Pesticides as a Last Resort

Least-Toxic Pest Management Protects Most-Vulnerable Patients

First, do no harm. Physicians across health care disciplines are expected to practice in accordance with this well-known principle. Professionals ranging from health facilities managers to nurses also adhere to this credo as they go about their daily work and ensure patient and visitor safety. This principle even comes into play when evaluating the effectiveness of a facility's pest control program. If the program that's in place compromises patient safety at your facility, it's time to consider a shift to an integrated pest management (IPM) approach.

The Honeymoon Is Over for Pesticides

The pest control contracts with which customers are most familiar are scheduled maintenance contracts: A vendor comes to spray on a predetermined weekly, monthly, quarterly, or annual basis, regardless of whether pests or pest-related damage have been spotted on the grounds or within a facility. But these pesticide-dependent practices don't effectively eliminate pests and pest-related problems. Worse still, they endanger health—especially the health of the most vulnerable populations residing in long term care or acute care facilities, including infants, children, the elderly, and people with existing illnesses or those recovering from surgery and other medical treatments.

A recent Maryland Health Care Facilities Pest Management Survey found a general reliance on toxic pesticides at Maryland hospitals and elder care facilities. Of the 25 pesticides identified by survey participants as being used at facilities, 11 are linked to cancer, 12 are associated with neurological effects, 10 are associated with reproductive effects, and 10 cause liver or kidney damage. The survey was conducted by the Integrated Pest Management in Health Care Facilities Project, spearheaded by the Maryland Pesticide Network, based in Baltimore, and Beyond Pesticides, based in Washington, DC, in collaboration with the grant-funded Maryland Hospitals for a Healthy Environment (MD H2E). For more information, see "Resources for Integrated Pest Management," page 9.

Pesticides on the lawn can be tracked in and make patients sick.

Integrated Pest Management Defined

Although there is no standard accepted definition of IPM, the IPM methodology generally establishes a sustainable approach to managing pests. IPM combines biological, cultural, physical, and—as a last resort—chemical tools in a way that minimizes health and environmental risk. IPM pest management techniques commonly include the following:

- *Exclusion techniques*—Sealing cracks and crevices with caulk or steel wool; repairing door sweeps and leaking pipes
- *Mechanical techniques*—Using traps and vacuuming
- *Sanitation techniques*—Washing all recycle bins, trash cans, carts, kitchens, and floor drain covers

"All nonchemical strategies such as behavior change and trash management must be exhausted before introducing pesticides as the last resort of an IPM program," says Jay Feldman, executive director, Beyond Pesticides.

Prevention Is Part of the Plan

Many clients realize that their conventional pest control service is not working when they examine the number of

"callbacks" in vendor log books. But when IPM is implemented, departments learn how to prevent pest problems. "Here is where IPM has direct overlap with energy conservation," notes Feldman. "Both efforts are trying to seal up the building envelope. We want to try to exclude pests rather than kill them because this reduces the toxic load in a building. We are talking about both structural and landscape management. Chemicals used in landscaping tend to find a way into a facility, through tracking and other methods." Natural (IPM-compliant) turf and landscape management promotes soil health and protects public health and the environment through the selection of nontoxic and nonsynthetic inputs.

Jim Chang, C.I.H., director, safety and environmental health, University of Maryland Medical Center (UMMC), Baltimore, says it becomes easier to recognize and resolve pest-friendly conditions when people are in the IPM mindset. "Before IPM, it was easy to walk by the gap under the door," he says. "But thanks to the efforts of our IPM mentors, the green team, and our sustainability manager, we now look at gaps under doors as a potential waste of heating and air conditioning energy, as well as a route of entry for mice and other creatures to come inside in search of warmth and food." Chang notes that even remedying the smallest imperfections can benefit the organization from an IPM perspective. "Facilities people also have to work with housekeeping, patients, and visitors to make sure debris, discarded food, and plant waste are kept away from the building," he says.

The Integrated Pest Management Coordinator

To be the most successful, an IPM program needs an IPM coordinator. An existing safety coordinator, environmental services professional, or person representing the facility green team is a potential candidate. The IPM coordinator is responsible for implementing the IPM plan and coordinating pest management–related communications between the facility, its landlords, service providers, staff, and patients. Joan Plisko, technical director, MD H2E, points out that 75% to 80% of hospitals in Maryland have green teams, most with leadership buy-in. "Green team members already understand the effects pesticides have on the environment," she says. Plisko also advises including a nurse leader as part of the IPM team. "This person can really contribute to the IPM education module."

Pest control vendors and employees should report pest-related problems to the IPM coordinator and generate work orders to fix problems. The IPM coordinator needs to review log books to confirm that the needed work has been completed.

The ability to maintain an IPM program's continuity over time is critical; turnover in facility management, the IPM team, and the pest control company can undo years of progress if written policies are not in place. The IPM coordinator serves as the guardian of institutionalized policies that dictate how the IPM program works. He or she also needs to make it a priority to obtain a material safety data sheet (MSDS) for each pesticide substance applied at the facility.

Educate and Implement

IPM education for staff should cover information about entryway controls, attraction, and harborage. Entryways such as loading docks and doorways without effective air curtains, door sweeps, or light traps can attract pests. Removing harborage opportunities means eliminating comfortable pest living spaces and involves addressing details about mop storage and dirty-water management. Simple adjustments can eliminate pests without the use of chemicals (for example, changing trash receptacles or trash receptacle locations). The way people do their jobs—whether they work in environmental services or maintenance—influences the severity of a facility's pest problem.

"A large portion of pest management is people management," Plisko says. "The number of food sources for pests in a health care facility is huge. We must teach and reteach staff about how to clean up after themselves."

Denise Choiniere, R.N., M.S., sustainability manager at UMMC, incorporates sustainability across hospital operations and clinical practice, evaluating patient, employee, and environmental safety. "An effective IPM program has to benefit every department," Choiniere says. "IPM theory means finding and eliminating the source." UMMC employees are educated through the facility's volunteer green team, which is a subcommittee of the environment of care team, and represents 20 departments.

"When employees understand the health effects of pesticides, a light bulb may go off," Choiniere says. "We want our patients to know we are here to take care of them, not make them sicker."

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Resources for Integrated Pest Management

Not sure where to start in implementing integrated pest management (IPM)? The Integrated Pest Management in Health Care Facilities Project (coordinated by Maryland Pesticide Network and Beyond Pesticides) has created a Model IPM Policy, Model IPM Plan, Model Landscape Policy, and Sample IPM Contract. To access these model policies, visit http://www.beyondpesticides.org/hospitals/policies.htm.

Designing Facility Security

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should be controllable by security personnel or police during emergency situations or times of heightened security," says Smith. "In cases where entry points are doors or other openings, they should be protected to the degree necessary for the space." Such protection may involve access control hardware, intrusion detection, video surveillance, and/or personnel for control and screening at designated entrances and times.

- *Differentiate between public, patient, and staff areas*. Certain parts of a facility can be accessible to the public, but others should remain accessible for patients and staff or staff alone. For example, pharmacy storage and distribution locations, food preparation sites, sterile corridors, and research laboratories should be accessible only by staff and involve physical and psychological barriers and hardware.
- *Restrict access to high-security areas*. These areas may include mental health units, pediatric units and newborn nurseries, emergency treatment areas, cash-handling areas, and so on. "Such restriction should keep out unauthorized personnel," says Smith. "This may involve using physical barriers and access controls such as a locked door with card reader-activated hardware." Other restrictions may include video surveillance monitors, intrusion detection alarms, and forced-entry-resistant construction.

Security risks can never be completely eliminated in a facility. But focusing on mitigating these risks during the design phase of construction can further patient safety and security while saving the organization time, money, and resources.

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And employees need to know that they have a direct effect on pest control. "UMMC is writing employee behavioral standards that incorporate IPM. We want employees to know they have a key role in IPM—which is to eliminate the source—and they can be held accountable for their behaviors," Choiniere says.

The 2011 focus for the University of Maryland grant-based Alliance of Nurses for Healthy Environments (ANHE) is chemical policy and reform. Robyn Gilden, Ph.D., R.N., assistant professor, University of Maryland School of Nursing (UMSON), and a member of the ANHE Research work group, is collaborating with the Children's Environmental Health Network and its Eco-Healthy Child Care Center Program checklist, of which pesticides and IPM are major components. UMSON offers an environmental health course that discusses pesticides and IPM in depth.

The Evolving Vendor Culture

An IPM team has to successfully connect pest control vendor efforts back to decision makers and training so everyone knows how to recognize and report pest problems.

"If staff can manage pests without using chemicals, people become engaged," Feldman says. "But this requires cultural change. Pest control vendors must be required to communicate problems—for example, with cracks or leaky pipes—to the proper person. If elements of an IPM program are adopted and requirements for reporting, disclosure, and communication are in place, vendors can be held to a standard that is in alignment with IPM policy. The contract defines vendor activities. The industry is still evolving to create IPM contracts that meet the needs of the health care industry."

Chang advises health facilities professionals who are interested in IPM to seek out their local advocacy groups to learn more. He says, "Groups such as Beyond Pesticides and Maryland Pesticide Network have heard the concerns and skepticism, they know which pest control vendors abide by IPM practices, and they can advise on how to best proceed down this path. Once you make this commitment, it's amazingly easy to move to sustainment mode. IPM consultants can advise about how to address periodic acute infestations of bedbugs or lice, for example, while still following IPM practices."

Concludes Feldman, "The health care commitment to 'first, do no harm' can play out in the pest management arena as we avoid using toxic chemicals that are really not needed when a good pest prevention program is in place."

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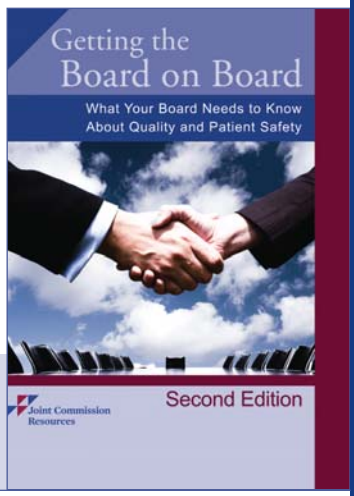

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