Contact Precautions and Hand Hygiene in Veterinary Clinics

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KEYWORDS

• Hand hygiene • Barrier nursing • Contact precautions • Infection control culture • Interventions • Hospital-associated infections • Zoonoses

KEY POINTS

- Contact precautions and hand hygiene prevent the physical translocation of microbes between patients, staff, and the environment, thus decreasing potential host exposure and preventing infection.
- Hand hygiene is considered the single most important measure for infection control in hospitals and other health care facilities. The same is likely true in veterinary clinics.
- Compliance with contact precautions and hand hygiene protocols is the most challenging component of ensuring efficacy. Available evidence suggests compliance in veterinary clinics is low.
- Monitoring these practices through means, such as direct observation or video surveillance, is feasible and provides data for evaluating interventions and providing feedback to staff.
- Development of a clinic infection control culture is the ultimate means of improving compliance with infection control measures, including hand hygiene and contact precautions.

THE IMPORTANCE OF HAND HYGIENE AND CONTACT PRECAUTIONS

There are 3 main categories of infection prevention and control measures: those that decrease host susceptibility, those that increase host resistance, and those that decrease host exposure to infectious agents. Of these, decreasing exposure is the most effective (and often the most practical) approach. If a host does not encounter a particular pathogen, or if exposure can be limited to a level below the infectious dose, then disease simply cannot occur. For some organisms, however, in particular

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those that may cause short- or long-term colonization, avoiding exposure may be difficult or impossible.

Contact precautions are measures used in health care settings specifically to help prevent the physical translocation of microbes between patients, staff, and the environment, particularly via direct or indirect contact or droplet transmission (as opposed to airborne transmission). In most cases, these include hand hygiene and glove use as well as use of disposable gowns or other designated overwear (eg, laboratory coats). Additional measures may include specific patient placement or cohorting and use of masks, eye protection, and shoe covers (also called personal protective equipment [PPE]) (**Table 1**).[1] There are several different sets of contact precautions that have been proposed or recommended in human health care, referred to as standard precautions, universal precautions, body substance precautions, isolation precautions, or barrier nursing protocols, depending on the setting, goals, and criteria for use (eg, some patients vs all patients or preventing transmission of microbes in general vs specific pathogens).[1] There is still considerable variation in how and what contact precautions are applied in human hospitals,[2] but it is nonetheless standard for each facility to have its own set of protocols for PPE and associated practices.

There is limited published research regarding the use of contact precautions and other infection control measures in veterinary facilities.[3–5] Guidelines for these practices can be found in textbooks and other publications,[6–10] but their implementation has seldom been assessed. Many of these infection control measures are simple to perform, but they all require varying amounts of time and effort, which can make achieving adequate compliance difficult, particularly in a busy clinic setting. Protocols for use of PPE, including what, when, and how, should be established and documented by each veterinary clinic and included as part of a tailored infection control program (see **Table 1**).

Of all the contact precautions, hand hygiene is considered the single most important measure for infection control in hospitals and other health care facilities.[11] It is universally applicable in all patient (and patient environment) contact scenarios. In veterinary medicine, hand hygiene is a key measure in preventing the spread of common zoonotic pathogens, such as enteropathogens and multidrug-resistant bacteria, including methicillin-resistant staphylococci. Hand hygiene also has the potential to help decrease the risk of nonzoonotic pathogen transmission between animals in veterinary clinics via the hands of clinic personnel. Recommendations regarding hand hygiene, including when, how, and how often it should be performed, appear in guidelines from several health care–associated organizations[11–13] as well as veterinary infectious disease control guidelines,[6,9,10] but achieving uptake and compliance with these recommendations remains challenging, particularly in veterinary facilities where a strong infection control culture is often lacking.

Hand Hygiene Basics

The goal of hand hygiene in the context of modern health care is to reduce or eliminate the transient (superficial) microbiota of the hands as atraumatically as possible and ideally to prevent rebound growth to decrease the likelihood of transfer of pathogenic or opportunistic microbes from the hands to other surfaces or individuals/tissues.[14,15] This may be accomplished by physical removal of the microbes from the skin or use of antimicrobial compounds that kill or neutralize the microbes. The resident microbiota of the skin is more difficult to remove but is also less likely to include pathogens and is important to maintain because it can play a role in competitively excluding other pathogens.[11,13] Maintaining the integrity of the skin even after repeated hand hygiene attempts is crucial, because skin damage provides niches for opportunistic pathogens

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