

Incorporating Pesticides into Practice Skills

The task of incorporating pesticide information into practice skills for primary care providers will require multiple collaborations over a period of years. Examples of the types of recommended efforts to be undertaken under the *National Strategies for Health Care Providers: Pesticides Initiative* include the following:

- Collaborations with established professional societies in planning and co-sponsoring continuing education activities.
 - ▶ Mini-symposia
 - ▶ Dedicated continuing education modules and monographs for publication
- Collaborations with regulatory/non-regulatory agencies in planning and co-sponsoring traditional and distance education continuing education activities. For example:
 - ▶ ATSDR – Teleconference
 - ▶ NORA (National Occupational Research Agenda)
 - ▶ EPA
 - ▶ National Institute of Environmental Health Sciences (NIEHS)
- Working with universities, colleges, hospitals, health care agencies, non-profit organizations, and Area Health Education Centers to plan, develop, and co-sponsor targeted continuing education.

Points of Contact for Training/Refreshing Practitioners

Following are possible venues and points of contact for providing training or refresher courses, experts for lectures or consultations, as well as a flow of information to practitioners on pesticide-related and environmental health issues.

- Agriculture Health and Safety Centers
- Area Health Education Centers (AHEC)
- Case studies
- Certification and recertification exams
- Continuing education (CE) modules
- Conferences
- Continuing education monographs

- Cooperative Extension Service Pesticide Safety Education Coordinators
- Distance Learning (Internet)
- Hotlines
- Libraries (universities, Internet, professional associations)
- Inservice education
- Journals
- Medscape, other Internet websites
- Newsletters
- NIOSH Environmental Resource Centers
- Pediatric Environmental Health Specialty Units
- Professional association meetings/conferences (national, state, local)
- Regulatory agency websites and links
- Video demonstrations

Adult Education Principles

In designing and presenting training sessions or refresher courses on pesticides in clinical practice, it is useful to bear in mind the following ideas and principles culled from adult education research.

1. Several factors influence the adult learner:

- Self-perception of knowledge
- Preconceived attitudes
- Experience
- Level of confidence

2. Health care providers may have already acquired knowledge, formed opinions, and adopted attitudes toward the topic of pesticides and about environmental health in practice.

3. A number of aspects of environmental health may affect the willingness of practitioners to learn about pesticides, and incorporate issues about pesticide exposure into routine clinical practice:

- Environmental health problems of any kind can be very complex and time-consuming.
- Reimbursement for services may not be available.

- The possibility of interacting with the legal system may act as a deterrent to becoming involved in environmental health problems.
 - Practitioners may have other sociopolitical and cultural perceptions that may lead to resistance to learning in environmental health, for example: "It's not a problem in my patient population," "I don't agree with environmental activists," "My patients have other more pressing concerns," or "I can't learn all I need to about environmental toxicology."
4. Learners should be encouraged to openly express their perceptions about environmental health issues and the practitioner's role.
 5. Individuals must be motivated to learn, so it is important to demonstrate the immediate practical value of addressing pesticide exposure in clinical practice.
 6. Assumptions about the significance of pesticides should be challenged (e.g., "Pesticide exposure is not relevant for my patients.").
 7. Instructors can affect the learner's self-concept as practitioners by finding out what the learner already knows. The instructor can explore whether or not the learner feels his or her responsibility extends only to treatment or to investigation and prevention of pesticide exposures as well.
 8. A short survey can be used to disclose knowledge and attitudes about pesticides and environmental health in general. This information can be used to discuss barriers and issues.
 9. There are several key ways in which adults learn:
 - By solving problems
 - By seeing, listening, and doing
 - By remembering the first and last information presented
 - Through association and repetition
 10. Varying the teaching methods used helps in maintaining the adult learner's interest:
 - a. Case studies
 - Should be short
 - Should be as real as possible
 - Can be oral or written
 - Develop a few specific questions for discussion
 - b. Group discussions
 - May be used to explore issues about investigation and advocacy
 - Present a case. *Example: In the past 4 months you and your colleagues have seen 4 children (ages 9 and 10) complaining of cough, shortness of breath and chest tight-*

ness and eye, nose and throat irritation. From an environmental history, you learn that all children attend the same school. The mother of one of the children is concerned that her child is being exposed to something at school.

- Develop discussion questions. Examples:
 - ▶ *What is the role and responsibility of the health care practitioner to pursue the mother's suspicions?*
 - ▶ *What actions should be taken?*
 - ▶ *What actions are required to be taken?*
 - ▶ *How could risks be communicated to parents or others who are concerned?*
 - ▶ *What should be documented in charts?*
 - ▶ *What plan of action is most appropriate for the health care provider?*

c. Instructor/student demonstrations

- Skill building
- Should demonstrate incorrect as well as correct techniques

d. Structured practice/role play

- Opportunity to practice communication skills with help of partner

e. Lectures

- Aim is to establish a baseline of knowledge
- Communication is generally one-way, so other methods should be used to facilitate the learner's problem-solving skills
- Enhance effectiveness of lecture by:
 - ▶ Including personal examples, stories, perspectives
 - ▶ Limiting the lecture to 45-60 minutes
 - ▶ Outlining learning objectives at the beginning and summarizing what was learned at the end
 - ▶ Avoiding reading from prepared notes
- Use audiovisual aids
- Distribute handouts summarizing key points
- Hold a large group discussion after lecture

11. Give credit for participation

- Incentives
- Recognition

12. Establish some method of evaluation. Evaluation approaches may include:

- Pre- and post-tests for knowledge evaluation
- Checklists for practice observation to document skills application, such as patient assessment, through direct or indirect (video) observation
- Chart audits for knowledge and skill demonstration
- Evaluation of specific learning objectives
- Community based organizations/groups in evaluation