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# Letter To The Editor: Could Part Of The Alarming Rise In Nosocomial Infections Have Anything To Do With Today's Often Careless Airway Secretion Management Approach?

R Velez

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## Abstract

This question is quite relevant, since millions of patients require airway suctioning during the course of their care -- be it in: anesthesia, critical care, emergency room, endoscopy unit, nursing home, rehabilitation center or ambulance settings.

Saliva, airway secretions and the suction tubes they are aspirated with are contaminated with blood, bacteria, viruses and fungi. Unfortunately, these tubes and secretions are often not contained adequately. Behind closed doors and curtains, used suction tubes often hang unprotected from the anesthesia machine, are pushed under a mattress, or lie by the patient where they brush against equipment, work surfaces and personnel. In this type of contaminated environment, supposedly sterile intravenous catheters, central venous lines and endotracheal tubes may provide ready avenues for nosocomial infection. How many pneumonias or septic episodes might not be prevented with better techniques? Thousands of patients and billions of dollars are needlessly lost to hospital acquired infection every year, in the USA.

Although it has taken health-care providers almost a decade to become used to wearing non-sterile gloves, many are still dripping airway secretions throughout the medical workplace. While the CDC has already provided "Universal Precautions" guidelines and OSHA has published "The Blood Borne Pathogens Standard," most examiners still seem to be overlooking this all too common fault in suctioning technique. Nevertheless, it is hopeful that in an issue of "Briefings on Hospital Safety" (June 1997), Carole Paterson, the JACHO's department of standards Deputy Director, says "...environment of care implementation and

design and infection control are on the random unannounced survey list for nearly all JACHO accreditation programs."

Even the lay press is raising concerns regarding the emergence of more resistant micro-organisms. A recent review in JAMA identifies a failure to use basic infection control practices as a major cause. The New York Times Magazine lead article from August 2nd entitled Superbugs The BACTERIA Antibiotics Can't Kill, describes how the CDC is currently closely monitoring the threat posed by some strains of Vancomycin Intermediate-Resistant Staphylococcus Aureus. They consider this situation to represent the bacterial world's most potent counterattack against antibiotics. As we all know, staph is a particularly common organism, which lives on the skin and in the nostrils of otherwise healthy people. It is part of what is considered our normal flora, were it is relatively harmless. If it gains access to the body through scrapes, incisions, etc. it can cause serious problems. Should VISA strains become widespread the problem would become far more severe. Health care workers can transmit staphylococcus when their hands become infected from contact with patients or body fluids. Clearly, for all of the above reasons, we need to examine our routine practice and heighten our consciousness about the very real risks posed by airway secretions and suction tubes. Although it is not widely known yet, oral suction tube holder disposable devices are now available to better manage this contamination risk.

## AIRWAY SECRETIONS AND BLOOD AN ANESTHESIA / CRITICAL CARE PERSPECTIVE

I am not sure that many physicians have considered the

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serious opportunity for nosocomial infection provided by our often improper management of airway secretions in the peri-operative period. Although anesthesia, critical care, and other medical staff are well aware of the potential spread of bacteria, viruses, and fungi from saliva, other upper airway secretions and blood during oro-pharyngeal manipulation, too much complacency still exists. After some thought, most would agree that this daily danger needs to be urgently addressed in a more practical and standardized manner.

A recent study in Anesthesia and Analgesia showed that 33% of anesthesia equipment surfaces were contaminated with blood, and that visual inspection was not a reliable means of detection. Part of the problem is that non-sterile reusable equipment is often difficult to clean thoroughly between procedures.<sup>1</sup> This unfortunate reality is aggravated by dripping airway suction tubes, which often hang precariously from the anesthesia machine, are pushed under the operating table mattress, or lie by the patient's head where they brush against the caregiver.<sup>2,3</sup> Clearly anesthesia and critical care equipment, work surfaces, personnel, and worse....the next patient may and do become infected. In this type of environment supposedly sterile intravenous catheters, central venous lines and endotracheal tubes provide ready avenues for infection. How many post-operative pneumonia's or septic episodes might not be prevented with better technique?<sup>4,5</sup>

In 1992 nosocomial infections contributed to the death of over 58,000 patients in this country alone.<sup>4</sup> More than 5.6 million American health-care workers risk potential exposure to AIDS and to hepatitis B during the course of their workday. Of additional concern is the resurgence of tuberculosis and the development of other resistant microorganisms in hospitals.<sup>4</sup> From 1980 to 1992 the death rate due to infectious disease as an underlying cause increased 58%, and more specifically, the mortality rate due to respiratory tract infections increased by 20%.<sup>6</sup> These statistics, and knowledge that intubation and mechanical ventilation greatly increase the risk of nosocomial pneumonia (because they alter the first line defenses) provide a potent incentive to examine our routine practice.<sup>7</sup>

Very troubling is a recent review in JAMA of strategies to prevent the spread of resistant organisms, which identifies a failure to use basic infection control practices as a major

cause.<sup>5</sup> Patient and health-care workers' safety is paramount. Despite all the cost cutting and time pressures for increased efficiency in operating room turn around time, we cannot afford to let our guard down when it comes to infection. It has been estimated that 6% of hospitalized patients in the United States contract nosocomial infections annually, at a cost of 5 to 10 billion dollars.<sup>8</sup>

The CDC has already provided guidance by stressing the need for UNIVERSAL BLOOD AND BODY FLUID PRECAUTIONS. OSHA refers us to the blood-borne pathogens standard, which requires that engineering and work practice controls be used to eliminate or to minimize employee exposure.<sup>4,9</sup> By now most of us have become used to wearing gloves and teaching new residents and nurses about the value of this practice.<sup>4,8,10</sup> Likewise we need to develop a similar consciousness about airway secretions. Therefore, I urge medical institutions to formulate an exposure determination plan for the safer handling of oral suction tubes...whether in the anesthesia, recovery room, critical care, or emergency room setting.

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