Infection Prevention and Control
February 20, 2018

Presented by
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We formulate. *We manufacture.* We test. We export. We deliver.
We understand. We have answers. We are Canadian.
We are 65. We know infection control.

What You Need

CDHO's website, RCDSO's website, advisors, PHO's website (Grand Rounds, Training)

Checklist: IPAC Core Elements in Dental Practice Settings - Public Health Ontario 2017

Checklist: Reprocessing in Dental Practice Settings - Public Health Ontario 2017

Infection Prevention & Control for Clinical Office Setting 2015, its references, RCDSO Guidelines Feb 2010

Risk Definitions

- **Legislated - must be compliant with relevant Act or regulation (i.e. OHSA)**
- **High Risk** - immediate health hazard exists. May lead to transmission of infection or risk or illness or injury. Practices that cannot be corrected **immediately must be stopped until health hazard eliminated.** An order may be warranted/issued.

Risk Definitions

- **Medium Risk** - practices must be corrected. Timelines for compliance or agreement on alternate process to be determined during inspection.
- **Inform & Educate** - provide information on best practices & mandatory legislated practice requirements. **May include just in time education.**

Everyone's Price of Admission… IPAC is everyone's job

- Responsibility
- Accountability
- Knowledge Application
- Continuing Competency

Written Policies & Protocols

- IPAC policies & procedures based on most current best practices **(Med)**
- Routine Practices
  - hand hygiene
  - risk assessment
  - PPE
  - environmental cleaning
  - waste management
  - education
  - healthy workplace & occupational health policies

Written Policies & Protocols
(I/E)

- reviewed & updated on regular basis
- staff have access & know how to use
- **IPAC & OHSA followed by all staff**
- water & water use during boil water advisory
- maintenance of dental unit water quality

Education

- regular education (education & continuing education) for consistent implementation of IPAC **(Leg, I/E)**
- record of attendance at staff education & training **(Leg, I/E)**

Water Quality

- suck back can contaminate lines (Saliva ejectors are not straws), **improper or inadequate compliance**
- 2011
  - death due to Legionella
- 2014-2015
  - Mycobacterium abscessus - Georgia, USA
- 2016
  - M. abscessus, Anaheim, California

Education - Water Quality

- water quality
- biofilm formation
- water treatment methods
- appropriate maintenance protocols for water delivery system (MED)

Boil Water Advisory

- policy exists regarding water and water use within the dental setting during a Boil-Water Advisory
- refer to local health unit

CDC/OSAP

- reschedule for immunocompromised patients
- warn patients, may wish to reschedule
- explain situation & procedures you are taking
- no one consume water, ice, drinks that has not been disinfected
- hand hygiene - ABHR

CDC/OSAP

- don't use tap water to dilute cleaning/disinfecting solutions
  - i.e. ultrasonic cleaning machine

CDC - connected to public water supply

- turn off water supply to dental unit, ultrasonic scaler & other dental equipment
- flow disinfected water out of bulb syringe when using high-speed handpiece
- drinking water - commercially bottled
- hand hygiene - ABHR

Cancellation of Advisory

- flush, clean & sanitize dental units & other equipment as per MIFU
- large buildings - speak with facility engineer re draining reservoir
- flush pipes & faucets - at least 5 minutes
- flush drinking fountains - at least 5 minutes

Cancellation of Advisory

- run water softeners through regeneration cycle
- drain & refill hot water heaters set below 113 F
- change all point-of-entry and point-of-use water filters including those associated with equipment that uses water

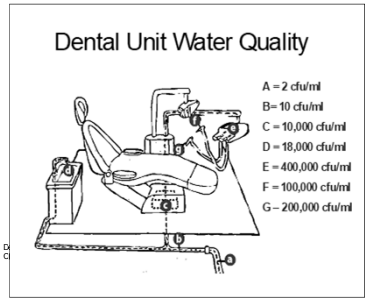
Independent Water Supply

- acceptable to use by following MIFU's
- do not use tap water for water bottles, ultrasonic cleaning machine, ultrasonic scalers
- maintain, monitor, shock

Biofilm growth (Med)

- tubing
  - hardeners/additives
- narrow bore
- low water pressure
- low flow rates
- stagnation

Dental Unit Water Quality



Microbial counts in newly installed dental waterlines can reach as high as

200 000

colony forming units per milliliter within 5 days.

Water Quality (MED)

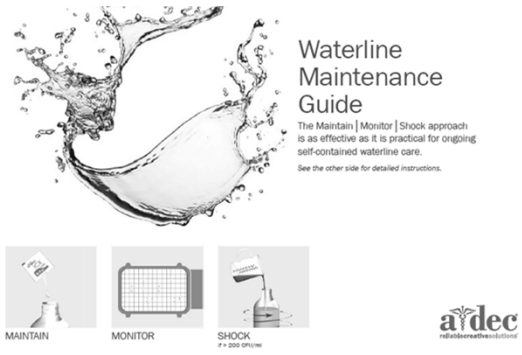
- no waterline heaters
- purge 2-3 min no attachment start of day
- purge 20-30 seconds between patients
- handpiece removed, clean & disinfect clinical contact surfaces
- attach sterilized handpiece for next patient

Water Quality (Med)

- sterile water/sterile saline
  - open surgical sites, bone cut during invasive surgical procedures
  - appropriate devices to deliver sterile irrigation solution

Closed or other water delivery systems

- Manufacturer's instructions related to dental units and equipment are followed for daily and weekly maintenance
  - log sheet



Water Treatment

- non-toxic
  - patient, equipment
- easy to use to ensure compliance
- residual activity
- environmentally friendly
- ideally combined maintenance & shock
- economical

2.6 Checklist - CORE

- Policies & procedures are in place for maintaining dental unit water quality
- Dentists & hygienist consult manufacturer to determine best method for maintaining acceptable water quality & **recommended frequency of monitoring.**

What is the quality of water you are using during patient treatment?

Outside testing

In office testing

Safe **drinking** water - **0 E. coli**

- E. coli is used as an indicator of the microbiological safety of drinking water; if detected, enteric pathogens may also be present. E. coli monitoring should be used, in conjunction with other indicators, as part of a multi-barrier approach to producing drinking water of an acceptable quality.

Monitor

- in-house testing
  - E One
    - results within 1 hour or 30 minutes @ 37 C
    - >500 cfu's/ml
      - bacteria, fungi, biofilm, legionella, mycobacterium abscesses
  - E Line
    - results within 24 hours @ 37 C
    - > 200 cfu's/ml total bacteria, fungi, E.coli, faecal coliform

Water lines, anti-retraction valves & other accessories

- Manufacturer's instructions
  - testing
  - maintenance
  - preventative maintenance
- antiretraction valves & other devices
  - may require periodic maintenance
  - Saliva ejectors are not straws.....

Handpieces, Intraoral Devices (Med)

- 20 to 30 seconds after patient use
- multi-use syringes
  - sealants, etching, bonding & filling cleaned & disinfected with low level disinfectant between patients
- syringe tip single use device
  - discarded in sharps container after each patient

Reprocessing Instruments

- Critical - **greatest risk**
  - clean & sterilize (sterilizer/autoclave)
- Semi-critical - **reduced risk**
  - clean & sterilize (sterilizer/autoclave)
  - heat intolerant instruments
    - available in heat tolerant or single use
    - cold sterile (high level disinfectants)
- Reprocessed items are stored in a clean, dry location - minimize contamination & damage **(High)**

High Level Disinfectants Flash Sterilization

Not suitable for dental office setting...

Unpackaged sterilization - emergency use only

Written Policies & Procedures (I/E)

- if item cannot be reprocessed
  - not purchased or single use only
- all aspects of reprocessing based on current recognized standards/recommendations
  - reviewed regularly and/or as new information becomes available

Written Policies & Procedures (I/E)

- Recall of reprocessed equipment
  - notification of principle dentist & RDH
  - assessment of patient risk
  - determination if additional notification of patients, other facilities and/or regulatory bodies (i.e. public health, regulatory college) is required
- Scheduled preventative maintenance of reprocessing equipment with written documentation as proof

Written Policies & Procedures (I/E)

- Quality monitoring and documentation of reprocessing process (i.e. biological, chemical indicators)
- single-use devices
- removal of faulty items until repaired or replaced

Education & Training **(High)**

- reprocessing staff
  - formal education & training - theoretical & practice components (PIDAC courses)
- device specific reprocessing
  - simple items (scaler, etc.)
    - review MIFU
  - complex instruments (handpiece, laser)
    - manufacturer's rep, training videos, based on MIFU
- trained upon hire, at least annually and whenever new equipment or processes are introduced **(Med)**

Education & Training - **High**

- single-use items including needles are not reprocessed
- prophy angles, high-volume suction, air/water syringe tips available in single-use or reusable form

Physical Space

- items cleaned in designated area physically separate from direct care areas & from where **clean, disinfected or sterile items** are handled or stored (Med)
- if physical barriers are not feasible, IPAC principles related to separation of clean & dirty are followed

Physical Space

- one-way work flow from dirty to clean to prevent cross-contamination (High)
- sink of sufficient size & depth for cleaning items (Med)
- sufficient cleanable, non-porous counter space to handle volume of work (Med)

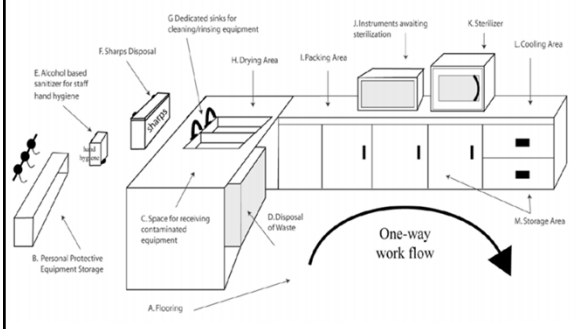
Physical Space

- dedicated hand hygiene sink and/or ABHR in reprocessing area
  - do not use hand washing sink for equipment cleaning
  - double sinks??
- puncture resistant sharps container at point of use and/or sharps are transported to reprocessing area **in covered container (plastic tray with hard plastic cover that locks or closed & locked cassette) Leg. High**

Physical Space

- plumbed or self-contained eyewash station within a 10 second walk of reprocessing area **(Leg. High)**
- regular schedule for environmental cleaning of reprocessing area
  - written procedures
  - clearly defined responsibilities **(High)**

Reprocessing Checklist Highlights – Section 4

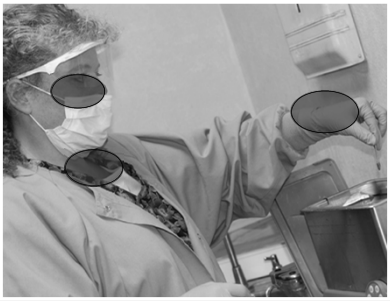


College of Physicians and Surgeons of Alberta. Reprocessing critical & semi-critical equipment : a physician tool kit. Edmonton, AB: College of Physicians and Surgeons of Alberta; 2008 [cited 2017 Oct 13]. Available from: http://cpsa.ca/wp-content/uploads/2015/04/IPAC_Reprocessing_-_A_Physician_Toolkit.pdf?pdf=Reprocessing-Toolkit

PPE

- available & readily accessible in appropriate sizes **(Leg. High)**
- PPE
  - gloves, gowns, masks, eye protection worn when cleaning likely to result in splashes or sprays of blood or other body fluids **(High)**

What's wrong in this picture?



Cleaning

- Contaminated items kept separate from clean items **(High) - one way movement from dirty to clean**
- Gross soil (blood, sputum)
  - removed at chairside or
  - in reprocessing area to prevent bioburden from drying on items **(High)**

Cleaning

- If cleaning can't be done immediately, keep items moist (Med)
  - in closed covered transport container
  - using product specifically intended following MIFU
    - rinse prior to placement in ultrasonic washer and/c instrument washer

Manual Cleaning

- enzymatic solution (Med)
- brushes (Med)
  - inspected frequently
  - changed when dirty
  - sterilize or dispose of at end of day
  - discarded if worn or damaged

Mechanical Cleaning

- Ultrasonic washer, washer/disinfector
  - tested for efficacy at least weekly or as per MIFU (High)
  - receive documented preventative maintenance (I/E)
- Detergent or enzymatic cleaning solution discarded as per MIFU (Med)
- Rinse instruments after ultrasonic cleaning

Dry, Inspect, Assemble

- instruments dried with lint free towel
- hinged instruments
  - open & unlocked
- sterilization pouches
  - instruments do not touch
  - circulation of steam to reach all surfaces

Sterilization (High)

- Critical, semi-critical instruments
  - disposable or sterilized using approved sterilization process
- Packaged as per MIFU (packaging & instrument)
- labelled **prior** to sterilization with
  - date processed
  - sterilizer used
  - cycle or load #
  - initials

if instruments not visible, package contents should be labelled

PHO Sterilization Log

Sterilizer Model: _____ Sterilizer Serial Number: _____

Load Details	Pouch Contents	Sterilizer Readings Met*	Operator Initials	Quality Indicators*	Operator Initials
Date: _____ Time: _____ Load #: _____		Temperature: ☐ Yes ☐ No Time: ☐ Yes ☐ No Pressure: ☐ Yes ☐ No		Chemical indicator Change: ☐ Yes ☐ No Biological Indicator: ☐ Pass ☐ Fail	

Process Challenge Device

- challenge to sterilization process equal to or greater than challenge posed by most difficult item routinely processed
  - most # of instruments, instruments with lumens (ie handpieces, ultrasonic tips)
- place in **fully loaded chamber**
- refer to MIFU re placement (ie coldest area of chamber as determined by manufacturer)

What does a PCD contain for spore testing?

- sterilization pouch either with large # of instruments or instruments with lumens
- BI placed in most challenging area of pouch for steam to penetrate
- external chemical indicator
- class 5 chemical indicator
- must be labelled PCD

Class B Sterilizers

- Bowie Dick test to be done each day sterilizer is used in an empty chamber
  - evaluates efficacy of air removal & steam penetration

Sterilizer without printer/USB

- *******retrofit or purchase new sterilizer with printer/USB********
- policy in place for recording physical parameters
- physical parameters (time, temp, pressure) recorded for each load
- class 1 outside of each pack

Sterilizer without printer/USB

- package contents can be seen - class 5 internal chemical indicator in each pouch
- package contents can't be seen - PCD minus biological indicator containing class 5 or 6 may be used to justify releasing load

Sterilizer with printer/USB

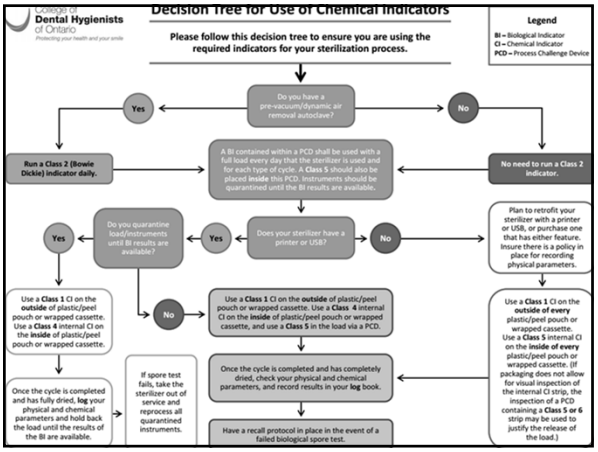
- mechanical indicators (time, temp, pressure) recorded for each load
- **if instruments quarantined**
  - class 1 external chemical indicator on each pouch/pack
  - class 4 internal chemical indicator on each pouch/pack at a minimum

Sterilizer with printer/USB

- **if instruments not quarantined**
  - labelled PCD in each load with class 5 chemical indicator (Decision Tree) PLUS
  - class 1 external, class 4 internal on all pouches/packages (Decision Tree)

OR

- as some offices are doing, a class 5 chemical indicator in each pouch



Sterilization (High)

- sterilizer loaded as per MIFU
- mechanical indicators (display, printout or USB)
  - checked, **verified** & initialled at end of each cycle
- Biological indicator
  - inside PCD with class 5 each day sterilizer is used for each type of cycle
  - control (MIFU)

Why a control vial?

- verifies
  - spores are viable
  - media can promote growth of test spores
  - incubator is operating at proper temperature

BI or CI Failure - 85% due to human error

- sterilizer failure
  - not enough water in reservoir
  - incorrect time at temperature
- incorrect packaging (too dense)
- incorrect loading
- too large a load
- incorrect placement of items - paper up or paper down

Sterilization - High

- instrument packs not used until CI's checked
- Instrument packs allowed to dry in sterilizer before removing or handling

Sterilization (High)

- failed CI, package reprocessed
- sterile packages
  - inspected for integrity
  - reprocessed if compromised

Storage (High)

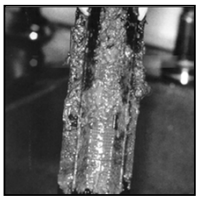
- sterile items stored in sterile packaging until time of use
- packaged, sterilized instruments stored securely in manner that keeps them clean, dry & prevents contamination
- reprocessed packages differentiated from non-reprocessed (colour coding)
- process for alerts & recalls from manufacturer or government agencies (Med)

Record Keeping (High)

- written log of test results by sterilizer (best practice)
- chemical indicators
  - sterilizer #
  - load #
  - date of sterilization
- mechanical indicators
  - chart/printout, load contents, person responsible for sterilization cycle

Suction Lines (Med)

- purge between patients
  - water or appropriate cleaning solution
- flush with enzymatic cleaner or appropriate cleaning solution as per MIFU



Thank you.... Germiphene is here to help!!!!

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For more information please email the ODHA at info@odha.on.ca or call 1-800-315-6342

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Ontario Dental Hygienists' Association