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Effective Floor Cleaning Protects Patient Health

by Robert Kravitz
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Patients enter hospitals believing they will be treated for their health problems and, as soon as they are better, discharged. However, in literally millions of cases each year, that simply is not what happens. Not only do some patients develop new health problems while in the hospital, thousands more die due to infections they acquire during their hospital stay.



According to the Centers for Disease Control and Prevention (CDC), every year nearly two million people contract a nosocomial or hospital-acquired infection while in the hospital, and about 90,000 of them will die from the infection. In fact, deaths due to nosocomial infections are now the fourth leading cause of death in the United States – after heart disease, cancer and strokes.

Negative health consequences aren't the only result of nosocomial infections; they are also expensive. When patients contract nosocomial infections, their hospital stay usually extends from four to 24 days. The CDC estimates that the added cost to house and treat these patients amounts to well over \$5 billion annually.

For hospital administrators and the cleaning professionals that maintain medical facilities, the core issues surrounding nosocomial infections are twofold: understanding where and how these infections are spread and how cleaning can help prevent them.

The fact that germs, bacteria, and microorganisms causing these infections are often found—and transmitted—by touching "high-touch" areas such as light switches, bed railings, faucet handles, and door knobs is well-established, but what is less known is that they are also on floors. Properly cleaned, disinfected, and maintained floors are also necessary to help minimize the spread of nosocomial infections. And because many medical facilities are unaware of just how important floor care is in preventing these infections, implementing floor care programs that keep floors infection-free can result in dramatic improvements.

How Floors Transmit Infection



Patients and hospital staff rarely "touch" a floor, so it often comes as a surprise that floors can actually be one of the primary ways nosocomial infections are transmitted. "Floors can rapidly become contaminated in a medical environment from airborne microorganisms," said Mike Nelson, vice president of marketing for Pro-Link, a jansan-focused marketing and buying group based in Canton, Mass. "And this happens much more frequently in medical facilities than many other types of facilities."

According to Nelson, these microorganisms are transferred to and from floors via shoes, equipment wheels and, more directly, by spills and body fluids onto floors. When patients or exposed staff (often cleaning workers) touch the bottoms of their shoes to remove them, for instance, these microorganisms can then be passed onto other, high-touch surfaces, such as those mentioned earlier.

The actual methods used to clean floors can also transmit infections. "Bucket cleaning solutions can become contaminated almost immediately during the cleaning process, even when dual or separate bucket systems – which separate rinse water and cleaning solution – are incorporated," Nelson said. "The continued use of the contaminated solution can transfer increasing numbers of microorganisms to subsequent floor surfaces. Here again, touching the solution [as well as possibly the mop head and even the bucket] can transmit disease."

Not only can the solution be contaminated, but, in many cases, the buckets themselves, along with mop heads and frames, may be contaminated. To help minimize this and make the floor mopping process in a medical facility healthier, Nelson recommends:

- Changing the mop head as often as possible
- Laundering the mop heads after each use
- Wiping down frames and buckets with cleaners and disinfectants and allowing them to air dry
- Changing the cleaning solution frequently to help minimize the contamination. If possible, consider switching to a microfiber system; the mop heads can be changed easily and microfiber uses less chemical and water than conventional mops

"Cleaning professionals in healthcare facilities must always remember that medical facilities are more likely to harbor germs and bacteria that can cause disease and that many patients have weakened immune systems," Nelson said. "The combination calls for much more diligence, not only in cleaning procedures, but in making sure the cleaning tools and equipment are also kept clean and sanitary."

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Floor Care Equipment

Contaminants on floors can also become airborne. Sometimes this happens when aerosol cleaners are used improperly when spot-cleaning specific floor areas. However, more often, this happens when floor equipment is used to clean, scrub, and polish hard surface floors. When these tasks are performed, cleaning professionals are actually "sanding" a very thin layer of finish off the floor. This top layer contains many of the contaminants of concern and these can be released into the air, potentially harming both the cleaning worker and building occupants.



"One way to minimize this problem is to select floor care equipment developed to 'green' floor care," Sofia Modesto, engineering manager at Tornado Industries, said. "The same technology designed to minimize floor care cleaning's impact on the environment will help capture and trap these contaminants so they do not become airborne."

Active systems, more common in Europe, incorporate a built-in vacuum system with a separate motor that vacuums up dust as the machine is used. In North America and other areas of the world, passive systems are more common. With these machines, the motor plays a dual role: it turns the disk to perform the floor care cleaning task as well as vacuums to capture dust.

Both systems have filters to prevent the dust from becoming airborne. In addition to the vacuum systems, these machines also have shrouds covering the base of the machine. The shroud is designed to help capture dust before it becomes airborne, which allows it to be vacuumed up.

"Cylindrical floor technology can also be helpful when performing floor care in medical facilities," Modesto said. "These machines use no pads, but have counter-rotating brushes on either end of the machine. The pads rotate inward, minimizing – if not eliminating – the amount of dust that can become airborne."

The brushes on cylindrical machines may also better penetrate VCT and other hard-surface floors to help remove deeply embedded soils and contaminants, according to Modesto. "Overall, the floor cleaning tends to be more thorough with cylindrical technology, which is what you want, especially in a medical environment," she said.

Putting Floor Care Into Action



Floor care systems and technologies are most effective when they are part of a healthcare floor care maintenance program. Individually incorporating steps, such as laundering mop heads, transferring to microfiber mop heads, and frequently changing cleaning solutions are helpful, but if other measures such as improperly using aerosol cleaners or conventional floor care machines are not corrected, the patient, cleaning worker and medical staff are at risk of acquiring infections.

"A systems approach to cleaning is almost always more effective than a piecemeal system," Pro-Link's Nelson said. "A system not only helps areas and surfaces to stay cleaner longer, but it helps minimize the need for more extensive and expensive restorative work, and maintains a consistently healthy environment."

Robert Kravitz

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