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INFECTION CONTROL IN RADIOLOGY

*protecting patients
and professionals*

**Basic precautions and new products
safeguard everyone's health**

BY SUSAN C. OLMSTEAD

If you work in healthcare, you've got to be a little bit germaphobic. In hospitals, clinics and other imaging sites, countless in-services, department meetings and continuing education courses are devoted to preventing the spread of disease. Your hand-washing habits may even be audited by your facility. You may deal with very ill patients with communicable diseases—and you may see many of them each day. Add to this an increase in antibiotic-resistant bugs and it's enough to make anyone nervous.

The recent well-publicized case of a patient with drug-resistant tuberculosis (TB) being allowed to fly on a crowded commercial airplane illustrated the particular predicament of radiology departments when it comes to infection control.

According to news reports, once he was hospitalized, the TB patient was allowed out of quarantine for only one reason—to get a CT scan, said Peter Rothschild, MD, the radiology director of High Field & Open MRI in Louisville, Ky., and the founder and president of Patient Comfort Systems Inc.

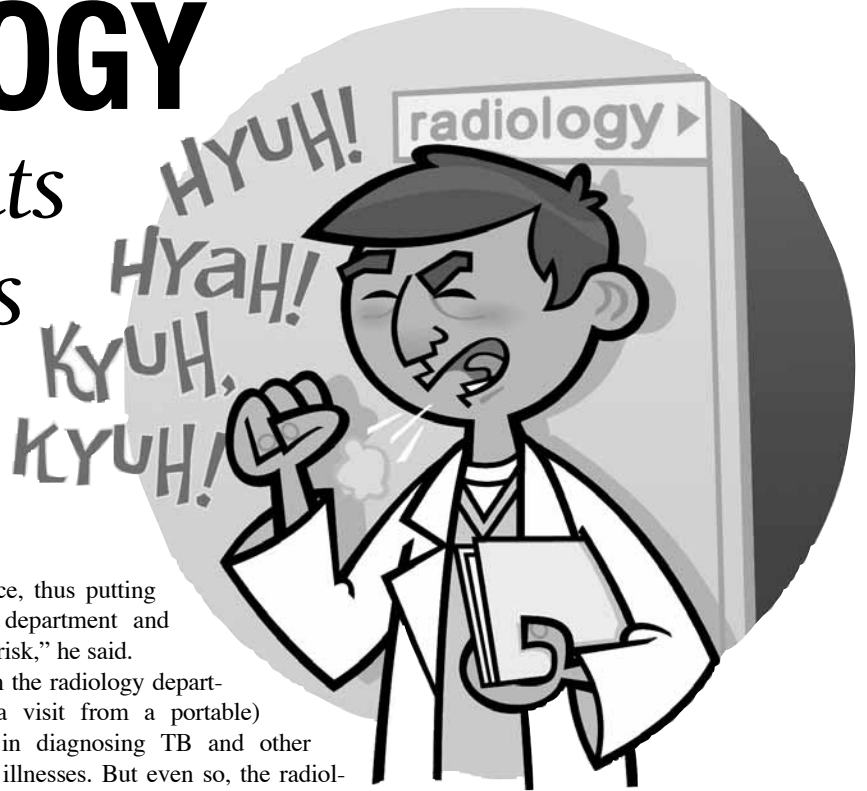
“Although [the patient] was strictly quarantined in a specially designed hospital room with a specialized ventilation and filtration system, he was allowed to leave his room for one purpose—to visit the radiology department for a CT scan. Clearly the radiology department did not have this degree of protec-

tion in place, thus putting the entire department and hospital at risk,” he said.

A stop in the radiology department (or a visit from a portable) is crucial in diagnosing TB and other respiratory illnesses. But even so, the radiology department is an often-neglected area in TB infection control programs, noted L.H. Tan, MD, et al., in a 2006 commentary in the *Biomedical Imaging and Intervention Journal*. Simply due to the nature of patient contact in radiology, technologists may neglect their own protection as well.

Learning from the East

Asian researchers have been especially interested in this problem, thanks to recent health scares there. In Malaysia, where the incidence of TB is much higher than in the United States, 25 healthcare workers were infected with the disease in 2004. The outbreak of severe acute respiratory syndrome (SARS) in 2003 in Taiwan led to three radiographers in that country being infected, according to an article by Y.C. Lin, BSC, et al., that appeared in a 2005 issue of the *British Journal of Radiology*. They wrote that “because of the impact of SARS on the radiology department [of Cheng-Hsin hospital in Taipei], the department established a SARS emergency infection control team and re-designed the department's



infection-control and emergency-management procedures based on the concept of risk-grade protection.” These procedures included a fever screening station outside the hospital emergency room and an emergency infection control team in the radiology department.

As concern mounts about the possibility of epidemics within the United States (illustrated recently by the near-panic caused by the bird flu), departments may want to revisit their infection control policies, and technologists must be ever-vigilant to protect themselves and their patients. The growing problem of Methicillin-resistant *Staphylococcus aureus* (MRSA) is another motivation for ramping up safeguards.

“[MRSA] is affecting every hospital in the country,” noted Dr. Rothschild. “There are many hospitals that are under legal action right now because patients have gotten this infection. Patients are afraid of these superbugs because they're extremely aggressive ... It's also an issue for the technologists working around [positioning] pads and around patients.”

SCOTT DERBY



(left) Patient Comfort Systems' table system in use on the Hitachi Altair scanner. *courtesy Patient Comfort Systems Inc.*

(below) Patient Comfort Systems Inc.'s full table pad system.



Keeping things clean

Dr. Rothschild has been concerned about infection control since the early 1990s, when, as a part of his research for a textbook on open MRI, he spoke with technologists around the country about the issues they faced in keeping imaging facilities clean. He cites high patient turnaround as a major factor in infection control.

"When I started in MRI," he said, "You were spending an hour scanning the patient. You had plenty of time to clean things. But you were making a lot more money per patient. Now, with all this decreased reimbursement, the pressure is to scan more patients ... You've got to squeeze those patients in. And the solution is to scan faster."

It's not uncommon for imaging facilities to be scanning patients every 20 minutes, he pointed out.

In 2003, the Food and Drug Administration (FDA) recommended antimicrobials be used for all surfaces that come into contact with patients, Dr. Rothschild noted. However, recommendations are not requirements, and infection control standards vary from facility to facility. While technologists may be responsible for between-patient and end-of-

the-day cleanup in some places, others may use in-house or outside cleaning companies.

Kathleen R. Kennedy, MS, RT(R)(QM), director of imaging services at Mercy Medical Center in Rockville Center, N.Y., said that the hospital's infection control procedures are drummed into every technologist at initial orientation and again during regular in-services.

"We take infection control very seriously. Like any hospital we are concerned about colonization and MRSA, so we do take a lot of precautions and do a lot of education."

—Kathleen R. Kennedy, MS, RT(R)(QM)

"We take infection control very seriously. Like any hospital, we are concerned about colonization and MRSA, so we do take a lot of precautions and do a lot of education," she said. Mercy does monthly snapshot audits of handwashing practices, and technologists clean positioning pads with "super-cleaning" wipes and change linens after each patient.

Of course, technologists at Mercy follow special protocol when dealing with patients who are quarantined, she explained. "We have signs on the floor that indicate if a patient is in an isolation room ... if we do a portable we have a 'clean tech' and a 'dirty tech' so that everything is handled appropriately.

Everybody's gloved and gowned and both wear masks, but one stays 'clean' and one would be considered 'dirty.' The clean tech is the only person who's touching the actual equipment and the cassette, and the dirty tech is the person who has contact with things in the room, including the patient."

Thankfully, technologists are not alone in the fight against infection. Just as scientists are hard at work on new antibiotics to treat resistant bacteria, new products to add to the infection-control arsenal are in the works.

New products offer assistance

Dr. Rothschild's company, Patient Comfort Systems Inc., founded in 2006, has developed new infection-resistant medical imaging table pads and positioners with permanent antimicrobial agents. This new product line was created in part to address the growing threat of infections spread by contact, including MRSA.

To maximize infection control, the pads incorporate ultra-strong fabric along with sewn and welded seams to protect core material from bodily fluids. Both the pad cores and cover fabrics are manufactured using a permanent antimicrobial agent to inhibit the growth of harmful bacteria. The vapor and moisture-impervious cover does not allow fluids to pass through and can be cleaned with any standard approved hospital-grade disinfectant, the company claimed.

Another company called Pure Bioscience claims that it has taken traditional methods of using silver to fight bacteria to the next level, through a technology called Silver Dihydrogen Citrate (SDC), which the company says is the first new disinfectant in 30 years. Staph Attack, used for closed populations, is the newest addition to the company's product line, and KinderGuard will be available shortly for uses pertaining to children. SDC is antibacterial, antiviral and antifungal, according to the company. ■

Susan C. Olmstead is a freelance writer in Rocky River, Ohio.

THERE'S MORE ONLINE!

For an overview of Methicillin-resistant *Staphylococcus aureus* (MRSA), and recommended infection control procedures for imaging departments, visit us online at www.advancweb.com/rad and scroll down to the Online Extras section.



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PATIENT COMFORT SYSTEMS

Hayward, California-based Patient Comfort Systems Inc. introduces a comprehensive line of high-performance mattress pads, lightweight knee wedges and positioners specifically designed to enhance advanced imaging scans, while boosting patient comfort.

Developed in conjunction with Tempur-Pedic Medical for MRI, CT, PET and related exams, the new product line features Tempur® material. In addition, the line provides a direct high-performance replacement for original equipment pads, which quickly become worn out and lose their comfort factor over time.

Furthermore, these pads will allow imaging centers and hospitals to manage pressure-related pain and discomfort during imaging procedures, helping patients to remain motionless for extended time periods. The results are clearer images as well as decreased repeat scans and call-backs due to motion. Also, the Tempur

material redistributes pressure away from weight-bearing points of body contact, thus reducing sensations of discomfort and pain.

Finally, the product line conforms to specific requirements for MRI compatibility, safety and patient comfort. A composite of proprietary, pressure-redistributing Tempur materials yields a thin form factor, retaining the maximum amount of free space inside the MRI, CT or PET scanner for patients.



Visit www.patientcomfortsystems.com for more information.

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