



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Safe Drinking Water

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

Environmental Quality Board Meeting November 17, 2015

Tom Wolf, Governor

John Quigley, Secretary

History of Rulemaking

- Received DEP regional staff input in Jan. 2014.
- 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

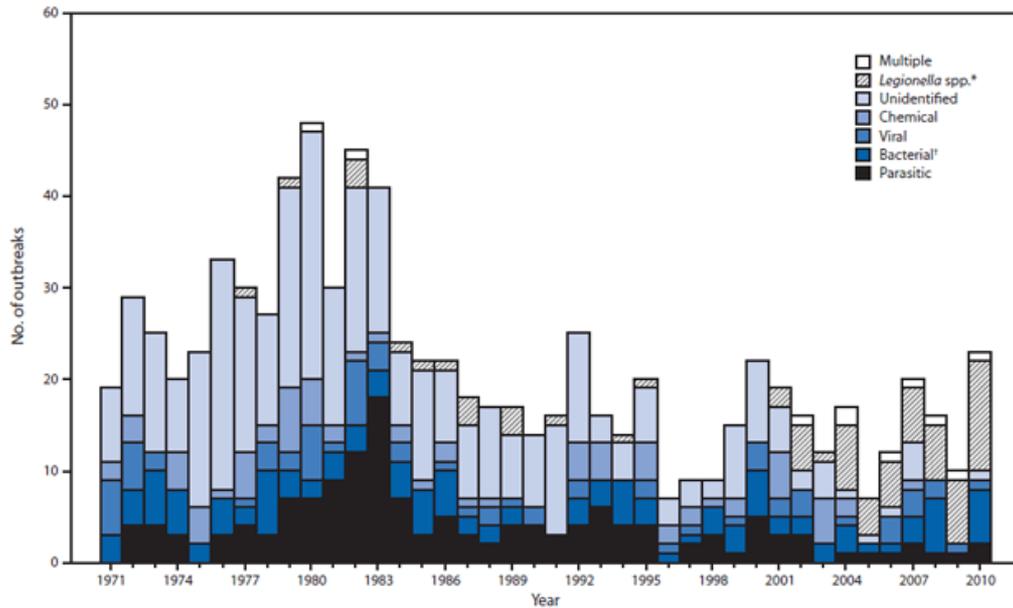
- TAC meetings were convened on 5/18, 5/26, 6/16 and 6/30/2015 to gather additional stakeholder input – 14 water systems and organizations delivered presentations.
- Two additional meetings were held with large water systems on 6/29 and 7/16/2015.
- TAC provided a final set of recommendations on 7/15/2015.

Background and Purpose

Why is the Department amending the disinfectant residual requirements?

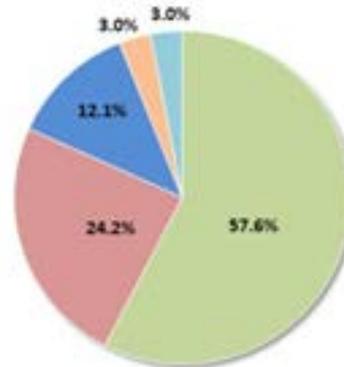
- There are some alarming trends in WBDOs associated with distribution system defects.
- Existing requirements are not protective of public health and are not enforceable – existing standards do not represent a **true** or **meaningful** residual.

National Waterborne Disease Outbreaks

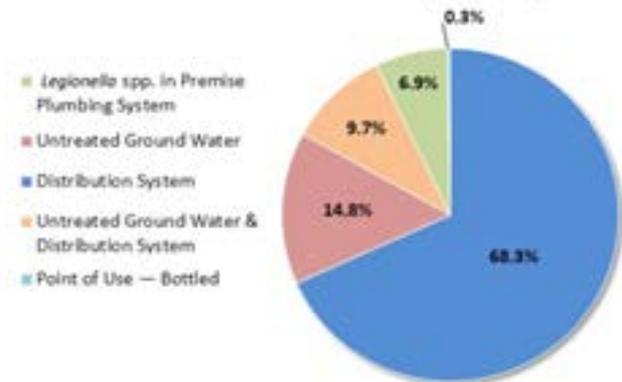


Source: CDC, MMWR, Vol. 62, No. 35, Septer

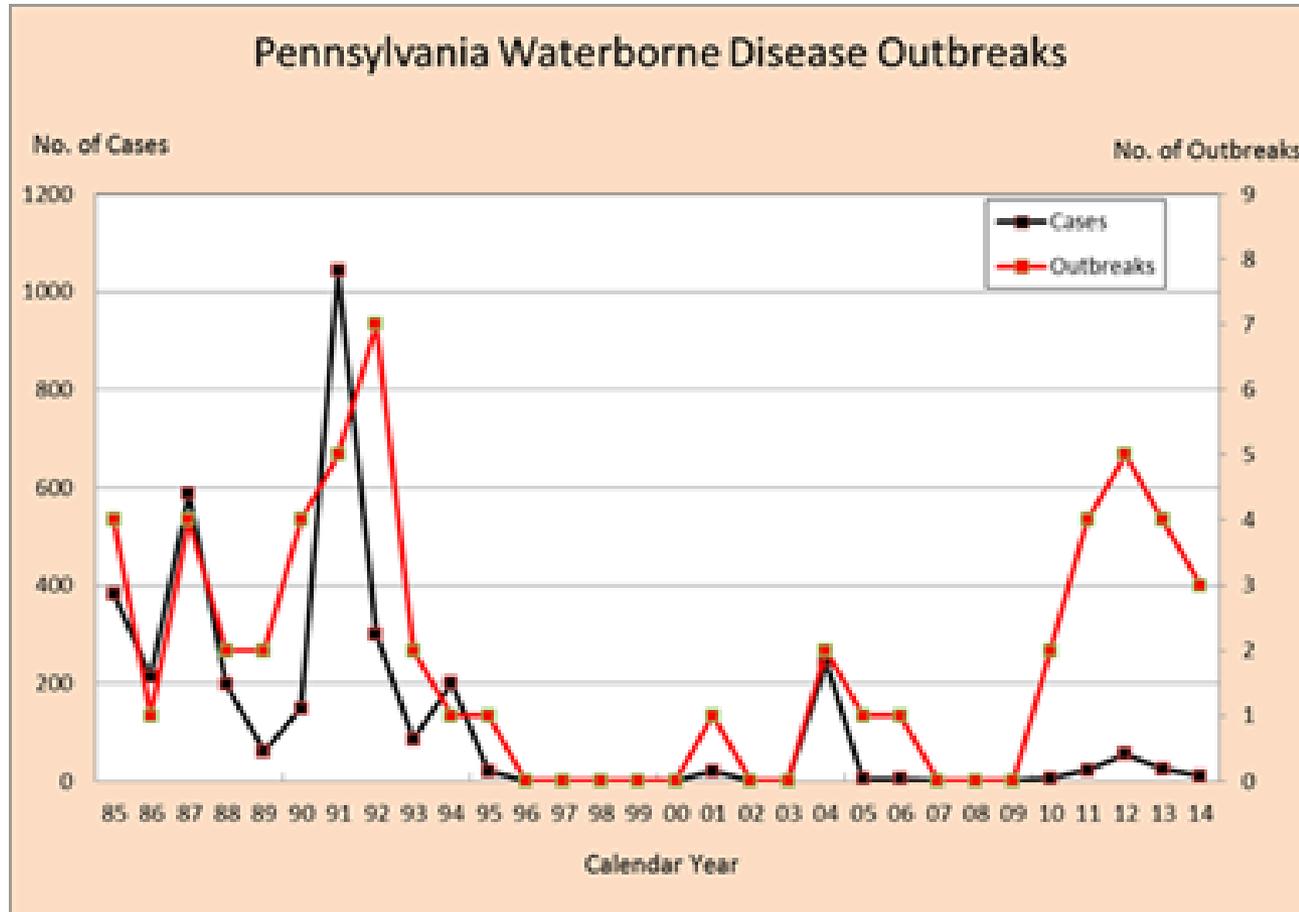
Outbreaks (N = 33)



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 Department is proposing a 60 day public comment period with two public hearings.



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