Integrated Pest Management (IPM) in Health Care Facilities Project

A project of Maryland Pesticide Education Network

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The Joint Commission

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RE: Integrated Pest Management (IPM) performance measures in Comprehensive Accreditation Manual for Hospitals (CAMH)

To Whom It May Concern:

The Joint Commission and Environment of Care News should be applauded for its article *"Pesticides as a Last Resort: Least Toxic Pest Management Protects Most Vulnerable Patients"* from the May 2011 *Environment of Care News* as it correctly describes the dangerous risks associated with chemical pesticide application in health care facilities. In addition, the article also defines integrated Pest Management (IPM) as combining "biological, cultural, physical, and – as a last resort – chemical tools in a way that minimizes health and environmental risk." It also describes the Integrated Pest Management (IPM) in Health Care Facilities Project and the work the project is doing with health care facilities across Maryland. And this article is still relevant and accurate today in 2025.

The IPM in Health Care Facilities Project promotes the adoption of IPM through research, education, and outreach to Maryland's health care facilities. It began in response to a study quoted in the aforementioned article that found of the 25 pesticides identified by survey participants as being used at facilities:

- 11 had been linked to cancer,
- 12 were associated with neurological effects,
- 10 were associated with reproductive effects,
- and 10 caused liver or kidney damage.

The IPM in Healthcare Facilities Project began as a partnership of the Maryland Pesticide Education Network (MPEN) and Beyond Pesticides in collaboration with Maryland Hospitals for a Healthy Environment (MD H2E). The Maryland Pesticide Education Network is a 501(c)(3) non-profit organization dedicated to protecting the public and the environment from toxic pesticides and promoting healthy alternatives.

As recently as just a few years ago, for a period of time, the CAMH incorporated IPM requirements that were developed in partnership with Orkin (and a Technical Manager there, Frank Meek), however, these were subsequently removed in a Joint Commission update to the CAMH and are no longer required. The rationale for this was not clear to the IPM in Health Care Facilities Project and with patient, staff, and the public's safety in mind, we believe it bears a reconsideration by the Joint Commission. And we recently learned that the Joint Commission will be further streamlining standards to be in line with the Centers for Medicare & Medicaid Services (CMS) Conditions of Participation (CoPs).

In addition, an emerging concern related to pesticides used at healthcare facilities is the presence of PFAS (per- and polyfluoroalkyl substances) in pesticides. PFAS are known as "forever chemicals" because they do not break down in the environment and bioaccumulate in humans. MPEN has learned in the past few years that PFAS are used as the active ingredient in some pesticides. Pesticides may also include PFAS in their inert ingredients or they may be introduced into pesticides from containers. All avenues of contamination and use are a major concern due to the health conditions associated with PFAS. Two of these pesticides have been specifically marketed to the healthcare field Fipronil+C and Bifenthrin+C, both of which have PFAS as the active ingredient. These concerns are all the more reason to include IPM standards in the CAMH.

Therefore**, the IPM in Health Care Facilities Project is submitting the following recommendations for consideration for the adoption of IPM performance measurements for health care facility accreditation by the Joint Commission in order to provide for needed protection of the health and safety of patients as well as hospital staff and visitors.** The IPM in Health Care Facilities Project appreciates the opportunity to comment on The Joint Commission's Comprehensive Accreditation Manual for Hospitals (CAMH) and suggest an update for the next version.

Since 2005, the IPM in Health Care Facilities Project has partnered directly with over 35 health care facilities, both singular facilities and several medical system's facilities serving Maryland residents. Our bi-monthly newsletter, shared with many facilities in the state, provides information on the latest research on pest management, adverse impacts of certain pesticides and safer alternatives, including data on pesticide registered disinfectants and safer alternatives. We provide both on-site visits and webinars available on YouTube for the health care industry in Maryland as well.

The IPM in Health Care Facilities Project supports proven effective policies and procedures that eliminate the sources of pest food, water, and shelter in hospitals and on hospital grounds. While it is essential that hospitals maintain a clean environment free of pests, it is also important that patients, staff, and visitors be

protected from exposure to pesticides. Pesticides are known to contribute to cancer[1], neurological disorders[2], problems with reproduction[3], birth defects[4], and liver and kidney damage[5]. They also can cause irritation to the eyes and skin, can trigger respiratory problems such as asthma, produce headaches, and nausea, and can affect learning disabilities in children[6]. Hospital patients who have compromised immune and nervous systems, the elderly, infants and children, and those who have an allergy or sensitivity to pesticides are particularly vulnerable to these toxic effects. Patients taking certain medications may also have heightened reactions to pesticides. And, as previously mentioned, some pesticides may have PFAS in them to which patients, staff, and the public may be exposed.

We recommend the addition of IPM standards within the Environment of Care (EC) and the Leadership (LD) sections of CAMH or in the new Physical Environment chapter. The IPM in Health Care Facilities Project offers the following recommendations for the following sections:

EC.01.01.01: The Hospital Plans Activities to Minimize Risks in the Environment of Care

Recommendation: Addition of an IPM policy and program as primary requirements to minimize pesticide-related risks. *The IPM in Health Care Facilities Project supports the requirement that Hospitals must adopt a written IPM policy that clearly specifies the program's goals, designates an IPM coordinator and establishes an IPM education program.*

Rationale: An IPM program is a pest management approach to preventing and managing pest problems in the least hazardous manner possible – with a program goal that seeks to use the least toxic pesticides only as a last resort, thus minimizing, and in some cases eliminating the potential risk to building occupants. Some facilities that have embraced IPM have been able to achieve a pesticide-free campus.[7]

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[1] Gerken, Jacob, Gear Thomas Vincent, Demi Zapata, Ileana G. Barron, and Isain Zapata. 2024. "Comprehensive Assessment of Pesticide Use Patterns and Increased Cancer Risk." Frontiers in Cancer Control and Society 2 (July). https://doi.org/10.3389/fcacs.2024.1368086.

[2] Aloizou, Athina-Maria, Vasileios Siokas, Christina Vogiatzi, Eleni Peristeri, Anca Oana Docea, Demetrios Petrakis, Antonios Provatas, et al. 2020. "Pesticides, Cognitive Functions and Dementia: A Review." Toxicology Letters 326 (June):31–51. https://doi.org/10.1016/j.toxlet.2020.03.005.

[3] Vasseur, Claudine, Loïse Serra, Souleiman El Balkhi, Gaëlle Lefort, Christelle Ramé, Pascal Froment, and Joëlle Dupont. (2024). "Glyphosate Presence in Human Sperm: First Report and Positive Correlation with Oxidative Stress in an Infertile French Population." Ecotoxicology and Environmental Safety 278 (June):116410. https://doi.org/10.1016/j.ecoenv.2024.116410.

[4] Addissie, Yonit A., Paul Kruszka, Angela Troia, Zoë C. Wong, Joshua L. Everson, Beth A. Kozel, Robert J. Lipinski, Kristen M. C. Malecki, and Maximilian Muenke. 2020. "Prenatal Exposure to Pesticides and Risk for Holoprosencephaly: A Case-Control Study." Environmental Health 19 (1): 65. https://doi.org/10.1186/s12940-020-00611-z.

[5] Prudente, Ivângela Raphaela Gouveia, Candice Lima Cruz, Laranda de Carvalho Nascimento, Claúdia Cristina Kaiser, and Adriana Gibara Guimarães. 2018. "Evidence of Risks of Renal Function Reduction Due to Occupational Exposure to Agrochemicals: A Systematic Review." Environmental Toxicology and Pharmacology 63 (October):21–28. https://doi.org/10.1016/j.etap.2018.08.006.

[6] Sagiv, Sharon K., Joseph M. Baker, Stephen Rauch, Yuanyuan Gao, Robert B. Gunier, Ana M. Mora, Katherine Kogut, Asa Bradman, Brenda Eskenazi, and Allan L. Reiss. 2024. "Prenatal and Childhood Exposure to Organophosphate Pesticides and Functional Brain Imaging in Young Adults." Environmental Research 242 (February):117756. https://doi.org/10.1016/j.envres.2023.117756.

[7] Springfield Hospital Center, a state psychiatric facility that operated under the Maryland Department of Health and Mental Hygiene and a participant of the IPM in Health Care Facilities Project, adopted clearly defined IPM principles and practices. Springfield completely eliminated pesticide use and was not applying pesticides after 2008.

Implementation: A successful IPM program emphasizes pest prevention through exclusion of pest entryways, sanitation practices, and the optimum maintenance of structures. Hospitals should conduct *preventive* measures that include:

- thoroughly cleaning food storage areas,
- caulking cracks,
- maintaining door sweeps,
- daily removing waste to dumpsters,
- educating hospital staff and occupants about the importance of proper waste disposal,
- spreading non-toxic, natural mulch to combat weeds,
- landscaping with pest- and drought-resistant plants,
- using weed-free seed,
- keeping vegetation away from buildings to reduce mold growth and pest access to buildings, and
- installing rat-proof waste compactors.

When preventive approaches fail, the adoption of additional tactics, including mechanical traps, vacuuming, biological controls, and habitat modification, can significantly improve the safety and effectiveness of a pest management program. Least hazardous pesticides are used only as a last resort. Hazardous pesticides are rarely if ever applied. Public notification is provided if any pesticide is used.

Designating an IPM coordinator to manage or oversee the IPM program is a key element of a successful IPM program and should be considered as a requirement for ensuring implementation of the IPM program as suggested in this letter for inclusion in the CAMH. The most appropriate person to be the IPM coordinator is usually the current staff person in charge of the hospital's pest management and/or the person in charge of grounds and maintenance. The coordinator's job should include supervising staff in managing pests, doing the work for him or herself, and/or overseeing a contractor's work who should also abide by the facility's IPM policies. In addition, the IPM coordinator should oversee educational activities to further minimize risks of pesticide exposure.

Education, in the form of workshops, training sessions, and written materials, is an essential component of an IPM program. All hospital occupants, including administrators, cafeteria staff, doctors, nurses, patients, volunteers, and visitors should be informed about the advantages of IPM and the hazards of pesticides.

EC.02.02.01: The Hospital Manages Risks Related to Hazardous Materials and Waste

Recommendation #1: Adoption of pesticides to the written inventory of hazardous materials. This section requires the hospital maintain a written current inventory of hazardous materials and waste that it uses, stores, or generates.

Rationale #1: Pesticides are hazardous materials. Many contain chemicals that are carcinogens, neurotoxins, can cause birth defects, contribute to asthma, and are associated with many other complications including learning disabilities and organ failure. Since pesticides can cause harm if they are used or stored in a hospital, a written record should be required.

Recommendation #2: Development of written procedures, including the use of precautions to prevent potential exposure to pesticides.

Rationale #2: When intentionally or accidentally released into the environment, pesticides can become airborne, and easily travel through a facility, potentially harming staff and patients. Similarly to requiring a response to a spill by other hazardous materials, specific precautions and procedures must be in place to protect staff and patients in health care facilities from pesticides.

Implementation #2: These procedures and precautions should include:

- Written notification to all staff and patients 24 hours in advance of a pesticide application;
- Pre-notification to abutting property owners, if a pesticide application will be made on the hospital's lawn or landscape; and,
- Post notification signs at the entrance to and immediately adjacent to the site of an expected pesticide application 24 hours in advance of the application and leave them in place for 72 hours after the application. In the case of emergencies, signs should be posted at the commencement of the pesticide application and remain posted for 72 hours afterwards. Written notification and posted notification signs should contain the following information:
    - Time/date of application;
    - Application site;
    - Name of pesticide product, active ingredient and EPA registration number;
    - Possible health effects listed on the pesticide product label or Material Safety Data Sheet (MSDS);
    - Application method;
    - Target pest and reason for the pesticide application;
    - Applicator name and company; and,
    - Name and phone number of whom to contact for additional information.

Recommendation #3: Minimize risks to staff and patients associated with selecting and using hazardous chemicals.

Rationale #3: The hospital can minimize risks by focusing on preventing and managing pest problems through non-toxic methods such as good sanitation practices, structural maintenance, mechanical and biological controls, and cultural practices such as cleaning procedures for staff lounges or eating only in specified areas. Only after non-toxic options have been tried or have no chance of working, a least hazardous pesticide may be used.

Implementation #3: Using least hazardous pest management materials will minimize risks associated with hazardous chemicals. Least hazardous pest management materials include:

- Boric acid and disodium octaborate tetrahydrate;
- Diatomaceous earth;
- Microbe-based insecticides;
- Botanical insecticides that do not contain synthetic pyrethroids or toxic synergists;
- Biological control agents, such as parasites and predators;
- Soap-based products;
- Use of liquid nitrogen for cold treatments; and,

- FIFRA 25(b) exempt natural pesticides, like con gluten meal, that are listed under section 25(b) of the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA).

To further minimize risks associated with pesticide use and exposure, the hospital should adopt an IPM program that prohibits the following (except when a pest problem poses an urgent threat to health, such as the swarming of stinging insects if non-chemical techniques are not available.

- The use of the most dangerous pesticides:
    - Pesticides in U.S. EPA Categories I and II (i.e., those with highest acute toxicity);
    - Pesticides linked to cancer – U.S. EPA Class A, B, C carcinogens and chemicals known to the state of California to cause cancer under Proposition 65;
    - Pesticides that interfere with human hormones and/or cause birth defects or reproductive or developmental harm, e.g., those identified as reproductive or developmental toxins or suspected endocrine disruptors or chemicals known to California to be reproductive toxins under Proposition 65;
    - Pesticides in the carbamate (carbaryl, bendiocarb, etc.), organophosphate (diazinon, acephate, etc.) or pyrethroid (cyfluthrin, permethrin, etc.) chemical family and phenoxy herbicides (2,4-D, mecoprop, etc.); and,
    - Pesticide products that contain inert ingredients categorized by the U.S. EPA as "List 1: Inerts of Toxicological Concern" (dioctyl phthalate, formaldehyde, hydroquinone, isophorone, nonylphenol, phenol, and rhodamine B)
- Pest management decisions based on aesthetics alone.
- The application of pesticides on a routine basis, whether pests are present or not.
- The application of pesticides while the area is occupied or may become occupied during the 24 hours following the application.
- The application of pesticides by fogging, bombs, or tenting or by space, broadcast, or baseboard spraying.
- Prohibit pesticides with PFAS as the active ingredient for which alternatives exist.

EC.04.01.01: The Hospital Collects Information to Monitor Conditions in the Environment.

Recommendation: Collecting and analyzing information that can result in the development and implementation of programs that reduce pest-conducive conditions in the hospital.

The hospital should have educational programs that emphasize the need for hospital occupants to monitor and report pest problems and reactions to pest control products, and stress the importance of properly sealing food containers, minimizing dispersion of crumbs, and appropriately disposing of food waste.

Rationale: Programs that encourage a broad suite of people to participate in the monitoring and reporting of pests, reactions to pest control products, and conditions conducive to pests will lead to more accurate data, more efficient pest control management, a greater understanding of the harmful effects associated with pesticides, and cleaner conditions throughout the hospital.

Implementation: One of the best methods of collecting information is through regular site inspections. Hospitals should routinely monitor their facility to determine whether pests are present and whether they are

present at a level that requires control measures. Monitoring can also help establish possible causes of a pest problem (such as leaky pipes, food crumbs, cracks in the walls, or drought-stressed plants) and the outcomes of control measures used. Monitoring is critical to reducing pest management costs because it helps pest managers target their intervention to only those areas where pest populations are present at a level that warrants action.

LD.04.01.01: The Hospital Complies with Law and Regulation

The IPM in Health Care Facilities Project agrees that a hospital must comply with all laws and regulations that protect patients, staff, and visitors.

Recommendation: Due to the greater percentage of hospital patients who have compromised immune and nervous systems, hospitals should take steps to go above and beyond the minimal laws and regulations to protect the people that are particularly vulnerable to the toxic effects of pesticides.

Rationale: Many laws and regulations that are currently in place do not adequately protect those with compromised immune systems from the harmful effects of pesticides.

Implementation: It is vital that the hospital employ a pest management program that effectively prevents and controls pest problems using the least hazardous approach.

In closing, IPM programs are cost-effective, proven to work, and protect the health of patients, staff, and visitors in healthcare facilities.[8,9] While The IPM in Health Care Facilities Project recognizes the challenges associated with changing the culture of pesticide use and implementing new standards of operation, by adopting IPM performance measurements in the CAMH, the Joint Commission will improve the health and safety of hospitals across the country.

Thank you for your thoughtful consideration of these comments and recommendations.

Respectfully submitted,

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List of signatories follows next page.

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[8] According to the U.S. Environmental Protection Agency (U.S. EPA. 2015. *Saving Dollars and Making Sense: Keeping Bugs Out of the Classroom.* 735-F-93-012. Office of Pesticide Programs. Washington, DC.) "EPA recommends schools use Integrated Pest Management (IPM) - a Smart, Sensible, and Sustainable approach to pest control. Smart because IPM creates a safer and healthier learning environment by managing pests and reducing children's exposure to pests and pesticides. Sensible since practical strategies are used to reduce sources of food, water, and shelter for pests in school buildings and grounds. Sustainable because the emphasis is on prevention that makes it an economically advantageous approach.".

[9] Chambers, K., T. Green, D. Gouge, J. Hurley, T. Stock, Z. Bruns, M. Shour et al. "The business case for integrated pest management in schools: cutting costs and increasing benefits." IPM Institute of North America. Madison, WI (2011).

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