

Emergency medical services oxygen equipment: a fomite for transmission of MRSA?

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Abstract

Objectives The primary purpose of this study was to determine if methicillin-resistant *Staphylococcus aureus* (MRSA) was present on the surface of oxygen cylinders and regulators used in the prehospital setting and secondarily to assess other surfaces for MRSA within the ambulance compartment, as a comparison.

Methods On 17 March 2018, the surface of oxygen cylinders and regulators located in ambulances at an emergency medical services (EMS) station in North Alabama (n=9) and at an offsite oxygen cylinder storage area (n=70) were swabbed using sterile cotton-tipped applicators saturated in an 0.9% NaCl solution. These cotton-tipped applicators were then streaked across the surface of HardyCHROM MRSA plates, followed by incubation at 36°C for 24 hours. The growth of pink or magenta colonies was considered a positive indication for the presence of MRSA. The motivation for assessing oxygen cylinders at the offsite storage area was to outline the persistence of MRSA on stored oxygen cylinders.

Results Of nine oxygen cylinders tested in the ambulances, nine had MRSA colonisation (100%). MRSA was also present on 67 of 70 oxygen cylinders (96%) tested at the offsite oxygen cylinder storage area.

Conclusion Oxygen cylinders appear to act as a fomite for MRSA. The development of universal disinfection protocols for oxygen equipment could help reduce the risk of patient infection due to cross-contamination.

- prehospital care
- bacterial
- first responders
- infectious diseases
- paramedics

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