A PETRI dish. Hospitals have sometimes been compared with the Petri dish for harboring and transmitting infections.

A CURE *FOR* HOSPITALS

The dirty little secret of hospitals is that, despite the hygiene practiced within their walls, they harbor nasty infections. Fortunately, antidotes exist for risk managers. ● **BY JOHN FAJEN AND KIM HANNA**

Hospitals and healthcare facilities pose a unique set of environmental risks and potential liabilities in the course of their daily operations. Whether it is indoor air quality problems such as mold, disposal of biohazards, storage tank maintenance or even emerging risks such as methicillin-resistant staphylococcus aureus (MRSA), owners and operators of these facilities can be exposed to claims for bodily injury, property damage and cleanup costs.

No matter what the environmental risk, successful prevention efforts start with the facility identifying and clearly defining the risks. Once the risks are defined, the implementation of carefully crafted prevention and response plans—including the training of personnel to ensure the plans are understood and adhered to—are part of a thorough healthcare risk management program.

MOLD & LEGIONELLA

One of the most common environmental risks hospitals may encounter arises from microbial matter, or mold. Inhalation of mold spores presents potential health hazards, particularly respiratory problems. These types of health issues can be exacerbated for those individuals whose immune systems are already compromised.

The origins of mold damage can often be traced to construction-, maintenance- and renovation-related events that may lead to a mold occurrence if the worksite is not properly maintained or controlled. For construction-related events, defects can occur during construction of the building leading to a potential breakdown in building stability.

Contractor errors may lead to internal pipes bursting and generating water events such as floods and leaks. Rapid construction or a lack of ventilation during these processes can also be instigators for mold growth. A poorly designed, maintained or functioning heating, ventilation and air conditioning system may also contribute to a deficient indoor air quality environment due to a lack of ventilation and rising levels of humidity.

When these types of situations go undetected for too long, they can create an environment suitable for the development and overgrowth of mold. For most healthy individuals, inhalation of airborne mold at normal levels does not have the same adverse effects as those of exposed hospital patients due to their higher susceptibility to infection.

"HOSPITAL-ACQUIRED INFECTIONS STEMMING FROM ENVIRONMENTAL OR POLLUTION-RELATED RISKS ARE A GROWING AND IMPORTANT ISSUE THAT CAN BE A SIGNIFICANT PATIENT SAFETY RISK."

—Kimberly Hanna and John Fajen, Chartis

An equally important environmental risk for hospitals and healthcare facilities is legionellosis. Unlike mold, which is a plant spore, legionellosis is caused by the bacterum Legionella pneumophilia. This bacteria is a potentially dangerous one particularly for those individuals whose health is already compromised. Since the 1970s, many hospitals and long-term-care facilities have noted outbreaks of healthcare-associated Legionnaires' disease. Those infections have been consistently linked to drinking-water systems. It follows that the incidence of healthcare-associated infection is dependent on the susceptibility of the patient populations, as well as the degree of contamination in the water supply.

Legionella origins can also be traced to issues with the chilling units in an air conditioning system. For healthcare facilities, when these systems are inadequately maintained or designed, patient areas such as showers, Jacuzzis and hydrotherapy pools become vulnerable to bio-film growth.

For healthcare facilities, the typical risks from a mold or Legionella outbreak include first- and third-party physical injury due to inhalation, business interruption damages when parts of the facility are shut down, costs to clean up the outbreak and remove damaged material, as well as the restoration of the removed property.

Prevention techniques for both mold and Legionella outbreaks need to occur as a collaborative process between hospital personnel and risk management to make the overall program effective.

Initially, a documented prevention plan should include detailed roles and responsibilities of involved staff, incident documentation requirements, inspection schedules, training and maintenance documentation.

However, preventing system failure is not always possible as accidents and incidents can occur.

summary

- **Hospitals are a Petri dish of potential infections from mold and drug-resistant bacteria, as well as other hazardous materials.**
- **Prevention plans and staff training, coupled with solid insurance coverage programs, offer risk managers the ability to fight back.**

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The next step is a detailed water management and response plan. Water leaks, if responded to timely and appropriately, can reduce a mold problem or prevent it entirely.

Lastly, an in-house training program for management and maintenance staff, including third-party management groups, is another step towards a successful prevention and protection plan for a healthcare facility.

HAZARDOUS MATERIALS

Like many industries, hospitals use and maintain supplies of hazardous materials and potential contaminants on-site. Effective accident prevention measures center around the proper storage, handling and disposal of these materials.

Hazardous materials in a hospital can include toxic chemicals (chemotherapy agents), reactive materials (cleaners, disinfectants), ignitables (oxygen), corrosives (acids) and biohazards. Like mold and Legionella, risks to individuals include first- and third-party bodily injury.

For the hospital, in addition to cleanup and restoration, disposal risks are a factor.

For example, off-site disposal, if performed in an incorrect manner, has the potential to contaminate the environment, causing physical injury and requiring a cleanup action.

Because these materials are used or generated in the course of daily operations of healthcare facilities by hospital personnel and third-party agencies, prevention techniques will rely heavily on educating staff on the proper handling and storage of hazardous materials.

As part of their assessment, underwriters and engineers look for a hazardous material management plan that is implemented throughout the facility.

Additionally, disposal plans, particularly for biohazards such as needles, body tissue and blood pathogens, must be clearly defined and adhered to within established industry standards.

Hospitals are embroiled in the whole national healthcare debate, landing them at times negative publicity for the quality and cost of their care. Meanwhile, day-to-day operations expose them to large workers' comp, med-mal, GL and environmental liabilities, not to mention massive debt.

Company	CRO	2008 Revenue	Primary Broker	Captives
Humana Inc.	Carolyn Snow, Director, Insurance Risk Management	$28.94 billion	Willis	Managed Care Indemnity Inc. (Vt.)
HCA Inc.	Jim Hinton, VP, Risk and Insurance	$28.37 billion	Marsh, Integro, Aon	Healthcare Indemnity Inc. (Colo.); Parthenon Ins. Ltd. (Bermuda)
Community Health Systems	Karen Sullivan, VP, Risk Management and Insurance	$10.84 billion	Withheld	N/A
Tenet Healthcare	By Committee	$8.66 billion	Gallagher, Willis	Healthcare Underwriting Co. (Vt.)
Kindred Healthcare	Kim Martin, SVP, Risk Management	$4.15 billion	Aon	N/A

Company	Risk Exposure:	Risk Strategies:
Humana Inc.	The company counts continued negative public publicity and opinion of the healthcare industry, coupled with increased litigation and increased jury awards, as risks.	Humana contracts with physicians and hospitals to accept financial risk for a defined set of HMO membership, paying the providers a monthly fee in return.
HCA Inc.	With debt of $26.98 billion as of the end of 2008, the company is highly leveraged. This exposes the company to numerous downsides.	Subject to a $5 million per occurrence, self-insured retention, the company's facilities are insured by a subsidiary for losses up to $50 million per occurrence.
Community Health Systems	The company has significant debt and at the end of 2008 had a debt to stockholder equity ratio of more than five to one.	The company maintains professional malpractice liability insurance and general liability insurance on claims in excess of its self-insured layers.
Tenet Healthcare	Tenet continues to be adversely affected by a high volume of uninsured and underinsured patients. As a result, the company continues to experience a high level of uncollectible accounts.	For the policy period April 1, 2008, through March 31, 2009, the company had coverage totaling $600 million per occurrence after deductibles and exclusions.
Kindred Healthcare	Kindred budgeted $34.19 million in 2008 for professional liability losses and $30.72 million for workers' compensation losses.	Kindred insures a substantial portion of its professional liability and workers' compensation risks through a single-parent captive.

COMPILED BY DAN REYNOLDS FROM THE FOLLOWING SOURCES: HOOVER'S, RISK AND INSURANCE MANAGEMENT SOCIETY INC. DATABASES; COMPANY FILINGS AND REPRESENTATIVES.

STORAGE TANKS

Storage tanks, both above and below ground, are another environmental risk concern for healthcare facilities. Most commonly, these tanks contain fuel for backup generators, as required by law.

However, gases such as oxygen can also be stored in central tank areas and piped through the building.

Spills or leaks from these tanks or their associated piping systems can result in environmental contamination in the case of fuel tanks or explosions in the case of gases like oxygen.

Typical causes of these types of spills or leaks include improper operation or maintenance of the system, old or physically degraded tanks, or even piping that has been plumbed incorrectly.

Prevention of fuel and gas leaks is based on proper maintenance and security programs. Tanks should be protected from direct public access in secure rooms or fenced areas. Operations and maintenance procedures should adhere to ASTM (American Society for Testing and Materials) standards. Lastly, because many of the tanks are in use only in emergency or backup situations, regular testing and inspections should be conducted and documented.

MDROS

Considerable media attention has been placed on healthcare-associated infections in recent years. In particular, the healthcare industry is challenged to appropriately manage infections caused by multidrug resistant organisms (MDRO).

MDROs are microbes that are resistant to one or more types of antimicrobial agents (antibiotics), and include microbes such as MRSA,

Vancomycin-resistant enterococcus and Clostridium difficile, among others.

Antibiotic resistance can limit the drug choices available to treat the infection, thus potentially making treatment problematic as well potentially increasing lengths of stay, costs and mortality.

The issue of healthcare-associated infections received further attention from hospital leaders as well as the public when, commencing Oct. 1, 2008, the Centers for Medicare and Medicaid Services (CMS) implemented a strategy to no longer provide additional reimbursements to hospitals when specific events viewed as reasonably preventable occurred during the hospitalization, including select instances of infection.

Some opine that labeling select nosocomial infections or other events as reasonably preventable might potentially lead to increased claims of medical malpractice and resultant litigation costs, even in the absence of actual negligence.

MRSA has received particular media focus. MRSA has been on the increase in the United States since 1975, when the percentage of resistance isolates was 2.4 percent percent. That rate increased to 29 percent in 1991, then 64 percent in 2003—and resistance is still increasing.

In hospitals MRSA is believed to be primarily spread through carriage on the hands of healthcare providers; contamination of the patient care environment plays a secondary role in transmission.

One aspect of management of MDROs that remains a long-standing challenge for healthcare is that, while the organisms may cause a readily visible infectious process that then prompts diagnosis and treatment, other individuals may have the microbe on their body but no signs of infection. This latter instance is known as colonization.

Thus, these patients, or neighbors, friends or co-workers, could be reservoirs of potential infection to others, including hospitalized patients with increased susceptibility.

While a successful MDRO prevention and control program will typically require a combination of interventions, there are several overarching strategies that hospitals must address.

These strategies include the need for appropriate hand hygiene of healthcare staff; the use of personal protective equipment such as mask, gowns and gloves; isolation procedures when indicated; and thorough cleaning of the patient care area especially for the "high-touch" surfaces at the bedside.

The good news is there are success stories of controlling outbreaks of MDROs.

In some instances the dedicated staff persisted with combined interventions for months or years in order to obtain adequate control.

The goal of prevention of further MDRO infections is the best method to decrease the burden that management of actual cases of MDROs places on facilities.

A key method of effectively helping to combat these risks is through a strong prevention program that includes strict standards for cleaning and disinfection of facilities, heightened hygiene standards for staff, and use of personal protective equipment and appropriate isolation techniques.

A greater number of healthcare facilities are recognizing the importance of a well-designed and well-implemented prevention program to mitigate the risks inherent in their operations.

These plans, along with a comprehensive insurance program, are a key component to a sound risk management plan.

Hospital-acquired infections stemming from environmental or pollution-related risks are a growing and important issue that can be a significant patient safety risk.

Environmental risks for hospitals and healthcare facilities can be managed with prevention programs and staff training.

With the acknowledgement of the environmental risks and the implementation of scientifically acceptable protocols for prevention, response and training of personnel, hospitals can ensure that they have an effective risk management plan.

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