

## Creating Healthy Work Environments VIRTUAL 2021

### **Current Trends in Anesthesia Airway Management During COVID-19 Pandemic: Keeping Caregivers Safe**

**Nina E. McLain, PhD, CRNA**

*Nurse Anesthesia Program Director, University of Southern Mississippi, Hattiesburg, MS, USA*

Mary Jane Collins, DHA, CRNA

*Nurse Anesthesia Assistant Program Director, University of Southern Mississippi, Hattiesburg, MS, USA*

#### **Purpose:**

The purpose of this study was to determine best practices in airway management in caring for a COVID-19 positive patient to prevent caregiver infection. Routine infection control processes were oftentimes difficult to utilize due to the lack of personal protection during intubation and airway management. The new challenge of personal protection during the pandemic offered an opportunity to investigate current trends and update the best practices of the past.

#### **Methods:**

Nurse caregivers (N=100) in 5 states were surveyed regarding innovative practices for airway management during the COVID-19 pandemic and the availability of personal protective equipment (PPE). Using social media and direct contact from publicly available email addresses, an anonymous survey link was sent to 100 anesthesia and intensive care nurses in 5 states reporting high numbers of COVID-19 ventilator patients. Thirty-three (N=33) respondents reported both qualitative and quantitative data. Descriptive statistics, domain grouping, and evaluation of anecdotal data were utilized.

#### **Results:**

Among the 33 participants who consented, more than half were CRNA (n = 18, 54.5%), 13 were registered nurses, and only two were NP. There were 12 respondents whose age in twenties while 16 were in thirty to forties. The facility size of the participants was mostly 201 – 500 beds (n = 14, 42.4%) and 100 – 200 beds (n = 9, 27.3%). Most of the participants were working at the large private or religious hospital (n = 16, 48.9%) while nine were working at the small community hospital and eight were working at the University research medical center respectively (n = 9, 27.3%; n = 8, 24.2%). Multiple innovative techniques were described relating to airway management including product substitutions for gowns, creative patient shielding, use of Yankauer and wall suction, and protective equipment covers as a few examples.

#### **Conclusion:**

It is unlikely that the current COVID-19 pandemic will be the only one seen in a lifetime and preparation and best practices based on current trends could prove invaluable to caregiver protection in future similar events. A summary of best practices and innovative techniques can potentially help caregivers re-evaluate current methods to ensure nurses have the best available knowledge to protect themselves from infection.

---

**Title:**

Current Trends in Anesthesia Airway Management During COVID-19 Pandemic: Keeping Caregivers Safe

**Keywords:**

Airway Management, COVID-19 Best Practices and Caregiver Protection

**Abstract Summary:**

This interactive lecture will present current trends in airway management to protect the caregiver from airborne viruses and contamination. A blend of audience polling, short videos, and interactive lecture will be used to guide the participant toward understanding trends and innovative solutions when personal protective equipment is limited or unavailable.

**Late Breaking Reason:**

Often without traditional personal protective equipment, anesthesia providers were particularly at risk for infection from their COVID-19 positive patients. This study investigated trends around the state of Mississippi to protect anesthesia providers during intubation and airway management. Lacking previous research, these actions may be utilized as future best practices.

**References:**

- Dat VQ, Long NT, Giang KB, Diep PB, Giang TH, Diaz JV. Healthcare infrastructure capacity to respond to severe acute respiratory infection (SARI) and sepsis in Vietnam: A low-middle income country. *Journal of Critical Care*. 2017;42:109-115.
- Evans J, Meisenheimer J. COVID-19 Suffocating the global medical supply chain...while breathing life into its future. In. *Online Insider2020*.
- News C. Pandemic exposes drug supply shortages doctors have grappled with for "more than two decades". In: News C, ed: CBS News; 2020:<https://www.cbsnews.com/news/coronavirus-pandemic-drug-supply-shortage-doctors/>
- Reynolds J. Ingenuity abounds in the face of COVID-19. In. *Pittsburgh Post Gazette: Pittsburgh Post Gazette*; 2020.
- Rubio-Romero JC, Pardo-Ferreira MdC, Torrecilla-García JA, Calero-Castro S. Disposable masks: Disinfection and sterilization for reuse, and non-certified manufacturing, in the face of shortages during the COVID-19 pandemic. *Safety Science*. 2020;129:104830.
- Heymann DL, Chen L, Takemi K, et al. Global health security: the wider lessons from the west African Ebola virus disease epidemic. *Lancet (London, England)*. 2015;385(9980):1884-1901.
- Rubio-Romero JC, Pardo-Ferreira MdC, Torrecilla-García JA, Calero-Castro S. Disposable masks: Disinfection and sterilization for reuse, and non-certified manufacturing, in the face of shortages during the COVID-19 pandemic. *Safety Science*. 2020;129:104830.

First Primary Presenting Author

***Primary Presenting Author***

Nina E. McLain, PhD, CRNA  
University of Southern Mississippi  
Nurse Anesthesia Program Director  
Associate Professor  
Hattiesburg, Mississippi  
USA

**Author Summary:** Dr. McLain received her PhD from Virginia Commonwealth University in 2007. She has been a nurse anesthetist for 28 years and is currently the Nurse Anesthesia Program Director at the University of Southern Mississippi. Her research interests are Medical Device Development, Ventilator associated pneumonia, and Innovation in Nursing.

Second Secondary Presenting Author

***Corresponding Secondary Presenting Author***

Mary Jane Collins, DHA, CRNA  
University of Southern Mississippi  
Nurse Anesthesia Assistant Program Director  
Assistant Professor  
Hattiesburg, Mississippi  
USA

**Author Summary:** Dr Collins received her Doctor of Health Administration degree from the University of Mississippi Medical Center. She is currently the Assistant Director for the Nurse Anesthesia Program at the University of Southern Mississippi. Her research interest areas are simulation and educational innovation.