

Biological Monitor

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500: The CDC's Proposed Standard for Dental Unit Water Quality*

The Center for Disease Control is expected to release new guidelines for infection control practices in dentistry in the fourth quarter of this year. The draft guideline proposes a water quality standard of 500 colony forming units per milliliter of water. As a point of reference, the EPA, the American Public Health Association, and the

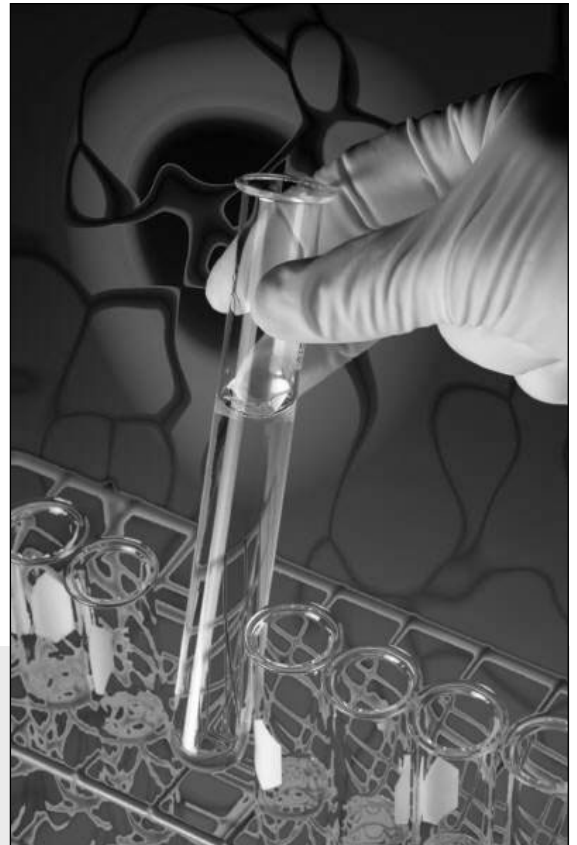
Untreated/unmodified dental unit water will most likely not meet the 500 CFU/mL standard.

American Water Works Association set standards for safe drinking water quality at no more than 500 CFU/mL. A CFU is defined as an individual cell which is able to clone itself into an entire colony of identical cells. In the laboratory setting, bacterial counts are derived through a process of filtering 1 mL of water, inoculating a growth media (R2A Agar) in a Petri dish, incubating, and counting the colonies. Each colony represents one bacterium.

Studies have demonstrated that dental unit waterlines can become colonized with a variety of microorganisms. Biofilms form on the interior surfaces of dental waterline tubing, allowing microorganisms to colonize and replicate. Once established, the biofilm can significantly increase bacterial counts by supporting bacterial growth. In two separate studies, research revealed that microbial counts can reach 200,000 CFU/mL within 5 days after new dental unit waterlines are installed, levels of microbial contamination as high as 1,000,000 CFU/mL have been documented.

Untreated or unmodified dental unit water will most likely not meet the 500 CFU/mL standard. Dental healthcare personnel should be trained about water quality, biofilm formation, water treatment methods, proper maintenance protocols for water delivery systems, and water quality monitoring.

*This article originated and contains excerpts from the CDC's *Draft Recommended Infection Control Practices for Dentistry, 2003*.



In this Issue

Chronic Irritant Contact Dermatitis

Eighty-five percent of healthcare workers have a history of skin problems. Find out what you can do to protect yourself.

DUWL Testing Service

New mail-in dental unit waterline testing service.

Receive Test Results More Often

BMS offers additional options for test reporting.

Chronic Irritant Contact Dermatitis

Eighty-five percent of healthcare workers have a history of skin problems. Contact dermatitis can develop from frequent and repeated use of hand hygiene products, exposure to chemicals, and glove use. There are two types of contact dermatitis – irritant and allergic. Irritant contact dermatitis is extremely common, and develops as dry, itchy areas on the skin around the area of contact. Allergic contact dermatitis may result from exposure to accelerators and other chemicals used in the manufacture of rubber gloves (e.g., natural rubber latex), and other chemicals in the dental office (e.g., gluteraldehyde).

Frequent hand washing with antimicrobial soaps and antiseptic agents can cause chronic irritant contact dermatitis. Repeated use of soap and water damages the skin. When the skin is damaged, it changes the skin flora, which results in more frequent colonization by staphylococci and gram-negative bacteria. Healthy, unbroken skin is the primary defense against infection and transmission of

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One strategy for reducing hand dermatitis is using alcohol-based hand rubs.

pathogens. Lotions are recommended to ease dryness from frequent hand washing and glove use; however, petroleum-based lotion formulas can weaken latex gloves and increase permeability. Studies have shown that the use of both non-antimicrobial as well as antimicrobial soaps cause greater skin damage, dryness and irritation compared to alcohol-based hand rubs.

The CDC proposed the use of alcohol-based hand rubs as one strategy for reducing exposure to irritating soaps and detergents. Studies have demonstrated that the hand rubs were better tolerated than washing hands with non-antimicrobial or antimicrobial soaps, and the hand rubs were more effective at reducing the number of microorganisms on the skin.

It is well documented that hand sanitizers are kinder to your hands and offer a great solution for those who suffer from hand dermatitis. If you suffer from dry hands, try an alcohol-based hand rub such as GelSan. GelSan was developed for healthcare personnel, by healthcare personnel, at the University of Utah Hospital and Clinics. For more information, call 1-800-819-3336.

DUWL Testing Service Now Available

In response to customer requests, Biological Monitoring Services (BMS) is now offering a mail-in dental unit waterline testing service. The service provides microbial counts up to 20,000 CFU/mL and a pass/fail result based on a standard of 500 CFU/mL.

You collect water from each dental unit in a separate test vial. You then pack the sample in the styrofoam mailer with a refrigerant pack and ship it via USPS Express Mail. Upon receipt, BMS processes samples according to the *Standard Methods for the Examination of Water and Wastewater, 20th Edn., 1998*.

The DUWL testing kit includes refrigerant pack, collection vials, styrofoam mailer, and an optional pre-paid Express Mail postage. A certificate, suitable for framing and display is provided. Results are available seven days from receipt. Test failures are immediately phoned to your office. Complete test results are faxed to your office.

Item #	# of Test Kits	Vials Per Kit	Pricing	Description
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80404	4	4	\$ 250	4 Styrofoam mailers, return postage not paid
80604	4	6	\$ 350	4 Styrofoam mailers, return postage not paid