



# An Overview of SENSOR-Pesticides

## Tracking acute occupational pesticide-related illness in the US

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# Why conduct pesticide poisoning surveillance?

- >16,000 pesticide products/~600 active ingredients
- Approximately one billion pounds used annually in US
  - ( $\frac{3}{4}$  of which are used in agriculture)
- Ongoing concern about pesticide toxicity
- Proper use of agricultural pesticides is difficult to ensure
- Pre-market testing of pesticides isn't comprehensive



## Endorsements: Pesticide poisoning surveillance

- 1993 & 2000: United States General Accounting Office
  - Released reports recommending improved surveillance
- 1994: American Medical Association
  - Recommended improved surveillance
- 1996: CSTE recommended adding acute pesticide poisoning as a reportable condition
  - It is a reportable condition in at least 30 states
- 1999: CSTE recommended acute pesticide poisoning indicators
  - This position statement included the SENSOR-pesticides case definition
- 2001: PEW Environmental Health Commission Report,
  - Calls for pesticide poisoning surveillance
- 2001: NIOSH Strategic Surveillance Plan



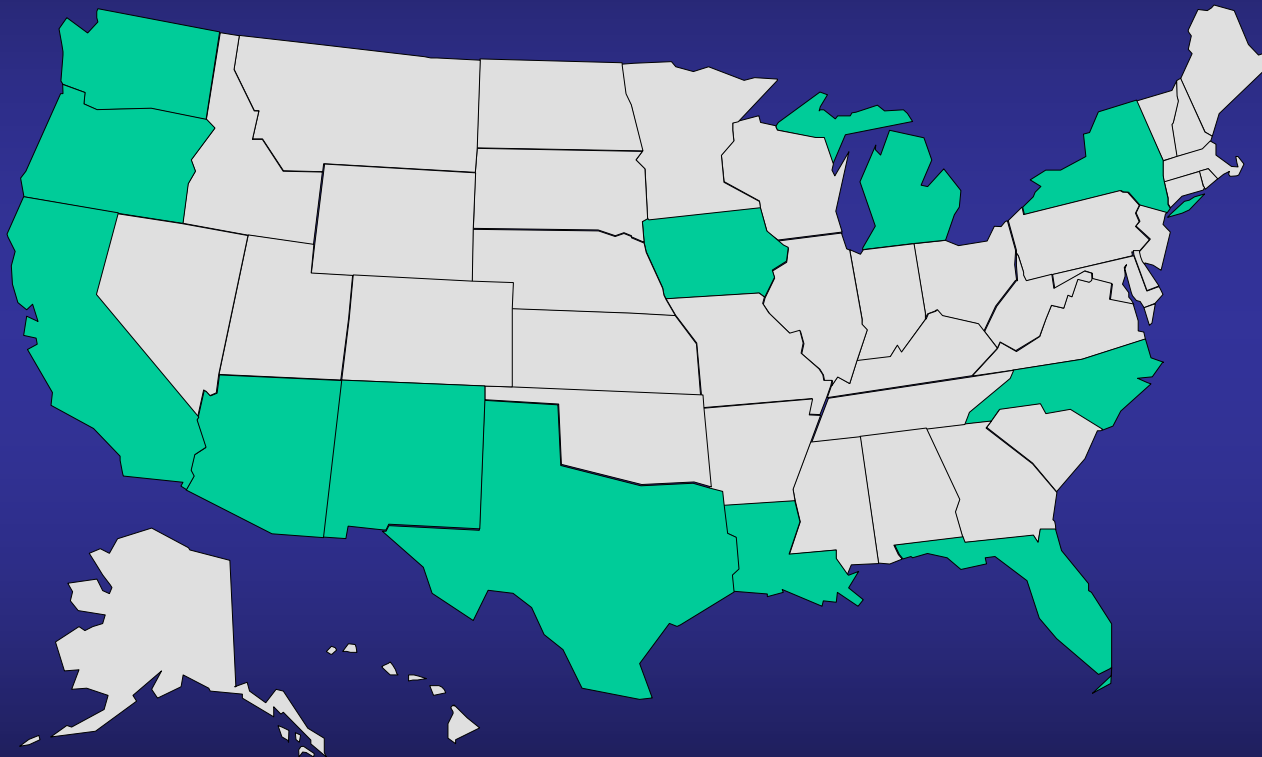


# SENSOR-Pesticides Program

- State-based surveillance
- Began in 1987
- “Sentinel” case identification and follow-up
- Timely opportunities for prevention/intervention
  - Directed to index case, co-workers and similar workplaces
- Standardized case definition, variables, and severity index
- Case ascertainment: use multiple sources
  - Including poison control center reports, workers’ compensation records, state dept of agriculture
- Funded by NIOSH and EPA
- <http://www.cdc.gov/niosh/topics/pesticides/>



# States participating in SENSOR-Pesticides (n=12)



 SENSOR-Pesticides



# States Participating in SENSOR-Pesticides

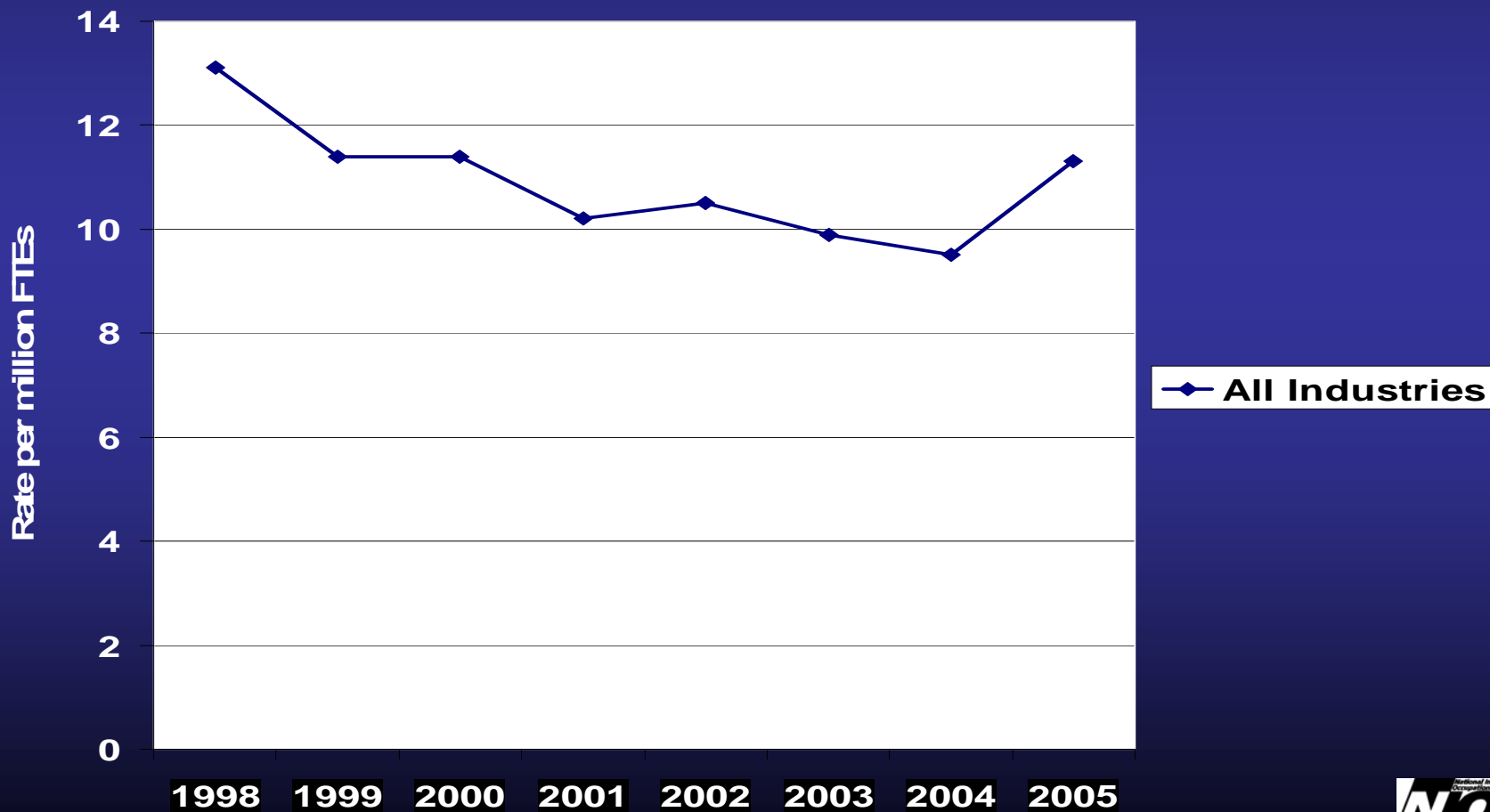
<u>1988-1992</u>	<u>1993-1997</u>	<u>1998-2000</u>	<u>2001-2005</u>	<u>2006-2008</u>
California	New York	Arizona*	Arizona*	Arizona*
Oregon	Oregon	California	California	California
Texas	Texas	Florida	Florida	Florida*
		Louisiana*	Louisiana*	Iowa
		New York	Michigan	Louisiana*
		Oregon	New York	Michigan
		Texas	Oregon	New Mexico*
			Texas	New York
			Washington	North Carolina
				Oregon*
				Texas
				Washington

\* = receives no federal support





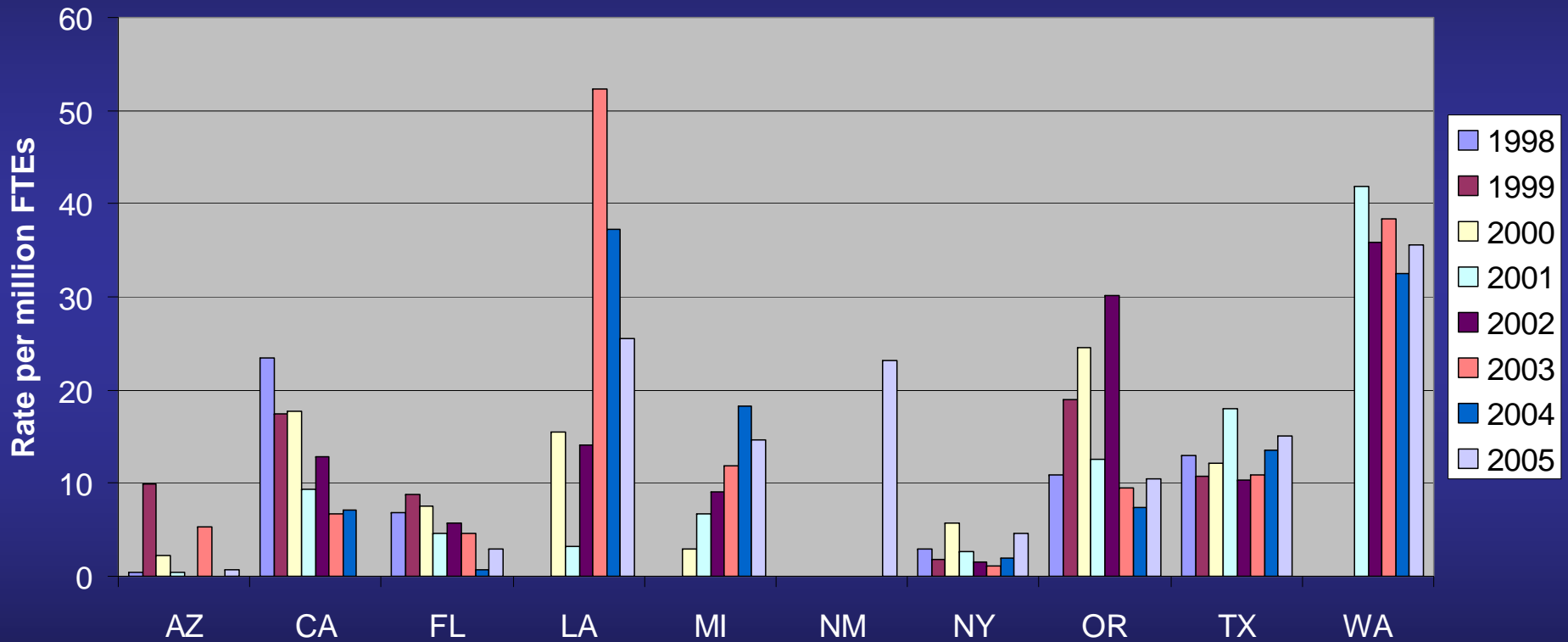
# Incidence Rate of Acute Occupational Pesticide-Related Illness by Year, 1998-2005





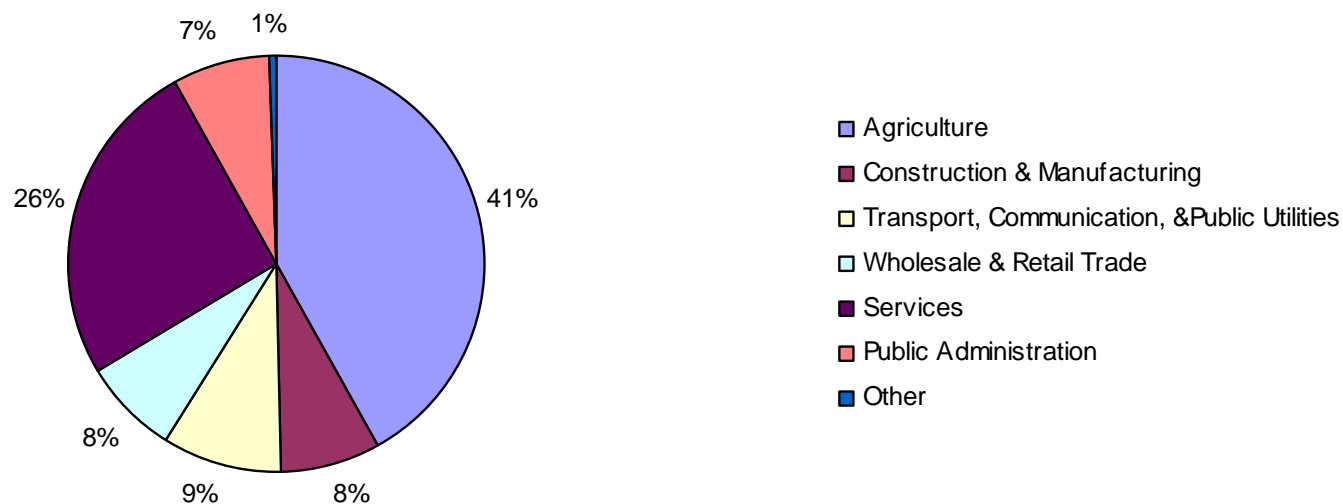
# Rate of acute occupational pesticide-related illness (per million FTEs), 1998-2005

## All Industries



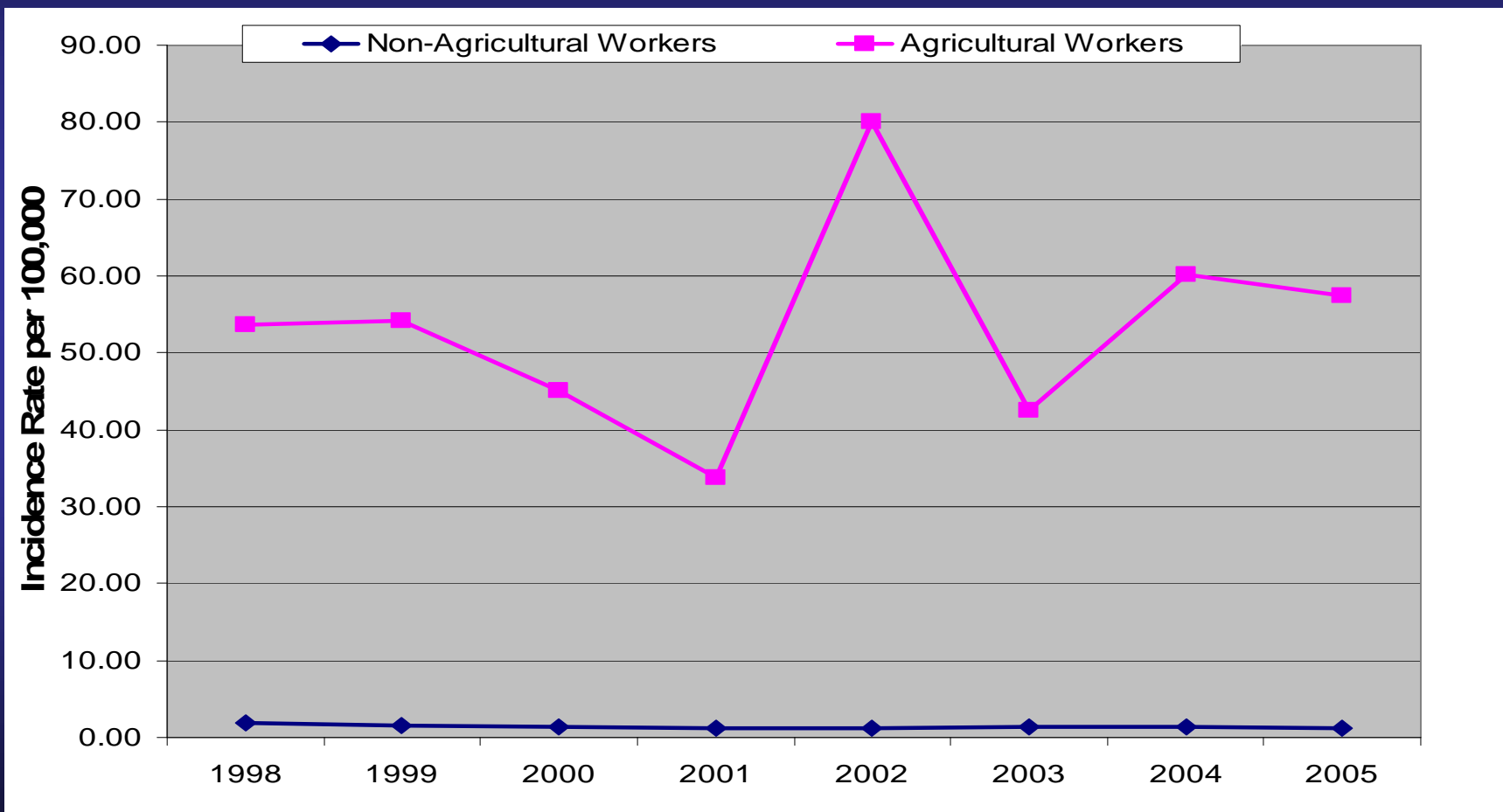


# Distribution of occupational cases by industry 1998-2005 (n=3,984)





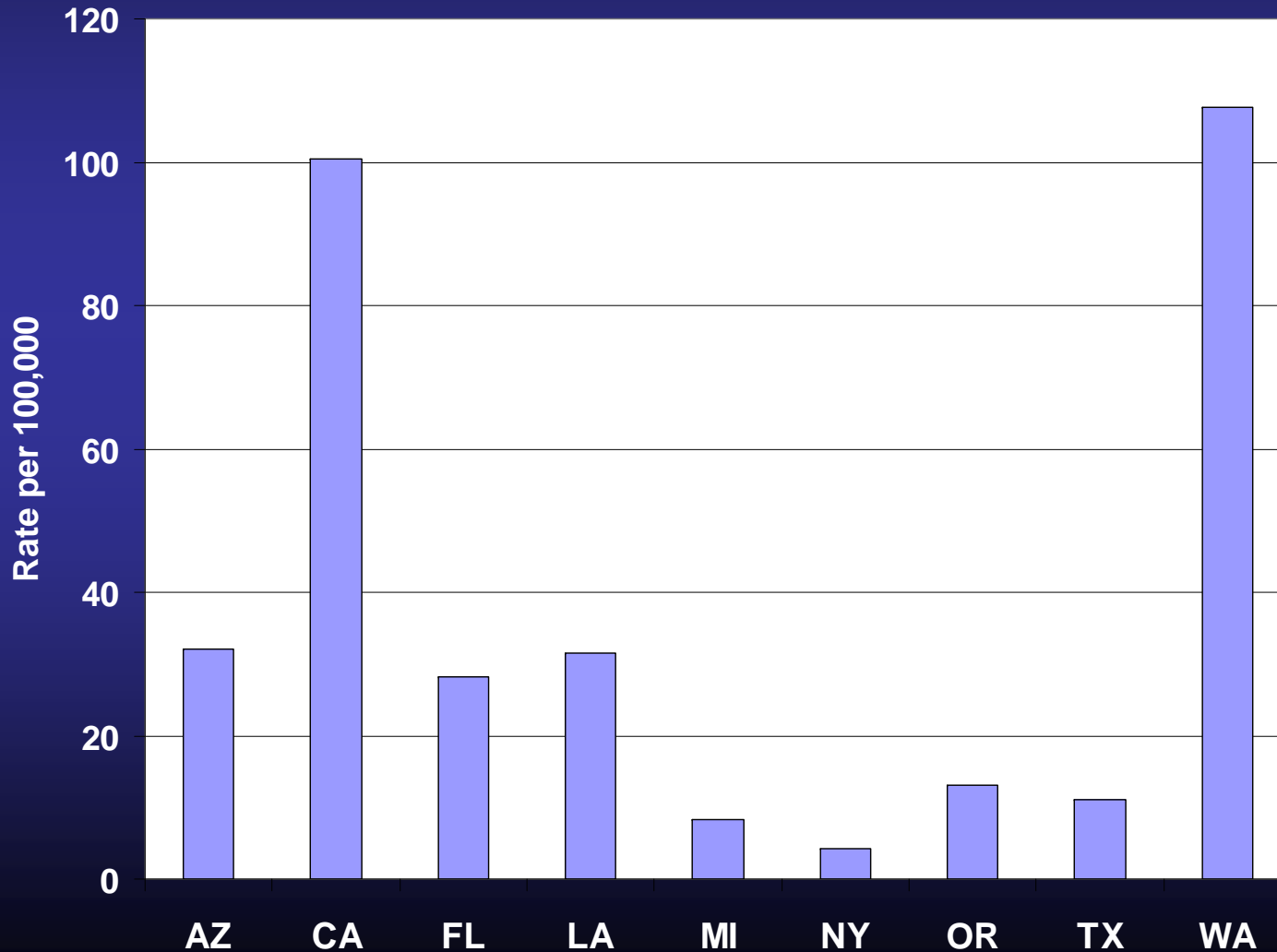
# Incidence Rate of Acute Occupational Pesticide-Related Illness by Year, 1998-2005 (N=3,271)





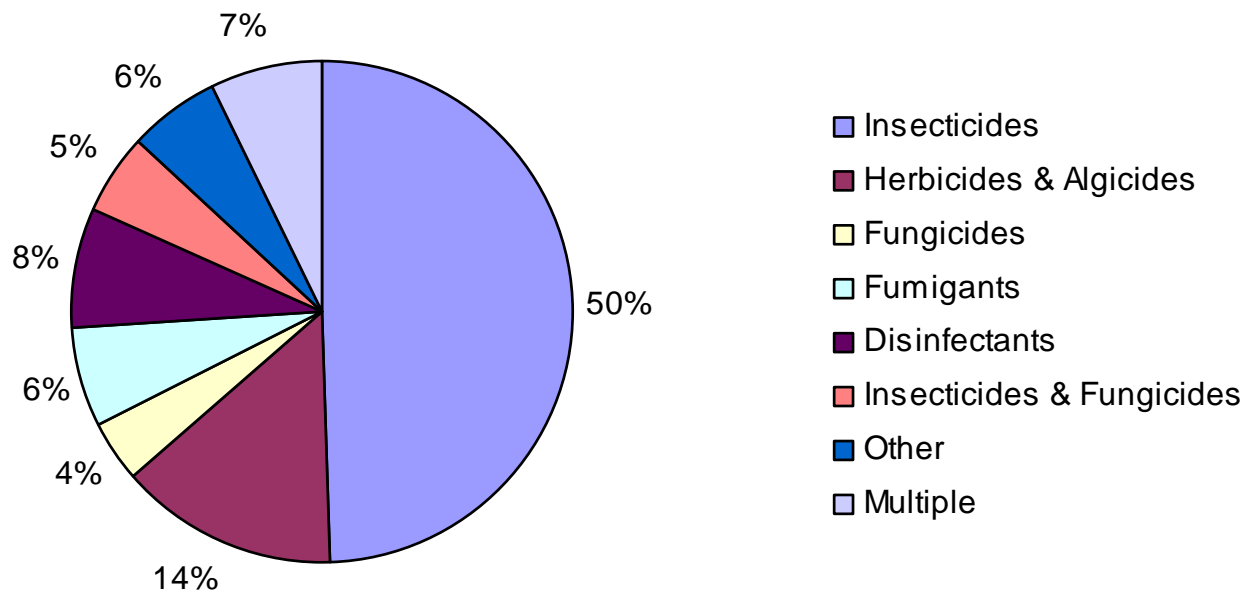
# Rate of acute occupational pesticide-related illness (per million FTEs), 1998-2005

## Agricultural Industry Only (BOC codes 010-030)



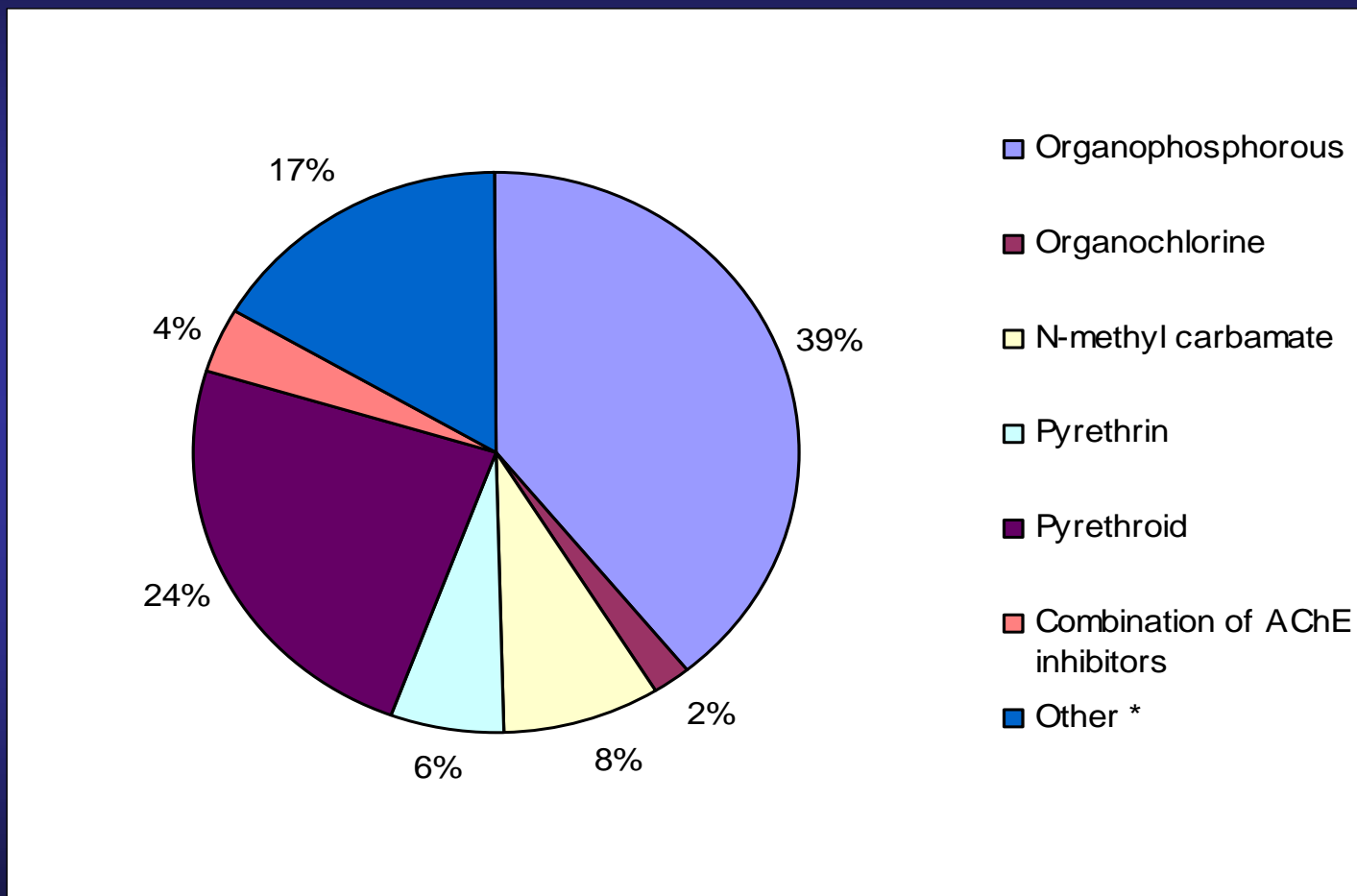


# Pesticide Functional Class, 1998-2005 (n=4,322)





# Pesticide Chemical Class for Insecticide Cases, 1998-2005 (n=2,140)



\*"Other" includes insecticide products that contain AIs of more than one chemical class, and insecticide products with AIs that don't fall into any of the above chemical classes.



# Outbreaks/emerging AFF problems recently identified

- **Illnesses associated with off-target drift of chloropicrin - California, 2003**
  - **Impact:** Reinforced the need for a reevaluation of chloropicrin, and supports the need for funds to cover medical expenses of pesticide-drift victims.
- **Illnesses associated with pesticide use at schools, US 1998-2001**
  - **Impact:** 31% associated with drift from nearby farms. Article received extensive media coverage, raising awareness of the need to reduce pesticide exposures at schools.
- **Case report: Three farmworkers who gave birth to infants with birth defects closely grouped in time and place — Florida and North Carolina, 2004-2005**
  - **Impact:** Raised awareness about many issues: risks faced by farmworkers, toxicity of pesticide mixtures, interactions between genetics and environmental exposures, lack of regulatory enforcement



# Outbreaks/emerging AFF problems recently identified

- **Worker illness related to ground application of cyfluthrin**
  - **Impact:** Further documented that drift is a common problem. Highlighted shortcomings with current pesticide regulations. Notification of a pesticide application is not required for workers employed at nearby farms.
- **Acute pesticide poisoning associated with pyraclostrobin exposure**
  - **Impact:** Raised awareness of risks of accelerated corn production. Reinforced the importance of compliance with pesticide regulations.
- **Acute pesticide poisoning among agricultural workers in the United States, 1998-2005**
  - **Impact:** In press, Am J Ind Med. Will raise awareness of the need to strengthen the Worker Protection Standard



# Unique Characteristics of the WA State program

- Longstanding length of operation
  - Early 1970s
- Higher staffing levels
  - Most states have  $\leq 1$  FTE on pesticide surveillance
- Staff decentralized throughout state
- Excellent access to workers' compensation data



# SENSOR-Pesticides is an important program

- Addresses widespread concern about pesticides
- The SENSOR-Pesticides program has been productive and has made many meaningful contributions
- Builds on CDC's long history of collaboration with state departments of health
- "Best" national surveillance system for acute pesticide poisoning