



Nebraska Department of Health and Human Services
HEALTH ALERT NETWORK
Advisory



TO: Primary care providers, ERs, urgent care, and local health departments

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RE: Recognition and Management of Pesticide Poisoning

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The arrival of warmer weather in Nebraska means increases in both agricultural and non-agricultural pesticide applications to manage insects, weeds, and other unwanted pests. While most pesticides are safe if handled properly, pesticide exposures can result in injury, illness, and even death.

The Nebraska Department of Health and Human Services is notifying health care providers to monitor patients for signs and symptoms of pesticide illness or injury and to report all cases of pesticide-related poisonings. Poisoning due to pesticides such as herbicides, insecticides, fungicides, rodenticides, disinfectants, and agricultural chemicals are reportable events in Nebraska (http://www.sos.ne.gov/rules-and-regs/regsearch/Rules/Health_and_Human_Services_System/Title-173/Chapter-1.pdf)

Background

- From 2011 to 2013, the Nebraska Regional Poison Center received 1,821 pesticide exposure calls. Insecticides, primarily pyrethroids and pyrethrins, were the most common pesticide classes reported (NRPC, 2014).
- From 2011 to 2013, Nebraska DHHS documented 91 occupational pesticide illness and injury cases, of which 67% occurred in the months of May, June, July, and August (DHHS, 2014).

At Risk Populations

- Agricultural workers, farmworkers, groundskeepers, landscapers, fumigators, and others who frequently apply or come into contact with pesticides.
- Children living in close proximity to agricultural areas and children with parents who use pesticides. Pesticide exposures can result from parents' transferring pesticides from the workplace into the home or when pesticides drift away from the intended application site.

- Women who are pregnant or planning a pregnancy. Studies show pesticide exposures during prenatal, perinatal, and even preconception periods may have an effect on reproductive outcome and offspring (EPA, 2013).

Recognition and Management of Pesticide Poisoning

Signs and symptoms of pesticide poisoning depend on the specific chemical, exposure route, exposure duration, and other factors. Recommendations for health care providers on the diagnosis and treatment of patients with specific pesticide exposures are found in the EPA's Recognition and Management of Pesticide Poisonings, 6th Edition (EPA, 2013). The document is available at

http://www2.epa.gov/sites/production/files/documents/rmpp_6thed_final_lowresopt.pdf. To obtain a free print copy, contact DHHS at 402-471-2937.

If a patient presents with signs and symptoms consistent with pesticide poisoning:

- Contact the Nebraska Regional Poison Center at 1-800-222-1222 for advice on the appropriate course of action and for assistance with locating antidotes.
- Decontaminate the patient by removing clothing and washing skin; health care personnel should wear personal protective equipment to prevent cross-contamination.
- Collect information on the pesticide, including the chemical name, EPA registration number, and the pesticide label and/or the Material Safety Data Sheet.
- Collect evidence of contamination, such as obtaining an unlaundered sample of the clothing the patient was wearing at the time of the incident. Place clothing in a sealed bag to avoid contamination.
- Order appropriate laboratory tests. The National Pesticide Information Center (NPIC) provides a list of pesticides that can be analyzed by clinical laboratories available at: <http://npic.orst.edu/mcapro/PesticidesTestingForExposure.pdf>. If the patient appears to have been exposed to an organophosphate or N-methyl carbamate insecticide, order cholinesterase blood tests, both plasma and red blood cell, to determine the level of cholinesterase activity. However, do not wait for laboratory confirmation before treating the patient.
- Schedule/conduct patient follow-up.

Reporting Cases

- Report cases of pesticide illness, injury, or poisoning either to DHHS at 402-471-2937 or by calling the Nebraska Regional Poison Center at 1-800-222-1222.
- If pesticide misuse is suspected, report the incident to the Nebraska Department of Agriculture Pesticide Program at (402) 471-2351. Examples of pesticide misuse include accidental or intentional spill or exposure; drift of pesticide onto humans, animals, or other non-target sites; suspected water contamination from runoff, drift or leaching; or exposure / ingestion due to improperly- or un- labeled containers.

Additional Resources

Nebraska DHHS Pesticide Poisoning Surveillance
<http://dhhs.ne.gov/publichealth/occhealth/pages/pesticides.aspx>

UNL Pesticide Safety Education Program
<http://pested.unl.edu/>

National Pesticide Information Center (NPIC)
<http://npic.orst.edu/>

References

EPA, 2013. Environmental Protection Agency. Recognition and Management of Pesticide Poisonings, 6th Edition. EPA Publication 735K13001.
NRPC, 2014. Nebraska Regional Poison Center. Toxicall Database Query.
DHHS, 2014. Pesticide Poisoning Surveillance Program. SPIDER Query.