



Just Because You are Using a Disinfectant Doesn't Mean You are Disinfecting: The Business Case for Improving Infection Prevention in ASC's

Background

Healthcare-associated infections are the fifth leading cause of death in acute-care hospitals in the United States and the fourth leading cause of death in Canada. These infections have a significant impact on patients, families, healthcare institutions and the economy. Healthcare institutions face reductions in reimbursements and their brand equity, and the 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 *Candida auris*, are forcing facilities to look closer at their current practices to ensure staff and patient safety and proper care.

With the focus on quality of care, there has never been a more compelling business case for ambulatory surgery centers to focus on preventing infection. While there are several factors that 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

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 workers' 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, proper 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



percent 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 operating rooms and shared patient care equipment is suboptimal. A previous study by Carling demonstrated that less than 25 percent of operating room surfaces are properly cleaned and disinfected. Further, Carling's studies also demonstrated that improved training along with monitoring and feedback on the process can significantly improve cleaning and disinfection compliance.

"There are a variety of issues that can impact proper execution, including a lack of time to do the job properly, inappropriate tools to do the job and a lack of understanding of how important cleaning and disinfection is, which is compounded by not measuring its effectiveness," says Carolyn Cooke, vice president of the North America healthcare sector at Diversey.

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, there is so much to do, and so little time between procedures, that everyone does something, but not all roles are clearly defined or executed. Bottom line, what is known as an effective method for reducing pathogen transmission may not be happening.

Disinfectants may not stay wet long enough. A disinfectant requires a specific contact time with a pathogen to kill it. This contact time 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 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 Matlow study 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 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. When patient and staff satisfaction are so important, are you sure your facility is 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 providing disinfectants that can be used safely used 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, proper operation, and unnecessary cost to the facility.

Ease of use. If the goal is to get staff to clean and disinfect OR tables and 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 decreases significantly. "It is highly unlikely that a staff member will leave the room and come back later to clean and disinfect," says Ms. Cooke. "If you want to improve cleaning and disinfecting compliance of environmental surfaces and shared patient care equipment, make sure that the product is available when and where they need it — at the point of care."

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 if 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.

Clearly defined roles and responsibilities. There is no shortage of things to do. If you want cleaning and disinfection to happen, both between cases, and at the end of the day, 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. According to Ms. Cooke, there are a variety of tools that



can be used to train and reinforce knowledge, including wall charts and cleaning cards that outline specifically who does what, when.

Right product. The products 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 and users. 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 *Clostridium difficile*.

Safe and pleasant for staff and patients. Staff is more likely use products that are nonirritating to eyes, skin and respiratory tracts, along with those that have no offensive odor. These products are also likely to reduce worker injuries and lost time, 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. Keeping cleaning products at the point of care in a place that is easily seen and accessed will increase the likelihood of the products actually being used, improving cleaning and disinfecting compliance on touch surfaces or shared equipment.

Validation. "The crowning element of any program is validating that the process is happening correctly," according to Carolyn Cooke. 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.

The Value of Improved Cleaning and Disinfection is Based in Evidence

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.