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## When Deploying Antimicrobial Protection, Most Facilities Ignore the Obvious - Door Hardware!

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You do not have to tell anyone that works in either the healthcare or education fields that they should be concerned with the spread of bacteria. They are already quite aware that the presence of these microbes on surfaces can produce undesirable consequences. Everyday teachers see children wiping their noses and then touching the doorknob to enter a room, and then other kids also touching that same door and coming down with the same illness the following week. More threatening, though, are the same activities being done in a hospital. Door levers that were just touched by visitors who have the sniffles and followed by a nurse who is stopping in to check the patient's IV cause bacteria and other germs to rapidly spread through the facility.

Bacteria, such as staph or MRSA, can lay in wait on surfaces for weeks, just waiting to be picked up by one person and transferred to another. In medical situations, the results can be dangerous; in education venues, they can contribute to a domino effect of not only sick children, but also their families. Even in the cleanest of venues, bacteria will begin to multiply between cleanings.

According to the Center for Disease Control, there are 90,000 deaths in the United States as a result of infections spread within healthcare facilities. In fact, as a patient, your odds are 1 in 20 that you will get a hospital acquired infection. These infections, which cost hospitals an average of \$60,000 in unreimbursed care per patient, add more than \$5 billion each year to our national healthcare bill. If you think about it, this makes sense because there are so many surfaces in hospitals that can act as a breeding ground for bacteria and other germs.

Schools experience high traffic every day, especially in areas like classrooms, gymnasiums and cafeterias. At schools and colleges things like lockers, educational tools, desks and a multitude of other objects used by many people each and every day can serve as a distribution point for sharing and transferring these microbes from one person to another.

This is why so many healthcare facilities and educational organizations use anti-microbial sprays, dispensers and coatings on so many of their objects. An antimicrobial is a substance that kills or inhibits the growth of microorganism such as bacteria, fungi, or protozoans. These substances are used throughout healthcare institutions and, to a lesser degree, in educational facilities. The most obvious uses in a hospital are in the operating room where surgical instruments have anti-microbial coatings. Filters, cabinets and other surgical room surfaces are often coated with antimicrobial agents. Patient rooms are sprayed over and over. Garments are washed and dried using anti-microbial agents.



*This reader, used at Community Hospice to collect time and attendance information, has an antimicrobial coating on its platen, where employees lay their hands.*

Schools do likewise. Most kindergarten teachers regularly wipe down the toys and tables used by their little carriers of microbes. College recreation centers have set up antimicrobial dispensers. If there is a possibility of contamination from one student to another, educational facilities, for the most part, are deploying antimicrobial agents in one form or another.

### **What Do You – and Everybody Else – Touch Each and Every Day at Work?**

It is the one thing most healthcare and education facilities forget to protect... the door hardware. Levers and locks. Exit and panic devices. Push/pull levers. Door accessories. All of us probably know at least one person who tries to avoid touching door hardware with their bare hands.

As Alan Haverkamp, a graduating senior in biology at the University of Maine so succinctly states, "I can't help but think how many other students who are spending time in our bio-hazards labs have also been touching these doors."

An antimicrobial coating on door hardware reduces the spread of bacteria, fungi and mold. It provides an added level of defense against microbes such as MRSA, e-coli, salmonella and streptococcus faecalis, so prevalent in both healthcare and education environments.

Today, all the above-mentioned door hardware products are available with an optional antimicrobial clear coating, a durable BHMA compliant coating that provides long lasting protection to the door hardware. It is even available on the platens of biometric hand geometry readers that schools and healthcare facilities use to collect time and attendance data or to provide extra protection at more secure doorways, such as those to the data center, bio-hazards laboratory and others.

### **How It Works**

For bacteria to grow, its cells must be able to form new protoplasm from nutrients available in the environment. Some antimicrobial coatings utilize ionic silver (AG+), a single atom that is missing one orbital electron. Silver has long been recognized for its antimicrobial properties and has been used to combat microbes for many years in many applications. The natural antimicrobial interacts with bonding sites on the microbe surface. The result is that the silver ions surround bacterial cells, blockading food and slowing the growth of bacteria, mold and mildew. The silver ions are released at a slow, steady rate creating a safe, continuous, long-term protection from microbes.

Such antimicrobial coated products receive continuous antimicrobial protection, creating an invisible line of defense between the door hardware and people's hands against a broad spectrum of bacteria. Used in conjunction with normal cleaning practices, they inhibit microbial growth that could infect anyone within the facility from touching the hardware.

### **Antimicrobial at John Radcliffe Hospital/Promedica Health System**

For instance, the John Radcliffe Hospital's (Oxford, England) decision to specify antimicrobial contact surfaces for their door fittings is recognition that hospital design and specification, and not just rigorous cleaning, play a crucial role in reducing the risk of healthcare-associated infections (HAIs).

As Dr. Jean-Yves Maillard, a microbiologist at Cardiff University, commented on the application, "MRSA and other HAIs pose a major challenge to the healthcare system and practical solutions are needed. Health authorities are focusing mainly on physical cleaning and disinfection to address the problem. Whilst this is obviously important, the built environment plays an important role. Technological developments in building design and construction that may help reduce the risk of infection are welcome."

Closer to home, in an effort to eliminate the challenge of surgeons, nurses, and support staff from fumbling with ID badges through scrubs or forgetting them, Promedica Health System's (PHS) Sylvania, Ohio-based hospital's surgery room grants door entry access through hypoallergenic/antimicrobial coated biometric hand geometry readers. The access control system allow rapid access in critical situations and most importantly creates a highly secure entry beyond card swipe technology that also allows PHS central security personnel to monitor and record through the hospital's access control system.

High traffic, public use buildings, such as schools and healthcare facilities, are ideally suited to antimicrobial coated door hardware simply because they may have hundreds of people going in and out every day. Adding door hardware with an antimicrobial coating can make a big difference by inhibiting the growth of bacteria on hardware surfaces.