

# Infection Control in Equine Critical Care Settings

Brandy A. Burgess, DVM, MSc, PhD<sup>a</sup>, Paul S. Morley, DVM, PhD<sup>b,\*</sup>

## KEYWORDS

- Health care–associated infections • Nosocomial infections • Infection control
- Equine

## KEY POINTS

- There is a recognizable standard of practice with respect to infection control. Due effort must be given to control and prevention of infectious disease transmission both within a facility and among animal populations: optimal patient care cannot be realized without controlling for health care–associated infections (HCAIs).
- Infection control in the critical care setting is a particular challenge because these patients typically have a greater degree of systemic illness and immune compromise; are more commonly subjected to invasive procedures and placement of indwelling devices; and more frequently receive antimicrobials and gastric protectants, putting them at greater risk for development of HCAIs compared with the general hospital population.
- Every equine critical care unit is distinctive in its physical and operational features and the types of patients that are managed in this hospital area. These unique features necessitate an infection control program be tailored in its finer details to each facility's needs. Designs should be patient centered and present performance guidelines: form should follow function.

## IMPORTANCE OF INFECTION CONTROL IN THE CRITICAL CARE SETTING

Optimal patient care cannot be realized without controlling risks for health care–associated infections (HCAIs)<sup>1</sup>: first do no harm. HCAIs result in increased hospitalization duration, increased morbidity and mortality among affected patients, and can greatly increase the cost of care.<sup>2</sup> In 2002, there were an estimated 4.5 HCAIs per 100 human hospital admissions, with an estimated 5.8% of deaths associated with HCAIs in the United States,<sup>3</sup> which is more than are reported for notifiable diseases. These deaths are therefore among the top 10 causes of human deaths reported in the United States.<sup>3</sup>

Critical care patients are a unique part of hospital populations in both human and veterinary hospitals. In general, compared with patient groups that are less sick,

---

<sup>a</sup> Department of Population Health Sciences, Virginia-Maryland College of Veterinary Medicine, Virginia Tech, 100 Sandy Hall, MC 0395, Blacksburg, VA 24061-0395, USA;

<sup>b</sup> Department of Clinical Sciences, James L. Voss Veterinary Teaching Hospital, Colorado State University, 1678 Campus Delivery, Fort Collins, CO 80526, USA

\* Corresponding author.

E-mail address: [paul.morley@colostate.edu](mailto:paul.morley@colostate.edu)

critical care patients have more systemic illness, a greater degree of immune compromise, are more commonly subjected to invasive procedures and placement of indwelling devices, and more commonly receive antimicrobials and gastric protectants. All of these factors place them at greater risk for development of HCAs compared with the general hospital population. As a result, it was recently estimated that approximately 30% of adult intensive care patients in developed countries experience an HCAI during hospitalization, which is approximately a 10 times greater risk for HCAI than is seen among noncritical patients in human hospitals.<sup>4</sup>

Although similar data in veterinary medicine are lacking, the occurrence of HCAs is common among accredited veterinary teaching hospitals (VTHs) and there are several publications documenting large outbreaks of HCAs associated with a variety of contagious agents. In a survey regarding infection control programs at these hospitals, 82% reported outbreaks of HCAs in the preceding 5 years, with 58% resulting in restrictions to patient admission and 32% reporting facility closure to aid mitigation efforts.<sup>5</sup> In adult horses admitted for gastrointestinal disorders, approximately 20% experienced an HCAI during hospitalization based on syndromic surveillance from 5 participating VTHs in a 6-week period.<sup>6</sup> Despite the recognized occurrence of outbreaks, the sporadic occurrence of HCAs is poorly understood. Further, because most veterinary hospitals do not use a systematic approach for documenting or investigating the occurrence of HCAs, practices used for preventing infections are almost entirely based on empiric assumptions.

Regardless of the paucity of evidence on which to base veterinary infection control practices, there is a clear risk to veterinary patients and personnel working with these animals. There are equally clear ethical and legal obligations for veterinarians to make a concerted effort to address these issues. Stated another way, there is a recognizable standard of practice with respect to infection control and due effort must be given to control and prevention of infectious disease transmission both within a facility and among animal populations: it is possible to do too little.<sup>7</sup>

## GENERAL INFECTION CONTROL CONCEPTS

Infection control is embodied by all efforts used to prevent the introduction and contain the spread of contagious pathogens within a facility or population. Overarching goals of an infection control program (ICP) are to eliminate sources of potentially pathogenic microorganisms and to break transmission cycles. In veterinary hospital settings, this is a challenge because clinicians are purposefully caring for patients with infectious diseases, and also generally caring for patients whose resistance to disease is compromised (especially those patients managed in the critical care unit [CCU]) and doing so in an environment that congregates animals from many different farms that are likely to be harboring an infectious agent.

There are several types of preventive measures that can be used to decrease infectious disease transmission risk, including environmental and personal hygiene and managing patient contacts. Specific measures to be used include early detection of high-risk patients, rigorous hand hygiene and contact precautions (ie, barrier nursing precautions), patient cohorting, movement restriction (including patient isolation), and regular environmental sanitation and monitoring (when information regarding contamination with specific pathogens is used to guide mitigation efforts). Every equine hospital is distinctive in physical and operational features, as well as in the different types of patients that are managed. These unique features necessitate an ICP being tailored in its details to each facility's needs. All ICPs that should be incorporated address these common infection control principles. There are general systematic approaches,

Download English Version:

<https://daneshyari.com/en/article/2458893>

Download Persian Version:

<https://daneshyari.com/article/2458893>

[Daneshyari.com](https://daneshyari.com)