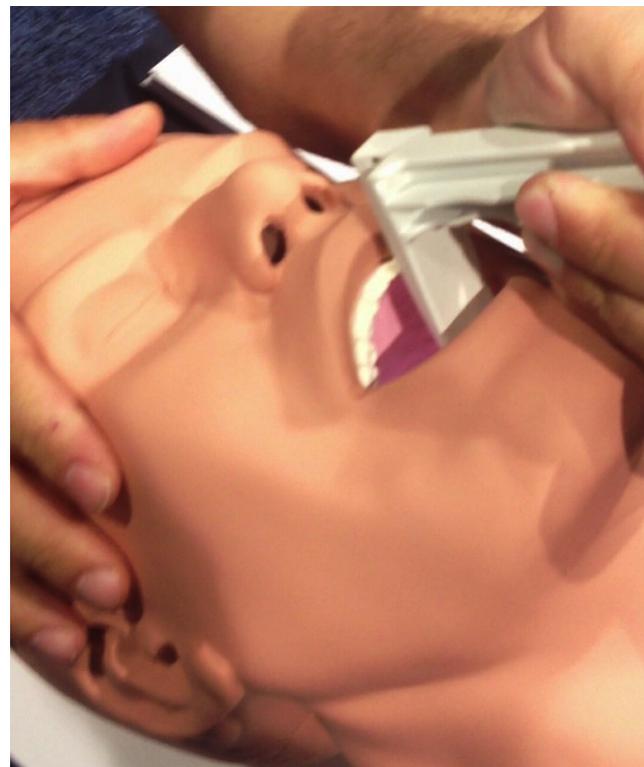


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### Laryngoscope Contamination Studies



As concern regarding cross-contamination becomes more prevalent in light of resistant bacteria strains, the laryngoscope handle falls into focus.

#### SUNY Upstate Medical University Study

A 2009 study published in Anesthesia & Analgesia sampled 60 laryngoscope handles from the operating rooms of SUNY Upstate Medical University. The hospital recognized their lack of regulations regarding the disinfection of these handles and authorized the testing. The researchers took samples of scopes used for a variety of cases.

Forty of these samples went for antimicrobial susceptibility testing and aerobic bacterial cultures. The other 20 were given polymerase chain reaction assays. Of the 40 sampled for bacterial contamination, 75 percent (30 total samples) tested positive.

- 25 showed evidence of coagulase-negative staphylococci
- 7 produced Bacillus
- 3 a-hemolytic Streptococcus
- 1 also produced Enterococcus, Staphylococcus aureus and Corynebacterium

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All the viral tests were negative. The researchers concluded there was certain evidence of bacterial cross-contamination with reusable laryngoscope handles even when treated with a low-level disinfectant.

### Swansea UK Study

Researchers at the Swansea University School of Medicine published a similar study in the 2010 Journal of Hospital Infection. This study collected 192 specimens from 64 laryngoscope handles deemed ready to use. Researchers isolated at least one specie of bacteria on 86 percent of the handles with a total of 128 different organisms. Pathogens discovered included:

- Enterococci
- Meticillin-susceptible Staphylococcus aureus
- Klebsiella
- Acinetobacter

The most common organism found was coagulase-negative staphylococcus. Of the 99 positive cultures, many were polymicrobial.

- Thirty percent of the handles grew just one species
- Twenty-eight percent grew two species
- Seventeen percent grew three species
- Eight percent four species
- Two percent five species

These are just two studies in a number that provide clinically based proof of the cross-contamination risk in reusable devices that touch mucous membranes such as the laryngoscope. Although most products require single use blades, the handle continues to be a source of vehicle transmission.

### Reasons for this Overlooked Issue

A 2013 issue of the European Journal of Anesthesiology addresses the problem of cross-contamination of reusable laryngoscope handles calling the issue “largely overlooked.” The authors theorized there were three contributing factors:

1. The switch to single-use blades to reduce the risk of the transmission of prions has limited the health care community’s diligence regarding the disinfection of handles. Healthcare professionals are assuming the use of disposable blades negates the risk.
2. The lack of indisputable evidence of contamination is dimming the clinical consequence of pathogen transmission via the handle despite a 2011 alert from the UK Medicine and Healthcare product Regulatory Agency. The agency attributed a patient death to the failure to decontaminate a laryngoscope handle leading to septicemia.
3. Healthcare professionals inherently trust institutional decontamination protocols and assume other staff members handle the task. It is likely most are not even aware of the practice.

Even though during a laryngoscope procedure, the handle does not touch oral mucosa, the tip of the disposable blade still contaminates it. Users fold the device and the infected area makes contact with the handle. The UK study showed heavier growth on the knurled section of the handle. This is the area that touches the blade when the device is closed between uses.

The conclusion drawn in the European Journal article was more facilities should consider switching to single-use laryngoscopes to reduce the risk of cross-contamination.

[Click here to download our white paper on the threat of cross-contamination of reusable laryngoscope handles](#)

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