Clinical Problem/Significance

- Sterile Processing Departments (SPD) face many challenges daily and typically have plans in place to address them when they occur.
- One challenge that can catch us off guard is a water crisis. When water is not available or can't be used instrument processing comes to a halt which dramatically impacts the OR schedule.
- Several factors can lead to water outage or the lack of access to potable water for use in the SPD. • Having an Emergency Water Supply Plan (EWSP) in place is key to addressing these issues should they arise.

Background & Clinical Question

Clinical Question: What impact does the absence of potable water have on SPD and Surgical Services Departments?

- **Potable water -** water that has been deemed safe for human use or consumption. To be deemed potable, testing must confirm that contaminants and microorganisms are below certain levels as specified by the Environmental Protection Agency (EPA).
- Sources of water lakes, rivers, reservoirs, wells or a combination of these sources; not considered potable because they often contain contaminants and microorganisms. Each municipal water supply treats the water to make it potable. Potable water is maintained by local water agencies in each state.
- Factors that can interrupt the flow of potable water broken water pipes, treatment facilities malfunction, and major weather events like hurricanes and floods.
- Water advisories may be issued by the water supplier, local and state governments, EPA or Federal Emergency Management Agency (FEMA) when potable water sources become contaminated.

Evidence

AAMI TIR 34 2014: "manual cleaning of instruments should be carried out with tap water which is free from any contaminates which may cause a risk to the public sometimes referred to as potable water."

The type of water required depends on the process and equipment for which it is used. Potable water is required for:

- Initial rinse sinks, soak and wash sinks, and final rinse after cleaning
- Washer disinfectors and cart washers
- Ultrasonic cleaners
- High level disinfection processes both automated and manual
- To generate steam to supply steam sterilizers and humidity for ethylene oxide systems
- Sterilant dilution and rinsing in iquid chemical sterilant processing systems
- Employee safety eye wash stations, hand hygiene, and mixing/diluting cleaning solutions

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Addressing Water Crisis in Perioperative Services Robert W. Williams, MMHC, BA, CRCST, CER, CIS

Impact to SPD/Surgical Services

- Instrumentation exposed to contaminated water may be subject to increased levels of microbial bioburden
- Water that is no longer potable should not be used for washer disinfectors or sterilizers
- Instruments sets processed with know or possible non-potable water are considered contaminated and should be removed from inventory both in sterile storage and assembly areas

	Categories of W
	Definition
Boil Water Advisory	 Issued when a known or poter contamination is present in war When ingested may make personal statements
Do Not Drink Water Advisory	 Issued when chemicals or toxin in the water supply will harm a when consumed
Do Not Use Water Advisory	 Indicates presence of harmful microorganisms, chemicals, to radioactive material in the water cannot be safely removed with Will harm persons when water skin or eyes, or is accidentally

Emergency Water Supply Plan

inhaled

Some things to consider when developing an EWSP:

- Is this a partial or complete loss of water?
- How long is the water crisis expected to last: day, weeks, or months?
- Which departments will be affected and how: slow down, shut down, etc.?
- What processes can continue with bottled or boiled water?
- Where can water be sourced: tankers, private wells, mobile water purification systems, etc.?
- What alternative HLD or sterilization processes can be used during the event?
- Where can reprocessing be outsourced?
- What are the activity & time requirements for coming back online, i.e., flushing lines, changing filters, cleaning equipment, etc.
 - - and Food Preparation Handwashing During a boil water advisory. Centers for Disease Control and Prevention. https://www.cdc.gov/.

Vater Advisories

Guidelines/Recommendations

ntial microbial ater supply sons ill	 Boiling kills microorganisms making wate safe to drink Water may still be used for handwashing, hygiene, cleaning, and laundry
ns present person	 Water may still be safe to use to flush toil or wash hands depending on the chemic or toxin in the water Use for preparing foods, drinking, oral hygiene, baby formula, and ice is prohibit
oxins, or er supply that n boiling r contacts	 Healthcare facilities must not use this wat for any reason

1. Centers for Disease Control and Prevention. (2020, February 18). Emergency Water Supply Planning Guide for Hospitals and Healthcare Facilities. Centers for Disease Control and Prevention. https://www.cdc.gov/healthywater/emergency/ewsp.html. 2. Centers for Disease Control and Prevention. (2010, November 2). Hospitals, Health Care Facilities & Nursing Homes On this Page During a boil water advisory When a boil advisory is cancelled Related links General Procedures Drinking Water Cooking 3. Benson, R, (2017, May 17) Situations Where Pathogens May Present an Imminent and Substantial Endangerment to the Health of Persons under Section 1431 of the Drinking Water Act [Memorandum]. EPA. https://epa.gov

- Water utility company will notify when water is safe to use without boiling.
- Recommended to contact your water facility and determine the best steps to proceed after an advisory is lifted. CDC recommendations
- Flush all water lines to equipment according to manufacturers' IFU
- Drain and refill hot water heaters
- Change all point of entry filters for equipment that utilize water
- Softeners should be flushed, or specific cycles run according to manufactures' IFU.
- Water quality should be monitored by your facilities water department and monitored by Risk Management and Infection Prevention departments.
- Longer periods of nonuse may require equipment decontamination prior to use. Refer to the manufacturers for recommendations.
- SPD managers should review instrument needs to prioritize instrument reprocessing back logs.

- Review of facility emergency preparedness plans for a water emergency contingency can benefit facilities and prevent delays in patient care.
- Identify all departments that would be impacted and include them in planning. Members may include leaders from Perioperative Services, Infection Prevention, Sterile Processing, Hemodialysis, Risk Management, Medical Staff directors, Operations, and Food Services.
- Clinical Implication: A facility on the Gulf Coast chose to invest in installation of a private well after an unexpected regional water shortage that lasted for weeks. The multitude of canceled procedures and increased cost associated with acquiring back up water sources justified the \$500,000 expense to install the well and purchase needed water treatment equipment in order to supply potable water to the facility.

- Short-term solutions may be appropriate for limited boil alert advisories while long term water outages or advisories may require a more detailed and sustainable response.
- Review of general information on emergency preparedness as it pertains to water emergency is essential.
- The Environmental Protection Agency (EPA) and Centers for Disease Control and Prevention (CDC) both offer valuable information that can be used when developing an EWSP.
- 4. AAMI TIR 34: 2014 (R) 2017 . Water for the reprocessing of medical devices

When Advisories Are Lifted

Clinical Problem/Significance

Conclusions

• There are many factors to consider when developing an EWSP.

