Why do we care about dental unit waterlines?

Biofilm:

- Biofilm is growing in the small dental tubing because of a high surface-to-water flow ratio.
- Bacteria can reach 200,000 CFU/mL in less than 5 days in brand new lines

Patients:

- Patients have died or been hospitalized because of contaminated dental unit waterlines.

Clinician:

- What are we breathing? Dental Unit waterlines are a major basis of aerosol bacteria in the dental environment

CDC Guidelines

- Even if your state hasn't adopted CDC guidelines we are still required to provide a safe dental visit.
- Most Dental Equipment Manufacturers have updated their IFUs in the last few years to protect themselves from the new FDA recommendations for Dental Unit Manufacturers: https://www.fda.gov/medical-devices/dental-devices/dental-unit-waterlines

How:

Shock - use a strong disinfectant to clean the lines

- Shock Before Initial Use of a Water Treatment Product
- Shock at least every quarter
- When your waterline test reveals a contamination level of 200 CFU/ml or more

Test - the only way you know if your lines are in compliance and your product is working.
OSAP recommends testing monthly on each dental unit, if you pass for 2 consecutive monthly cycles move to quarterly testing

- Mail-in testing
- In-Office testing

Treat - using a low-level antimicrobial to maintain clean lines.

No matter what product you choose you must follow the instructions for use!

- Tablets
- Straws
- Liquids

Maintain - establish a Standard Operating Procedure (SOP) and make sure the entire team understands why.

- Appoint a Waterline Warrior
- Test and Document your results
- Flush lines at the beginning of the day and in between patients
- Choose a maintenance product and use it according to the IFUs
- Re-test quarterly (and document)
- Shock as needed
Suction

Why:

- **Aerosols**
  - Covid opened to the doors to a conversation that’s been happening since the 60’s
- **Safety**
  - Keeping aerosols in Zone 1 is optimal
  - Devices can control up to 100% of aerosols if the vacuum system running optimally, even with sub-optimal placement.
  - Ideally, flow rate should be between 7.1-10.6 SCFM to control aerosols
  - Both Flow rate and Vacuum are needed to control aerosols and fluids
- **Patient Comfort and safety**
  - A well functioning suctioning system will keep the patient comfortable without interruptions
  - When a patient closes on the saliva ejector or the tip becomes occluded, **backflow may occur** due to a temporary drop in vacuum pressure.
  - Suction Adaptors need to be reprocessed, check your IFUs
  - HVE is necessary for capturing Aerosols
  - Saliva Ejectors only capture 38% of Aerosols
- **Equipment Longevity**
  - In order for any suction devices to function properly, the vacuum must be working optimally

How:

- Establish SOPs to keep your suction lines clean
  - Run suction lines daily (and sometimes in between patients) using a dispenser
  - Use an EPA 2020 compliant suction product
    - pH between 6-8, non-foaming, no chlorine, chelating agents
  - Run lines from furthest from the vacuum to closest
  - Change your chair traps weekly
  - Change your big trap at least monthly
  - Check your Amalgam separator trap

Resources:

- Mick R. E. et al., Dent Res Jan-Feb 1969 “ Dental aerobiology is the study of airborne particles in the dental office”