Environmental Exposures Heighten Risks for the Healthcare Industry

Healthcare buildings, equipment, and property may pose overlooked – and underinsured – pollution risks

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Dramatic changes are roiling the U.S. healthcare industry. Legislation has been at the forefront, but demographic and other trends are playing a substantial role. An aging population and greater access to insurance are spurring demand for healthcare overall, and in turn, putting greater stress on existing facilities while increasing the need for new and updated hospitals, outpatient and long-term care facilities. As healthcare organizations focus on meeting growing demand, they should not overlook the substantial, and often unique, environmental risks that may arise in day-to-day operations, in construction projects, and which may accompany mergers and acquisitions.

In healthcare, environmental exposures are compounded by the need to safeguard patients who may be more susceptible to injuries arising from pollution conditions or incidents. Fumes from fuel or chemicals, as well as mold spores, legionella bacteria and other conditions, can cause serious harm to people with weakened immune systems. In addition, the medical and hazardous wastes generated by healthcare facilities heighten the challenges from a risk management and insurance perspective. While some organizations may rely on traditional property and casualty coverage, that can leave significant gaps in coverage for environmental and pollution exposures.

Because pollution-related risks are typically excluded by general liability and property policies, an environmental incident could leave a facility facing significant financial costs as well as lasting reputational damage. To address these exposures, healthcare organizations need a robust risk management strategy as well as insurance that provides coverage for the full spectrum of pollution risks.

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By working with an insurer that can offer expertise in environmental risk management as well as the appropriate coverages, healthcare organizations can better manage the potential risks to their patients and their reputations.

### Environmental Risks in Healthcare

While healthcare facilities face environmental challenges similar to many large businesses, they also must address exposures specific to the industry. The requirements of running a large physical plant carry risks relating to storing fuel on-site and using chemicals and solvents for cleaning and maintenance. Asbestos, lead-based paint and other hazardous materials are common problems in older structures. Even new buildings may have to deal with problems stemming from mold or bacterial growth on building substrates. Healthcare facilities produce hazardous and infectious wastes arising from medical tests and procedures. As healthcare organizations seek to expand or acquire other businesses, they run the risk of acquiring environmental liabilities along with a particular property. Given the strict liability exposure for hazardous wastes, transportation and disposal of those materials present additional challenges.

Pre-existing Exposures

Any building built prior to the late 1980s may contain a number of materials considered as pollutants by today's standards. Potential contaminants include lead-based paint, asbestos-containing materials such as ceiling tiles and pipe insulation or caulk that contains PCBs (polychlorinated biphenyls). Renovations can easily spread dust contaminated with lead or asbestos if these materials are not identified and are inadvertently disturbed.
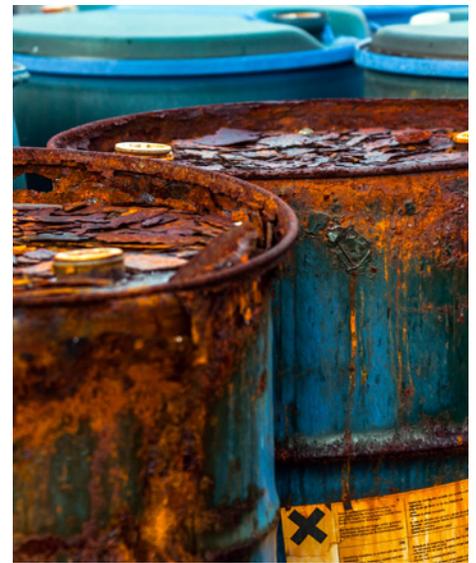
Past uses of fuels, solvents and chemicals often leaves contamination behind at existing properties. Those exposures include ash from medical wastes burned in incinerators and buried on a property in accordance with common practice until the late 1990s; and fuel oil or solvents that have leached into the soil and ground water and migrated around the site or even onto adjoining properties. Left unaddressed, contaminants in soil and ground water can lead to vapor intrusion problems that sicken patients and staff in affected buildings.

If solvents used for dry cleaning in hospital laundries and stored on-site leak, they can contaminate soil and ground water. The solvent tetrachloroethylene, also known as perchloroethylene, or more commonly as "perc," can pose serious health hazards.[1] Other cleaning chemicals that are stored in bulk can lead to serious releases.

To manage the full array of pre-existing and new environmental risks, healthcare risk managers need to identify the exposures, understand the regulatory requirements and take steps to mitigate those risks. That includes assessing a facility's pollution risks and developing plans to manage them, from bacteria and mold, to medical and hazardous wastes and the exposures that stem from acquisitions and construction.

Legionella

Besides traditional environmental exposures, bacterial and mold growth present heightened risks in a healthcare setting. *Legionella,* one form of bacteria that causes the potentially fatal Legionnaires' Disease and the milder Pontiac fever, commonly grows in water towers and potable water systems, as well as decorative fountains and other water features. The bacteria can spread in airborne water droplets and can be particularly dangerous for people who are already sick.

Reported cases of Legionnaires' disease in the United States have risen nearly four and half times since 2000 to about 6,000 in 2015, according to the CDC.[2] A review of Legionnaires' disease outbreaks from 2000 to 2014 shows that 19 percent were associated with long-term care facilities and 15 percent with hospitals.[3] Cooling towers were identified as the source of two 2015 legionella outbreaks in the New York City borough of the Bronx, including one at a healthcare facility in which 15 people were sickened, one of whom died.[4]

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An outbreak sourced to a Bronx hotel earlier that year sickened 128 people and caused 12 deaths.[5]

To combat legionella, healthcare risk managers should make sure that they conform to industry standards in identifying potential risks, evaluating their potable and utility water systems, and assessing infection controls in regular operations and during construction. The ASHRAE Standard 188 calls for comprehensive hazard control planning and includes procedures for monitoring and treating potential sources of legionella contamination. It's crucial to follow best practices for infection control related to construction and to ensure that all personnel have the appropriate training to identify potential construction-related exposures.

Mold

Mold may pose a serious health threat to patients with weakened immune systems at hospitals, dialysis centers, long-term care and other facilities. Mold needs only a source of moisture and organic material to grow. Unaddressed or unnoticed leaks from pipes, roofs, windows and doors can lead to mold growth on drywall. Water seeping in through building envelopes may promote mold growth as can flood damage. Mold spores spread through the heating and ventilation system, or released by construction work, can sicken patients and lead to significant liabilities. One hospital system reached settlements exceeding $1 million in lawsuits that claimed mold was a factor in patient deaths.[6]

A water intrusion and mold management plan can help to combat mold by identifying potential sources of mold contamination, such as from a roof leak or water release by a pipe, valve or sprinkler head, and the steps to be taken to address the affected building materials.

Medical Waste

Medical and 'red bag' wastes containing infectious or pathological materials present dangers for health workers, maintenance staff and anyone else who comes into contact with them. Medical waste disposal is primarily regulated on a state-by-state basis, rather than by the federal government, since the Medical Waste Tracking Act of 1988 expired in 1991.[7] It's important to note that a healthcare organization's potential liability for such wastes does not end when it is hauled away by a contractor.

Healthcare facilities must take special steps when handling and disposing of medical, and 'red bag' waste, which must be handled properly and decontaminated or sterilized before ultimate disposal. Almost all such waste was incinerated until the EPA promulgated stringent emission standards for medical waste incinerators in 1997. In place of incinerators, alternative methods can render the waste non-infectious so that it can be disposed of as solid waste.[8]

Additional safety measures are required to minimize the potential for infection from needles and other "sharps." If not properly handled, "sharps" pose the risk of skin punctures and infection by serious diseases, such as hepatitis and HIV. Hospital personnel suffer about 385,000 sharps-related injuries each year, according to the Centers for Disease Control.[9] To avoid such injuries, healthcare organizations should follow established safety procedures, including a sharps injury prevention program and use proper disposal methods.

Hazardous Materials

While healthcare groups often contract out the transportation and ultimate disposal of hazardous wastes to a third-party, under U.S. laws, they remain strictly liable for any environmental damage caused by that waste. That could include a spill during transportation arising from an accident or improper disposal by a contractor. If any cleanup is required, the healthcare organization could be held liable for that as well under the Superfund laws. That strict liability also applies to the transportation and disposal of other hazardous wastes such as fuels, lubricants, cleaning chemicals and low-level radioactive materials in medical testing devices.

The management and disposal of hazardous waste is regulated by the federal government under the Resource Conservation and Recovery Act. Such wastes may include solvents and other chemicals. The responsibility for correctly identifying products as hazardous waste lies with the facility as well as the responsibility for ensuring the proper handling and disposal. To avoid liabilities stemming from removal and disposal of wastes, it's crucial to audit transportation and disposal firms for compliance with all regulations applicable to the type of waste. The appropriate pollution insurance can be structured to provide coverage for many hazardous waste exposures.

Petroleum Storage Tanks

Because of the life-and-death nature of their work, hospitals and long-term care facilities require emergency generators and the requisite fuel tanks. Hospitals with helicopter pads may have fuel tanks for the aircraft. Large facilities may also have fuel storage tanks for other vehicles. Whether above- or below-ground, tanks and fuel lines can leak. Emergency generators often have so-called day tanks with an automatic feed from larger storage tanks. Those mechanisms can malfunction, meaning additional fuel will continue to flow even though the day tank is already filled and may continue to overflow until someone stops it. Fuel leaks and spills can contaminate the building, the property, the soil and ground water, and may necessitate expensive cleanup and remediation.

Facilities using underground storage tanks may fall under EPA regulations revised in 2015 that have added requirements for tank construction, containment and overfill equipment, operation, maintenance, testing and record-keeping.[10] The amended rules cover systems not previously addressed such as emergency generators, which are common in healthcare facilities.

Pollution Exposures from Acquisitions

The acquisition of a medical group or individual properties carries the risk of also acquiring existing pollution problems. Such contamination may date back a century or more on some sites as many urban areas have been built up on fill of uncertain provenance that may contain contaminants from past industrial and other uses of the property or adjacent ones. Initial excavation for an addition to an existing healthcare campus or an adjoining site could discover soil or ground water contamination resulting from manufacturing or industrial activities decades earlier. More recent problems

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can include solvents from a former dry-cleaning operation that have contaminated an adjacent retail space now being considered for outpatient services.

When it comes to acquisitions, organizations should research potential environmental exposures tied to the properties in question to avoid acquiring unexpected environmental liabilities as well. A Phase I environmental assessment that details the history of the property and its current and former uses can identify potential problems that require further investigation. If needed, a Phase II investigation can provide follow-up testing of the site and ground water to identify any contamination. Organizations considering acquisitions may want to consult with environmental experts to evaluate the environmental risks that may be associated with a transaction. A comprehensive pollution policy can be structured to provide coverage for many pollution exposures linked to acquisitions.

Risks Rise with Healthcare Construction

Another impact of rising demand for healthcare is growth in healthcare construction projects. Advances in medical technology are also prompting renovation of existing buildings or construction of new ones. Construction projects, however, pose a wide range of environmental risks associated with excavation, demolition, construction equipment and materials. Excavating a property is likely to require removing large amounts of soil, particularly if the building is to include underground parking. Should that soil be contaminated with petroleum, chemicals or other contaminants, it will have to be disposed of at a qualified site. That increases both the disposal and the transportation costs.

Excavation can lead to the discovery of pre-existing contamination, whether limited to the site itself or migrating from an adjoining property. A contaminated groundwater plume that has migrated under the site may contain volatile organic compounds or chlorinated solvents. Those substances can off-gas and, if unaddressed, lead to vapor intrusion that can affect the health of people on the site. In such cases, the healthcare facility may have to install a vapor barrier as part of the construction project at a significant expense.

Without proper safeguards, demolition can spread dirt and dust as well as mold that has grown on old drywall or in wall cavities and in ceiling spaces. Dust and odors are very common complaints during renovation. Installing a rubber roof with sealants whose fumes are taken into the heating and ventilation system can spread petroleum or chemical odors throughout a building.

For large-scale construction projects, contractors often bring fuel trucks on-site for the heavy equipment, along with lubricants, chemicals, solvents and paints. Leaks or spills and other releases of such material will have to be reported to the appropriate authorities and cleaned up in accordance with all applicable local, state and federal regulations.

Construction materials and methods can also lead to pollution exposures. Exterior insulation finishing systems, known by the acronym EIFS, are insulation panels that are screwed or

Five Steps for Environmental Risk Mitigation

These steps can provide the basis for a robust strategy to manage environmental exposures:

1. Identify the exposures

Whether it's a current facility, a proposed acquisition or a construction project, identify potential environmental exposures such as operations that use chemicals or petroleum products. Test water systems for legionella or other bacteria. Assess the building envelop, windows or other penetration points for moisture intrusion that can foster mold. Update waste generation, storage, transportation and disposal protocols to reflect best practices. Plan and manage construction projects to prevent the spread of dirt, dust and mold spores, or disturbing lead paint or asbestos in older buildings.

2. Inventory pollutants and plan for exposures

Inventory the chemicals, gases and petroleum products used or stored on-site and the types of waste generated. Identify all underground and aboveground storage tanks. When purchasing or leasing a property, perform appropriate due diligence to assess potential pre-existing pollution issues and the cost of remediation.

3. Mitigate the risks

Develop standard operating procedures and emergency response plans for daily use of chemicals, gases and petroleum products. Establish plans to address water intrusion and mold as well as legionella or other bacteria in water systems. Audit waste transporters and disposal companies for compliance and financial strength. Develop training programs for employees who handle environmental exposures.

4. Comply with regulatory requirements

Review the potential exposures and the applicable regulations. Keep up to date with regulations affecting each exposure. Ensure compliance through internal specialists or hire third-party vendors to support compliance measures.

5. Get the right coverage and expertise

Because environmental problems can still occur in the best run facilities, obtain the appropriate insurance to help mitigate the financial risks. Coverage can be structured to include first-party exposures such as clean-up costs, business interruption costs and catastrophe management services, along with third-party bodily injury, property damage and cleanup costs liability claims. Environmental risk engineering services can help identify exposures and develop risk management plans.

sealed to the sides of the building which are later finished with stucco. If the panels aren't sealed or attached properly, the stucco covering can crack and permit water to seep in. With a source of moisture, mold can grow on the drywall, wallpaper and wallpaper glue.

To minimize the potential risks from a construction project, it's crucial to identify the environmental exposures and develop ways to mitigate them before work begins. An Infection Control Risk Assessment can identify the steps that will be taken to prevent the spread of contaminants in order to protect patients, staff, workers and visitors. Examples of appropriate measures include containment systems to seal off work sites, ventilation to the outside, and "clean room" style dressing areas where workers can put on and safely discard protective clothing. Taking the proper measures can minimize the chances of having to perform expensive and disruptive remediation, or facing bodily injury and wrongful death claims that arise from construction work.

Changing Regulations Present Challenges in Healthcare

A complex web of federal, state and local environmental regulations creates heightened risk management challenges for healthcare organizations. Regulations cover not only substances traditionally regarded as regulated or hazardous materials or toxic wastes, but also areas such as bacterial infestations in water systems. Reporting requirements may be confusing. For instance, a release of a regulated or hazardous material may require reporting to authorities from the county health department to federal environmental agencies, and reporting lapses can bring expensive penalties. To lessen compliance and reporting risks, healthcare organizations need to make sure that they stay up to date with changes in regulations at all levels.

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Here is a brief overview of some regulatory concerns:

Asbestos and lead-based paint regulations

EPA regulations governing lead-based paint require that renovations of facilities built before 1978 where children regularly visit or stay, including child-care facilities and hospitals, must be performed by certified contractors trained in lead-safe work practices.[11] Federal regulations under the Clean Air Act cover demolition and renovation of structures that may contain a threshold level of asbestos or asbestos-containing material. Where

asbestos is present, organizations have to decide whether it makes more sense to manage it in place or to remove it. Healthcare facilities should have in place a program to manage asbestos-containing materials and lead-based paint in buildings. Renovations involving asbestos or lead-based paint should only be performed by accredited contractors.[12]

Legionella

The Centers for Medicare and Medicaid Services now requires participating facilities to develop and adhere to policies and procedures to inhibit bacterial growth in building water systems in order to reduce the growth and spread of *legionella* and other pathogens in water. The June 2017 CMS guidance memorandum applies to hospitals, critical access hospitals and long-term care facilities, and cites the ASHRAE *legionella* standard.[13] The CMS stresses that healthcare facilities are expected to comply with requirements to protect the health and safety of their patients or risk citation for non-compliance.

Mold remediation

When it comes to maintenance and remediation, healthcare organizations should refer to industry standards that offer guidelines on best practices for
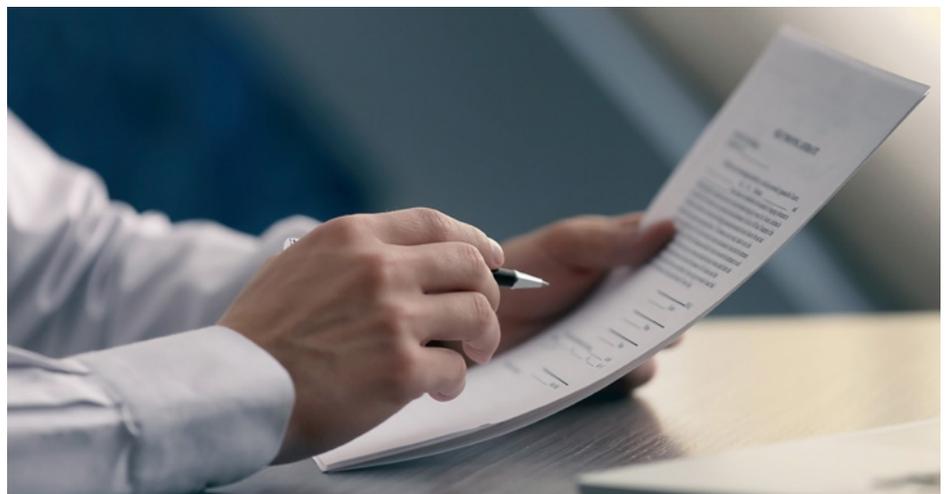
identifying and removing mold. The EPA, for example, provides information on identifying and remediating mold in commercial buildings. A key step in mold prevention is identifying unwanted moisture, and ASTM Standard E3026 provides guidance in assessing elevated moisture and moisture-conducive conditions.

Medical waste

Nearly all 50 states have enacted some type of medical waste regulation but they differ significantly. Some state regulations are based on the federal Medical Waste Tracking Act standards implemented in states such as New Jersey, New York and Connecticut from 1989 to 1991 to address medical wastes washing up on beaches. Typically, the state environmental agency takes responsibility for medical waste regulation, but health departments may also play a role.

Hazardous Waste

The management and disposal of hazardous waste is regulated by the federal government under the Resource Conservation and Recovery Act. The EPA regulates such wastes from "cradle to the grave," including generation, transportation, treatment, storage and disposal. The Superfund law, or the Comprehensive Environmental Response, Compensation and Liability Act, provides funding for cleanup of toxic waste sites, and enables the government to apportion liability - in whole or in part - for hazardous wastes under a strict "polluter pays" principle. For instance, a company may find itself liable for contamination resulting from past uses of fuels and chemicals at a site it recently acquired. A company may also be held liable for the clean-up of a waste disposal site where its waste was sent. To avoid liabilities stemming from removal and disposal of wastes at non-owned disposal sites, it's crucial to audit transportation and disposal firms for compliance with all regulations applicable to the type of waste.

A proactive risk management strategy can help to identify and mitigate potential pollution risks.

Underground Storage Tanks

In 2015, the EPA updated its 1988 regulations for underground and aboveground petroleum storage tanks, adding requirements for tank construction, operation, maintenance, testing and record-keeping. Of particular interest to healthcare facilities, the regulations now cover storage tanks for emergency generators. The updated rules require a variety of periodic and annual inspections. Some states have operational and inspection requirements for storage tanks that are more stringent than the federal regulations. To make sure that they comply with EPA and state regulations, health organizations may want to work with an insurer that can provide risk engineering experts to provide the required training and guidance on testing and compliance.

Mitigation Starts with Proactive Risk Management

The critical role of healthcare organizations means that they face intensified environmental risks as people recovering from illness or injuries can be more susceptible to new health problems caused by pollution. A proactive risk management strategy can help to identify and mitigate potential pollution risks. Because environmental risk mitigation and compliance presents a particularly complex challenge in healthcare, organizations may want to consider working with risk engineering professionals that can assess the risks, help with planning and provide training and compliance services.

Obtaining the appropriate insurance coverage should be a crucial part of any healthcare organization's risk management strategy. General liability and property policies will likely not provide sufficient coverage, if any, for incidents related to the environmental exposures that healthcare facilities often face. Premises pollution liability policies provide the coverage for these environmental-related risks. In addition to the right coverage, healthcare organizations should look to work with an insurer that has experience both in the industry and expertise in environmental risks. By addressing their environmental risks and working with the right insurer, healthcare organizations can help protect their patients and themselves.

Case in Point

A healthcare facility that required additional medical office space acquired a vacant office building and began renovating it to fit its needs. During the interior renovation, water intrusion was discovered due to a failing roof system, cracks in the exterior facade and leaks around windows. The excess moisture allowed mold to grow in exterior wall cavities. Before completing the planned retrofit, the healthcare facility was required to remediate the mold conditions on three floors. This necessitated an additional 30 days of construction and significant extra costs for removing and replacing drywall. Having the appropriate insurance coverage to respond to mold conditions and working with the right carrier with expert claims handling services can help alleviate such unforeseen challenges.

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