

*Mycobacterium abscessus* is an environmental contaminant and can be found in water and dust. It has been described as a cause of healthcare-associated infections. In the healthcare setting, exposure to *M. abscessus* may best be avoided by preventing non-sterile water contamination of medical equipment and supplies. Prevention efforts should focus on eliminating potential tap water contamination of the surgical field as well as assuring meticulous adherence to good general infection prevention methods.

Below are recommendations based on the investigation findings you have reported to DHEC, our site visit to your facility on June 11, 2014, and the environmental cultures performed by CDC. These recommendations summarize the interventions we have discussed during the course of the investigation and include support of actions already take by your infection prevention staff as well as general recommendations for prevention of *M. abscessus* infections in healthcare settings.

Measures that you have already implemented:

1. Storage of clean materials must be in areas designated solely for clean storage and no water source should be present in these areas.
2. Clean the cardioplegia machine and heater/cooler machine outside of the OR area. Given the majority of the cardiac cases have occurred in surgeries taking place in the second week of the cleaning cycle of the cardioplegia machine, we agree with implementing a weekly cleaning schedule, so long as the manufacturer agrees that it is reasonable to maintain the machine on this schedule.
3. Continue morning flushing of scrub sinks for at least 2 minutes until point of use bacteriologic filters can be installed.
4. Work with facility building staff and/or engineer to perform careful inspection of water system, prioritizing the areas near the operating rooms, to assess for dead spaces where stagnant water could be located. Remove any dead spaces that are found.
5. Dressing of the OR table should be performed on the day of the surgery and no dressings should be on the OR table while cleaning is being performed in the OR.
6. Continue to emphasize meticulous adherence to infection prevention guidelines by staff in the operating rooms for the prevention of surgical site infections: <http://www.cdc.gov/hicpac/pdf/ssiguideines.pdf>.
7. Continue to ensure that medications and flushes given intraoperatively are stored in areas that do not have a water source and when utilized in the OR preparation and handling should be done away from any source of tap water or ice.
8. Continue heightened surveillance for further cases for at least 4 months.

Recommendations for measures moving forward:

1. Designate a specific water source for filling the heater/cooler machine if it is returned to use. Use only this source for filling the machine, and work with engineering staff for utilizing a point of use bacteriologic filter (eg., <0.22 μ) at this site.

2. Work with engineering to consider point of use bacteriologic filters at scrub sinks with priority on those outside of the ORs where the cases underwent surgery: OR 30, OR 31, OR D2, and OR D8. Also consider installing point of use filters at the sinks in the decontamination areas. Installation of these filters should only be performed if appropriate pressure can be maintained for the sinks to perform their designated functions.
3. If there is a return to use of ice from tap water, install a point of use bacteriologic filter for the ice machine, and maintain a cleaning disinfection schedule of the ice machine in accordance with manufacturer recommendations.
4. Submit clinical isolates to CDC for PFGE molecular analysis and comparison of clinical isolates to environmental isolates.
5. Future installation of plumbing in the facility should avoid creating areas of dead legs and unused branches in the plumbing system to prevent stagnation and microbial contamination of tap water.

Please continue to provide updates to DHEC on the developments in this outbreak and we will continue to work with your facility and CDC to assist in stopping this outbreak and preventing further illness among your patients.