Reporting, Surveillance, Legal Aspects of Pesticide Related Illnesses

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Reporting Requirements

Why is reporting a pesticide illness important?

- Vignette: In 1993 the EPA Registration for phosphamidon on Apple Trees expired.

  The only available cost effective alternative for aphid control still approved for use on apple was phosdrin.

Phosdrin & Phosphamidon

- Workers began to use Phosdrin in Washington State, a chemical rarely used in the past.

Phosdrin	LD 50mg/kg	2-4	4-40
Posphamidon	LD 50mg/kg	10-20	367

- Pesticide Poisonings began to roll in.

How did we Know to act?

- During the course of the summer of 1993 Department of Health received notice of and investigated 26 acute pesticide poisonings with Phosdrin
- An emergency ban on Phosdrin was initiated by the state
- Phosdrin was eventually deregistered by the EPA

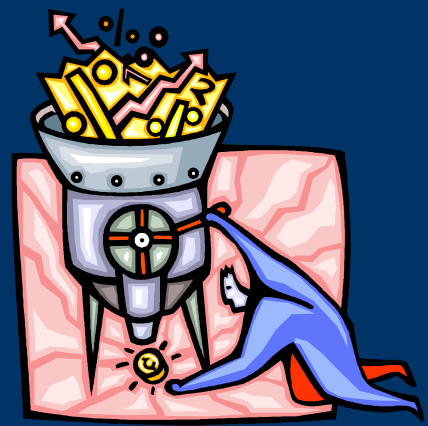
Surveillance of Pesticide Poisonings: How it can make a Difference

- California system: 1970s California began surveillance of pesticide poisonings
- Washington State began pesticide poisoning surveillance in 1991
- This event highlights the importance of surveillance of pesticide poisonings which identified an outbreak early on and resulted in a prompt public health intervention

MMWR report available:
http://www.cdc.gov/mmwr/preview/mmwrhtml/00023208.htm

Surveillance is:

- The systematic collection and evaluation of all aspects of exposure occurrence and sequelae- useful in controlling exposure.
- **Screening** is testing a person or population for the presence of disease or a marker of disease



Washington State Pesticide Events - 2003

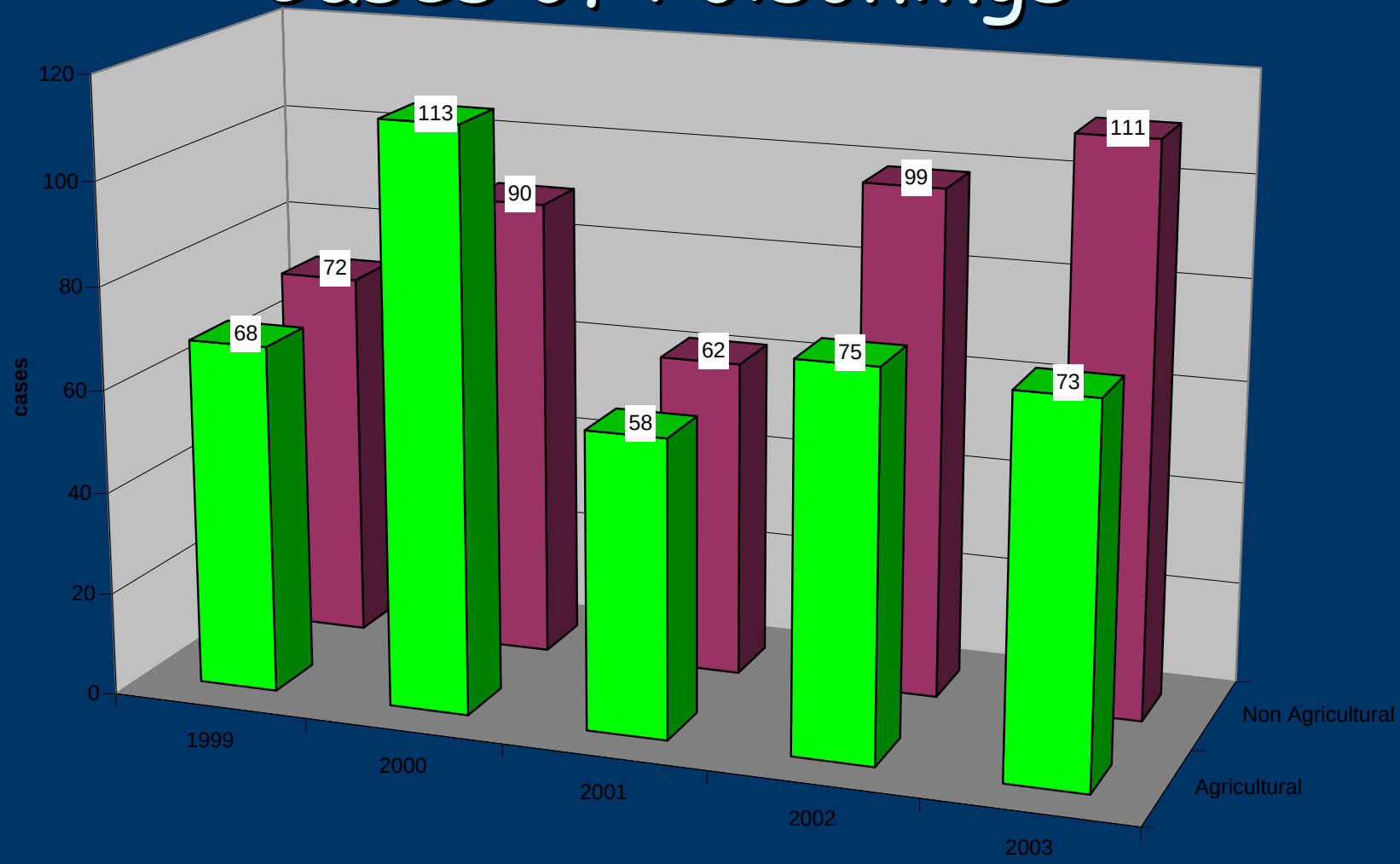
Department of Health: 242 incidents involving 275 individual cases

Type of incident	**242**	**Classification of cases**	**275**
▪ Agriculture	103	▪ Definite	69
▪ Residential	83	▪ Probable	53
▪ Commercial/Industrial	32	▪ Possible	62
▪ Other	24	▪ Suspicious	21
		▪ Unlikely	23
		▪ Insufficient information	47
Childhood cases ≤ 18 years old	**38**	**Definite, probable or possible cases**	**184**
▪ Definite, probably or possible	26	▪ Agriculture	73
		▪ Non Agriculture	111

67%

Source: 2004 Pesticide Incident Reporting and Tracking (PIRT) Annual Report

Agricultural vs. Non-Agricultural Cases of Poisonings



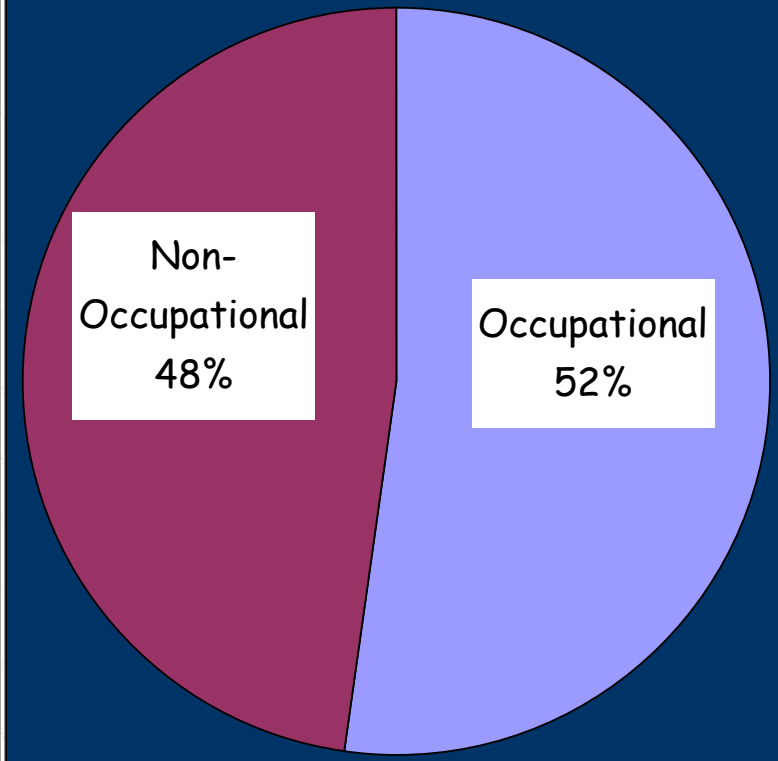
Source: 2004 Pesticide Incident Reporting and Tracking (PIRT) Annual Report

Occupational versus Non-Occupational Cases of Pesticide Poisoning

Table 34. Occupational and Non-Occupational Cases* by Age and Gender, 2003

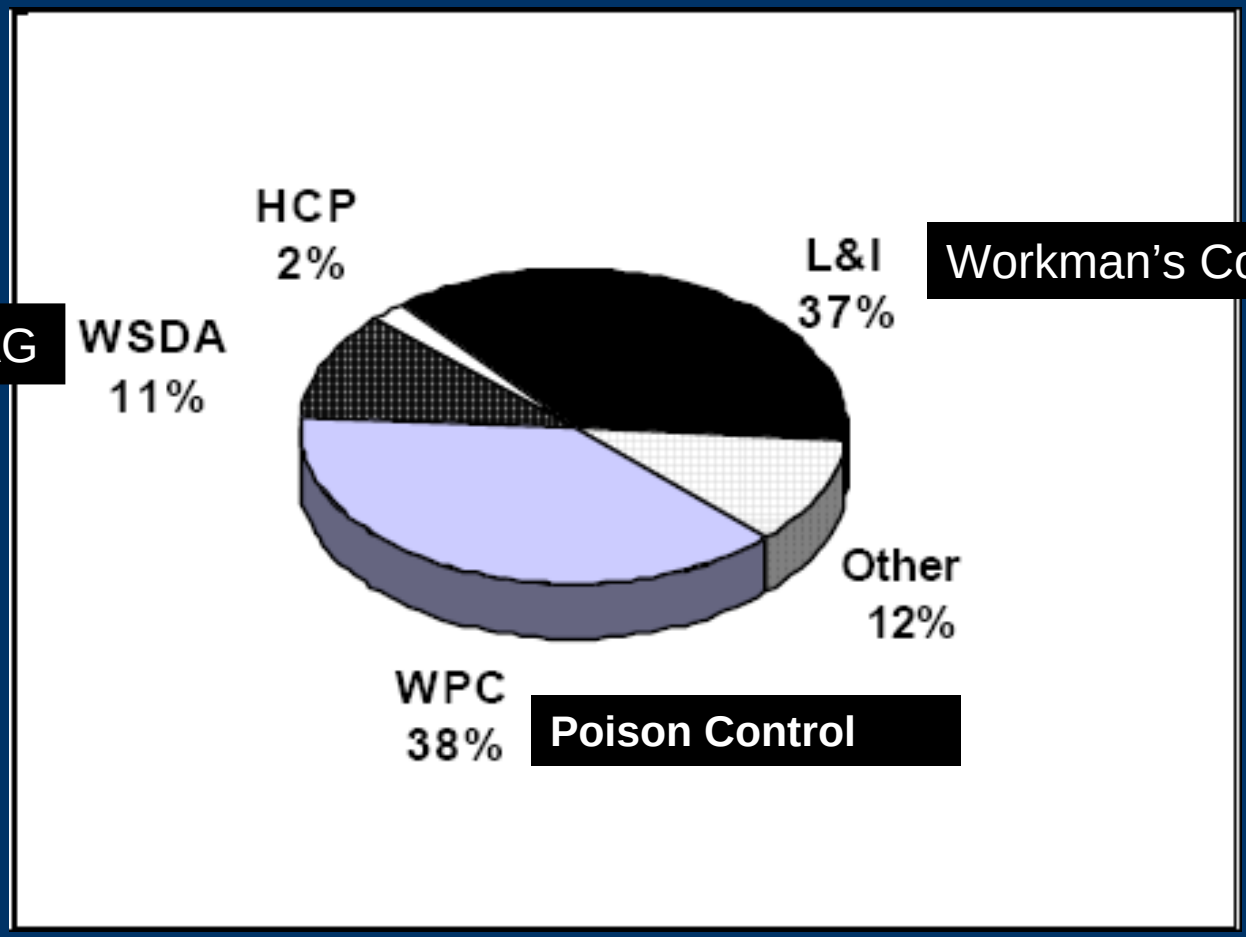
Age	Occupational		Non-Occupational		Total
	Female	Male	Female	Male	
0 - 5	0	0	5	8	13
6 -11	0	0	3	2	5
12-18	0	2	1	5	8
19-29	5	23	3	5	36
30-49	12	42	14	16	84
50+	5	7	18	8	38
Unk	0	0	0	0	0
Total	22	74	44	44	184

* *Limited to cases with illness classified by DOH as definitely, probably, or possibly due to pesticide exposure.*



Source: 2004 Pesticide Incident Reporting and Tracking (PIRT) Annual Report

Washington State Source of Case Reports 2002 and 2003 Combined



Source: 2004 Pesticide Incident Reporting and Tracking (PIRT) Annual Report

Proportion of Poisonings

Ranked 8th Cause of Poisonings = 102,754 cases in 2005 (4.2%)

Children

Table 17B Substances most frequently involved in pediatric exposures (children younger than 6 years)

Substance	No.	%*
Cosmetics and personal care products	168021	13.4
Cleaning substances	124962	10.0
Analgesics	98237	7.9
Topicals	92482	7.4
Foreign bodies	91101	7.3
Cough and cold preparations	67494	5.4
Plants	55078	4.4
Pesticides	52174	4.2
Vitamins	48989	3.9
Antihistamines	34401	2.8
Antimicrobials	33528	2.7
Gastrointestinal preparations	30289	2.4
Arts/crafts/office supplies	29798	2.4
Electrolytes and minerals	24886	2.0
Hormones and hormone antagonists	22877	1.8

Despite a high frequency of involvement, these substances are not necessarily the most toxic, but rather may be the most readily accessible.

* Percentages are based on the total number of exposures in children younger than 6 years (1 250 536) rather than the total number of substances.

Adults

Table 17C Substances most frequently involved in adult exposures (>19 years)

Substance	No.	%*
Analgesics	124186	14.9
Sedatives/hypnotics/antipsychotics	97714	11.7
Cleaning substances	82854	9.9
Antidepressants	67479	8.1
Bites/envenomations	62027	7.4
Cardiovascular drugs	46470	5.6
Alcohols	44809	5.4
Pesticides	40328	4.8
Food products, food poisoning	39327	4.7
Cosmetics and personal care products	38081	4.6
Chemicals	27743	3.3
Hydrocarbons	27589	3.3
Fumes/gases/vapors	26968	3.2
Anticonvulsants	26555	3.2
Antihistamines	24079	2.9
Stimulants and street drugs	23265	2.8
Antimicrobials	22479	2.7
Hormones and hormone antagonists	21102	2.5
Cough and cold preparations	18673	2.2
Muscle relaxants	17526	2.1

Despite a high frequency of involvement, these substances are not necessarily the most toxic, but rather may be the most readily accessible.

* Percentages are based on the total number of exposures in adults older than 19 years (835 832) rather than the total number of substances.

Source: Watson WA. 2004 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System

US: Intentional vs. Unintentional

Pesticides: herbicides (including algæcides, defoliants, desiccants, and plant growth regulators)					
232 a	34 y	2,4-Dichloro-phenoxyacetic acid	A	Ing	Int suicide
233	30 y	2,4-Dichloro-phenoxyacetic acid Gasoline	A	Ing	Int suicide
234 a	75 y	Glyphosate	A	Ing	Int suicide
Pesticides: insecticides (including insert growth regulators, molluscicides, nematicides)					
235	24 y	Cypermethrin/imiprothrin	A	Asp/ing	Int suicide
236	89 y	Diazinon	A	Ing	Int suicide
237	>19 y	Organophosphate	A	Ing/paren	Int suicide
238 a		Terbufos	A	Ing	Int suicide

Out of 196,164 suicide fatalities 7 used pesticides

Accidental

Suicide

84%

8%

Table 6A Re ure cases

Reason	No.	%
Unintentional		
General	1 511 748	62.0
Therapeutic error	222644	9.1
Misuse	96124	3.9
Bite/sting	89 562	3.7
Environmental	55 725	2.3
Food poisoning	36 851	1.5
Occupational	34452	1.4
Unknown	3496	0.1
Subtotal	2 050 602	84.1
Intentional		
Suspected suicidal	196164	8.0
Abuse	45562	1.9
Misuse	43514	1.8
Unknown	16014	0.7
Subtotal	301 254	12.4
Other		
Malicious	9291	0.4
Contamination/tampering	4592	0.2
Withdrawal	1022	0.0
Subtotal	14905	0.6
Adverse reaction		
Drug	42812	1.8
Food	5319	0.2
Other	13123	0.5
Subtotal	61254	2.5
Unknown	10629	0.4
Total	2 438 644	100.0

WHO Sentinel Surveillance

Country	INDIA	NEPAL	INDONESIA	THAILAND	MYANMAR	PHILIPPINES
Time period	12 mo	6 mo	6 mo	6 mo	12 mo	10 mo
Reporting sites	10	5	8	9	8	38
Cases	1531	256	126	130	208	327
Circumstances identified	95%	93%	96%	98%	94%	99%
Intentional	**89%**	**92%**	**43%**	**62%**	**86%**	**87%**
Accidental	5%	1%	16%	8%	8%	8%
Occupational	6%	0%	37%	28%	0%	4%

What to Do With a Sick Farm Worker

- Mr Gomez reports to clinic with nausea, vomiting, headache, blurry vision, abdominal cramping, weakness.
- He is sweating, has pinpoint pupils, has fasciculations, bradycardia
- Your history confirms you suspicion
  - OP pesticide overexposure
  - You treat with atropine, 2-pam and hospitalize
- Who ya gonna call? When you gonna call?

Surveillance and Worker Compensation

- In Washington State
  - Filing a worker compensation claim results in a report but does not satisfy reporting requirements*
- Reporting a Pesticide Poisoning in Washington
  - Calling Poison Control 1 800 222 1222
  - Calling WA DOH 1 877 485 7316
    - Hospitalizations and Deaths must be reported immediately
    - Others - 3 days.

•**Pesticide poisonings-Reports.**
•http://apps.leg.wa.gov/RCW/default.aspx?cite=70.104.055

Ethical/Legal Requirements

- To report or not to report
  - A legal obligation in 30 states.
  - Investigations in 9 states
- To report a dangerous workplace
  - An ethical obligation- you are obliged to act
- **Each employer – (OSHA General Duty Clause)**
  (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

  (2) shall comply with occupational safety and health standards promulgated under this Act.

Int Code of Ethics for Occ Heatlh Prof http://www.icoh.org.sg/core_docs/code_ethics_eng.pdf
AAOHN Code of Ethics http://www.aaohn.org/practice/standards.cfm
ACOEM Code of Ethics http://www.ohr.psu.edu/OCCMed/ethics.cfm
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=3359

NIOSH Sentinel Event Notification System SENSOR

- Eight States are funded to provide in depth investigatory information about reported pesticide poisonings
- Four states provide data unfunded
- Aggregate data is available for the country
- Estimates of the national burden can be made from Sensor Data
- Trends can be seen
- Outbreaks identified
- Basis for future epidemiological studies

NIOSH Sensor program http://www.cdc.gov/niosh/topics/pesticides/

NIOSH
The National Institute for Occupational Safety and Health

Other Pertinent Standards

- EPA Worker Protection Standard
  - Training, Notification, Personal Protective Equipment, Decontamination, Medical emergencies
  - Medical Provider's "right to know"
- OSHA Workers "Right to Know"
  - Employee has access to MSDS.
  - Information provided to worker and medical provider

WPS http://www.epa.gov/pesticides/safety/workers/PART170.htm#170.7

Worker Protection Standard

Federal regulation applying to pesticide applicators and field workers requiring:

- Posted warnings about pesticide applications
- Provision of personal protective equipment (PPE)
- Restrictions on re-entry into treated areas
- Decontamination facilities
- Emergency medical assistance information and transportation
- Provide basic pesticide safety training.
- Post nearest medical facility's phone/address.
- Provide transportation to medical care if exposure occurs on the job.
- Provide MSDS and pesticide label to employee and medical provider, with description of how used and exposure details.

Other Standards

- FIFRA: *Federal Insecticide, Fungicide, Rodenticide Act*
  - Defines pesticides and label as law
- FFDCA: *Federal Food, Drug, and Cosmetic Act*
  - Tolerances, residues at harvest, on human and animal feed
- FQPA: *Food Quality Protection Act*
  - Health based standard for pesticides
  - Ten-fold safety factor
  - Cumulative exposure concept

Other Standards

- OSHAct: *Occupational Safety and Health Act*
  - Covers workers who manufacture, formulate, distribute pesticides
- TSCA: *Toxic Substances Control Act*
  - Inventory of toxic chemicals
  - Authority to regulate chemicals given to EPA