revised Total Coliform Rule (RTCR) -- presented to TAC on 6/18 and 9/23/2014.
- On 4/21/2015, the EQB approved the proposed RTCR with modifications – which included splitting out the “non-RTCR” provisions for additional stakeholder input.

# History of Rulemaking

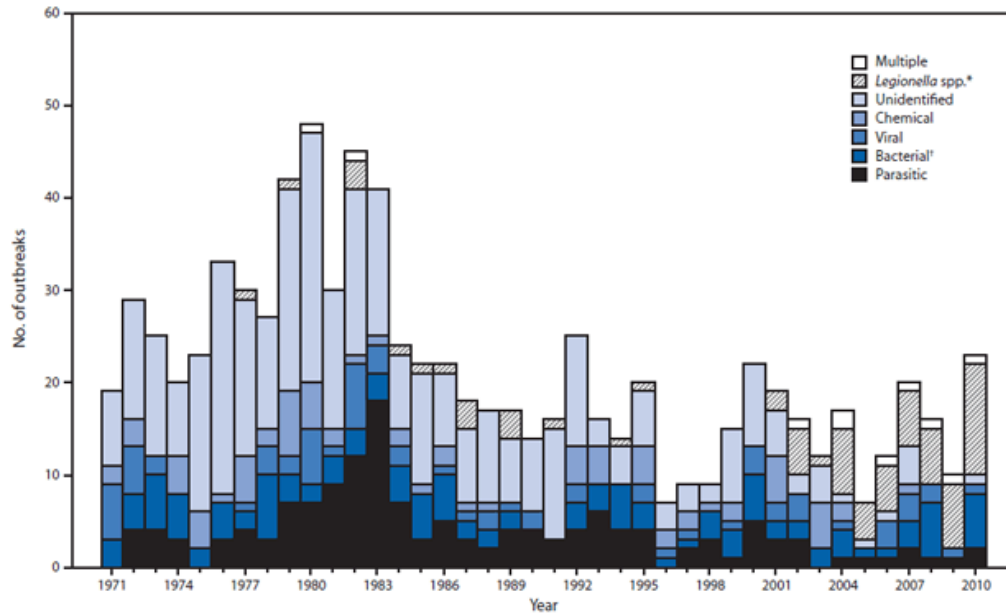
- TAC meetings were convened on 5/18, 5/26, 6/16 and 6/30/2015 to gather additional stakeholder input – 14 PWSs and organizations delivered presentations.
- Two additional meetings were held with large water systems on 6/29 and 7/16/2015.
- TAC provided a final set of recommendations on 7/15/2015.
- EQB approved the proposed rulemaking on 11/17/2015.

# Background and Purpose

Why is the Department amending the disinfectant residual requirements?

- There are some alarming trends in WBDOs associated with distribution system defects.
- Existing requirements are not protective of public health and are not enforceable – existing standards do not represent a **true** or **meaningful** residual.

# National Waterborne Disease Outbreaks

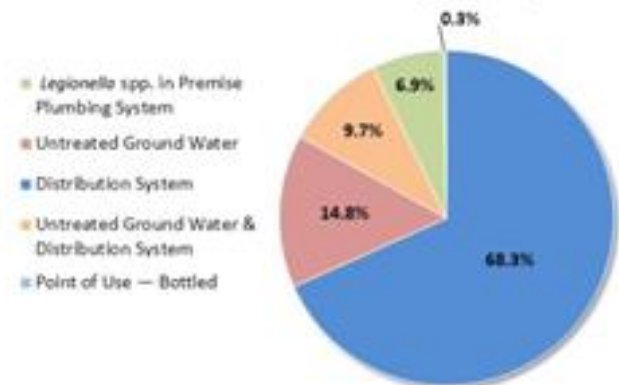


Source: CDC, MMWR, Vol. 62, No. 35, Septen

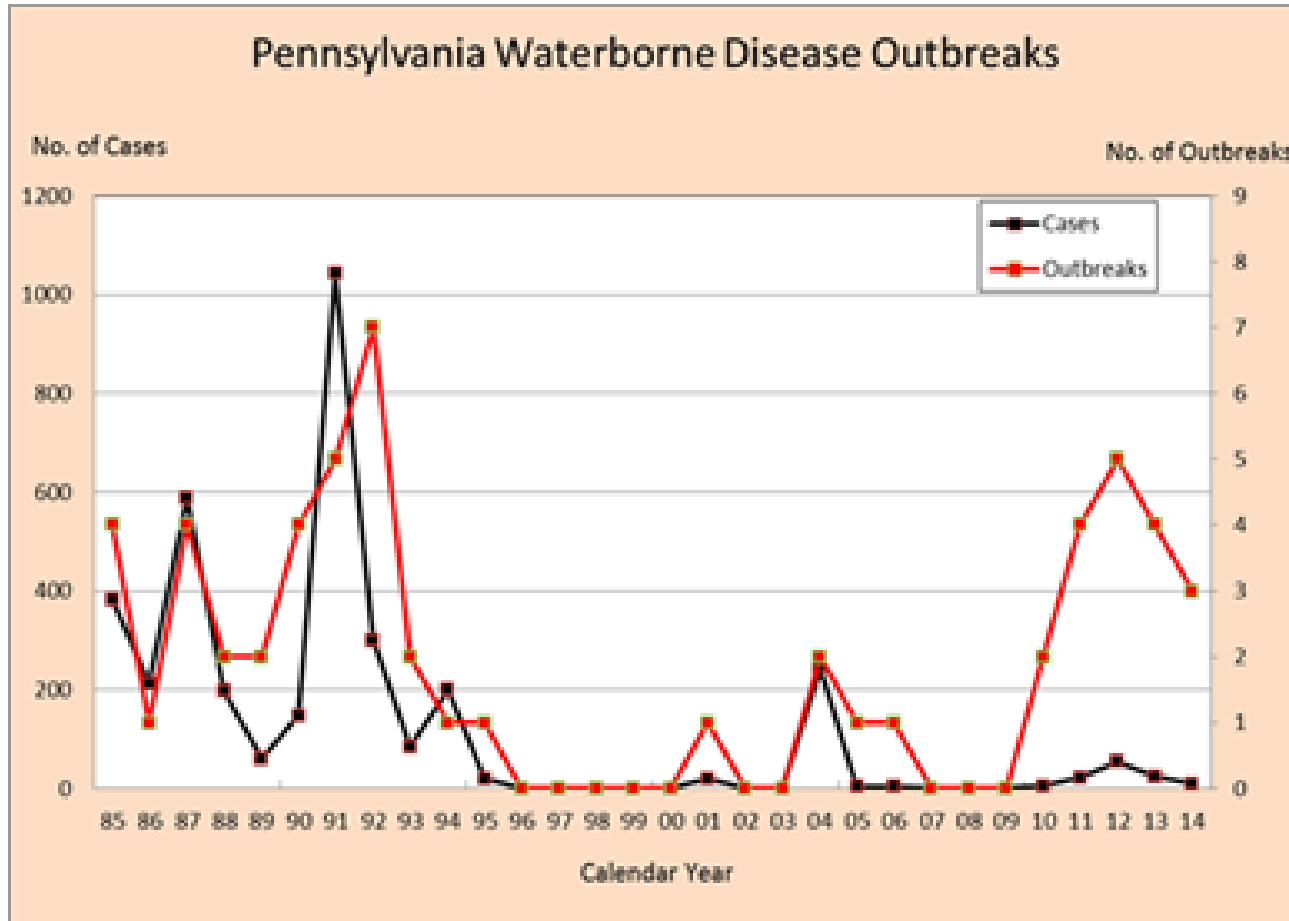
**Outbreaks (N = 33)**



**Cases (N = 1,040)**



# Pennsylvania Waterborne Disease Outbreaks



# Purpose of Rulemaking

- Protect public health through a multi-barrier approach designed to guard against microbial contamination by ensuring the adequacy of treatment for the inactivation of microbial pathogens and the integrity of drinking water distribution systems.
- Incorporate minor clarifications needed to obtain primary enforcement authority (primacy).

# Significant Provisions

- Increases the minimum disinfectant residual in the distribution system from 0.02 to 0.2 mg/L (free or total chlorine).



# Significant Provisions

Why is the proposed limit of 0.2 mg/L significant?

- Scientific studies and data support the fact that residuals of 0.2 mg/L are effective at inactivating *E. coli* and other pathogens.
- Due to analytical method limitations and interferences from organic and inorganic contaminants, when disinfectant residuals are < 0.2 mg/L, there may be little to no active disinfectant actually present.

# Significant Provisions

- Requires weekly monitoring at RTCR sites as per a sample siting plan.
- Sets the standard at no more than one sample (for small systems) or no more than 5% of the samples (for med and large systems) out of compliance for 2 consecutive months.
- Clarifies the disinfectant residual at the entry point by adding a zero to the minimum level = 0.20 mg/L.
- Requires water systems to monitor, calculate and report log inactivation.

# Applicability

- Disinfectant residual requirements in the distribution system apply to all 1,982 community water systems, and 822 noncommunity water systems that have installed disinfection for a total of 2,804 water systems.
- The CT/log inactivation monitoring and reporting requirements apply to all 353 filter plants which are operated by 319 water systems.

# Comparison to Other States

At least 23 other states have more stringent distribution system disinfectant residual requirements, including several nearby states such as West Virginia, Delaware and Ohio.

# Estimated Costs

- CT/Log Inactivation Monitoring at EP:
  - Cost to upgrade to electronic recording devices @ \$1,500 for 25% of systems using strip chart recorders (29 systems)
  - $29 \times \$1,500 = \$43,500$
- Disinfectant Residuals in Distribution System:
  - Costs for automatic flushers ~ \$2,000
  - Costs for booster chlorination stations ~ \$200,000 - \$250,000
  - Total estimated capital costs for 20% of large systems (6) = \$780,000

# Schedule and Next Steps

- The 60-day public comment period will end on 4/19/2016.
- Three public hearings are scheduled for 3/28, 4/5 & 4/7/2016.
- Three stakeholder meetings are scheduled for 3/9, 3/30 & 4/15/2016.
- Additional information is available on our website.



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Safe Drinking Water

# **Lisa Daniels**

## **Bureau of Safe Drinking Water**