

INTEGRATED PEST MANAGEMENT (IPM) IN HEALTH CARE FACILITIES



WINTER 2011 NEWSLETTER

Welcome to the winter edition of the *IPM in Health Care Facilities* newsletter, published by the Integrated Pest Management (IPM) in Health Care Facilities Project—a partnership of the Maryland Pesticide Network and Beyond Pesticides in collaboration with the Maryland chapter of Hospitals for a Healthy Environment (MD H2E). The Project enables and facilitates transition to safe pest management practices at Maryland health care facilities. This newsletter is part of the Project's outreach effort to share information with Maryland health care facilities interested in effective pest management that protects patients, residents, staff and visitors from unnecessary exposure to pesticides.

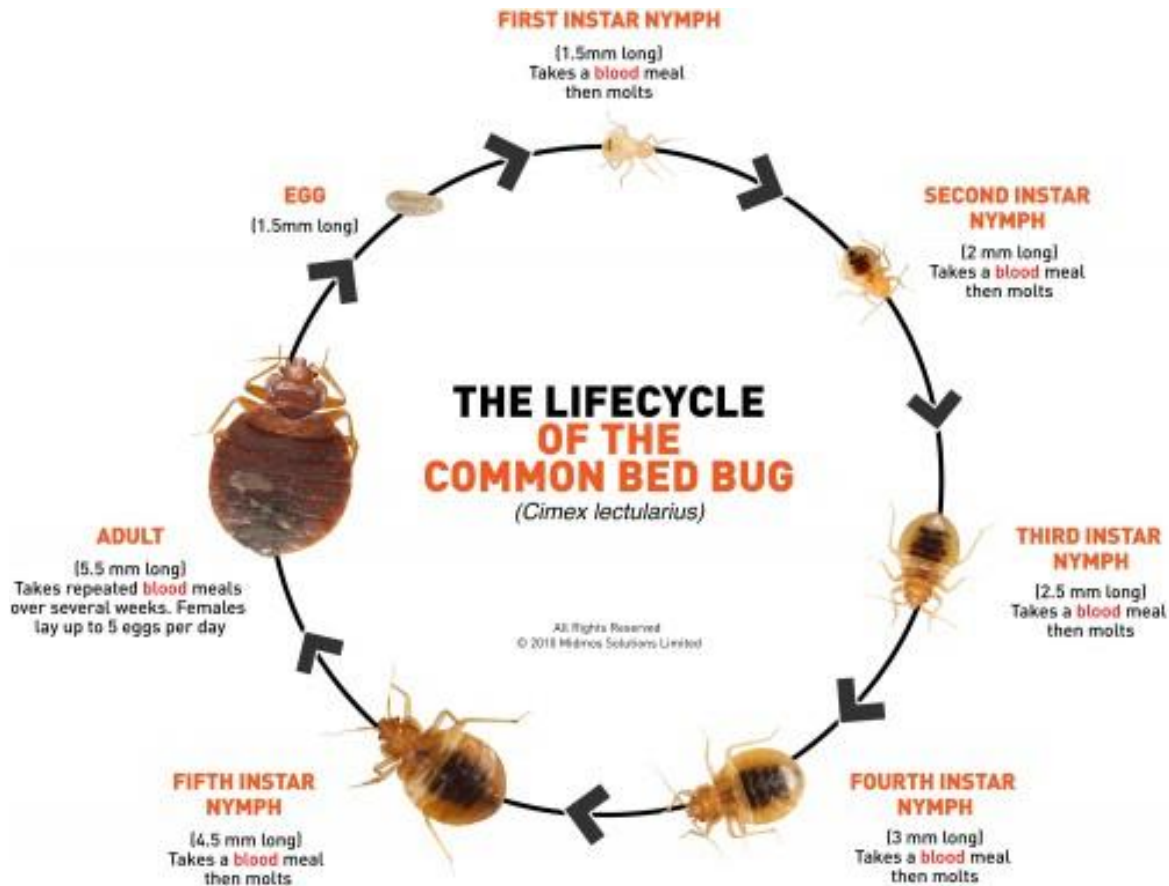
Facilities participating in the Project's Partnership Program agree that IPM prioritizes pest prevention and non-chemical interventions as key components to *greening* their facilities. Under an IPM approach, only least-toxic pesticides are used as a last resort for pest management. This approach is especially important for patient and long-term care populations, which are especially vulnerable to chemical-intensive pest control methods that can cause or exacerbate the very diseases and conditions for which they are being treated.

Feel free to contact us to learn more about how you can improve patient, staff and visitor safety by reducing pest complaints and toxic chemicals in your facility—with no increase in cost.

This edition of the newsletter includes the most current information about **bed bugs**. Additionally, we continue our section of **pesticide profiles**, which are chemical products that may be in use in your facility without your knowledge. Also, we feature an interview with **Springfield Hospital and Angel Systems** on their successful implementation of an IPM Program that lead to their transition to a pesticide-free campus.

Don't Forget:
Maryland Hospitals for a Healthy Environment (MDH2E)
offers many **free** seminars and events for greening your facility. Visit their
Web site for the latest information. www.mdh2e.org

Got Bed Bugs? Don't Panic!



How do bed bugs get into your health care facility?

People can get bed bug infestations in their homes, by visiting other infested homes, public venues such as movie theatres, hotels and homeless shelters where the insects hide in mattresses, pillows, upholstery and curtains. The bugs are stealth hitchhikers that climb onto bags, clothing, luggage, wheelchairs and other medical equipment.

Bed Bug Prevention

- As with all pest prevention under an IPM program, seal up cracks and crevices that will allow entry and exit of pests, including door sweeps, window screens, etc.;
- Remove any animal habitats near, attached to, or inside the facility, such as bat roosts or bird nests in the eaves, roof or attic, and exclude animals from entry;
- Trap and remove host animals and nests;
- Remove debris and clutter from facilities (inside and out).
- If possible, keep beds away from the walls;
- Encase mattresses and box springs in zippered, bed bug-proof covers, which deny access to hidden areas and trap those already inside. After a year, bed bugs trapped inside will die. It will also make monitoring easier.

Monitoring

- Regular IPM monitoring in general facility areas should include indications of bed bug infestations;
- Have housekeeping staff regularly check for signs of bed bugs;
- All staff needs to be trained on identifying bed bugs, and to allay fear staff need to be educated about the limited health effects of bed bugs. These insects do not carry disease. Some people do not show any signs of bites while others may have many bites and react with localized swelling;
- Inspect new patients' belongings- clothes, wheelchairs and any other articles on admission for any evidence of bed bugs;
- Use of bed bug barrier under beds and sofas to trap bed bugs traveling from floor.

Identifying Bed Bugs

Adult bed bugs are flat, elliptical, and between 1/8" to 1/4" inch wide. With a reddish-brown color, they appear somewhat like a flattened apple seed. Immature bed bugs are about the size of a pin head and yellowish to reddish purple. Bed bugs can survive a year on a single feeding. They are usually active at night, feeding on sleeping hosts.

Bed Bug Bites

Human reactions to bedbug bites can range from swelling, itching and pain to nothing at all. There are no documented cases of bed bugs transmitting diseases in humans and they are not effective vectors of disease. Itching and inflammation from bites can generally be resolved with antihistamines and corticosteroids to reduce allergic reactions and antiseptic or antibiotic ointments to prevent infection. Bed bugs can show up as sore spots or itchy welts, often in a line. However, identification should not be based solely on the appearance of the bites since they can resemble bites caused by many other kinds of blood feeding insects, such as mosquitoes and fleas.



How can you detect bed bugs?

When not feeding, bed bugs reside and breed in cracks and crevices of bed frames or headboards and along the seams, folds, or 'buttons' of mattresses, or within box spring frames. Bed bugs do not restrict themselves to beds: up to half of the bugs in an infestation will be away from beds. The more severe the infestation, the further bugs, eggs, and hatchlings will be found from a bed. Rusty-orange stains can indicate infestation. Bed bugs can be found in:

- Cracks and crevices of the floor, plaster or ceiling moldings;
- Window and door casings, moldings, cracks in plaster, picture frames;
- Along the edge of carpeting;
- Under loose wall paper and switch plates and outlets;
- In drapery pleats, the upholstery of sofas or chairs or the folds of clothes hanging in the closet;
- In the cracks and crevices of night stands or bureaus;
- Inside clocks, phones, televisions and smoke detectors, etc.

Investigate the possible cause of the infestation. By getting rid of the source, you will help rid the infestation in your facility. Bed bugs, including eggs, may be carried from infested areas to non-infested areas on clothing, in luggage, in furniture or bedding. They can also travel between rooms. Rodents, birds, and bats can serve as alternative hosts.

Intervention

It is not necessary to treat all rooms/units in the facility -- just the affected and adjacent units.

Pesticides are not a first line of response nor are pesticides always needed to eliminate bed bugs. The consensus among IPM experts is that there is very little value to interior perimeter treatments with pyrethroids or pyrethrins. For example, an article in Pest Control Technology magazine a few years ago noted that pyrethroids, commonly employed to kill or prevent bed bugs "are not providing more than 50% mortality as residuals and as direct contact insecticides." Bed bugs are highly adaptive, with resistance to these insecticides being observed within generations of a single infestation. In addition, use of these insecticides exposes patients' visitors and staff to health risks such as exacerbation of respiratory illnesses, Parkinson's disease, and other documented health effects. Instead, treatments with borates or diatomaceous earth are more effective and far less toxic to residents and staff.

The focus of an IPM bed bug program is monitoring, prevention and physical elimination. Frequent (at least every 2 weeks) monitoring inspections and follow-up treatments are recommended.

Appropriate staff (Maintenance, Housekeeping) should:

- Carefully inspect furniture, mattresses, linens-and belongings brought into the facility for bed bugs or rusty-orange stains that indicate infestation
- Fill cracks, nooks or crannies in bed frame, floors, walls, the edge of baseboards and moldings with sealant
- Re-glue loose wallpaper
- Alert the IPM Coordinator about a possible infestation so that the vendor's technician can be notified.

Your vendor should:

- Have access to using canine 'helpers' to sniff out bed bug infestations
- Vacuum bugs for visible bugs and debris and either
- Steam clean, use a thermal/heating system to kill bugs and eggs or use frozen CO2 to kill bugs and eggs.

Vacuuming bed bugs

"Standard" non-chemical intervention for removal of bed bugs and eggs should include dismantling and treating bed frames, upholstered furniture, drapes, rugs, etc., for vacuuming/steaming. All furniture must be thoroughly vacuumed/steamed, with shelves, detachable furniture legs, etc., removed to reach crevices. Walls and floors must be thoroughly cleaned. Better results are achieved by scraping the end of the suction wand repeatedly over the harborage area. Vacuum bags are immediately discarded. Brush attachments enhance the potential for spread by allowing bugs and eggs to adhere to the bristles.

Steam Cleaning

Steam temperatures of approximately 220°F kill bedbugs and eggs on contact. "Dry-steam" and other low-moisture systems are best, as they reduce the possibility of mold growth. Low-moisture steamers are available from such companies as AmeriVap Systems (tel: 800-763-7687) and Hi-Tech Cleaning Systems (tel: 866-606-1355). Vendors should use a commercial-grade steamer with variable steam outputs and multiple attachments. Larger brush heads are better as smaller diameter tips are less efficient and frequently emit too much pressure, causing bugs and eggs to be blown off the substrate and scattered rather than eliminated. Steam can be used to treat almost any area where bed bugs are found or suspected. Avoid treating finished wood surfaces or delicate items that might be damaged by high heat."

Thermal Treatment

Heat must be applied evenly throughout a structure to kill bed bugs wherever they are hiding, including inside walls. Thermal treatment uses fans and a heat source; the area is heated to 140°F and held until all areas within the space are heated to 120°F. A whole room can be heated, or items may be enclosed in thermal units placed within a room.

Cryonite Treatment

Cryonite® is being offered by some vendors that claim it is a successful non-toxic and chemical-free method of killing bed bugs and eggs. It is a pressurized carbon dioxide "snow" that kills bed bugs and eggs by rapid freezing. The system is optimized for crack and crevice treatment.

Some vendors provide mattress and box spring encasements in order to encase both the mattress and box spring in zippered (plastic) covers, which deny the bugs access to inner, hidden areas and trap those already inside. After a year, bed bugs trapped inside will die. Encasement is necessary if an infested bed is to be kept. They also help protect new bed components until the current infestation is eliminated. Heavily infested or damaged mattresses, frames and headboards may warrant disposal. Infested items to be discarded should be bagged or wrapped to prevent dislodgement of bugs en route to the dumpster.

Least-toxic chemical controls

Thorough treatments (spaced approximately two weeks apart) as outlined above should eliminate most bed bug infestations. In the case of a severe infestation where the above is insufficient, intervention can include the following:

- Clean vacuumed areas (see above) with diluted borax (2 oz per quart of water)
- A residual treatment with fresh water diatomaceous earth (avoid products that include pyrethrins/pyrethroids in combination with diatomaceous earth)
- Wall void treatment with sodium borate or food-grade diatomaceous earth
- Insecticidal soaps and silica aerogels provide a least-toxic control that you can employ if all else fails.
- All other pesticides should only be used as a last resort

Other steps the facility can take when admitting patients with bed bugs in their belongings:

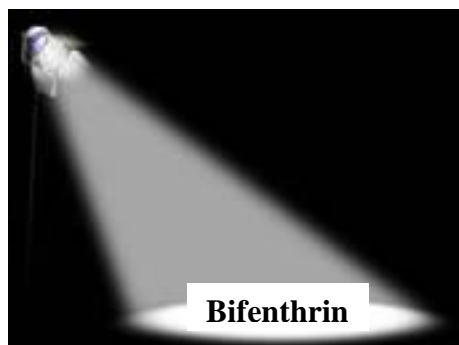
- Launder clothing in hot water (at least 120°F). Clothing, footwear, toys, stuffed animals, backpacks and other non-launderable items can conveniently be de-infested by heating them for a period of time in a dryer at most settings. A typical clothes dryer run for five minutes at low, medium or high heat produced temperatures of about 140, 150 and 180°F, respectively, plenty hot to kill bed bugs. While certain items may require professional dry-cleaning, utilizing conventional washers and dryers may help limit the spread of bed bugs.
- Infested "Dry clean only" clothes can be placed 'dry' in a dryer for 30 minutes on medium heat without damaging the clothes while killing the bed bugs. Enclose clothes in plastic bags when moving them through the facility.

Sources:

Pest Control Technology, *Killing Them Softly: Battling Bed Bugs in Sensitive Accounts*, by Michael F. Potter, Alvaro Romero, Kenneth F. Haynes and Erich Hardebeck January 2007; www.pctonline.com/articles/article.asp?ID=2822&IssueID=226

Stern Environmental Group website: www.sternenvironmental.com/bedbugs/services.php

Pest Control Technology, *Killing Them Softly: Battling Bed Bugs in Sensitive Accounts*, by Michael F. Potter, Alvaro Romero, Kenneth F. Haynes and Erich Hardebeck January 2007; www.pctonline.com/articles/article.asp?ID=2822&IssueID=226



Pesticide Profile: BIFENTHRIN

Talstar®: what is it, why is it being used in your health care facility and should you be concerned?



The most common product containing the synthetic pyrethroid pesticide **bifenthrin** in health care facilities is **Talstar** concentrate formulation, used primarily for managing ant complaints and more recently for bed bugs. The Environmental Protection Agency (EPA) stated that professional pest control applicators, as well as residents and pets, can be exposed to bifenthrin during and after applications around the home and in commercial and industrial settings. It is classified by EPA in **Acute Toxicity Level II** (moderately toxic) and in **class C** (a possible human carcinogen).

Introduction

We continue our profile of pesticides currently in use in health care facilities since it came to our attention that some pest management providers are relying on chemicals as a first choice product to pest management in those settings. This approach is antithetical to IPM, where least-toxic pesticides are used *only* as a last resort. The significant health risks linked to bifenthrin exposure need to be seriously considered given the vulnerable populations that health care facilities serve. This is especially important since there are successful nontoxic and less toxic interventions available for the very pest pressures for which bifenthrin is now being used. In an IPM program, pest sightings indicate that there are causes that need to be addressed. These underlying causes could be structural or mechanical in nature or sanitation could be a cause. When the source is addressed, most often there is no need for pesticide use.

At times, however, when all non-chemical methods have been exhausted and the pest problem continues, a pesticide may be needed. In an IPM program, least-toxic pesticides are only used as a last resort. Boric acid products can address the same pest problems that bifenthrin does. It is a least-toxic product and does not pose the health hazards that exposure to bifenthrin can cause. While it takes more time for boric acid to resolve the issue, boric acid will be successful; and it will protect patients, staff, residents, visitors and the environment from exposure to a toxic chemical. Because it does not volatilize, boric acid is considered a least-toxic product.

Mode of Action

Bifenthrin, as a synthetic pyrethroid insecticide, causes toxicity by acting as a paralytic agent. The insecticidal properties of synthesized derivatives of the naturally occurring pyrethrum come from the ketoalcoholic esters of chrysanthemic and pyrethroic acids. These acids are strongly lipophilic and rapidly penetrate many insects and paralyze their central nervous system. Bifenthrin is often used in health care facilities as a concentrate in a spray formulation and is applied to baseboards and floors where ant trails have been sighted.

Toxicity

The potential acute effects from bifenthrin inhalation exposure include sneezing, nasal stuffiness, headache, nausea, incoordination, tremors, convulsions, facial swelling and burning or itching sensations. Infants are the most vulnerable due to their inability to efficiently break down the pyrethroids. Many pyrethroids have been linked to endocrine disruption, which can adversely affect reproduction, interfere with the immune system and increase the chances of breast cancer. Bifenthrin has also been linked with neurotoxicity and is classified by U.S. EPA as a possible human carcinogen.

Breakdown and Volatility

Bifenthrin is volatile. Volatility is the capacity of a substance to evaporate, thus moving through the air, being easily inhaled and moving widely as its persistence permits. Studies show health impacts of pesticides at extremely low levels, even when the health effect is not seen at larger doses. These low level exposures are not typically evaluated by EPA.

Environmental Fate

Bifenthrin is extremely toxic to fish and other aquatic organisms. It is also moderately toxic to bees and non-human mammals. Birds, particularly waterfowl, can become indirectly affected due to the threat of a contaminated food supply.

Resistance

Some species of spiders, mites and beetles have documented resistance to Talstar. Pesticide resistance is the adaptation of pest species targeted by a pesticide resulting in decreased susceptibility to that chemical. Pests develop a resistance to a chemical through selection. The most resistant organisms are the ones to survive and pass on their genetic traits to their offspring.

Non-Toxic and Least-Toxic Options to Talstar® for Structural Pest Management

Boric acid, silica gels, diatomaceous earth and essential oils

Sources:

www.beyondpesticides.org/gateway/pesticide/bifenthrin.htm
www.fmcprosolutions.com/Home/LabelsMSDS.aspx
pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC32863



Beyond Pesticides: Gateway on Pesticide Hazards and Safe Pest Management [Go to the Gateway](#)

Beyond Pesticides has created a new database tool that is intended to provide decision and policy makers, practitioners and activists with easier access to current and historical information on pesticide hazards and safe pest management, drawing on and linking to numerous sources and organizations that include information related to pesticide science, policy and activism.

Currently, the Gateway lists over 300 pesticides and contains the following information:

- Beyond Pesticides ChemWatch Factsheet
- General information: product names, chemical class, uses & alternatives, toxicity rating
- Health and environmental effects and citations
- Regulatory status
- Key studies
- Supporting information: other factsheets, studies, databases and reports

If you have reports, factsheets, databases, articles, commentary that you think should be made available through the Gateway, please send them to gateway@beyondpesticides.org

An Interview with Springfield Hospital Center and Angel Systems

Background

Springfield Hospital Center, located in Sykesville, Carroll County, joined the Integrated Pest Management in Health Care Facilities Project (IPM in HCF) in 2006. Springfield is owned and operated by the State of Maryland within the Department of Health and Mental Hygiene (dhmh.maryland.gov/Springfield). Springfield opened its doors to patients in 1896 and has been in continual use ever since, dedicated to serving the mental health needs of patients throughout the state. Angel Systems (www.angelsystems.com) was hired as Springfield's pest management vendor in 2008 after a bid process typical of the State procurement structure and in consultation with the IPM in HCF Project. Angel has an IPM contract with Springfield. In November 2010, the IPM in HCF Project presented its first-ever awards for transitioning to and sustaining a pesticide-free facility to Springfield and to Angel.

The following interview took place at Springfield on February 9, 2011 between the **IPM in HCF Project, Winnie Barnes (WB)**, Housekeeping Supervisor at Springfield Hospital and **John MacTaggart (JMT)**, Branch Manager for Angel Systems.

IPM Project Editor (ED): For background purposes, Winnie and John, can you share with us how long you have been in your respective positions?

WB: I have been the Housekeeping Supervisor at Supervisor for the last seven years, but have been at Springfield for 35 years.

JMT: I have been at Angel for 16 years where I am the Branch Manger...an active Branch Manger, meaning that I am onsite/in the truck every day. That is how long I have been in the pest control business, prior to that I was in construction.

ED: Please tell us about Springfield State Hospital Center. Describe its history and the current patient population it serves.

WB: Springfield opened in 1896 with about 3,000 patients. Now we have between 300 and 400 inpatients. The place has really been downsized in just the 35 years that I've been here. Many buildings have closed; they are trying to get it more centralized.

ED: How long has Angel Systems been practicing IPM? What brought about the change to IPM from conventional pest management?

JMT: For about 16 years, when I came onboard. We started it at the very beginning to our contracts with government bases. We were one of the first companies that started IPM at our government sites throughout the DC/Virginia region. You can say that we were green before

most people were. As more information became available about green products and services, we always seemed to be ahead of most other companies.

ED: Do you find it well received in most places you service?

JMT: Not at the very beginning. Green pest management was misunderstood and unaccepted. Now, I believe it is more accepted, but people still don't understand it. IPM or Green Pest Management has to be defined [nationally] because right now anybody can claim to be green and because it's not regulated, it's not enforced.

ED: How would describe IPM if you were telling somebody else about it? How would you tell someone about Springfield's pest management program?

WB: No chemicals! We don't spray, we inspect. It's been a learning process...teaching people how to handle their food and not leave it lying around. It's all those little things that you don't think about. But, it was a hard process at first because people were so used to someone coming in to take care of the problem by spraying. They felt it was the company's job to treat for pests.

JMT: People get into their comfort zones. As long as someone's in their comfort zone, they can't see any reason to change. You know, nobody likes change except a baby's diaper. It's like Winnie was saying, it could be as simple as changing your garbage schedule.

ED: That's what you did here, right?

WB: Yes, we went from pulling trash once a day to twice a day.

ED: And that was an institutional change brought about by the implementation of your IPM program?

WB: Yes. For example, what good is emptying a trash can in an office on Friday morning when you eat your lunch Friday afternoon and leave it sitting on your desk and in your trash can until Monday?

JMT: But there is still resistance because people want to see the pest company come in and do something.

WB: People still might say, "I saw him [PCO] and he didn't do anything." They still want that fix right away.

JMT: Inspecting and making recommendations are what we are doing, but, again, it's the whole comfort zone. In a facility like Springfield, newsletters and other education keeps people informed that pest management is an ongoing process. We [Angel] also have meetings with housekeeping and maintenance staff as part of the ongoing IPM program here at Springfield.

JMT: One of the luxuries here is that the key personnel are in-house; they are not vendors like in other facilities. Everybody here is held accountable because they are all in-house staff.

WB: New hires get training in pest management as part of orientation.

ED: What was Springfield's pest management regimen prior to converting to an IPM program?

WB: Conventional: spray and walk away.

JMT: People used to joke that you could come in the next day and the baseboards would still be glowing. It was a proactive approach, but it was a chemical approach.

WB: In the old days, we [housekeeping] used to spray ourselves. I remember one time after we sprayed, the smell was so strong and the patients complained so much that we had to go back and scrub everything down—floor to ceiling—three times because it was making them so sick!

ED: Was there general agreement among management staff in adopting an IPM approach or did you find resistance? If so, it might be helpful to other facilities considering adopting IPM to know how administration moved forward.

WB: The resistance was in IPM being labor intensive and with the State budget fixed, they were not going to hire additional maintenance staff.

JMT: IPM requires caulking, repairing holes and leaks and other such things and in a short staffing situation, the maintenance crew didn't want anything else thrown at them. So, I will do caulking here and there—not a whole room, because that is the facilities' responsibility, but a little caulking here, a little steel wool there is something an IPM pest technician should expect to be part of their job. Part of what sold people on IPM was the push for energy savings, particularly in old buildings.

WB: Administrators want to know how they can save money. By caulking or adding door sweeps or replacing doors, they are saving on energy costs. Pest management is an added benefit to doing that.

ED: So would you say that structural IPM is a secondary benefit to a strategy to becoming more energy efficient?

JMT: Yes, that what drives many businesses, pest control operators can benefit by being more green. Sometimes you just need a wakeup call.

ED: Winnie, what long-term benefits do you see for Springfield's patients and staff from the IPM program?

WB: They don't run the risk of getting any sicker than they already are by being exposed to chemicals. It's definitely a healthier environment!

ED: What would you like to convey to other health care facilities considering transitioning to IPM and pesticide-free landcare?

WB: Do it, but know that it's a long process. It takes a while to change people's behavior. Look at me, I was skeptical. I was sure this wasn't going to work, so you have to allow the program to run its course. Now, I really like it; I don't even use anything at home anymore!

ED: Considering that the Springfield campus includes many buildings over 100-years-old and encompasses multiple acres in a rural setting, what was your biggest challenge to creating and sustaining a pesticide-free facility?

JMT: Well, in our business, the question is: why would you treat the same crack over and over again, year after year when you can just reach down one time and caulk it? Working with a proactive approach saves labor and becomes cost effective to the business. What we do is take a building [or a campus] and break it down into one square to isolate the problem. We compress the problems inward to compact to problem to a certain area. So, as long as you eliminate areas all the way back in, you only have to go to that one area. You don't have to stay there for an hour and go to multiple areas.

ED: John, is there a story you could share that would help illustrate your point?

JMT: OK, last year the chapel here had a yellow jacket infestation. They had gotten inside the building by flying in through the soffit, got over the wall, then through the layers of insulation and compressed themselves between the insulation and the wall to the point where the nest was making like a water spot mark coming through the ceiling. So, that meant the problem was contained to one area, but we had to go in and get the nest out. The guy [John's helper] went in and started poking the ceiling, and the bees started flying out. The nest was about 4 x 5 feet. At that point everyone evacuated—quickly! We had to go back in with suits [protective gear] and a shop vac to get them all out. We had many admirers from behind the glass, but no one wanted to come inside and help.

WB: (laughing) I can't imagine why!

JMT: We got them all. The repairs were made and the problem has been eradicated.

ED: You got them all with that one time vacuuming?

JMT: Yeah, we got them all. There were a few stuck in between the windows and we had to vacuum there, too, but we got them all.

ED: And no one got stung?

JMT: Nope, no stings. But, I did have a dilemma, since it was in a church. You know, we're all God's creatures...I wondered if I should have just let them out the door...

ED: John, what do you think is the biggest challenge to creating a pesticide-free facility?

JMT: The biggest struggle is getting people to change their behavior. They are so used to calling in the pest guy, that there is resistance to doing something a new way. The sustainability of the education is the hardest part. People get so caught up in their lives, they don't think about pest management. In my experience, what I've learned is that pests need three things to survive: food, water and shelter. I concentrate on removing the first two avenues because in areas with building this old, they will always find shelter. So, to solve the problem, we take away the access to food and water. We've had great success by looking at the first two. Sometimes, we can almost solve the problem over the phone.

ED: Winnie, do you agree with that?

WB: Yes. I've learned so much just by being in my job. We've gone through the learning phase together. And, it helps that IPM training is part of our general orientation program now.

ED: Yes, I agree with you. And, the IPM Project provided training DVDs for the facility to be used exactly for that purpose. The Project has a short training DVD for orientation and a longer version specific to EVS, Maintenance and Dietary staff.

ED: John, Is there anything you would like to say to other pest management professionals who have not yet offered an IPM program or organic landcare to their customers?

JMT: It's as simple as people are afraid of change. Some in the pest management industry are behind the curve on change. In my opinion, I think that it's not so much the fear of losing business, but the fear of trying to adapt to create a new business—with a completely different operating model. Remember when IPM first came about? Everybody did away with sprays and went to baits. To treat the same area, baits cost more than sprays because there are more labor costs, so you have to charge more. The industry lost out right then by not educating the client on why being safer was going to cost more upfront. The customer wants the lowest cost and in the bigger picture, people do not want to pay more to "see" the company do less. Spraying is a very visible act. Inspecting and monitoring often looks like the tech isn't doing anything. It's a misperception. Clients want to be more green; IPM will increase their sustainability, so why not give the customer that choice? Also, with pesticides there are so many regulations and they vary from state to state and federal regulations that you have to keep track of to be compliant. Why not just make it easy on yourself? You know, you can't be pulled over for having an open container of caulk in your truck.

ED: Has Springfield seen a reduction in pest sightings since you instituted IPM?

WB: Yes, we used to have more pest complaints. It's slowed down significantly.

JMT: It's definitely slowed down from the initial year until now.

ED: Would you say that is typical for a good IPM program?

JMT: Yes. It all comes down to good communication and cooperation.

WB: It's like John said, communication is important. Now that people know about keeping their areas clean themselves and not waiting around for someone to come in to take care of a problem, they will take the initiative themselves so pests are not attracted in the first place. And, if they do see a bug, they will deal with it; so, that cuts down on the pest complaints, too.

ED: How do you see the future of the pest management industry in terms of practices and products?

JMT: I see it staying just like it is right now with one side verses the other [conventional and IPM] until the regulations catch up. Without IPM being regulated, there are too many companies calling themselves green without actually being green.

ED: And in the health care industry, that regulatory body would be Joint Commission.

JMT: That's right, once Joint Commission institutes regulations, no hospital wants to be out of compliance because the risk is too great.

ED: What do you personally consider the most rewarding aspect of IPM?

JMT: When I first came onboard one guy trained me a bit and he was always hurting himself or getting sick and always used to say that the pesticides were making him sick. So, I'd have to say that the more IPM I do, the more I don't have to deal with chemicals and the chances increase that my health and life may be extended.

ED: In November, the IPM Project presented both of you (Springfield and Angel) awards for your efforts at Green Health Care Facility Practices by transitioning to IPM and sustaining a pesticide-free facility here at Springfield. Do you think the award and the publicity that comes with it will have any impact on either the short term or long term prospects for IPM, particularly in healthcare? What does the award mean to you?

WB: The recognition means something to those of us who are actually doing the day-to-day work. It makes the people here feel a little bit better about what they are doing.

JMT: For the company, it's great to see that we were actually recognized for doing this work because generally you don't get recognized. Andy [Andy Angel, owner of Angel Systems] was very proud of the award because it adds some credibility to what we do. The recognition may allow other pest management companies to add IPM to their services to make themselves more competitive and to offer their clients a safer choice. For me personally, the award allows me to think that there are some of us who share the same end result: the hope for a better world.