

# 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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