COVID-19 PPE Update: Disinfection Techniques
4.14.2020 1415

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The COVID-19 pandemic has led to a global shortage of N-95 respirator masks. To prepare, research and clinical teams across the country have developed ways to disinfect N-95 masks for reuse. Techniques and protocols include: ultraviolet light, aerosolized hydrogen peroxide, and a heat process. Spectrum Health’s Infection Prevention team, Supply Chain Services, Sterile Processing Department, and Environmental Services have prepared a process using these methods to disinfect team member masks.

Disinfection process for eye protection: total capacity 2,400 per day/ cabinet

UV light cabinet: Used to clean goggles, face shields, and other hard surface items. Currently, 20 units deployed: 7 at BW (CSR, 9C, 5HC, 2S, ED) and 3 at BL (1H, 1G, ED), and Regional facilities (United, Big Rapids, Zeeland, Pennock, and Gerber). Documentation from the manufacturer does not indicate this is effective technique for mask disinfection, and the team has not tested this as an option given the other techniques detailed below.

Disinfection process for N-95 masks: total capacity 16,000 per week

Hydrogen Peroxide fogger: This follows a process that Duke University published. Tests were complete on March 27 within a dedicated room in Sterile Processing. 5 MHC was first to operationalize the total disinfection process on April 1. Current units with processes in place: 9 Center, 2 South, BW ED, HDVCH ED and BW ORs. Experimentation to begin on April 6 to assess process for the Regional Hospitals, starting with United Hospital.

Heat Disinfection: This process is based on studies from Stanford University and the University of Tennessee. A small oven from Gentex was acquired on March 27 (currently in Sterile Processing at BW). A successful disinfection test was performed on March 30. Based on the success of this test, two additional small ovens were procured from Gentex, with plans to begin using the week of April 6. The team is reviewing the possibility of utilizing a larger oven that Gentex will provide but that will require some electrical and venting changes. The team hopes to utilize the three smaller ovens at BL.

Surfacide UV light system: This process is based on studies from the University of Nebraska. The Skytron unit was purchased and will arrive at the MC April 8. The team is prepping a conference room on A-Level to run this UV light system. The collection and delivery process to support this approach will echo the process we are using for the hydrogen peroxide disinfection of masks in Sterile Processing.