Dental unit waterline safety

WHAT IS (AND ISN'T) GOING WELL

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Waterline treatment and testing is a vital pillar of infection control in dentistry, and yet it still remains a huge point of confusion—even apathy—for many clinicians.

About a year ago on October 31, 2022, the Centers for Disease Control and Prevention's Division of Oral Health issued a Health Alert Network (HAN) Health Advisory, a very unusual event. The report was triggered by a March 2022 outbreak of nontuberculous Mycobacteria at an unidentified pediatric office; outbreaks also occurred in 2015 and 2016.

There are four levels of Heath Alert Network messages, and a Health Advisory is the second most urgent. The CDC states that Health Advisories "require immediate action" and "provide important information about a public health event."[1]

While the CDC did not state specifically what procedures were involved in the 2022 outbreak, the children harmed in the 2015 and 2016 outbreaks had all undergone pulpotomies.

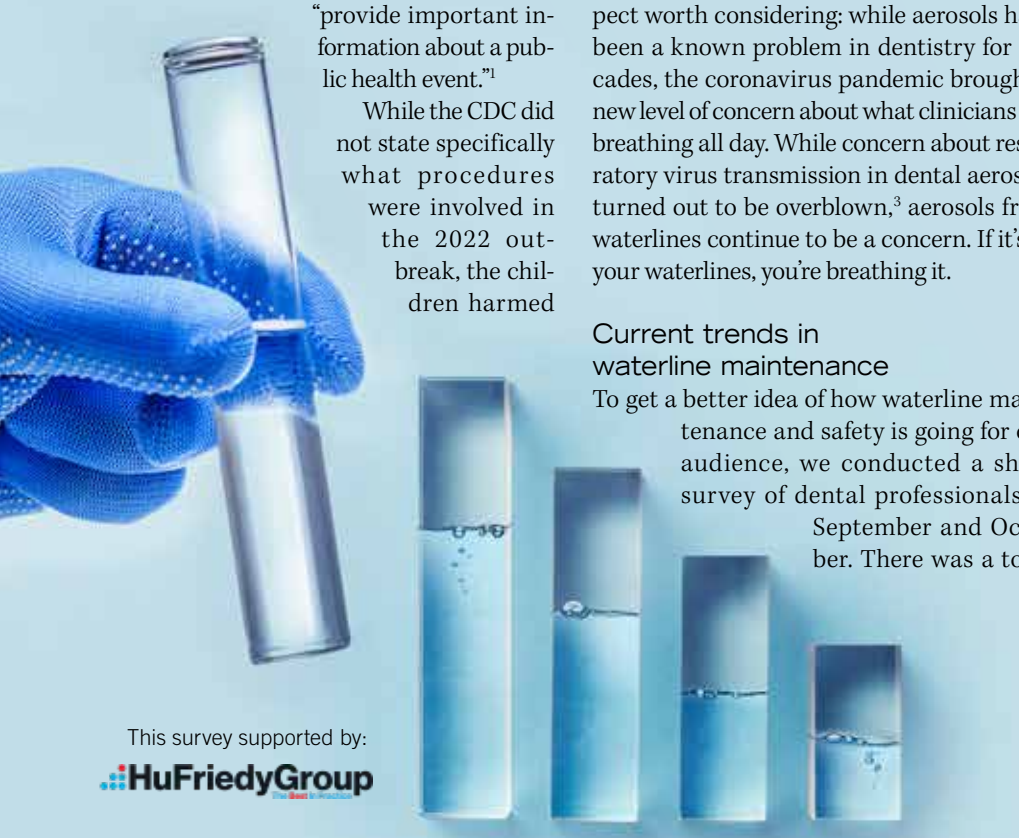
Writing about the alert at the time, Amanda Hill, RDH, said, "this makes the third such cluster of infections since 2015 where multiple children have been affected. And when I say affected, I don't mean these kids had to take an antibiotic for 10 days and all was well. These patients have had multiple surgeries and lost permanent teeth and parts of their jaw. Many are permanently disfigured and/or disabled because of these infections."[2]

If it's in your waterlines, it's in your air

Known disease outbreaks from dental unit waterlines are rare, but the consequences can clearly be severe and life-altering. Another aspect worth considering: while aerosols have been a known problem in dentistry for decades, the coronavirus pandemic brought a new level of concern about what clinicians are breathing all day. While concern about respiratory virus transmission in dental aerosols turned out to be overblown,[3] aerosols from waterlines continue to be a concern. If it's in your waterlines, you're breathing it.

Current trends in waterline maintenance

To get a better idea of how waterline maintenance and safety is going for our audience, we conducted a short survey of dental professionals in September and October. There was a total



This survey supported by:

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Are you failing waterline testing, even following use of a shock treatment?

Yes	No
10%	48%
N/A	**Other**
35%	7%

In the United States, how many clusters of dental-associated infections have been linked to waterlines since 2015?

None	1
41%	2%
2	**3**
10%	6%
4	**5+**
6%	35%

Do patients ask if/how their treatment water is maintained?

Yes	No
5%	88%
Not sure	**Other**
3%	4%

Does your office advertise your waterline maintenance procedures to patients?

Yes	No
1%	89%
Not sure	**Other**
8%	2%

What type of treatment product are you using, if any?

Daily maintenance tablet	38%
In-bottle straw	31%
Daily maintenance liquid	15%
Periodic liquid shock	33%
Periodic shock tablet	19%
Inline cartridge	6%
Nothing	10%
Other	10%

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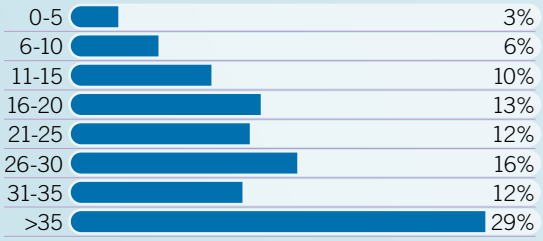
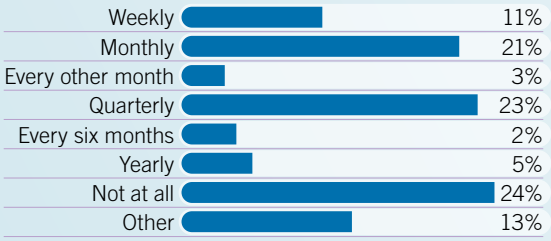
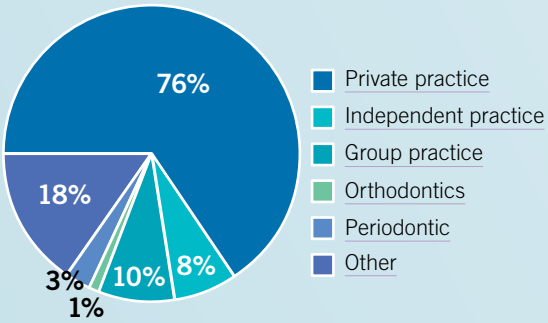
How many years have you been a practicing clinician?



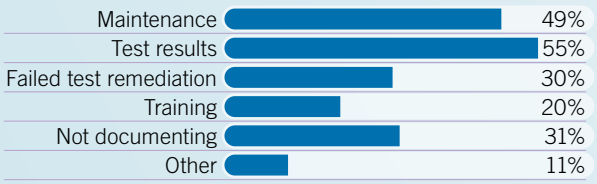
How often are you testing waterlines?



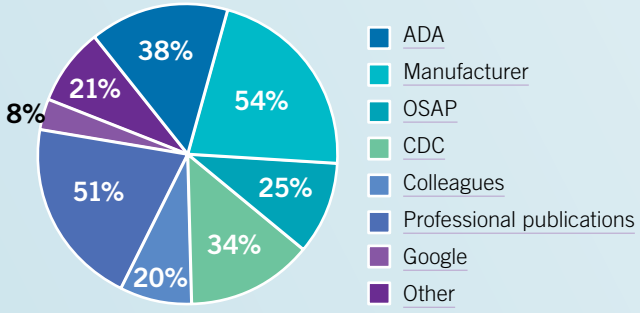
Which best describes your practice settings?



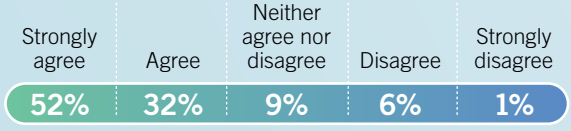
If you are currently testing and/or treating your waterlines, are you documenting?



How do you obtain information regarding waterline testing, maintenance, and safety?

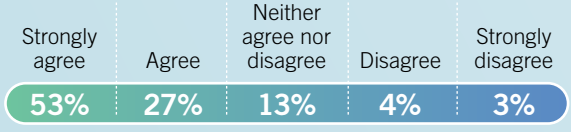


My workplace uses recommendations from manufacturers and industry leaders such as the ADA, CDC, or OSAP for waterline maintenance.



Maintaining dental unit waterlines is important to patient and provider safety.

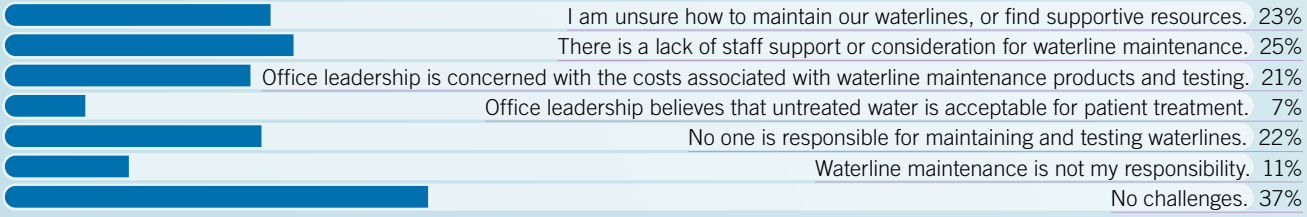
The dentist and/or practice owner where I work is committed to waterline safety.



How is staff being trained/retrained on the waterline testing/treatment protocol in the office?

No regular educational training or retraining is provided	44%
New hires only	13%
When a new waterline test or treatment product is brought in	20%
After failed waterline test	4%
On a quarterly basis	8%
Annually	19%
Other	10%

What are some challenges you face when implementing waterline safety in your office?



of 186 respondents. While there were many encouraging signs in the results, some of the data shows that dentistry still has a ways to go.

Seventy-seven percent of our respondents were dental hygienists, 13% were dentists, with the other 10% distributed in other roles such as assistants, office managers, and educators. About half strongly agreed that their office was following accepted industry recommendations to maintain waterlines, and 83% overall strongly agreed that waterline maintenance is important to patient and provider safety.

Our survey also included a question asking respondents how many disease outbreaks had been caused by dental water in the United States. Interestingly, dental professionals tended to either underestimate or overestimate this. 41% responded that there had been no outbreaks, while 35% selected 5 or more. (The correct answer was 3.)

Comparing dental hygienists and dentists

When asked to rate their agreement with the statement "maintaining dental unit waterlines is important to patient and provider safety," hygienists were more likely than dentists to strongly agree. Eighty-eight percent of hygienists "strongly agreed" that it was important, while only 63% of dentists did. Twelve percent of RDHs selected "agree" compared to 38% of dentists. However, no one in either group selected "disagree" or "strongly disagree."

Hygienists were also more likely to indicate discomfort with how waterlines were being handled in their practices. All dentist respondents agreed or strongly agreed that the dentist and/or practice owner where they worked is committed to waterline safety. Among hygienists, 75% agreed or strongly agreed, but the remaining 25% were not convinced.

Testing confusion

Surprisingly, nearly a quarter (24%) of all respondents were not testing waterlines at all. This meant that even among those who saw themselves as working at a practice supportive of waterline safety, routine testing was not being performed. For example, 15% of respondents who "strongly" agreed or agreed their practice was following waterline safety also indicated that their practices were *not ever testing*.

The Organization for Safety, Asepsis, and Prevention (OSAP) recommends practices test monthly until they have passed for two consecutive months, to verify their maintenance is working.[4] Afterward, quarterly testing is sufficient. In our results, 23% were testing quarterly—but 24% overall were not testing at all!

"There is clearly still confusion about how to test, treat, and maintain dental unit waterlines properly," said Hill, a key opinion leader in waterline safety. "However, this knowledge is essential for both the safety of the patient and the clinician. The only way to know if your water is safe is to test."

What's going well

Among respondents who said they were not facing challenges, some common themes emerged: supportive teams (especially practice owners), rigorous systems, and easy-to-use equipment. A single staff member having responsibility for testing was mentioned many times. A few respondents said they worked for the government and had very strict rules about waterline quality.

What respondents wish was different

At the end of the survey, we asked respondents if they had any questions or experiences they'd like to share. A very common theme was the wish for greater oversight of waterlines.

- "There should be a required test with results recorded outside of the office. Same as autoclaves. Regular office inspections in person should also be part of our standard of care."
- "I wish there was an organization that checks waterlines and OSHA standards of private practices. Most times when I try to bring up such standards, it gets dismissed."
- "Frustrating that hygienists want to follow protocol and there is no support from the DDS. Only way to get change is to turn them in to OSHA and then they may not fire you but they will make your life miserable. The system is terrible."

Other clinicians emphasized the importance of buy-in from staff, especially the practice leader. Some respondents said they didn't really know how or if maintenance was being performed, as it wasn't their direct responsibility. Having a single staff member handle a particular aspect of infection control is a common and recommended practice. This also raises the point that other staff should be aware of office procedures so they can be confident the environment is safe and can answer any patient questions.

If you are confused about waterline safety, looking to build a program from scratch, or just want to update your knowledge, we have a wealth of resources for you on our websites, rdhmag.com and dentistryiq.com. Just search "waterlines." OSAP also has an exhaustive resource included in this article's citations. **RDH**

REFERENCES

1. Outbreaks of nontuberculous mycobacteria infections highlight importance of maintaining and monitoring dental waterlines. Centers for Disease Control and Prevention. October 31, 2022. Accessed September 12, 2022. https://emergency.cdc.gov/han/2022/han00478.asp
2. Hill A. Waterline warning: Dental practices, listen up. DentistryIQ. November 8, 2022. Accessed September 12, 2022. https://www.dentistryiq.com/dentistry/article/14285436/dental-waterline-warning-dental-practices-listen-up
3. Froum SJ, Froum S. Dentistry is completely safe with enhanced infection control. *Dental Economics*. December 1, 2020. Accessed September 12, 2022. https://www.dentaleconomics.com/science-tech/sterilization-and-infection-control/article/14188344/dentistry-is-completely-safe-with-enhanced-infection-control
4. Dental unit waterlines (DUWL). The Organization for Safety, Asepsis, and Prevention. Updated August 14, 2023. Accessed September 12, 2023. https://www.osap.org/topics-dental-unit-waterlines-duwl

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