

# Preventing Agricultural Pesticide Exposure:

## Revisions to the EPA's Worker Protection Standard



Photo by Earl Dotter

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Agricultural work is one of the most dangerous occupations in the U.S. Pesticide exposure results in illness or injury to thousands of agricultural workers and their families each year. Approximately one billion pounds of pesticides are used in the U.S. every year.<sup>1</sup> Studies show that agricultural workers suffer serious short- and long-term health effects from pesticide exposure. Signs of acute pesticide poisoning include irritated eyes, rashes, nausea, dizziness, headaches, and shortness of breath. Long-term effects of pesticide exposure include cancer, infertility, birth defects, and neurological disorders.

Agricultural workers are routinely exposed to pesticides. Workers who harvest crops and perform other tasks in treated areas risk exposure from direct spray, aerial drift, or contact with pesticide residues on the crop or soil. Pesticide “handlers” who mix, load, or apply pesticides may be exposed through accidental spills, splashes, and defective, missing or inadequate protective equipment. Their children and other family members may also be exposed to pesticides through drift and “take home” exposures from pesticide residue on workers’ clothing, shoes, skin, and tools.

The U.S. Environmental Protection Agency’s (EPA) Worker Protection Standard (WPS) provides basic workplace protections to agricultural workers to minimize the adverse health effects of pesticide exposure. The regulation applies to hired workers involved in the production of agricultural crops. In November 2015, the EPA revised the WPS for the first time in more than 20 years. The revised WPS aims to improve protections for workers and handlers to reduce their occupational exposure to pesticides. The issue brief provides an overview of some of the major provisions in the updated regulation that may be of particular interest to clinicians who provide routine and emergency medical assistance to agricultural workers and their family members. By understanding the key provisions of the WPS, clinicians can help their patients to prevent pesticide-related illness and injury, and will be better prepared to assist patients who present with acute pesticide poisoning.



<sup>1</sup> US EPA Office of Pesticide Programs, Pesticides Industry Sales and Usage: 2006 and 2007 Market Estimates, February 2011. (accessed Feb. 29, 2016), available at [http://www.epa.gov/sites/production/files/2015-10/documents/market\\_estimates2007.pdf](http://www.epa.gov/sites/production/files/2015-10/documents/market_estimates2007.pdf).

# Basic Protections in the WPS

The WPS requires agricultural employers to take the following steps:

- » Provide pesticide safety training
- » Inform workers about where and when pesticides have been sprayed
- » Keep workers out of pesticide-treated areas during application and until re-entry into these areas is deemed safe
- » Provide protective equipment for all workers coming into contact with pesticides or pesticide-treated areas within the time periods when re-entry is restricted
- » Provide facilities for decontamination (including clean water, soap, and towels)
- » Facilitate emergency medical care if necessary

Important changes in the new regulation beginning in <i>January 2018</i> :	
<p><b>Pesticide Safety Trainings</b></p> <p>Currently, employers must provide pesticide safety training to workers and pesticide handlers at least once every five years. The safety training must include information about the health hazards from pesticide exposure, how to mitigate exposure, and how to obtain emergency medical care, among other things. Employers must also display in a central location a poster with basic safety information and the name and address of a nearby health facility.</p>	<ul style="list-style-type: none"> <li>» Employers must provide a pesticide safety training every year, and no worker may enter an area where a pesticide has been used without receiving a full safety training.</li> <li>» The training content will expand to include more information on: 1) how to reduce take-home exposures from residues on skin and clothing; 2) employer obligations in the event of an emergency; 3) how to report violations to state enforcement agencies; 4) the location of detailed information about pesticides recently applied; and 5) minimum age (18) and notification requirements for early-entry workers (those who can enter a treated area during a restricted entry period).</li> </ul>

Important changes in the new regulation beginning in <i>January 2017</i> :	
<p><b>Information about Recent Pesticide Applications</b></p> <p>Employers must inform workers about where and when pesticides were sprayed to avoid accidental exposures. The WPS also requires employers to post information about recent pesticide applications (including name of the pesticide, location of field, and re-entry interval) in an easily accessible central location.</p>	<ul style="list-style-type: none"> <li>» The posted information must also include safety data sheets (SDS) for each pesticide used. SDSs contain essential information about a pesticide, including toxicity, health effects, first aid procedures, storage, disposal, and necessary protective equipment for handling.</li> <li>» Employers must post warning signs around pesticide treated areas in outdoor production when the product used has a restricted-entry interval (REI) greater than 48 hours.</li> <li>» Workers may designate another individual to access information about the pesticides used in their worksites. This is important in the event a worker is out of the country, or otherwise incapacitated.</li> <li>» Clinician Access to Information: When an agricultural worker seeks medical assistance due to pesticide exposure, employers must promptly make available SDSs, product information, and application information to medical personnel upon request to better facilitate diagnosis and treatment.</li> </ul>

Important changes in the new regulation  
beginning in *January 2017*:

### Protections during Applications and during Restricted Entry Intervals (REIs)

The WPS prohibits application of pesticides in a way that will expose workers or other persons. Workers must be excluded from areas while pesticides are being applied and they cannot enter a pesticide treated area during the REI unless they are given protective equipment. An REI can last anywhere between 4 hours and 30 days, depending on the crop, the pesticide used, and the location. Information about REIs is found on pesticide labels, and employers should also post REIs in a central location accessible to all workers.

- » Children under the age of 18 are prohibited from handling pesticides and from early entry into restricted areas.
- » During pesticide application in outdoor areas, only properly trained and equipped pesticide handlers involved in the application may enter areas up to 100 feet around the application equipment (known as an application exclusion zone or “AEZ”). An applicator must suspend application if a worker or other person is in the AEZ.
- » Workers who must enter a treated area during an REI must receive detailed information about the pesticides used in the area where they will work and the personal protective equipment (PPE) required by the labeling.

### Personal Protective Equipment

An employer must provide and maintain personal protective equipment (PPE) for handlers and early entry workers (those who work in treated areas before the REI has ended). PPE includes clothing and equipment that must be used to protect a worker from contact with pesticides, such as gloves, respirators, or coveralls.

- » Respirators: Employers must comply with OSHA-equivalent standards on medical evaluation, fit testing, and training for pesticide handlers whenever a respirator is required by the labeling.

### Decontamination Supplies

Handlers and workers must have sufficient water, soap, and towels to wash their hands on a regular basis and to wash themselves in case of an accidental exposure to pesticides. Handlers must be provided with enough water for washing their entire body in case of an emergency and a clean change of clothing to dress in after the contaminated clothing has been removed.

- » The revised rule specifies the minimum amounts of water required for workers, handlers, and early-entry workers: 1 gallon for each worker and 3 gallons for each handler and early-entry worker.
- » If handlers use products requiring eye protection, they must have access to a system capable of delivering 0.4 gallons of running water per minute for 15 minutes for eye flushing.

### Emergency Medical Assistance

If an agricultural worker becomes ill due to pesticide exposure, the employer must promptly make available transportation (which can include calling an emergency vehicle) to a medical facility. Upon the request of the injured worker or treating medical personnel, an employer must provide information about the pesticide to which the person may have been exposed.

- » In an emergency situation, an employer must promptly provide (even without being requested) the SDS, product information (name, EPA registration number and active ingredient) and circumstances of exposure to treating medical personnel.

# State Level Protections for Agricultural Workers

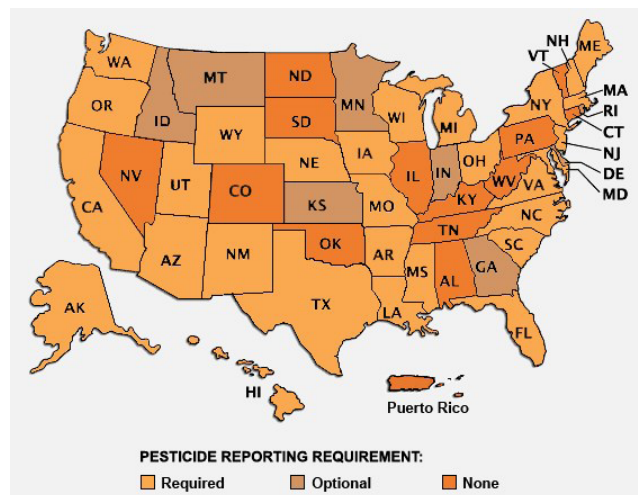
Medical Monitoring: The EPA opted not to include in the revised WPS a national requirement to monitor pesticide handlers' exposure to cholinesterase (ChE)-inhibiting pesticides. However, employers of pesticide handlers in the states of California and Washington must pay for blood tests that monitor handlers' exposure to organophosphate and carbamate pesticides.<sup>2</sup> When the tests show overexposure, the worker must be removed from handling activities to prevent injury. More information about ChE monitoring guidelines can be found on *MCN's website*.

## What Clinicians Can Do To Protect Workers from Pesticide Exposure

Agricultural workers face many obstacles when seeking medical care for pesticide-related illness, including language barriers, lack of access to medical care, lack of information about workplace hazards, lack of awareness of poisoning symptoms, and fear of retaliation.

Workers may not relate any health issues they are experiencing with pesticides and therefore may not mention pesticide exposure to their clinician. For this reason, it is important for clinicians to identify agricultural worker patients and ask about their occupational history. If they are presenting with pesticide-related symptoms, it is important to ask about the exposure and to collect and document relevant data.

Thirty states require clinicians to report suspected and confirmed cases of pesticide overexposure. Twelve states (Arizona, California, Florida, Iowa, Louisiana, Michigan, New Mexico, New York, North Carolina, Oregon, Texas and Washington) have established surveillance systems to formally respond to reported incidents. EPA relies heavily on clinicians to report possible pesticide poisonings in order to understand and prevent future pesticide misuse. Clinicians should review their state's pesticide incident reporting requirements. An *interactive map on Migrant Clinician Network's website* details the pesticide reporting requirements in each state.



Pesticide Reporting and Workers' Compensation Map

## Resources

Clinicians play an important role in educating their patients on pesticide safety. To access educational materials and to learn more about pesticide safety and the revisions to the Worker Protection Standard, please refer to the following resources:

U.S. EPA

- » *Revisions to the Worker Protection Standard*
- » *Recognition and Management of Pesticide Poisonings: 6th Edition*

Farmworker Justice [www.farmworkerjustice.org/resources/health-and-safety-resources](http://www.farmworkerjustice.org/resources/health-and-safety-resources)

Migrant Clinicians Network [www.migrantclinician.org/issues/occupational-health/pesticides.html](http://www.migrantclinician.org/issues/occupational-health/pesticides.html)

<sup>2</sup> These pesticides depress the level of the blood enzyme acetylcholinesterase which plays a vital role in the central and peripheral nervous system. Exposure can be detected through plasma or red blood cell cholinesterase tests taken within 24-48 hours. Without baseline levels, however, the test must be repeated weekly for about 6 weeks to see if levels rise.

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