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Reducing Your Legal Liability

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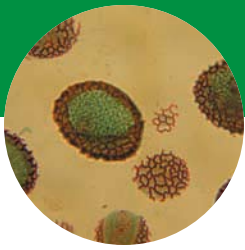
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By Michael A. Pinto, CSP, CMP

Seeing the Big Picture of Infection Control — Part 3 Construction Practices and Cleaning of Apparel and Equipment

Infection control is a broad subject and can seem very complex to those who are unfamiliar with its many components. There are a number of societal trends currently urging individuals and organizations toward greater awareness and the incorporation of infection control principles into their work practices. It is important for cleaning and restoration professionals to understand these activities and adjust their offerings to meet the growing demand. In the previous two issues of *Cleaning & Restoration* magazine we began the education process by comparing the various aspects of infection control to a family portrait, using this analogy because infection control is similar to a family dynamic where the relationships between the different parties are fluid. In both family relations and infection control, putting too much emphasis on one person or area can have negative consequences. Instead of the

complaint being: “Mom always liked you best!”; the restoration contractor may be hit with: “Why didn’t you warn us that this project could impact our operations so seriously!”

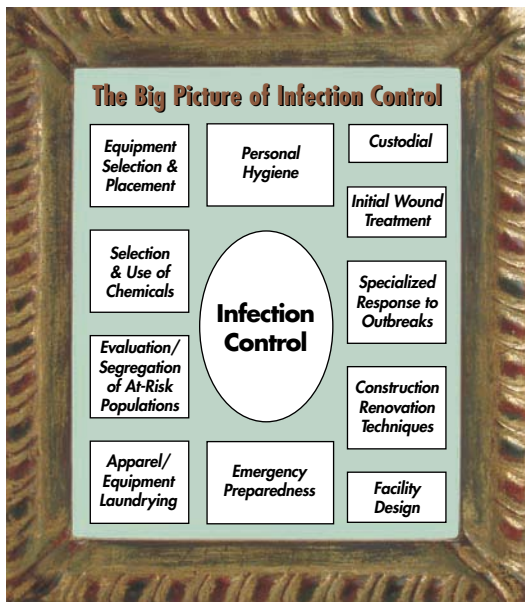
A classic example of the dangers of doing business as usual in a facility where infection control procedures needed to be taken into consideration occurred on Jan. 25, 2005, when a 29-week-old baby “died of an infectious disease.” St. Justine Hospital in Montreal was one of five area

medical facilities where patient deaths were attributed to the presence of *Aspergillus* mold. Hospital administrators moved premature babies out of the neonatal wing while trying to locate the source of infection. The renovations of their fourth-

floor infant intensive care unit area was the prime suspect as construction activities without adequate infection control practices in place were implicated as the primary cause of the fatalities at the

other hospitals. Those series of incidents resulted in a hospital and construction company both being held partially liable as no containment or impermeable barrier had been erected between the patient care areas and the adjacent construction site. There was further indication that contaminated dust particles infiltrated the medical facility from the work area through windows that were not properly sealed.

The explosion of reports of methicillin-resistant staphylococcus aureus, or MRSA, infecting athletes from professional levels all the way down to high schools has kept coaches, trainers and equipment managers busy. Outbreaks around the country have resulted in schools, and even entire districts, being shut down for specialized cleaning. While the coaching staff can educate the players and take certain precautions to minimize contact with the staph bacteria, many teams and schools have not kept up with new methods for cleaning surfaces and contaminated sports gear. Uniforms and equipment that incorporate a variety of materials such as plastic shields, padding, Velcro, and natural and synthetic fibers can now be



laundered and disinfected. Such specialized cleaning and laundry services are great for existing cleaning and restoration companies that are used to handling fire and smoke damaged contents or cleaning structures after bacteria contamination such as sewage losses.

The Construction Side of Restoration and Infection Control

Building on our family portrait analogy, we go back to the center photo of the *American Gothic* farmer and his wife (basics of infection control) surrounded by photos of a baby in the bath water (personal hygiene), Cinderella (custodial practices) and Doc Brown from the *Back To The Future Movies* (selection & use of chemicals). Now we add a photo of a family member working in a construction trade. But as we do, we need to remember that it is called a trade because more than brawn is involved. Nowhere is this more evident than in infection control as changing techniques can improve restoration and construction sites in regards to infection control dramatically.

Extensive use of dust barriers, HEPA-filtered vacuums, negative air machines, dust free cutting tools and products which disinfect surfaces while being cleaned are becoming a standard practice on many construction

projects. The primary focus of these enhanced restoration techniques are the medical services industry — and with good reason. The U.S. is expected to spend more than \$20 billion a year by

2010 for medical facility construction. Once built, these facilities add to the existing demand for infection prevention products and services which is now estimated at more than \$8.9 billion a year.

Although the techniques may be familiar to most restoration contractors the growing regulatory complexity of working within a medical facility is often as mystifying as a foreign language. Rules related to infection control for facilities and patients come from the Centers for Disease Control and Prevention (CDC), Healthcare Infection Control Practices Advisory Commission (HICPAC), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Association for Professionals in Infection Control and Epidemiology (APIC), and the American Institute of Architects (AIA). If that is not confusing enough, a number of regulatory agencies such as OSHA and Health Canada have rules to protect the construction workers from

the infections they can acquire when working in such buildings.

APIC and Health Canada use similar processes to define minimum infection control practices for various types of restoration/construction projects in healthcare facilities. The organizations categorize each

construction activity by the amount of dust and debris produced using an A to D scale. Then project managers for the healthcare facilities are required to identify potentially affected patients and

Construction Activity

- **Type A:** Inspection, non-invasive activities
- **Type B:** Small scale, short duration, minimal dust-generating activities
- **Type C:** Activities that generate moderate to high levels of dust, require greater than one work shift to complete
- **Type D:** Activities that generate high levels of dust, major demolition and construction activities requiring consecutive work shifts to complete

Source: Health Canada

Patient Risk Groups

Low Risk

- Office Areas

Medium Risk

- Cardiology
- Echocardiography
- Endoscopy
- Nuclear Medicine
- Physical Therapy
- Radiology/MRI
- Respiratory Therapy

High Risk

- CCU
- Emergency Room
- Labor & Delivery
- Laboratories (specimen)
- Newborn Nursery
- Outpatient Surgery
- Pediatrics
- Pharmacy
- Post Anesthesia Care Unit
- Surgical Units

Highest Risk

- Any area caring for immunocompromised patients
- Burn Unit
- Cardiac Cath Lab
- Central Sterile Supply
- Intensive Care Units
- Negative pressure isolation rooms
- Oncology
- Operating rooms including C-section rooms

Source: Health Canada

put them into one of four risk groups. Once these two assessment activities are completed, the restoration project manager can cross reference with tables where the type of construction activity

intersects with the identified patient risk group. At each intersection point minimum protocols are established for appropriate infection controls steps. (See charts). These minimums can be useful

guides for projects outside of healthcare facilities as well.

The Contents Side of Restoration and Infection Control

Up until just a few years ago the idea of apparel and equipment laundering for infection control was primarily relegated to medical facilities and their specialized laundering process for bedding and surgical scrubs. Laundering in other situations, particularly those familiar to restoration contractors, was undertaken to remove smoke odor or deal with other contaminants such as sewage or molds. However, over the past decade a number of studies have been conducted which document the negative impacts that improperly laundered clothing can have on infection control. One of the most interesting research projects in this area was conducted in England. The authors found that “functionless clothing” was one of the main sources for bacterial spread. They were especially critical of neck ties because they touch contaminated surfaces as they dangle from the wearer and are rarely cleaned. (*British Medical Association*)

Since appropriate laundering does not usually receive the attention that it deserves, our family photo for this aspect of infection control includes a poor person scrubbing clothing on an old fashioned corrugated washboard. Hopefully such a photo would remind us that we can work “smarter” not “harder”. Once the importance of apparel and equipment laundering is appreciated, individuals concerned about infection control can look for new advancements which allow more and different materials to be cleaned in less time.

Although many people are familiar with the general precautions to avoid infection that go along with laundering (*i.e.*, wash all uniforms, clothing, sheets, etc. in laundry detergent and dry in a hot dryer) they do not appreciate that modern materials and

products oftentimes make that difficult. Putting many fabrics in a hot dryer is a virtual guarantee of ruining the item. Standard washing machines with aggressive agitation can damage multilayered items such as military gear, sports equipment, and quilted contents. In contrast, laundering hard bulky items such as helmets, protective pads or plastic equipment trays can damage traditional washing equipment.

Fortunately, industry advancements have helped to alleviate a number of these problems. Specialized laundry processes have come on to the market to address these concerns. A large number of vendors now offer EPA-registered disinfectants that can be used to clean surfaces and equipment in the laundry area to prevent the possibility of cross contamination of freshly laundered items.

One of the recent advancements for reducing infectious agents in the laundry and of a wide range of materials is the “Esporta” wash system. This equipment uses hydraulic pressure rather than agitation to achieve impressive levels of cleanliness. The Esporta system works with neutral pH cleaners to preserve washed materials. Recent tests have shown

an incredible kill rate for microbials, even in dense products such as foam mats.

While the system was originally designed to clean sports equipment, the Esporta process has proven effective for a wide range of restoration applications including infection control. One study, completed in 2007, shows that the equipment produced impressive effectiveness on sewage contaminated soft goods. With a 99 percent or higher kill rate on skin bacteria, the testing indicates that restoration contractors can effectively clean previously un-washable items.

Next month we will finish our overview of infection control by looking at emergency response procedures and evaluation/segregation of at risk populations. ■

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Editor’s Note: This is the third installment of a multi-part series. Part 1 appeared in the January 2008 issue of *Cleaning & Restoration* and part 2 appeared in the February issue.

Minimum Infection Control Procedures by Class

Class I - Infection Control

- Minimize dust
- Replace ceiling tiles
- Clean work area

Class II - Infection Control

- Seal doors, vents, HVAC components
- Air scrubber or filter
- Dust control (mist or vacuum) while working
- Dust mat at entry
- Covered waste during transport through building
- Wet wipe with chemical
- Wet mop and/or HEPA vacuum floors

Class III - Infection Control

- Complete isolation of work area (room enclosure or control cube)
- Negative pressure work via HEPA equipment
- Waste in containers, then in covered carts
- HEPA vacuum and wet wipe (HEPA sandwich)
- Visual inspection by owner or 3rd party
- Controlled tear down

Class IV - Infection Control

- Extra effort to seal all penetrations (do not rely on negative pressure to prevent dispersal of contaminants)
- Minimum 1 stage decontamination chamber
- Use of shoe covers or disposable suits (new shoe/body covering every time in/out)

Source: Health Canada

Table of Infection Control Categories

Risk Group	Construction Activity			
	Type A	Type B	Type C	Type D
Group 1	I	II	II	III / IV
Group 2	I	II	III	IV
Group 3	I	III	III / IV	IV
Group 4	I-III	III / IV	III / IV	IV

Source: Health Canada