

# Understanding and Applying Integrated Pest Management

By Zia Siddiqi, Ph.D.

**W**ith multiple entrances and exits and round-the-clock foodservice operations, hospitals and long-term care facilities are more vulnerable to pest infestations than many other commercial settings. Given the complex and sensitive nature of these environments, effective pest control can be daunting. Most environmental services professionals have probably heard the term integrated pest management, or IPM, before. Some may dismiss it as a buzz phrase, but the fact is every healthcare facility in the country should have a pest control program that follows IPM principles. For facilities already using IPM, new technologies are paving the way for even more targeted and effective programs.

## What is IPM?

IPM is an environmentally responsible approach to pest management that combines multiple countermeasures to combat pests versus relying on pesticides alone. At the most basic level, IPM practitioners recognize that pests seek habitats that provide their essential needs for survival, such as food, water and shelter. By removing some of these basic elements, or by blocking access to them, IPM programs can impose a significant degree of control over pests before chemical pesticides are employed.

## Why Should Healthcare Use IPM?

In healthcare facilities, patients may have compromised immune, neurological, digestive or respiratory systems putting them at increased risk of harmful effects from exposure to pesticides. The elderly, pregnant women, infants and children also may be especially vulnerable to the effects of pesticides. By reducing the use of pesti-

cides, IPM helps reduce any negative impact on human health and the health-care environment. For this and other reasons, IPM is recommended by the Centers for Disease Control and Prevention (CDC), the U.S. Environmental Protection Agency (EPA), Hospitals for a Healthy Environment (H2E), the American Society for Healthcare Environmental Services (ASHES) and many others.

As if that were not enough, there are two other compelling reasons to use IPM: It is more effective, and it costs less. In 2003, Orkin Inc., an Atlanta-based pest control company, conducted a study with Virginia Polytechnic Institute and State University comparing the efficacy and costs of IPM and conventional spray-based methods in a low-income housing facility infested with cockroaches. The year-long study proved that IPM was not only more effective than traditional methods but also may be less expensive over the long term because it addresses the sources of problems rather than symptoms, thus lowering the long-term costs of maintaining adequate control.

## The Nuts and Bolts of IPM

The first step in a healthcare IPM program is an inspection of the entire facility by a staff or contracted pest management professional. This initial inspection should identify structural conditions, sanitation issues and other circumstances conducive to pest infestations. For example, any openings in the building exterior that can serve as harborage areas or entry points should be identified and repaired. Sealing off these points is one of the best ways to keep pests out without using chemicals. Likewise, the facility's sanitation schedule should be reviewed and modified as needed.

Landscaping around the facility should be reviewed as part of the initial inspection. Many pests, including ants, cockroaches, earwigs and crickets, invade from the outside by way of vegetation that touches a building. The facility's grounds staff or landscaping contractor should be instructed to trim back all tree branches, shrubs and plants on a regular basis to ensure that there is ample barrier space between vegetation and buildings.

Finally, the preliminary inspection should identify areas of high pest pressure in and around the facility, such as nutritional services departments, shipping and receiving docks, staff locker rooms and medical waste holding rooms. Once identified, conditions favorable to pest infestations in these areas — excess moisture, pest food sources, harborage areas and entry points — should be eliminated as soon as possible.

After the initial inspection is complete and modifications have been made to reduce the facility's vulnerability to infestation, the next step is to choose additional prevention measures as appropriate. If no sign of pest presence is found in the original inspection, countermeasures may be limited to vigilant monitoring for pest presence. Other measures, such as trapping or chemical treatments, should not be employed unless there is evidence of pest presence, which is why monitoring is so critical to successful IPM.

Regular inspections by an IPM professional are a core component of the monitoring process, but the program cannot rely solely on these inspections, which may be a week or more apart. All healthcare facility staff members must play a role to ensure pest monitoring is occurring 24 hours a day, every day. All staff should be

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encouraged to take note of pest activity and report any sightings to environmental services immediately. Environmental services staff should document any reported sightings and respond as soon as possible.

If pests or evidence of pests is observed, immediate action must be taken to eliminate any existing infestation and prevent reoccurrence. In an IPM program, treatments are chosen carefully to control the target pest while minimizing any adverse impact on people and the sterility of the healthcare environment.

Proper pest identification is a key component of prevention. Once the target pest is accurately identified, the IPM professional can choose the most viable and environmentally friendly treatment option. Such treatments may include mechanical traps in the case of rodents, tamper-resistant bait stations, sticky traps or crack-and-crevice gel applications. Once treatment has begun, any bait stations or traps should be maintained during subsequent inspections and facility staff should be encouraged to monitor the affected location closely between inspections.

### Notification and Documentation

Notification and documentation is vital to safety and quality assurance. In the case of residual-pesticide applications, notifications should be posted to alert staff members and patients who may wish to avoid the treated area for any reason. Ideally, such notifications should include the brand name of the pesticide used and its active ingredients, the date and time of the application, the method of application, the earliest recommended date and

time to resume activity in the area and contact information for the professional who serviced the area.

The IPM program also should provide detailed documentation of pest activity and services performed. Pest activity records reveal trends that support more appropriate and effective responses, and service records provide data for reviews of the pest management program by facility administration, public health inspectors, medical personnel and healthcare accreditation boards. Such records should clearly spell out observed pest activity and all actions taken to control pests, including dates, times, locations, target pests and any pesticide applications. Information on pesticide usage should include EPA registration numbers of any product applied.

### IPM Audits

Comprehensive documentation also provides critical information for quality assurance audits. If a pest management program is not evaluated at least on an annual basis, there is no way to gauge its efficacy. It is a good idea to enlist a third party to carefully review the IPM program on a regular basis. Anyone that works closely with the current program should not be the auditor. Some pest management providers offer audits by corporate quality assurance managers not directly affiliated with the branch office servicing the facility. Or facility management may choose to conduct such audits.

Ideally, quality assurance audits should be conducted with little or no prior notice to ensure an accurate assessment of the

program. Audits should include a review of all pest management documentation and a careful inspection of the entire facility with emphasis on critical zones. The auditors should analyze pest activity in context of sanitation and maintenance issues that may affect pest presence.

### The Future of IPM

As the pest management industry and academic researchers continue to study pests and discover better ways to combat them, IPM will evolve into an even better pest management methodology. From handheld data-collection technology that enables real-time tracking and analysis of pest-activity data, to the isolation of a cockroach sex pheromone that may lead to better lures and traps, the future of IPM is one of the smarter and more targeted treatments. Just as medical innovations have allowed surgeons to perform more complex procedures with fewer after-effects, so IPM enables pest management professionals to isolate and control pest problems with minimal unintended impact. In healthcare facilities, where tolerance for both pests and pesticides is extremely low, such precision is a must. **FC**

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*Dr. Siddiqi is quality assurance director at Orkin Inc., Atlanta, and co-author of Integrated Pest Management — the first installment in the ASHES Recommended Practice Series. Orkin and ASHES are partners in IPM education, promoting more effective and environmentally friendly pest control practices in healthcare settings.*