AANA Introduces an Evidence-Based Infection Control Guide

The American Association of Nurse Anesthetists Infection Control Task Force applied a rigorous evidence-based process to the revision of the Infection Control Guide for Certified Registered Nurse Anesthetists. This article details the necessity of a current Professional Practice infection control document, including an expansion of infection control and prevention literature since the last revision of this document; a multitude of infectious outbreaks; and an overwhelming lack of adherence to principles of effective hand hygiene, asepsis, and safe injection practices. Specific areas discussed include preventive measures used by Certified Registered Nurse Anesthetists during patient care activities; infection control measures aimed at procedures involving the anesthesia delivery system; and infection control practices for cleaning, disinfecting, and terminal cleaning of the environment.

Keywords: Infection control, infection control guidelines, infection control task force, infection prevention, nurse anesthesia practice.
focused on ensuring provider education and promoting adherence to the principles of effective hygiene, including asepsis and safe injection practices. As the evidence for best clinical practice evolves, it is essential that the nurse anesthetist integrate into practice the changing infection control regulations at both the national and state levels, to decrease the infection risk.

The CDC is the primary developer of national infection control and prevention guidelines, often in collaboration with its Healthcare Infection Control Practices Advisory Committee, which is responsible for research and dissemination of the latest information for preventing disease transmission. The 2007 CDC Guideline for Isolation Precautions set the national benchmark for isolation practices and is used as a model by other federal agencies, state, local and nonprofit organizations. Other federal agencies within the Department of Health and Human Services that play key regulatory roles in infection control include the Food and Drug Administration, Centers for Medicare and Medicaid Services, and the Agency for Healthcare Research and Quality. The Occupational Safety and Health Administration issues requirements for the protection of healthcare workers from pathogen exposure. The Joint Commission issues infection control education and process requirements for accreditation, and lists one of the National Patient Safety Goals as “Prevent Infection.”

To provide the current perspective on infection control and prevention, the AANA Infection Control Task Force applied an evidence-based research process to support recommendations contained in the revised Infection Control Guide. A database was developed to serve as both a repository for the infection control literature and a mechanism to systematically review and rank the research. The current Infection Control Guide provides links to websites for more detailed information about specific issues. Readers are often referred to the product manufacturer’s guidelines for most current infection control measures tailored to newer equipment because of its complexity. Those guidelines are accessible online or by contacting the product manufacturer.

Overview of the Guide
The AANA Infection Control Guide for Certified Registered Nurse Anesthetists is organized into 3 sections. The first section, “Preventive Measures: Personal,” details infection control precautions that CRNAs should use during most patient care activities. It begins with hand hygiene, the most important infection control measure, and describes prevention of occupational exposure, sterile technique for line insertion, regional anesthesia, safe injection practices, and perioperative antibiotic considerations.

The second section, “Preventive Measures: Procedural,” consists of infection control measures aimed at procedures involving the anesthesia delivery system, disinfection and sterilization of commonly used airway and interventional equipment, and the use of products labeled as “single use” and “multiple use.”

The last section, “Preventive Measures: Environmental,” examines infection control practices for cleaning, disinfecting, and terminal cleaning of the environment, as well as managing laundry, personal protective equipment, and the proper disposal of noncontaminated and biohazardous waste generated when providing clinical care.

Key Clinical Implications
To gain familiarity with current best practices, CRNAs are encouraged to access and frequently review the complete Infection Control Guide for Certified Registered Nurse Anesthetists (located at http://www.aana.com/practicemanager) to gain familiarity with current best practices. Additional evidence-based recommendations will be included annually as warranted by research literature. Some notable excerpts from the evidence-based recommendations follow:

- Effective hand hygiene before, after, and between patient contacts remains the most important infection prevention measure. Alcohol-based hand rubs should be located in all anesthetizing locations.
- Hand hygiene for 15 seconds with alcohol-based hand rubs can kill 99.99% of bacteria, most viruses, but not spores, and is ineffective for visibly soiled hands.
- Chlorhexidine skin preparation is superior to povidone-iodine.
- Use sterile field when inserting arterial lines.
- Use full sterile barrier technique for central line insertion.
- Use a facemask in addition to hand hygiene and sterile technique with meticulous asepsis when performing neuraxial block.
- Cleanse with 70% isopropyl alcohol prior to accessing vascular line ports, stopcocks, and ampule surfaces.
- Do not access IV bag for diluent or any other use other than aseptically adding medications; use individually wrapped saline syringes.
- Use safe injection practices to aid in disease outbreak prevention.
- Environmental contamination is difficult to control during airway management, monitor and clean any contaminated areas.
- Follow Surgical Care Improvement Project Measures to prevent surgical site infections.
- Disinfect and sterilize laryngoscope blades prior to reuse; keep stored blades covered.
- Keep materials for future cases clean, confined, and covered.
- Do not reuse any single-use-labeled material or device.
- Clean and disinfect newer invasive...
devices in strict accordance with manufacturer guidelines.

**Conclusion**
The AANA *Infection Control Guide for Certified Registered Nurse Anesthetists* identifies multiple preventable threats to patient health. The deleterious effects of infection may not manifest immediately, yet can threaten the health and life of patients undergoing anesthesia. All CRNAs should diligently promote patient safety through an understanding and adherence to the latest infection control and prevention evidence-based practices.

**REFERENCES**

**AUTHOR**
Charles A. Griffis, CRNA, PhD, is an associate professor at the University of California, Los Angeles (UCLA). He works as a faculty nurse anesthetist for the anesthesia department, providing clinical service and teaching students. Dr Griffis is faculty at the UCLA School of Nursing, Los Angeles, California, and a visiting professor for the Kaiser Permanente Nurse Anesthesia Program, Pasadena, California, and the University of Southern California Program of Nurse Anesthesia, Los Angeles.

**ACKNOWLEDGMENTS**
Infection Control Task Force members and authors of the *Infection Control Guide for Certified Registered Nurse Anesthetists* include Charles A. Griffis, CRNA, PhD (chair); Margaret Grace Ford, CRNA, MS, PharmD; Michele E. Gold, CRNA, PhD; Mary C. Karlet, CRNA, PhD; and Manju Mani, CRNA, MS. The AANA staff who played an essential and much-appreciated role in the development of the revised guide include Lisa Thiemann, CRNA, PhD; Kymika Okechukwu, MPA; and Ewa Greenier, MPH, MBA.