

 <p style="text-align: center;"><b>DIVISION OF ADULT INSTITUTIONS</b></p> <p style="text-align: center;"><b>POLICY AND PROCEDURES</b></p>	<b>DAI Policy #:</b> 500.40.28	<b>Page</b> 1 of 5
	<b>Original Effective Date:</b> 06/01/00	<b>New Effective Date:</b> 06/08/15
	<b>Supersedes:</b> 500.40.28	<b>Dated:</b> 07/18/14
	<b>Administrator's Approval:</b> Cathy A. Jess, Administrator	
<b>Required Posting or Restricted:</b>		
<input type="checkbox"/> Inmate <input checked="" type="checkbox"/> All Staff <input type="checkbox"/> Restricted		
<b>Chapter:</b> 500 Health Services		
<b>Subject:</b> Dental Unit Waterline Maintenance and Monitoring		

**POLICY**

Division of Adult Institution facilities shall ensure Dental Unit waterline quality meets the standards recommended by the Centers for Disease Control and the American Dental Association, and shall be monitored to assure these standards are met.

**REFERENCES**

Standards for Health Services in Prisons, National Commission on Correctional Health Care, 2014 P-B-01, Infection Control Program

Standards for Health Services in Juvenile Detention and Confinement Facilities  
National Commission on Correctional Health Care, 2011, Y-B-01, Infection Control Program

Centers for Disease Control Guidelines for Infection Control in Dental Health-Care Settings, 2003

American Dental Association ADA Statement on Dental Unit Waterlines, April 2012

Attachment A – DentaPure® Installation Instructions

Attachment B – DentaPure® Instructions for Use

Attachment C – Waterline Test Service – Instructions

Attachment D – 1:10 Solution Shock Disinfection and Air Purging Procedures

**DEFINITIONS, ACRONYMS, AND FORMS**

ADA – American Dental Association

Biofilm – A community of slime producing microorganisms attached to a solid surface which may include bacteria, fungi, yeasts, protozoa and other microorganisms, and which may colonize on the interior surfaces of waterline tubing.

CDC – Centers for Disease Control

CFU – Colony-forming unit

CFU/mL – Colony-forming units per milliliter

Clean water – Freshly boiled or heat distilled water.

Colony-Forming unit – The minimum number of separable cells which can give rise to a visible bacterial colony.

CRA – Clinical Research Association

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Dental Treatment Water – Clean, nonsterile water used for non-surgical dental treatment, irrigation, and cooling of high speed hand pieces and ultrasonic devices.

Distilled Water – Water which is distilled under the standards of the USP. Distillation reduces the mineral or organic content of water but does not reliably eliminate bacteria or endotoxins.

DOC – Department of Corrections

DSU – Dental Services Unit

DUWL – Dental Unit Waterlines

Endotoxins – Lipopolysaccharides in the cell wall of gram negative bacteria that can produce a wide range of adverse physiologic responses. Endotoxins are heat stable but can be degraded by oxidizing agents (e.g., peroxide and hypochlorite).

EPA – Environmental Protection Agency

EU/mL – Endotoxin units per milliliter

FDA – Federal Drug Administration

Heterotrophic Bacteria – Bacteria found in water which require a carbon source for growth. Determining the heterotrophic plate count is used as an indication of the amount of residual disinfectant present in a water supply.

Oral Surgical Procedure – Any dental procedure that involves incision, excision or reflection of tissue that exposes normally sterile areas of the oral cavity including cutting to the bone. (e.g., surgical extraction, biopsy).

“1/10 Solution” – A disinfectant solution of one part 6% sodium hypochlorite (household bleach) plus ten parts distilled water. Used in water bottle and water line disinfection procedures. A 1/10 solution must be one week old or less to be considered an effective solution.

Self-Contained Water System – A system that supplies water to the dental hand pieces and syringes from a source that is bottled and bypasses the public water system and plumbing lines. When used with periodic chemical treatment protocols, this water system has demonstrated safety.

Sterile Water – Water that has been autoclaved in order to remove all microorganisms. USP standards for endotoxins in sterile water is a maximum of 0.25EU/mL. Minerals and organic compounds may remain after sterilization. Bottled water is not considered to be sterile unless it is labeled as being sterile.

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Sterile Water Delivery System – A system which bypasses or replaces the dental unit water system with autoclavable water bottles and tubing lines.

USP – United States Pharmacopoeia

## **PROCEDURE**

### **I. General Recommendations**

- A. All dental treatment units shall be fitted to operate with a self-contained waterline system.
  1. Water bottles in use must be PETE-free.
  2. Information about self-contained systems and daily disinfection is located in the instruction manual for each brand of dental unit.
- B. Dental treatment water must meet EPA/CDC standards for drinking water of less than 500 CFU/mL, and ADA recommendations for dental treatment water of less than 200 CFU/mL.
- C. Distilled water shall be used in DUWL for non-surgical dental procedures.
- D. Sterile water shall be used for surgical procedures cutting to bone. Sterile irrigation shall be supplied with either disposable bulbs/syringes, IV-bagged sterile water or, use of a fully sterilizable water delivery system (e.g., AquaSept®).
- E. Waterline pressure shall not exceed 45 psi.
- F. Each waterline shall be flushed for two minutes at the start of the workday or after periods of disuse.
- G. Each waterline shall be flushed for 20-30 seconds between inmate patients.
- H. Dental staff shall avoid gravitational retraction into water lines by keeping suction and evacuation lines below the level of the inmate patient's mouth.
- I. Dental staff shall prevent retraction caused by the inmate patient lips closing around the tip of the saliva ejector.
- J. If the public water system is under a Boil-Water Advisory, do not use public water for rinsing, hand washing, or preparation of any solutions. Follow the guidance of the local water utility for flushing of faucets once the Advisory is cancelled. See [www.dhs.wisconsin.gov/localhealth/](http://www.dhs.wisconsin.gov/localhealth/).

### **II. Maintaining Dental Unit Water Quality**

- A. Wash hands before handling the independent water bottle and any part of the water line system to avoid cross contamination.

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- B. Between each inmate patient, clean and heat sterilize all hand pieces, syringes or other instruments that attach to the dental unit air and waterlines.
  
- C. To reduce microorganisms in DUWL, use a continuous antimicrobial chemical agent in the self-contained system's independent water bottle.
  - 1. The DOC has chosen DentaPure® as the agent to be used in all DSUs.
  - 2. Follow manufacturer's directions for installation (Attachment A) and use (Attachment B).
  - 3. Use appropriate volume (365B or 40B) for the size of the water bottle.
  - 4. DP365B becomes ineffective after a maximum of 365 calendar days or 240 liters of use.
  - 5. DP40B becomes ineffective after a maximum of 60 calendar days or 40 liters of use.
  - 6. When water usage is within 5 calendar days or 10 liters of maximum use, test daily using the iodine test strips until the maximum use is reached, or the test strip turns yellow. Then change the cartridge.
  - 7. Dates of cartridge change should be documented on a log.

### III. Monitoring Dental Unit Water Quality

- A. Laboratory Water Testing
  - 1. As a precaution against procedural inadequacies, laboratory testing of DUWL for heterotrophic bacteria should be performed once per year on each dental operatory unit.
  - 2. See Attachment C for instructions on sending water samples to a waterline testing laboratory.
  
- B. Positive Waterline Test Procedure
  - 1. If test results are greater than 200 CFU/ml, review work practices and cartridge change records. Correct any procedural problems.
  - 2. Shock the DUWL with the 1/10 solution to remove the biofilm complex. See Attachment D for the 1/10 procedure.
  - 3. Retest the DUWL using a laboratory collection kit. Send water test sample to a laboratory for processing.
  - 4. Do not use the dental unit until you receive a negative result.

**Bureau of Health Services:** \_\_\_\_\_ **Date Signed:** \_\_\_\_\_

James Greer, Director

\_\_\_\_\_ **Date Signed:** \_\_\_\_\_

Dr. Ryan Holzmacher, Medical Director

\_\_\_\_\_ **Date Signed:** \_\_\_\_\_

Mary Muse, Nursing Director

\_\_\_\_\_ **Date Signed:** \_\_\_\_\_

Dr. Barbara De Lap, Dental Director

**Administrator's Approval:** \_\_\_\_\_ **Date Signed:** \_\_\_\_\_

Cathy Jess, Administrator

**DIVISION OF ADULT INSTITUTIONS FACILITY IMPLEMENTATION PROCEDURES**

<b>Facility:</b> Name		
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<b>Chapter:</b> 500 Health Services		
<b>Subject:</b> Dental Unit Waterline Maintenance and Monitoring		
<b>Will Implement</b> <input type="checkbox"/> As written <input type="checkbox"/> With below procedures for facility implementation		
<b>Warden's/Center Superintendent's Approval:</b>		

**REFERENCES**

**DEFINITIONS, ACRONYMS, AND FORMS**

**FACILITY PROCEDURE**

- I.
  - A.
  - B.
    - 1.
    - 2.
      - a.
      - b.
      - c.
    - 3.
  - C.

II.

III.

**RESPONSIBILITY**

I. Staff

II. Inmate

III. Other