

\$9.00

Cleaning & Restoration

January 2008 • Vol. 45 No. 1

Published by the Restoration Industry Association

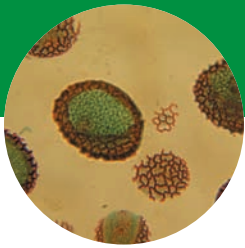
Do Your Business Practices Reflect Your Ethics?

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Consistency vs. Fairness



By Michael A. Pinto, CSI, CMP

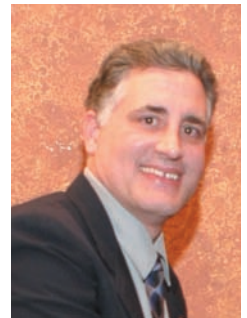
Seeing the Big Picture of Infection Control

Today it is a good news/bad news scenario with regard to cleaning and infection control. The bad news actually comes in two parts. More than ever, there is public awareness and concern about infection agents such as norovirus, methicillin-resistant staph aureus (MRSA), avian flu, SARS, and even

seemingly common concerns such as flu or athlete's foot fungus. The second aspect of the bad news is that this increased awareness has raised people's expectations that custodial/maintenance/restoration personnel will protect us from these threats.

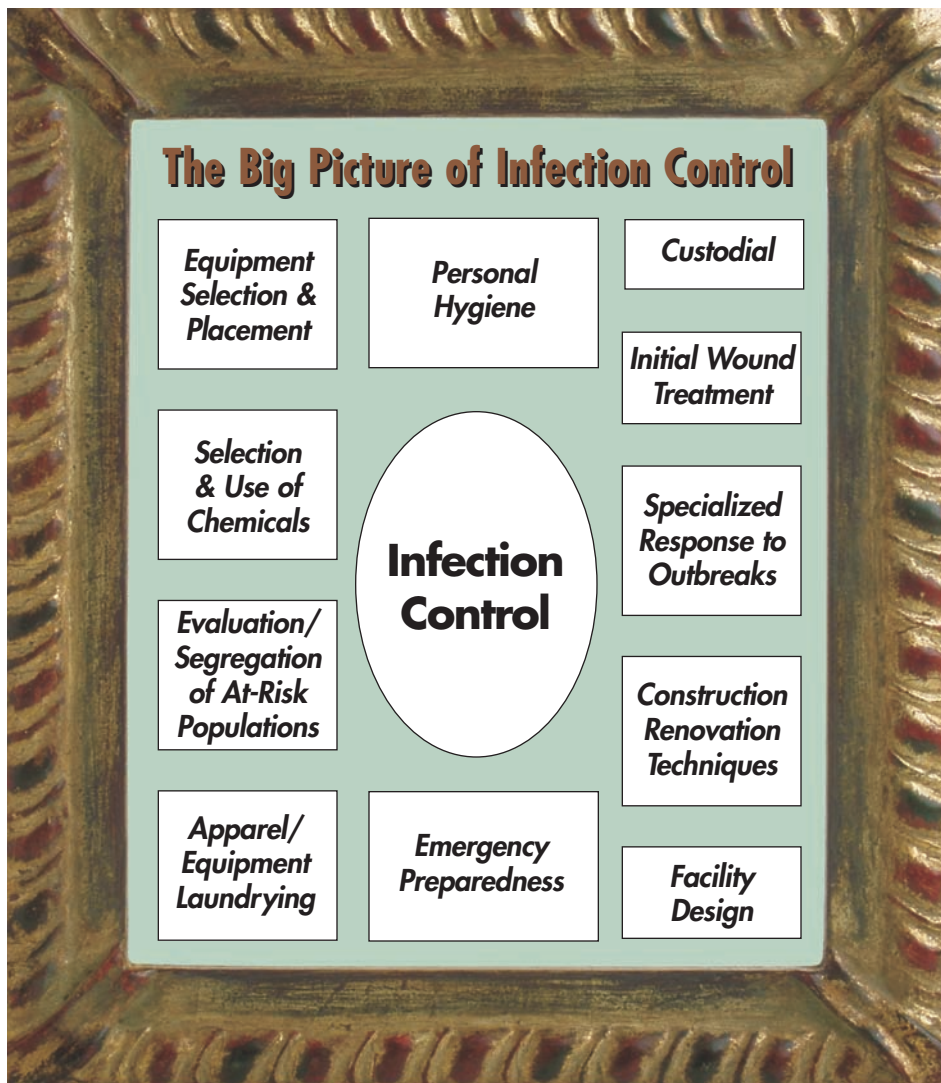
Fortunately, there is some balancing good news for the facilities staff and

restoration/cleaning professionals who are tasked with controlling these infection risks. Over the last few years, there has been an "explosion" of new tools, equipment and procedures that not only help deal with infection threats, but make overall cleaning more effective.



Unfortunately, with the pace of life and business continually accelerating, it is difficult for decision makers to keep current with infection control information; and even more difficult to sort fact from marketing fluff. Because of this, having a framework to evaluate infection control information is critical.

One way to sort and utilize a large amount of data is to develop a mental framework of how you view the data. While the analogy of a jigsaw puzzle is used in some situations, such a mental framework implies a static relationship between the individual pieces. In a puzzle, the pieces either fit or they do not, and there is only one right answer. The reality of infection control efforts is that it is a dynamic situation. As such, a thought process that may be more helpful is to think of a large picture frame on the wall with photos of various family members. Using imagery like this allows us to capture information in broad groups and relate



the groups to one another in a sensible way.

Just like many family pictures are dominated by a photo of the primary family members (think of the image known as *American Gothic* portraying a pitchfork-holding farmer and a younger woman), the collage of images for our frame would have Infection Control in the center of the collection. This “patriarch” of the family grouping is a basic understanding of the scope and impact that infections and infestations have on us as people and as restoration industry professionals. Without a solid grasp of the challenges associated with infectious and infestive agents, all of the information related to control strategies remain disjointed.

Primary Concerns With Infection Control

For the past 150 years, infection control has been an important part of treatment in health care facilities. Today, however, the interest in infection control has “spread” to food processing facilities, schools, gyms, hospitality venues such as hotels and cruise ships, prisons, offices and the home. Because of its long history of infection control and more serious impacts on patients compromised by illness, the greatest amount of statistical information on infection control is related to the health care industry — and the numbers are astounding. It is estimated that in the U.S., two million hospital acquired infections occur annually. Of those, more than 100,000 lead to deaths every year. As such, health care acquired infections kill more people each year than car crashes and homicides combined! Another way to interpret the numbers is that one

out of every 20 people who enter a hospital develops an infection that they did not have when they arrived. For any particular hospital the average is 14 patient deaths per year from facility acquired infections (known in the health care industry as “nosocomial infections”). The economic impact is also staggering. The 5 to 7 billion dollars per year spent on hospital acquired infections breaks down to a minimum of \$13 million per day; \$825,000 per hospital or \$2,500 per infected patient.

As significant as infection control is to the health care industry, that is not the only area of concern. Repeated reports of norovirus out breaks on cruise ships, influenza closing schools, and antibiotic resistant bacteria seriously injuring or killing athletes tell us that infection control efforts should go beyond health care facilities. Indeed, any location where people are in close quarters increases the risk of transmission of infectious agents. (See chart 1 on average amount of floor space per occupant for a telling measure of why infections are so prevalent in some situations.)

Understanding which areas are especially susceptible to infections helps us determine appropriate control actions, but so does a basic knowledge of the types of infectious agents that cause the most problems. Two of the organisms that have

garnered substantial public attention recently are Methicillin Resistant Staphylococcus Aureus bacteria (MRSA) and Norwalk type viruses (Noroviruses).

In October 2007, MRSA was national front page news when an entire Virginia school district shut down for cleaning following the death of a high school student. The same week that the Virginia school district made the news, the *Journal of the American Medical Association* published a study that estimated 94,000 MRSA infections in the United States each year with 18,000 of those resulting in fatalities. The report noted that while MRSA kills more people than HIV and AIDS, the MRSA deaths are rarely tracked. Now that more extensive testing has begun, experts estimate that approximately 25-30 percent of the healthy population carries staph bacteria on skin or in nasal passages. More significant is the estimate that one percent of the U.S. population carries the antibiotic-resistant MRSA strain.

While some individuals think that the problem with MRSA infections has not really grown but just become better publicized, the facts tell a different story. Antibiotic resistant infections were virtually unheard of in the 20 years following the general introduction of penicillin. From the 1960s until the early 1990s, MRSA infections were mostly confined to health care facilities where the combination of compromised patients and medical treatments that were increasingly invasive allowed the skin contaminant to become the dominant cause of hospital staph infections. In fact, MRSA reported infections in health care facilities grew from two per-

Chart 1

Social Density	
Elementary Schools.....	3.9 sq. ft.
Hospitals.....	7.8 sq. ft.
Offices.....	11.7 sq. ft.
Residences.....	16.2 sq. ft.

cent in 1974 to 63 percent in 2006. And about 15 years ago, the first community-associated outbreaks of MRSA caused infections were reported.

Since then, such problems have been documented as having occurred among prisoners, children and athletes. In these community settings, MRSA infections often begin with a look like “normal” skin infections such as pimples, boils or slightly swollen skin near the site of a wound. However, MRSA infections often progress to areas of swelling and pain radiating out from the initial site and draining pus, low grade fever, lethargy and other symptoms that indicate a greater assault by the bacteria on the body. In immune compromised individuals, the MRSA bacteria can quickly produce life-threatening bloodstream infections, pneumonia and other problems.

Noroviruses, on the other hand, are generally not considered to be life

threatening for healthy individuals. The term “norovirus” covers a class of organisms that produce “stomach flu” type symptoms. Nausea, vomiting, diarrhea, stomach cramping, low-grade fever, chills, headache, muscle aches and tiredness are the usual symptoms that accompany a norovirus infection. Since these problems are caused by a virus, there is no medication to cure a norovirus, only products to deal with managing the symptoms. Without effective vaccines, antiviral medications or effective antibiotics for treatment, the answer to norovirus management is prevention through infection control efforts.

The Importance of Personal Hygiene for Infection Control

If the center picture of our collage is the patriarch infection control looking like a farmer with a pitchfork, the photo representing personal hygiene would be a cute scene of a baby taking

a bath. Personal hygiene for infection control is similar to that baby; cute to talk about until the process is overlooked a few times, then it is just stinky. For infection control, cleanliness really is next to godliness.

Whenever personal hygiene is discussed, the importance of hand washing cannot be overemphasized. Numerous studies by the American Society of Microbiology show that more than 17 percent of Americans do not wash their hands; even after bathroom use! But it’s no wonder that the Centers for Disease Control and Prevention states that inadequate hand washing contributes to 50 percent of food-borne disease outbreaks.

Surprisingly, it is not much better in the healthcare profession. Even though it is common knowledge that one of the most frequent ways contaminants spread is from patient to patient contact, 34 separate studies reviewed

Common Infectious Diseases Found in Sensitive Environments Health Care-Day Care-Schools & Universities

Direct Contact	Transmission Routes:		
	Respiratory	Fecal-Oral	Blood
Chickenpox	Chickenpox	Campylobacter	Cytomegalovirus
Cold Sores	Common Cold	E. Coli O157	Hepatitis B
Conjunctivitis	Diphtheria	Enterovirus	Hepatitis C
Head Lice	Bacterial meningitis	Giardia	HIV Infection
Impetigo	Hand-Foot-Mouth Disease	Hand-Foot-Mouth Disease	
Ringworm		Hepatitis A	
Scabies	Impetigo	Infectious Diarrhea	
	Influenza	Pinworms	
	Measles	Polio	
	Mumps	Salmonella	
	Pertussis	Shigella	
	Pneumonia		
	Rubella		

by the American Medical News Service confirmed that doctors are not washing their hands regularly between patients. One frightening study done by the Hospital of Saint Raphael's in New Haven, Conn., estimates that health care professionals only wash their hands thoroughly 40 percent of the time.

And it is not just medical professionals who are lax in their personal hygiene. In a survey of 1,008 men and women, the *Clean Hands Report Card* found:

- 68 percent don't wash their hands long enough to effectively remove germs and dislodge dirt (i.e., wash with soap at least for 20 seconds)
- 36 percent seldom wash their hands after coughing or sneezing
- 31 percent don't wash before eating lunch

For decades now, study after study has shown that improving personal hygiene in all sectors could eliminate nearly half of all infections. That is why images representing infection control and personal hygiene dominate the center of our framework for understanding and controlling infectious contaminants. Still, that leaves 50 percent of the infections that need to be mitigated through other methods. Next month we will take a closer look at custodial practices, selection and use of chemicals, and clothes/equipment laundering as other important steps related to infection control ■.

Michael A. Pinto, CSP, CMP, currently serves as chief executive officer of Wonder Makers Environmental, Inc. Dr. Pinto has authored three books including Fungal Contamination: A Comprehensive Guide for Remediation, over 120 technical articles, as well as 18 commercial training programs. He can be reached at map@wondermakers.com.