PEER-REVIEWED

Complying With Georgia's Dental Unit Water Quality Rule

Silver-ion cartridge system, rapid mail-in and in-office tests, and shock tablets help Oral Health Center ensure waterline safety

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For the Georgia Board of Dentistry, few initiatives have felt as urgent—or as personally meaningful—as spearheading Georgia's Dental Unit Water Quality Rule.[1] What began as a response to devastating pediatric outbreaks has evolved into what they believe should serve as a national model for protecting the most vulnerable patients.

The Catalyst: When Children Became Casualties

The statistics are sobering. In 2015, Georgia experienced its first major outbreak related to dental unit waterline contamination, in which 22 children contracted nontuberculous mycobacteria infections from contaminated dental unit water at a pediatric practice. The consequences were severe—100% developed lymphadenitis, 37% suffered pulmonary nodules, some developed osteomyelitis, and nearly half experienced hearing loss from necessary antibiotic treatments.[2] Then, in 2022, another pediatric outbreak occurred at a different practice, and in 2024, a third case emerged at a hospital after a patient was seen in the operating room for dental care.

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The Georgia Board of Dentistry knew it had to act decisively. Although California had experienced a significant 60 to 70-person outbreak in 2016, it was the state of Washington that had led the way in developing response models that were similar to what Georgia needed to implement.[3]

Building Consensus: The Rule That Wrote Itself

The Georgia Board of Dentistry learned from Washington's 5-year rulemaking process and streamlined its process to create a dental unit waterline rule in 5 months. Another key was changing the language from "the dentist shall perform" to "the dentist shall be responsible for" to acknowledge the reality that team members typically handle these protocols. The rule itself is deliberately non-prescriptive.[1] It requires quarterly testing and 5-year record retention, but it doesn't mandate specific products or methods. This flexibility was intentional. The board wanted to provide education and to create responsibility, not a regulatory burden that would generate resistance.[4-7]

Setting the Standard

The Oral Health Center of Grady Health System's Infectious Disease Program is a 12-chair facility that serves approximately 2,000 patients with HIV annually. Given the patient population's immunocompromised status, infection control has always been paramount. Regarding waterline management, after experimenting with other products such as tablets during the COVID-19 pandemic, the facility returned to using a dental waterline silver-ion cartridge system (Sterisil® Straw, Solmetex). The simplicity is appealing, with benefits including once-yearly cartridge replacement, compatibility with both tap and distilled water, and no overnight air-drying requirements. Most importantly, the silver-based system is tasteless, unlike some iodine-based alternatives that may alarm patients with their unpleasant taste.

Implementing a Two-Tiered Testing Strategy

The Oral Health Center's waterline testing protocol reflects the heightened standards of its hospital-based setting. The facility uses a two-tiered approach that involves a quarterly mail-in R2A waterline test (Sterisil® R2A With FASTRead™, Solmetex) for official compliance that is supplemented by biweekly spot-checks

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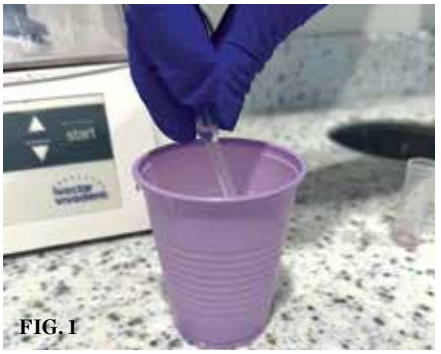
FIG. 1

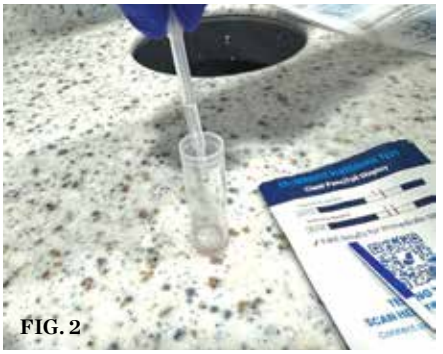
FIG. 2


FIG. 3

FIG. 4

(1.) Equally sized water samples are collected from all water sources in the operatory in a clean cup. **(2.)** Five drops of the collected water are added to the test kit's reagent-filled vial. **(3.)** The vial is gently swirled to mix the water with the reagent and then placed on a flat surface for 5 minutes to ensure that the reagent is fully dissolved. **(4.)** The test strip is then placed in the vial with arrows facing down. Results are available in 10 minutes.

with an in-office strip test (Sterisil® FASTCheck15™, Solmetex). This mail-in R2A waterline test was selected by the facility for its EPA-certified laboratory and remarkable turnaround time, which includes an early failure notification within 24 hours if bacteria surpass the 500 CFU/mL limit and a complete report by week's end. The in-office test was selected for its fast 15-minute results and easy-to-read strips. It integrates seamlessly into the facility's workflow. The infection control coordinator, who holds credentials through the Dental Assisting National Board/DALE Foundation and the Association for Dental Safety (formerly known as OSAP), performs the testing every other Wednesday afternoon when the clinic is closed for maintenance and meetings. The process is very straightforward: collect equally sized water samples from all sources in the operatory, add five drops of the water to the reagent-filled vial, swirl, and wait (Figure 1 through Figure 4). The results indicate whether the sample is below or above 500 CFU/mL, which is the EPA standard for potable water.[5] This dual approach to waterline testing satisfies both the facility's Joint Commission requirements and its personal commitment to thoroughness.

The Pooled Sample Strategy

Cost-effectiveness matters, especially for larger practices. The Oral Health Center utilizes pooled sampling that combines up to 10 waterline samples per operatory. If the pool tests positive, the entire operatory is treated over a weekend using a shock treatment (Citrisil™ Shock Dental Waterline Microbial Contaminant Control Tablet, Solmetex) then retested several days later. This mirrors HIV testing protocols—pool samples for efficiency, then investigate individually if positive. The key is maintaining appropriate documentation, including using proper forms, clearly labeling operatories, and maintaining logs that would satisfy any regulatory review.

Moving Forward: Lessons for the Profession

Advocacy evolves. Today's challenge is ensuring that no child—or any patient—suffers preventable illness from contaminated dental waterlines. The Georgia rule proves that meaningful change doesn't require regulatory battles or industry upheaval. Sometimes, it just requires recognizing that protecting patients is the right thing to do, then making it as simple as possible for everyone to succeed.

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