

Purpose

This Standard Operating Procedure (SOP) provides step-by-step instructions on how to perform dental unit waterline maintenance and testing. Waterline maintenance and testing is performed on a regular basis to ensure that the number of microorganisms in water used as coolant or irrigant for non-surgical dental treatment is as low as reasonably achievable and, at a minimum, meets nationally recognized standards for safe drinking water.

Scope

These procedures apply to any dental personnel that is tasked with DUWL maintenance and documentation. Follow recommendations for monitoring water quality provided by the manufacturer of the dental unit or waterline treatment product. Assign a team member the responsibility of monitoring local alerts to find out whether any boil water orders have been issued.

Definitions

Biofilm - An assemblage of microbial cells that attaches to a surface and is enclosed in a matrix of primarily polysaccharide material.

Dental Unit - Combination of interconnected dental equipment and dental instruments constituting a functional assembly for use in the provision of dental treatment.

Adhesion/Attachment - The stable interaction of a cell with respect to a surface. Living cells actively excrete chemicals to anchor themselves to a substratum.

Heterotrophic plate count (HPC) - A culture method for estimating the number of live heterotrophic bacteria in water.

Colony Forming Units Per Milliliter (CFU/mL) - Minimum number of separable cells on the surface of or in semi-solid agar medium that give rise to a visible colony of progeny numbering in the tens of millions. CFUs may consist of pairs, chains, clusters, or single cells.

Infection - Invasion and multiplication of microorganisms on or in body tissues resulting in a disease process.

Pathogen - An organism that can produce disease in a host. Opportunistic microorganisms leverage weakened defense mechanisms to inflict damage on a host.

Shock - Utilizing a chemical in waterlines to completely rid the lines of contaminants. This step enables continuous low-level antimicrobial products to work most effectively.

Treat - Daily treatment of waterlines continuously controls contamination by reducing and inhibiting re-growth of bacteria.

Test - Clinical monitoring quarterly to ensure effective waterline maintenance protocol. (<500 CFU/ml). This part of the protocol provides the necessary documentation to protect the dental practice.

Protocol

- Shock, treat, and test dental unit waterlines by consulting with the dental unit manufacturer for appropriate methods and equipment to maintain the recommended quality of dental water.
- Flush lines for several minutes each morning. Flush handpieces with air/water for 20 to 30 seconds between patient appointments. Installing sterilized handpieces and sterile or disposable syringe tips after flushing will reduce cross-contamination.
- Follow the dental unit manufacturer's recommendations for treating dental unit waterlines. Implementing protocols not recommended by the unit manufacturer could cause equipment damage and void warranties.
- Avoid heating dental unit water. Warming the water may amplify biofilm formation and select organisms pre-adapted to growth in a human host.
- Use sterile solutions for all surgical irrigations. Ensure that only heat-sterilized/sterile-disposable bulb syringes or sterile water delivery devices are employed to deliver the sterile water.
- Educate and train oral healthcare workers on effective treatment measures to ensure compliance and minimize risks to equipment and personnel.
- Accurately complete and document whatever approach is chosen.

Responsibilities

Infection Control Coordinator (or those in similar positions) - use SOPs to communicate to staff and explain how to perform dental unit waterline operations. Employees can use SOPs for reference when learning to complete certain tasks according to established protocols. You will want to use these SOPs to determine whether your processes meet agency standards.

Employees that perform this duty must be knowledgeable in DUWL maintenance and responsible for adhering to the manufacturer's instructions for use. The employee must use aseptic techniques, compatible products, and complete the documentation accurately. The responsible employee must have access to and understand how to document the information accurately using either an electronic method or hard copy. The employee must make sure the practice's water line treatment schedule includes water quality monitoring.

Procedure

Infection Control Coordinator Name: _____	
Shock Product: _____	
Treatment Product: _____	
Testing Product & Frequency: _____	
	<u>Shock</u> Product Name: _____ Schedule: _____
	<u>Treat</u> Product Name: <input type="checkbox"/> BluTube <input type="checkbox"/> BluTab Schedule: _____
	<u>Test</u> Product Name: <input type="checkbox"/> QuickPass <input type="checkbox"/> Flo <input type="checkbox"/> R2A Schedule: _____ Hard Copy: <input type="checkbox"/> Yes <input type="checkbox"/> No Online Tracking: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>Defensible Documentation: Is your information filled out accurately and completely?</i>
	<u>Additional Dental Water Quality Guidelines</u> Daily water unit flushing: <input type="checkbox"/> 1 minute at the start of the day <input type="checkbox"/> 20-30 seconds after each patient <input type="checkbox"/> Use of sterile water that does not contain antimicrobials, bacteriostatic agents, or added buffers for surgical procedures. <input type="checkbox"/> Method to monitor "Boil Water" advisories - Who? What? Where?
	<u>Cleaning the Inside of the Water Bottle</u> Brand of Bottle: _____ Instructions for Maintaining: _____ <i>Employees must maintain asepsis when handling waterline maintenance products.</i>

This documented was adapted from the original waterline maintenance SOP developed by Monica Satake and Kellie Thimmes.