Infection Control Conundrums – Moving Towards New Solutions
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Disclosure
I receive no money and have no financial arrangement or affiliation with any company whose products are mentioned during this presentation or who are sponsoring this event.

Outline of Infection Control Conundrums
1. National Headlines
2. VA Solutions
3. Future considerations for manufacturers and others in dentistry

VA hospital may have infected 1,800 veterans with HIV
By the CNN Wire Staff
July 1, 2010

After a dentist at the Dayton VA Medical Center admitted to not washing his hands or changing gloves between patients during an 18-year period, 375 veterans were tested for hepatitis and HIV

HBV+ 2
HCV+ 7

Dentist’s office a “perfect storm” for HIV, hepatitis exposure
By Mariano Castillo, CNN
March 29, 2013

I will tell you that when...we left, we were just physically kind of sick.” Susan Rogers, executive director of the Oklahoma Board of Dentistry

Oklahoma Dentist

Media are talking about dental IC – advising patients:
Watch dental staff open sterile packs
Barrier use
Watch for staff to be changing gloves
General cleanliness

VA Solutions – New Policies
VA Directive - Use & Reprocessing of Reusable Medical Equipment (RME)
Must have dental representative on facility IC Committee, and get local policies approved.
VA has formulated infection control and environment of care standards that meet or exceed CDC guidelines
9  **Inspections**
- VISN Lead Dentists, trained in VA Standards, inspect VA dental clinics at least annually
- Office of the Inspector General
- The Joint Commission

10  **Competencies**
- Instruments are sterilized by highly trained professionals in central processing who undergo competency testing and validation annually
- Dental staff members are thoroughly trained and competency verified annually regarding dental aseptic technique

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Courtesy: Dr. Douglas Richardson, Oral and Maxillofacial Surgeon, Sarah Spencer, Oral Surgery assistant, Morristine Neal Dental Assistant, Dr. Byron Wade, Dental Chief Dayton

11  **Biological indicators**
- SPS autoclaves are spore tested for every cycle (Oklahoma office reportedly was not spore testing)
- CDC recommends testing once/week

12  **Instrument inspection**
- Instruments are inspected, discarded if damaged or corroded (Oklahoma office reportedly was using rusted instruments)

13  **Cleaning and disinfection**
- Dental operatories are thoroughly cleaned and disinfected between patients
  - Use of timers
  - Use of barriers
  - Dental assistant checklist
  - Master maintenance list

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14  **Sterile burs**
- Any bur, drill, or endo file used in a patient’s mouth is sterile before use
  - CDC Guideline, but not always universally practiced
  - Study showing 8% of nonsterile burs have microbial growth upon arrival from manufacturer
The sterility of burs directly from the manufacturer. JOEL M. HAUPTMAN, BA, DDS*, MARVIN B. GOLBERG, BS PHARM., DDS†, CARRIE ANN REWKOWSKI, DMD‡. * J Esthet Restor Dent 18:268–272, 2006

15 Disposable burs
- Any bur, drill, or endo file used in a patient’s mouth is discarded after use on that patient – never reused on a another patient
- CDC acknowledged that cleaning of burs can be difficult
- Multiple references cite reprocessing difficulties
- NBC nightly news segment on the difficulty of properly reprocessing RME

16 Radiology
- Lead aprons have annual fluoroscopy check
- X-ray machines are inspected and calibrated annually by radiation physicist

17 Changing gowns
- CDC - when visibly soiled or at least daily
- VA - after procedures involving probable contamination, visible or not, such as after using handpieces and ultrasonics, or at least daily

18 Disposable items
- Unit dose materials, discarded after each use have been emphasized.
- Saves on labor costs
- Prevents cross contamination

19 Sterility Indicators
- Sterile instruments are kept in sterile packaging until ready to use on the patient
- Packs are checked for sterility
  - No breaches in package
  - No water or oil stains

20 Dental Lab
- Any patient prosthesis or impression entering a VA lab is disinfected prior to entry into the lab. The prosthesis is again disinfected prior to delivery to the patient.
- Wet Pumice and rag wheels are discarded on a daily basis

21 Storage
- Sterile packs are stored in a central location
- Evidence of rotation
- Temp and humidity monitored

22 Implants
1 Biological
2 Non-Biological
3 Not Implant
4 Bone Grafts from cellular origin
   Membranes from cellular origin
Implant bodies
- Implant Cover Screws
- Synthetic Bone Grafts
- Synthetic Membranes

Implant abutments
- Pins/posts
- Restorations

Evacuation instruments
- Evacuation instruments are terminally sterilized after each patient use
- Instruments are disassembled, cleaned and disinfected
- O-rings are inspected, lubricated, and replaced as needed
- All major manufacturers offer sterilization instructions

Evacuation instruments
- Concerns:
  - Leaky valves/O-rings
  - Contaminated debris
  - Difficult to clean

Backflow potential
- Do not hold the saliva ejector above the mouth (1,2).
- Ask patients to not close their mouth around the suction tip (1,2)
- Bacteria associated with backflow were found 25% of the time. (3)

Layering Strategy
Combine infection control strategies to reduce risk

Water lines
- Test quarterly
- If > 500 cfu/ml, then take out of service, “shock”, and retest
- If > 200 cfu/ml, then “shock” the lines, remain in service
- Not required to routinely test for specific organisms
- Do not combine samples
- Results reported to each hospital’s IC Committee

28. **Atomizers**
   - Problems with potential backflow
   - Occlude – disposable tips
   - Spray onto disinfected or clean surfaces
   - Do not spray directly into oral cavity

29. **Future considerations - Autoclave cycles**
    Manufacturers write sterilization instructions based off of AAMI standards
    - Pre-vac: 270°F for 3.5-10 minutes
    - Gravity displacement: 250°F for 15-30 minutes.

30. **Future considerations - Air/water syringes**
    Manufacturers should thoroughly test their reprocessing instructions
    
31. **Sterile irrigant during surgery**
    - 58% of dentists reported using sterile water or sterile saline
    - 33% correctly identified which procedures required the use of sterile irrigation


32. **Surgical procedures**
    CDC recommends only sterile irrigant be used for surgical procedures (perio, implant, apical, surgical extractions)

33. **Future Considerations – Sharps Count**
    - Concerned about burs falling on floor and staff getting stuck inadvertently during clean-up
    - Keep all sharps products towards the back of tray

34. **Future considerations – Flip charts.**
    - Keep posted in clinic, front office, and lab
    - Cover emergencies
        - Fire
        - Medical emergencies
        - Hazardous material spill
Future considerations
- Review MSDS book annually
- Can staff locate
- Methacrylate level check in lab

Laser/Electrosurgery “smoke”
- Destruction of tissue creates smoke that may contain harmful byproducts
- No evidence of HIV/HBV transmission with laser/electrosurgery plumes and surgical smoke
- Infectious materials (HSV, HPV) may contact mucous membranes of nose

Summary
- Disconnect between CDC Guidelines and what actually goes on in practice
- Need for routine inspections
- Interview staff/competency training on annual basis
- Straightforward instructions from dental manufacturers following AAMI standards

Thank you
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