

# Real Estate Journal

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## Infection Control Risk Assessment: An essential planning tool for safe healthcare construction

### ms Infection Control



By Mike Solak,  
A.J. Martini, Inc.

Nearly 75% of all construction projects in health care involve an expansion or renovation to an existing hospital structure presenting unique challenges for the containment of contaminants. Design and construction of hospital and health care facilities present many challenges, but the complexity of maintaining a safe environment is certainly one of the most difficult.

The importance of containing contaminants during a health care-related construction project has recently become better understood by the design and construction industry. Within the past few years, the AIA (American Institute of Architects), CDC (Centers for Disease Control), and JCAHO (Joint Commission for Accreditation of Health Care Organizations) have all published guidelines.

Infection Control Risk Assessment (ICRA) was first introduced as a requirement for patient areas affected by construction projects in the 2001 edition of the AIA Guidelines for Design and Construction of Health Care Facilities and was made mandatory by the JCAHO. ICRA can best be described as a strategic plan that identifies and mitigates the potential risks for transmission of disease-carrying agents that can be

transported or spread during a construction project.

The process for developing an ICRA plan ideally starts at the early design and planning stages of a project. The owner of the facility is responsible for assembling a panel with expertise in the areas of infection control, risk management, facility design, safety, epidemiology, ventilation, and construction. The panel then addresses the impact the particular construction project will have on the patient population. The following is a list of issues the ICRA should address as they relate to construction activities in the facility:

- Impact of disrupting essential services to patients and staff;
- Patient placement or relocation;
- Measures to protect patients and staff from transmission of contaminants during the construction or renovation project;
- Measures to maintain acceptable levels of Indoor Air Quality (IAQ) throughout the facility during the project;
- Infectious containment; and
- Environmental monitoring.

The plan that is adopted by the ICRA panel is meant to be a living document that should be updated through each phase of the project. During the actual construction, the panel should meet on a regular basis to update the ICRA and to assess the risk as construction progresses. It should come as no surprise to anyone that the success of a health care project depends on many knowledgeable people with expertise from a diverse number of professions. The same multidisciplinary approach is required to ensure the success of the infection control plan for

construction projects.

The role of the consulting engineer in assisting in the development of the ICRA has become increasingly more important as the scope and complexity of the guidelines for contaminant control have evolved. The HVAC design engineer can play a very important role in the development of the phasing and pressure control aspects of the ICRA. In many cases, there is no one on the design and construction team who understands the existing and proposed HVAC systems, pressure relationship issues, principles of air movement, and potential construction phasing implications better than this individual.

The education of the ICRA panel on fundamental HVAC design concepts and code requirements is often overlooked as other, more visible issues, such as construction barriers, are discussed at length. The design engineer should communicate how the HVAC system is intended to function once construction is complete, what capabilities the system has for maintaining pressure control, and how the system will operate during the various phases of construction.

The final responsibility for the development of the ICRA clearly rests with the owner of the facility. The logic for this requirement is obvious when you consider the fact that the medical staff at the facility is most familiar with the types of patients and procedures performed. It is incumbent on the design professional to educate the owner of the need for the ICRA to be in place early in the design process in order to ensure that the design is inte-

grated with the infection control strategy.

Our healthcare system struggles to maintain tight cost controls in the face of ever-rising health care costs. At the same time these cost pressures are reducing the overall capital that is available. Meanwhile, the patient population is demanding more services with better amenities. Additional challenges of attracting qualified doctors and nurses along with the need to keep pace with new medical technologies are leaving health care providers no choice but to continue to renovate and expand. The financial pressures are further exacerbated by the additional regulatory requirements that add cost to any health care construction project.

The involved design professionals, owners, contractors, and regulatory agencies in healthcare are the individuals responsible for understanding, executing, and enforcing the infection control measures required to reduce infection. The cost of properly conducting construction to avoid spreading contaminants can be significant. With a workable ICRA in place before beginning any work and with proper planning and education, the impact can be minimized. Projects that do not address these issues early in the planning phase may face costly changes and potential project delays not to mention jeopardizing patient safety. However, the result of these efforts will make for a safer environment in our healthcare system.

**Mike Solak is the manager of the healthcare division of A.J. Martini, Inc., Winchester, Mass.**