

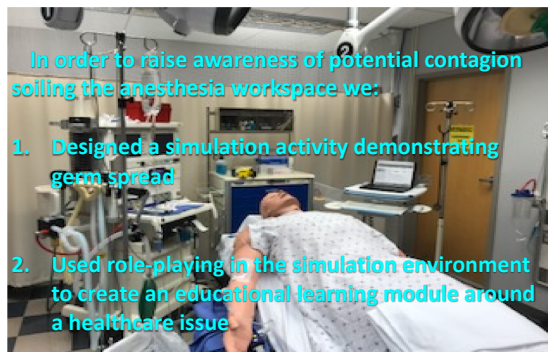
# Anesthesia Workstation Contamination: Using Simulation to Identify and Remedy

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## Introduction

During the induction period, the hands of the anesthesia provider pivot between touching the patient & touching many work surfaces (anesthesia machine, cart, monitors). This constant varied contact creates conditions for contamination. Especially during mask ventilation & intubation, hands are in contact with secretions, which could be a vector for bacterial & viral contamination of the work surfaces. Although not part of the surgical field, contamination of these surfaces could contribute to surgical site infections & transfer to other patients.

## Project



In order to raise awareness of potential contagion soiling the anesthesia workspace we:

1. Designed a simulation activity demonstrating germ spread
2. Used role-playing in the simulation environment to create an educational learning module around a healthcare issue

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## Methods

In order to assess the potential extent of soiling, a simulation exercise was designed to demonstrate bacterial transmission in the anesthesia work space using a product called *GloGerm*<sup>®</sup>, an invisible substance applied to a surface and only visible with a black light. Ninety-five members of the anesthesia department participated. Four simulation sessions were implemented, each with two participants performing an induction in an operating room of the simulation lab. Unbeknownst to them *GloGerm*<sup>®</sup>, had secretly been applied to the mouth, lips and internal nasal passages to simulate bodily fluids. During each scenario, approximately 20 members observed via live-video and tallied spots in the OR environment possibly contaminated by the anesthesia members. At the completion of induction and successful intubation, the simulated activity stopped. Participants and observing members entered the scenario room and a black light revealed areas of contamination. The results of the tallied observations were then compared with the *GloGerm*<sup>®</sup> revelations. Part 2 of the project was production of a video recording of the anesthesia team members in the simulated operating room performing an induction & utilizing all components of best-practices which decrease the risk of contamination of workspace surfaces.

## Results

The simulation exercise was successful demonstrating spread of the *GloGerm*<sup>®</sup> from the participants hands to surfaces throughout the anesthesia workstation. This allowed all members to visually identify the most common areas of contamination.

## Conclusions

The goal of the simulation activity was to heighten awareness for the anesthesia team members that their workplace actions affect infection transmission & could translate to increases in actual patient surgical infection rates. The exercise was successful, as it provided a visual representation of germ spread and members were able to see contamination happen while observing. A follow-up educational video proved important to display best-practices. In future plans, video will be required viewing of all new employees & become an annual mandatory training module.

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