

Indicator 11: Acute Work-Related Pesticide Poisonings Reported to Poison Control Centers

Significance

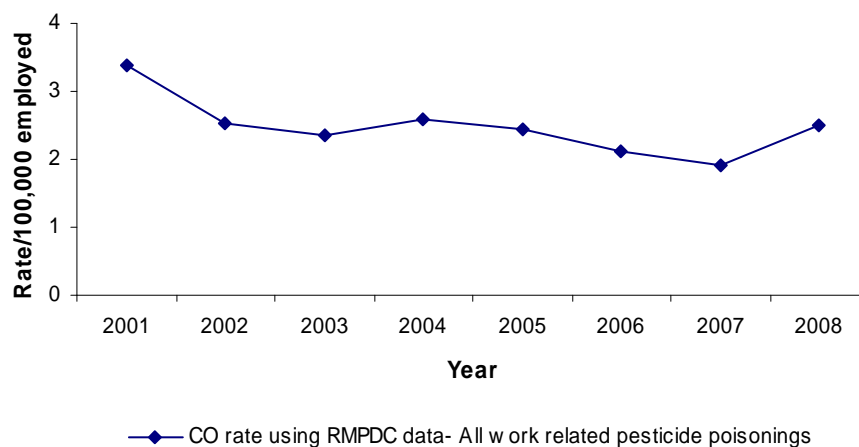
An estimated 1 billion pounds of pesticides are used each year in the United States to protect food and control disease. Pesticides are workplace chemicals purposely designed to harm certain life forms. The active ingredients in pesticides can pose both acute and chronic exposure risks if not carefully applied. The Environmental Protection Agency (EPA) estimates that 20,000 to 40,000 work-related pesticide poisonings occur each year.

Methods

Local poison control centers provide guidance and information for cases of work-related pesticide poisoning to medical professionals, the public and consumers throughout the United States. The American Association of Poison Control Centers (AAPCC) collects information from local poison control centers on all cases/reports of work-related pesticide poisoning reported to poison control centers that result in acute illness throughout the United States. Pesticide poisonings include exposures to disinfectants, fungicides, fumigants, herbicides, insecticides, repellents and rodenticides in the work environment. Many states do not have access to local poison control center data. As a result, the national AAPCC data are often used to calculate the incidence of reported work-related pesticide poisonings in each state. These data are difficult to access and, as a result, the most recent results available are from 2005.

The Rocky Mountain Poison and Drug Center (RMPDC), the local poison control center that serves Colorado, provided to the Colorado Department of Public Health and Environment (CDPHE) work-related pesticide poisoning data for Colorado for the years 2001 to 2008. The criteria for determining the number of reported pesticide poisonings from RMPDC data were based on the Council of State and Territorial Epidemiologists (CSTE) guidance document “Occupational Indicators: A Guide for Tracking Work-Related Health Effects and Their Determinants.” Criteria include exposures to disinfectants, fungicides, fumigants, herbicides, insecticides, repellents and rodenticides in the work environment. The pesticide poisoning rates for Colorado, using RMPDC data, are provided in Figure 11.1.

Figure 11.1 Work-related pesticide poisonings, reported to RMPDC per 100,000 workers, Colorado, 2001-2008



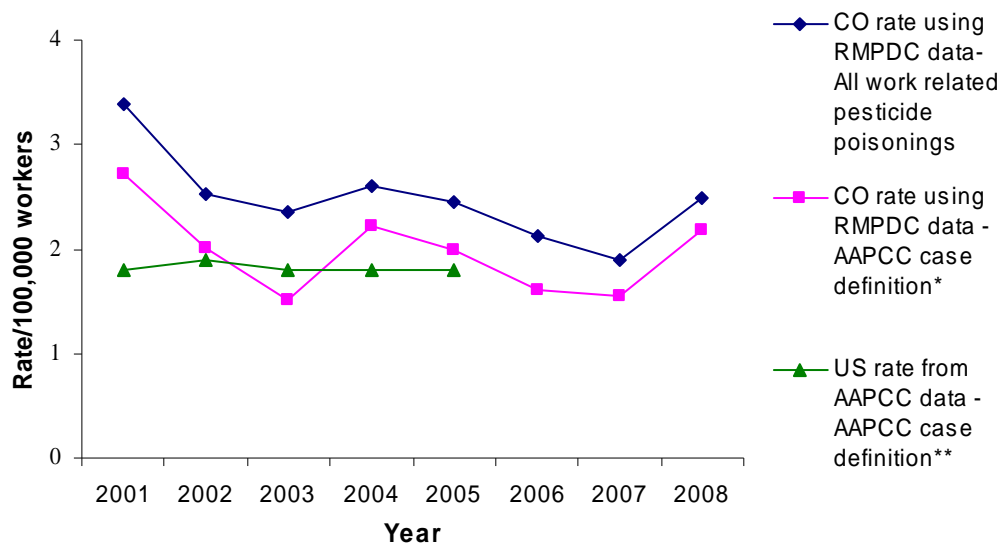
Source: RMPDC Data- Reported cases of work-related pesticide poisonings (numerator); Employed persons age 16 years or older from the BLS Current Population Survey (denominator).

National work related pesticide poisoning data are available from the AAPCC. The case definition of work-related pesticide poisonings from the AAPCC data is slightly different from the case definition of work-related pesticide poisoning using CSTE guidance. To compare Colorado work-related pesticide poisoning data to United States pesticide poisoning data, the case definition of pesticide poisonings from RMPDC was modified to match the case definition used for AAPCC data. The AAPCC case definition still includes most exposures to disinfectants, fungicides, fumigants, herbicides, insecticides, repellents and rodenticides in the work environment; however, the following pesticide generic categories were eliminated from Colorado data to match the AAPCC case definition:

- 0201055 (bromine water/shock treatment) in the Disinfectants Generic Category
- 0201056 (chlorine water/shock treatment) in the Disinfectants Generic Category
- 0201008 (disinfectant industrial cleaner) in the Disinfectants Generic Category

The original RMPDC data, as well as the modified RMPDC data and AAPCC data, are provided in Figure 11.2 and Table 11.1.

Figure 11.2 Work-related pesticide poisonings reported to poison control centers, Colorado and the United States, 2001-2008



Source: RMPDC Data- Reported cases of work-related pesticide poisonings (numerator); Employed persons age 16 years or older from the BLS Current Population Survey (denominator).

* Source: RMPDC Data- Reported cases of work-related pesticide poisonings for Colorado with AAPCC case definition applied (numerator); Employed persons age 16 years or older from the BLS Current Population Survey (denominator).

** Source: AAPCC Data for the United States with AAPCC case definition applied (numerator); Employed persons age 16 years or older from the BLS Current Population Survey as reported by CSTE (denominator).

Table 11.1 Work-Related Pesticide Poisonings Reported to Poison Control Centers, Colorado and United States 2001-2008

Year	Colorado RMPDC Data - ALL Work Related Pesticide Poisonings		Colorado RMPDC Data-Based on AAPCC Case Definition*		United States AAPCC Data-Based on AAPCC Case Definition **	
	Number	Rate/ 100,000 workers	Number	Rate/ 100,000 workers	Number	Rate/ 100,000 workers
2001	75	3.4	60	2.7	2,492	1.8
2002	58	2.5	46	2.0	2,528	1.9
2003	55	2.4	35	1.5	2,503	1.8
2004	62	2.6	53	2.2	2,476	1.8
2005	59	2.5	48	2.0	2,593	1.8
2006	53	2.2	40	1.6	Not Available	Not Available
2007	49	1.9	40	1.6	Not Available	Not Available
2008	65	2.5	57	2.2	Not Available	Not Available
Average 2001-2008	60	2.5	49	1.9	Not Available	Not Available
Average 2001-2005	62	2.7	48	2.0	2,518	1.8

Source: RMPDC Data- Reported cases of work-related pesticide poisonings (numerator); Employed persons age 16 years or older from the BLS Current Population Survey (denominator).

* Source: RMPDC Data- Reported cases of work-related pesticide poisonings for Colorado with AAPCC case definition applied (numerator);. Employed persons age 16 years or older from the BLS Current Population Survey (denominator).

** Source: AAPCC Data for the United States with AAPCC case definition applied (numerator); Employed persons age 16 years or older from the BLS Current Population Survey as reported by CSTE (denominator).

Results

- On average, between 2001-2008, 2.5 per 100,000 Colorado workers reported a work related pesticide poisoning to the RMPDC. (Figure 11.1 and Table 11.1)
- The rate of all work-related pesticide poisonings reported to RMPDC in Colorado ranged from 1.9 to 3.4 per 100,000 workers per year for the years 2001 to 2008. (Table 11.1 and Figure 11.1)
- When looking specifically at the AAPCC case definition of work-related pesticide poisonings, between 2001-2005, Colorado had a slightly higher rate of reported work-related pesticide poisonings (2.1/100,000 workers) in comparison to United States rates, which have remained stable at 1.8 from 2001-2005. (Figure 11.2 and Table 11.1)
- On average, between 2001 and 2008, 18% of all pesticide poisonings in Colorado were in the following Disinfectants Generic Categories:
 - 0201055 (bromine water/shock treatment)
 - 0201056 (chlorine water/shock treatment)
 - 0201008 (disinfectant industrial cleaner)

Data Sources

- Poison Control Center(s) data (numerator)
- BLS Current Population Survey data (denominator)

Limitations

- Not all work-related pesticide exposures resulting in illness are reported to poison control centers.
- Most work-related pesticide poisonings reported to poison control centers are acute exposures to pesticides; chronic exposures are usually not reported to poison control centers.
- Poison control centers capture the types and active ingredients of a pesticide; however, the circumstance, occupation and business and industrial identification associated with a call are generally unknown.

Recommendations

- Report work-related pesticide poisonings by age, gender, race/ ethnicity, severity and illness in order to better target prevention efforts.