

The ability to control and stop the spread of infectious disease has always been a priority for healthcare environments.

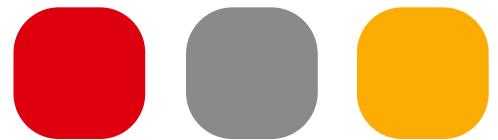
But last year, the issue became magnified, as healthcare professionals around the world struggled to control the SARS epidemic.

What did the healthcare community learn from the SARS breakouts and what can be done in healthcare environments to help prevent this from happening again?

Infection Control

A discussion with Dr. I.W. Fong

We recently had an opportunity to speak to Dr. I.W. Fong, Director, Infectious Disease, St. Michael's Hospital, Toronto, Ontario, who discussed with us the things you need to consider, relative to infectious disease, when designing or renovating a healthcare environment.



Dr. I.W. Fong, M.D., B.S., F.R.C.P.C.

In addition to his duties as Director, Infectious Disease at Toronto's St. Michael's Hospital, Dr. Fong is a professor of Medicine and a published author. Most recently, Dr. Fong published *Emerging Infectious Diseases of the 21st Century: Volume I*, which highlights and reviews new perspectives of infections on the cardiovascular system.

Dr. Fong, what would you attribute as being the primary cause of the spread of infectious disease in healthcare environments?

The most common way that infectious diseases, both bacterial and viral, are spread in hospitals is through direct human contact or through droplets. The majority of these diseases are hidden and often unrecognized. That was the problem with SARS. But even these diseases can be controlled.

The best approach, but often not followed by medical personnel, is the simplest and most cost-effective method and that's proper handwashing. It's the most effective means of breaking transmission of many diseases and it is the least practiced adequately within healthcare environments.

Studies have shown that only 40% of healthcare personnel wash their hands properly only 80% of the time after patient contact.

When choosing various surfaces for healthcare environments what are the most important factors to consider?

Although this is not as big a problem in hospitals as some make it out to be, it is important for hospitals to choose surfaces that are smooth and non-porous, especially in the clinical areas and patient areas, so that they are easy to clean. This is particularly impor-

tant in preventing the spread of certain bacteria such as MRSA and VRE, fomites and certain viruses like Norwalk, and occasionally tuberculosis. These diseases are difficult to cure because they are resistant to many antibiotics and are easily transmitted from objects and surfaces.

Properly cleaned surfaces help prevent the transmission of these types of diseases. The most effective anti-viral, anti-fungal, anti-bacterial agents for blood spills, vomit or fecal

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contamination is household bleach, diluted 1 to 10. So you want a surface that can't be damaged by bleach when cleaning or penetrated.

As a result of new technology and increased demand for services, many healthcare organizations in North America are undergoing renovations to update their facilities and improve patient care.

What precautions should be considered during this process?

It's always a concern when you begin a renovation project at a hospital. We need to consider what will happen when you start to generate dust and what risk does that pose to staff and patients.

For renovations that create dust outside the immediate work area, there is a very high risk of the spread of infectious diseases.

Activities that would generate a lot of dust include drywall repair or demolition, the pulling of wires, duct cleaning, ceiling tile work, and fixture removal and special precautions should be taken.

It's important that localized barriers are put up to prevent the spread of the dust to patient and staff areas.

For more extensive projects, it may be necessary to modify ventilation systems or erect more rigid barriers.

A great deal of planning is necessary and the renovation team should always work closely with the hospital's infection control group to reduce the risk.

I would highly recommend the use of a checklist that is reviewed by everyone before any work begins.

In really tight spaces it may also be necessary to use HEPA filtration equipment, to protect both the construction workers in that area, as well patients and staff in the other areas of the facility.

Finally, in large construction projects where extensive dust will be generated, access to those areas should be restricted to those working on the project.

Which areas of the hospital are at most risk during renovation projects?

For the most part, people who are generally healthy are not at risk.

Office staff and patient care unit staff and patients are low risk groups. The risk increases as you move into emergency rooms, operating rooms, oncology, chemotherapy and dialysis units, neonatal, and transplant units.

Patients in these areas often have compromised immune systems and cannot fight off opportunistic pathogens present in dust that would normally affect healthy individuals.

It's really important to consider the proximity of the renovation activity to the high risk infection control risk groups within the hospital.

What are the potential infectious diseases associated with construction?

Outbreaks of *Aspergillus* spp have occurred in cancer and transplant patients, as well as to patients who are immunosuppressed.

This fungus or mold is ubiquitous – it can be found everywhere. When drywall is repaired or torn down, spores of this fungi are released and if you're someone who is undergoing chemotherapy or had a transplant and you inhale these spores you can get aspergillosis, which is often fatal.

Less common is *Legionella pneumophila*, which is present in many hospital water tanks and faucets and can be spread through the HVAC system, if not properly maintained or cleaned to patients who are immunosuppressed, the elderly and those in critical care.

In your opinion, what should hospitals be doing to help curb the spread of infectious disease?

Hospitals need more isolation rooms with negative pressure. These rooms are vented outside and the air from that room is released outdoors.

More sophisticated air filtration systems are also needed. HEPA-filtered exhaust systems from high-risk areas would also help control the spread of infectious disease.

In waiting areas, air should flow from staff areas to waiting areas.

What do you consider to be the most important factor in controlling the spread of infectious disease in health-care environments?

It's amazing to me that the simplest principles of infection control are not practiced by most healthcare professionals and that's simply washing your hands. Why is washing hands such a problem?

Physicians and nurses claim they're too busy or they forget. The use of alcohol gels or waterless hand antiseptics has become very popular and is proven to be more effective than hand washing, but despite the ease people still forget to do it before and after all patient contacts.

If this practice were followed 100% of the time, the number of infectious diseases in hospitals would be greatly reduced.

Dr. Fong recently spoke about infectious disease at a seminar hosted by Steelcase.

If you would like a videotape of the seminar, please call Stav Kontis – 800.268.3172, x 5957.