Environment of Care® News

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Contents

Joint Commission Resources

The New "Life Safety" Chapter

What It Applies to and How Organizations Can Comply with It

The Joint Commission requires health care organizations to comply with the *Life Safety Code*®* to help ensure fire safety. In the *Life Safety Code*, the National Fire Protection Association (NFPA) specifies construction and operational conditions to minimize fire hazards and provide a safety system in case of fire. To help assess compliance with the *Life Safety Code*, and as part of the Standards Improvement Initiative, The Joint Commission created the "Life Safety" (LS) chapter, which includes all the Joint Commission requirements regarding *Life Safety Code* compliance. The LS chapter applies to any organization or part of an organization that is considered a health care, ambulatory care, or residential occupancy.

A new standards chapter emphasizes fire safety.

What Is an "Occupancy"?

The *Life Safety Code*, otherwise referred to as NFPA 101®, defines *occupancy* as "the purpose for which a building or portion thereof is used or intended to be used." Following are brief descriptions of several different occupancy types recognized by the Joint Commission.

Health Care Occupancy

A health care occupancy is defined in NFPA 101 Section 3.3.134.7 as "an occupancy used for purposes of medical or other treatment or care of four or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control." Although this definition does not address overnight sleeping accommodations, Chapters 18 and 19, on health

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* Life Safety Code® *is a registered trademark of the National Fire Protection Association, Quincy, MA.*

Preventing Infection in the MRI Suite

Magnetic Environment Poses Strong Challenges

If you were one of the more than 10 million people who undergo a magnetic resonance imaging (MRI) scan each year, you'd count on the procedure to be not just accurate but safe.[1] However, according to MRI and infection prevention expert Peter A. Rothschild, M.D., MRI suites often lack basic safeguards against infections such as methicillin-resistant *Staphylococcus aureus* (MRSA). Dr. Rothschild points to the difficulty of implementing and maintaining effective infection prevention because of the unique challenges posed by MRI's strong magnetic environment.

"My belief is that substandard infection prevention is common in MRI suites, especially in outpatient MRI centers, which is where at least half of all MRIs are performed," says Rothschild. He emphasizes the need for simple infection prevention procedures, such as hand hygiene and cleaning of the scan room. "The magnets in the MRI suite are quite hazardous," he says. "They contain liquid helium at almost 459°F below zero, and their magnetic field is 30,000 times greater than that of the earth. In most cases, housekeeping staff members are prohibited from entering the MRI suite except under strict supervision. Even then, they're not allowed in with their mechanized cleaning equipment."

Rothschild points out that the strong magnetic field of the MRI can be hazardous if someone who enters the room has a metal implant such as an aneurysm clip or a pacemaker. "Some outpatient centers rely upon the MRI technician to clean the MRI suite," says Rothschild. This is "a job for which they are seldom trained and may be only poorly equipped. A recent study from Ireland, in which MRSA was cultured from within the bore of an MRI system, could possibly indicate a lack of thorough cleaning."[2]

Rothschild says that a major concern for health care organizations is asymptomatic persons as carriers of MRSA. "Any patient lying on an imaging table could be capable of contaminating surfaces in the radiology suite," he says.

Guidelines for Infection Prevention

Several organizations have issued guidelines for environmental infection prevention in health care facilities. Among them are the Centers for Disease Control and Prevention (CDC) and the Healthcare Infection Control Practices Advisory Committee (HICPAC).[3] Citing numerous studies indicating that MRSA can be spread via contaminated surfaces, the HICPAC document includes several recommendations concerning cleaning and disinfecting various surfaces, including those frequently found in radiology suites, such as bed linens, pillows, mattresses, pads, carpet, and furnishings.

A 2007 document on safe MRI practices developed by the American College of Radiology (ACR)[4] contains only one paragraph concerning infection control. It explains that prohibiting housekeeping and cleaning personnel from the innermost zones of the MRI facility calls into question the cleanliness of the MRI suite. The ACR document recommends that magnet room finishes and construction details be designed to facilitate cleaning by appropriately trained staff, using nonmotorized equipment. It states: "Additionally, as the numbers of MRI-guided procedures and interventional applications grow, basic infection prevention protocols, such as seamless floorings, scrubbable surfaces, and hand-washing stations should be considered."

Rothschild notes that imaging centers and hospitals seldom pay their technologists to wait for cleaning crews to come in and then monitor them while they clean the MRI suite. "Therefore," he says, "in my opinion, the cleaning crews likely will avoid venturing into the MRI room, and thus the responsibility to clean the scan room may often, by default, either be assigned to one of the MRI technologists or simply overlooked."

Rothschild points to other areas of risk in the MRI suite—particularly positioning pads and mattress covers, which he says are often torn and frayed, creating a friendly environment for bacteria. "At many MRI centers," Rothschild says, "there's a false belief that merely placing a clean sheet over the table pads—without actually cleaning the pads between patients—will somehow prevent the spread of infectious agents. Few MRI centers clean their pads even once a day, much less between patients. Cleaning pads during working hours can be perceived as time-consuming and as possibly decreasing throughput, thereby potentially reducing the center's productivity and negatively impacting its financial well-being."

Rothschild recommends using a black light to periodically inspect pads and mattresses for biologic contamination by material such as blood, other body fluids, bacteria colonies, and more. "This is an excellent way to confirm that the cleaning procedures are adequate and the pads are not damaged, because biological material remaining on the pads will light up under black light exposure."

Cleaning the Magnetic Bore

Rothschild asserts that the risk of MRSA transmission is increased in the magnetic bore because the patient is often touching or in very close contact with the surface of the bore. "Obviously, it's difficult and even potentially hazardous to clean inside the bore of an MRI unit," he says. "Most cleaning tools should not even be brought inside the MRI room, much less into the bore of the magnet. This makes it even more difficult to clean inside the bore." Rothschild says that the only other way to accomplish this task is to physically crawl inside the bore and clean and disinfect it by hand. "Unfortunately, this puts the technologist in close contact with contaminated surfaces," he says.

Jerry Gervais, C.H.F.M., C.H.F.P., associate director of The Joint Commission's Standards Interpretation Group, recommends that all cleaning work be performed under the supervision of the organization's technologist or physicist. "Training by the manufacturer is also acceptable," he continues. "However, the reality is that the technologist or physicist won't be available to the cleaning crew at the time this is done." Gervais suggests that the crew be credentialed to do this work and that their competencies be checked on a regular basis. "Any cleaning staff member who's new to the process should be thoroughly oriented and trained to the satisfaction of the technologist or physicist," he says.

Rothschild recommends the implementation of 11 infection control procedures to reduce the spread of MRSA and other infections that could be acquired at freestanding imaging centers and hospital radiology departments. Among them is writing and posting a cleaning schedule and an infection prevention policy that specifies MRI cleaning procedures. He also suggests that organizations implement a mandatory hand hygiene procedure that is to be strictly followed between patient exams for technologists and any others who come in contact with patients.

Rothschild advocates further research to determine the percentage of MRIs in the United States that harbor MRSA. "It's crucial to assure patients that proper infection prevention procedures are being performed in the MRI suite," he says.

Joint Commission Standards Compliance

Louise Kuhny, R.N., M.P.H., M.B.A., C.I.C., senior associate director, Standards Interpretation Group, Joint Commission, points to two main premises of the Joint Commission's infection prevention standards to underscore the need for a clean MRI suite. "First, every accredited organization must have a unique and specialized infection prevention plan that meets its specific needs," says Kuhny. "Second, each organization must have a risk assessment strategy, along with methods for evaluating the success of that strategy. In the case of the MRI, accredited organizations could assess this as a risk point and would be expected to have goals and strategies to address these risks."

Kuhny also reminds organizations that many of the areas of concern are in fact included in CDC guidelines.[5] Therefore, any organization accredited by the Joint Commission is already expected to comply with them. "For example," she says, "the Joint Commission routinely references the HICPAC guidelines for infection prevention in health care facilities and thus expects organizations to consider HICPAC guidelines when formulating infection prevention strategies. This is implicit in Standard IC.01.05.01, EP 1." Similarly, prompt removal of body fluid and disinfection of contaminated areas is covered in various CDC recommendations. "Therefore, Joint Commission surveyors expect to see compliance," says Kuhny.

Specific recommendations are also covered in Joint Commission standards. One example is mandatory hand hygiene by providers between patients. "The Joint Commission expects and requires compliance with hand hygiene under National Patient Safety Goal 7, which calls for reducing the risk of health care–associated infections,"[6] Kuhny reiterates.

Finally, Kuhny reminds organizations that "Joint Commission surveyors include all areas of accredited facilities in their survey activity, including the MRI suite."

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