



Just Because You are Using a Disinfectant, Doesn't Mean You are Disinfecting

The Business Case for Improving Infection Prevention

Healthcare-associated infections (HAIs) are the fifth leading cause of death in acute care hospitals in the United States and the fourth leading cause of death in Canada. Each year it is estimated that over 720,000 HAIs occur in U.S. healthcare facilities, and worse, approximately 75,000 people will die from them. These infections have a significant impact on patients, families, healthcare institutions and our economy. For patients, it means longer hospital stays, increased pain and suffering, potential ongoing issues or even death. For families it can mean the loss or debilitation of a loved one and significant financial burden. Healthcare institutions face reductions in reimbursements and their brand equity, and our economy faces billions of dollars in excess healthcare costs.

From emerging pathogens to “super bugs”, the public has never been more aware of infection control challenges, which are frequently cited in headlines. Bacteria have become more resistant to antibiotics, which leaves healthcare professionals with limited, or in some cases, no effective treatment options. And emerging pathogens, such as ebola, are forcing healthcare facilities to look closer at their current practices to ensure staff, patient and visitor safety, and proper care.

As reimbursements become more aligned to the quality of care, there has never been a more compelling business case for healthcare institutions to focus on preventing infection. While there are several factors which can impact infection rates, including early identification of infected or colonized patients, antibiotic stewardship, and hand hygiene, a focus on improved cleaning and disinfection practices is warranted.

Cleaning and Disinfection Needs Improvement

Recent studies have shown that the environment may play more of a role in the transmission of infection than previously thought. Studies have shown that pathogens can survive on environmental surfaces and equipment for days, and even months. These contaminated surfaces can play a role in the transmission of infection when a patient either contacts these surfaces directly, or when these pathogens are picked up on healthcare worker or visitors' hands and then are indirectly transferred to a susceptible patient.

Several studies have also shown evidence that a patient's risk of acquiring an infection, especially a multi-drug resistant infection, is higher if the prior-room occupant was infected or colonized, further implicating the role of the environment in the spread of infection.

To reduce this risk, cleaning and disinfection of hands, surfaces and equipment is critical. In recent years, there has been a major focus on improving hand hygiene, but still it is estimated that only about 50% of healthcare workers follow basic hand hygiene measures. Even if the hand hygiene compliance rate was higher, there is still the risk that hands can become re-contaminated by touching contaminated



surfaces, which is why hand hygiene and surface cleaning and disinfection are both important factors to reduce infection.

Unfortunately, data has shown that cleaning and disinfection of patient rooms, operating rooms, and shared patient care equipment is suboptimal. Studies conducted by Carling have demonstrated that less than 50% of patient room surfaces and less than 25% of operating room surfaces are properly cleaned and disinfected. The outcomes are potentially even worse in the clinical area where cleaning and disinfection of surfaces or shared equipment may not part of the core job description, leading to those hopeful and random acts of disinfection in many facilities.

Evidence has demonstrated that daily cleaning and disinfection of surfaces in a patient's room, such as bed rails, can significantly reduce the transmission of pathogens to healthcare workers hands. Further, Carling's studies also demonstrated that improved training along with monitoring and feedback on the process can significantly improve cleaning and disinfection compliance.

It is clear that cleaning and disinfection is critical, and there is no doubt that it needs improvement. There are also a number of challenges that can impact the effectiveness of cleaning and disinfecting, from product, to process, to program. To have a successful program, it is important to understand the barriers and how to overcome them.

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What does this mean?

Germs are invisible. It is difficult to tell if the job was done properly. A surface can look clean, while still housing a significant amount of pathogens. The real question is how do you know the surface was truly cleaned and disinfected?

Roles and responsibilities. In many facilities, cleaning and disinfection roles and responsibilities are unclear. There is confusion about who is cleaning what... As an example, in some facilities, environmental services is not responsible for daily cleaning of bed rails because they don't want to disturb the patient – yet the clinical staff isn't doing it either... Bottom line, what is known as an effective method for reducing pathogen transmission to hands of healthcare workers isn't happening.

Disinfectants may not stay wet long enough. A disinfectant requires a specific contact time with a pathogen to kill it. This contact time, or the time it is required to stay wet, is listed on the label of EPA- or Health Canada-registered disinfectants. Optimally, the disinfectant will stay wet and in contact with the pathogen for at least as long, or longer, than the required contact time. Unfortunately, many disinfectants dry before the contact time is achieved, especially those with long contact times or high levels of alcohol. Are you confident that the required contact time is being achieved?

Disinfectant and tool compatibility. Quaternary ammonium compound-based disinfectants (quats) can bind with cotton and some microfiber cleaning tools, which prevents the release of the disinfectant active



on to the surface, inhibiting the disinfection process. This issue, called quat binding, is caused when quats, which have a positive charge, bind with cleaning tools that have a negative charge. Other studies have demonstrated that some cleaning cloths may be so absorbent that it prevents the release of enough disinfectant on to the surface to do the job. Have you checked to make sure that your disinfectant and tools are compatible?

Safety. A study by Matlow, et al, demonstrated that staff may be less likely to use a disinfectant that they feel is hazardous or unpleasant for patients or themselves. Some disinfectants are irritating to eyes, skin or respiratory tracts, and may require the use of personal protective equipment (PPE), or be irritating to patients, while others may have an offensive odor. Your staff may be reacting by minimizing use, or they may be using these products without the proper PPE which can increase risk of injury or lost time. Patient and staff satisfaction are so important! Is your facility providing a disinfectant that is tough on pathogens, but gentle on staff and patients?

Assets. Billions of dollars are invested in healthcare furnishings and equipment, and having disinfectants that can be used safely on these assets is important. Some disinfectants can harm surfaces or shorten the useful life of furnishings, equipment, clothing and other assets. Understanding compatibility with multiple assets can help address useful life, and unnecessary cost to the facility.

Ease of use. If the goal is to get staff to clean and disinfect bed rails or patient care equipment between uses, yet the product isn't in the right place at the right time – the odds of the cleaning and disinfection process happening decrease significantly.

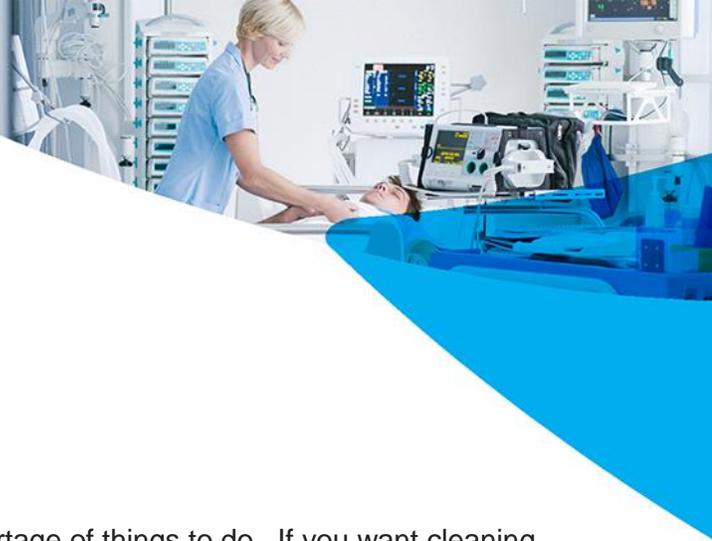
As discussed, there are several barriers to proper cleaning and disinfection. Just because you are using a disinfectant, doesn't necessarily mean that you are disinfecting. Unfortunately, it isn't enough to just provide a disinfectant, compliant cleaning and disinfection requires a programmatic approach. If your staff isn't motivated to use the product or the product or tools are ineffective, your success may be limited.

Addressing Cleaning and Disinfection Challenges

In marketplace research, we identified the elements of a successful cleaning and disinfection program.

Roadmap: Successful & Compliant Clinical Wiping Program





Clearly Defined Roles and Responsibilities. There is no shortage of things to do. If you want cleaning and disinfection to happen, it is critical that staff is clear on their roles and responsibilities. These need to encompass who is to clean what, when, with what, and how often... Anything less won't get the job done.

Right Product. The product(s) selected need to meet the facility's needs, which includes addressing the pathogens of concern while ensuring it is safe for most of the facility's assets. As discussed, it is also important that the product selected helps facilitate compliance by staying wet long enough to do the job. The goal is to identify a disinfectant that can meet the needs in the majority of situations; however, facilities may need to select more than one product to meet their needs, just as you do at home. You don't use bowl cleaner on the leather couch, and as such, it may be necessary to select certain task oriented disinfectants for specific pathogens, such as *C. difficile*.

Safe and Pleasant for Staff and Patients. Staff is more likely use products that are non-irritating to eyes, skin and respiratory tracts, which have no offensive odor. These products are also likely to reduce worker injuries and compensation issues, ensuring a more satisfied and productive staff. There are now several disinfectants on the market that are not only effective, but significantly less hazardous to staff, and more pleasing for patients.

Accessibility. It is highly unlikely that a staff member will leave the room and come back later to clean and disinfectant. If you want to improve cleaning and disinfecting compliance on touch surfaces or shared equipment, make sure that the product is available when and where they need it – at the point of care.

Validation. The crowning element of any program is validating that the process is happening correctly. Since pathogens are invisible, it is often difficult to confirm proof of process. Implementing a program to monitor and measure cleaning and disinfection effectiveness can help you ensure compliance with the process.

There has never been a more compelling business case to improve cleaning and disinfection. From emerging pathogens, to antibiotic resistant organisms, the risks are great, and cleaning and disinfection is one of the keys to cost effectively reducing the risk. In some cases, it is one of the last defenses. Isn't it time to overcome the barriers to an effective program? Many infections are preventable and improved cleaning and disinfection has been demonstrated to reduce the risk. We all want to improve the quality of care, and by using a few simple steps, you can improve the effectiveness of your program to create a safer and more satisfying environment of care, and create benefits for patients, families, staff and the facility.

Hopefully the road map we have shared will help you continue to improve your program.