



# Department of Pesticide Regulation



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## MEMORANDUM

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SUBJECT: PHYSICIAN FEEDBACK 2003

The physician feedback project was developed as a mechanism to acknowledge physicians properly reporting pesticide-related illnesses. This process was initially established for year 2000 cases (released in 2002). In conjunction with the annual release of the Pesticide Illness Surveillance Program data, the Department of Pesticide Regulation (DPR) sends a letter to physicians who properly reported cases with information about the availability of the annual report and offer to prepare a custom query of the database for cases in their county. Although California has the most extensive and long-standing reporting system in the United States, pesticide-related illnesses are under-reported by physicians. Among the reasons for underreporting are thought to be lack of training for physicians in the area of recognition, diagnosis and treatment, and unfamiliarity with state reporting requirements.

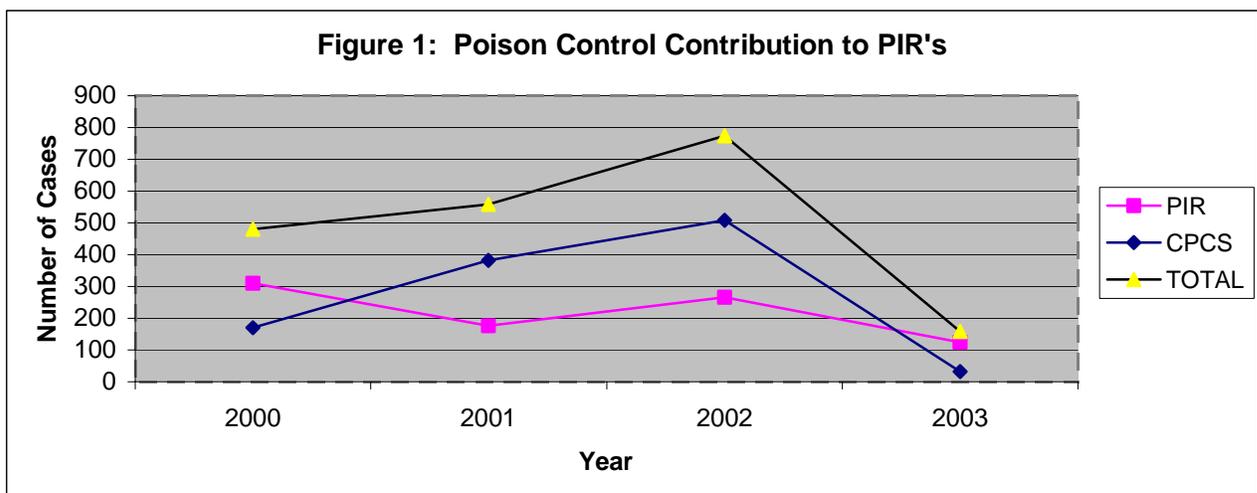
California Health and Safety Code Section 105200 requires that a physician who knows, or has reason to believe, that a patient is suffering from pesticide poisoning to report the case to the local health officer by telephone within 24 hours. When this requirement is met, the local health officer (or designated representative) informs the county agricultural commissioner (CAC) and also completes a Pesticide Illness Report (PIR), copies of which are distributed to the State Office of Environmental Health Hazard Assessment (OEHHA), to the Department of Industrial Relations (DIR) and DPR. Annual reporting of pesticide incidents by doctors via PIR accounted for only 13 percent of the cases reported in 2003. Between 1998 and 2002 the number of cases received as a PIR ranged from 27 to 57 percent with an average of 40 percent of total illnesses reported. The remaining reported cases come from evaluation of workers' compensation documents (Doctor's First Report of Occupational Illness and Injury).

DPR has been concerned about lack of compliance with the pesticide reporting law for many years. The physician feedback project was initiated after exploring several different methods to improve the completeness and timeliness of pesticide illness reporting. In 1994, DPR initiated an effort to enhance physician reporting and familiarity of the requirement by sending summaries of the reporting requirements for pesticide



related conditions to all actively registered physicians within the state of California. Subsequently, throughout 1995 and 1996, DPR sent individual reminders when it was determined that physicians failed to report pesticide-related illnesses. These physicians were predominantly identified through Doctor's First Report of Occupational Injury or Illness. Physicians are required to file this report within 5 days of an initial examination, for every occupational injury or illness they encounter.

Another effort to improve reporting was the cooperation between DPR and the California Poison Control System (CPCS). The role of the CPCS was to facilitate the reporting of probable pesticide exposures cases. Cases identified for reporting include those meeting the following criteria: a) exposures occurred to an identified pesticide b) patient was symptomatic and c) patient was seen by a health care provider. This effort is particularly promising in identification of pesticide illnesses and provides information faster than all other avenues of reporting. In 2002, DPR assigned 508 cases for investigation based on PIRs that CPCS had helped to provide (Figure 1). Only 33 suspected or confirmed illness cases were identified through the CPCS system in 2003. This significant drop coincided with the expiration of a federal grant and DPR was not able to identify a funding source.



PIR – Pesticide Illness Report (physician reporting).

CPCS – California Poison Control System (facilitated physician reporting).

Feedback from the 1994 effort resulted in several proposed reasons for the failure of physician's to report. Physicians may be unaware of the reporting requirement or may not recognize that their patients are suffering from pesticide exposure. In some cases, physicians do not understand what constitutes a pesticide, antimicrobials in particular.

Secondly, although a physician need only report to the local health officer, the number of agencies to whom the reports are submitted is confusing. These problems were addressed by the cooperative effort with CPCS. However, one of the biggest criticisms of the system was the lack of feedback to the reporting physician regarding the outcome of investigations. It was also suggested that the resulting data is underutilized, and that physicians are not provided with the percentage of actual pesticide illnesses relative to the number of physician reports received.

The current physician feedback project was developed in response to physicians who have expressed interest in learning the outcome of pesticide related illnesses that they have reported to DPR. Each physician or their staff member was sent a summary letter describing our objective with a prepaid response card offering them the opportunity to accept or decline further information. This included the option of requesting a printed copy of our illness surveillance program description, an annual pesticide incident summary, statewide pesticide summary tabulations, and county specific pesticide illness profiles. The physicians that requested to remain on the mailing list last year were sent a slightly different summary letter notifying them of the 2003 report availability.

The “feedback” letters acknowledged the fact the medical provider reported a pesticide-related illness or injury case(s) to the local health officer in accordance with the Health and Safety Code section 105200 during the years 2000 - 2003. They were advised that the case was thoroughly investigated by the local CAC and the resulting data from the investigation was combined with the medical records and entered into our pesticide illness surveillance database. In addition, it was pointed out the data is used to identify pesticide-related illness trends and evaluate the effectiveness of our regulatory program.

A total of 1232 potentially pesticide-related illnesses were reported to DPR via all mechanisms. Only, 158 PIRs were filed by 64 individual physicians in the year 2003. Thirty-three of the 158 PIRs were facilitated by CPCS.

A total of sixty-four letters announcing the release of the 2003 data were sent out to 2003 filers. All physician addresses were identified. An additional 130 notification letters were sent out to those physicians who requested to remain on the list. Twenty-two postcard responses were received from physicians with 11 requests for 11 distinct counties (Table 1). Thirteen physicians requested to remain on the list. The overall response rate for 2003 feedback project was 34 percent of which 52 percent requested data. Only 11 letters from both the 2003 filers and those requesting to remain on the list were returned to sender as undeliverable.

**Table 1: Summary of Physician Requests for 2003 County Specific Data**

County	Number of Requests	County	Number of Requests
Colusa	1	Sacramento	1
El Dorado	1	Santa Clara	1
Glen	1	Solano	1
Kern	1	Sonoma	1
Los Angeles	1	Yolo	1
Orange	1		

Fifty percent of the cases reported via PIR were related to non-agricultural pesticide use in contrast to 40 percent related to agricultural pesticide use. The remaining 10 percent of cases were not classified as either agricultural or non-agricultural because it was determined during the investigation that no pesticide application had taken place. Sixty percent of the cases were occupational in nature, with the 30 percent being a non-occupational exposure. For one case, it could not be determined whether or not the case was occupational in nature. The remaining cases were determined to not be pesticide related and therefore the occupational status was classified as not applicable. Fourteen of the reported cases involved individuals less than six years of age (Table 2). Table 3 contains statistics of the cases reported by physicians via PIR in 2003.

**Table 2: Properly Reported Pesticide Illness Reports 2003 by Age**

Less than 6 years old	6-18 years old	Greater than 18 years old	Unknown
14	6	134	4

**Table 3: Illnesses Properly Reported by Physicians in California<sup>1</sup> Summarized by Type of Activity and Exposure 2003**

**Occupational<sup>2</sup>**

Type of Activity <sup>3</sup>	Type of Exposure <sup>4</sup>								Total
	Drift	Residue	Direct Spray/Squirt	Spill/Other Direct	Ingestion	Multiple	Other	Unknown	
Mixer/Loader	5	1	0	5	0	0	1	1	13
Applicator	6	0	6	2	0	0	2	10	26
Mechanical	0	0	3	1	0	0	0	0	4
Packaging/Processing	2	0	0	0	0	0	0	0	2
Field Worker	7	16	0	0	0	1	0	0	24
Routine Indoor	2	4	2	0	0	0	2	0	10
Routine Outdoor	1	0	0	0	0	2	0	0	3
Transport/Storage/Disposal	0	0	0	1	0	0	0	0	2
Emergency Response	0	3	0	0	0	0	0	2	5
Other	1	0	1	1	0	2	0	0	5
Unknown	0	0	0	0	0	0	0	1	1
<b>Total Occupational Cases</b>	<b>24</b>	<b>24</b>	<b>12</b>	<b>10</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>14</b>	<b>95</b>

**Non-Occupational<sup>2</sup>**

Type of Activity <sup>3</sup>	Type of Exposure <sup>4</sup>								Total
	Drift	Residue	Direct Spray/Squirt	Spill/Other Direct	Ingestion	Multiple	Other	Unknown	
Applicator	4	0	0	2	0	0	0	1	7
Routine Indoor	0	4	1	0	7	3	0	2	17
Routine Outdoor	0	0	0	1	1	0	0	2	4
Other	2	0	0	1	12	1	1	0	17
Unknown	0	0	0	0	1	1	0	0	2
<b>Total Non-Occupational Cases</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>21</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>47</b>
<b>Total Occupational/ Non-Occupational</b>	<b>30</b>	<b>28</b>	<b>13</b>	<b>14</b>	<b>21</b>	<b>10</b>	<b>6</b>	<b>21</b>	<b>158</b>

<sup>1</sup> **Source:** California Department of Pesticide Regulation, Pesticide Illness Surveillance Program. A total of 1232 reports were received via all methods; only 13% (158) were properly reported.

<sup>2</sup> **Occupational Status:** Occupational or Non-Occupational

Occupational : Work related. The individual was on the job at the time of the incident. This includes both paid employees and volunteers working in similar capacity to paid employees.

Non-Occupational : Not work related. The individual was not on the job at the time of the incident. This category includes individuals on the way to or from work (before the start or after the end of their workday).

<sup>3</sup> **Type of Activity:** Activity of the injured individual at the time of exposure

- Mixer/Loader : Mixes and/or loads pesticides. This includes: (1) removing a pesticide from its original container, (2) transferring the pesticide to a mixing or holding tank, (3) mixing pesticides prior to application, (4) driving a nurse rig, or (5) transferring the pesticide from a mix/holding tank or nurse rig to an application tank.
- Applicator : Applies pesticides by any method or conducts activities considered ancillary to the application (e.g., cleans spray nozzles in the field).
- Mechanical : Maintains (e.g. cleans, repairs or conducts maintenance) pesticide contaminated equipment used to mix, load or apply pesticides as well as the protective equipment used by individuals involved in such activities. This excludes the following: 1) maintenance performed by applicators on their equipment incidental to the application; 2) maintenance performed by mixer/loaders on their equipment incidental to mixing and loading; 3) decontamination by HAZMAT teams.
- Packaging/Processing : Handles (packs, processes or retails agricultural commodities from the packing house to the final market place. Field packing of agricultural commodities is classified as FIELD WORKER.
- Field Worker : Works in an agricultural field performing tasks such as advising, scouting, harvesting, thinning, irrigating, driving tractor (except as part of an application), field packing, conducting cultural work in a greenhouse, etc. Researchers performing similar tasks in an agricultural field are also included.
- Routine Indoor : Conducts activities in an indoor environment with minimal expectation for exposure to pesticides. This includes people in offices and businesses, residential structures, etc. who are not handling pesticides.
- Routine Outdoor : Conducts activities in an outdoor environment with minimal expectation for exposure to pesticides. This excludes field workers in agricultural fields. This includes gardeners who are not handling pesticides.
- Transport/Storage/Disposal : Transports or stores pesticides between packaging and preparation for use. This includes shipping, warehousing and retailing as well as storage by the end-user prior to preparation for use. Disposal of unused pesticides is also included in this activity. This excludes driving a nurse rig to an application site.
- Emergency Response : Emergency Response Personnel (Police, fire, ambulance and HAZMAT personnel) responding to a fire, spill, accident, or any other pesticide incident in the line of duty.
- Other : Activity is not adequately described by any other activity category. This includes but is not limited to: 1) being inside a vehicle; 2) dog groomers not handling pesticides; 3) individuals handling pesticide treated wood; 4) two or more activities with potential for pesticide exposure.
- Unknown : Activity is not known

<sup>4</sup> **Type of Exposure:** Characterization of how an individual came in contact with a pesticide.

- Drift : Spray, mist, fumes, or odor carried from the target site by air. Drift must be related to an application or mix/load activity.
- Residue : The part of a pesticide that remains in the environment for a period of time following an application or drift. This includes odor after the completion of an application.
- Direct Spray/Squirt : Material propelled by the application or mix/load equipment. Contact with the material can be by direct projection or ricochet. This includes exposure of mechanics working on application or mix/load equipment when the material is forced out by pressure.
- Spill/Other Direct : Any of the following: 1) Contact made during an application or mixing/loading operation where the material is not propelled by the equipment; 2) Expected direct contact during use (e.g. washing dishes in a disinfectant solution); 3) Leaks, spills, etc. not related to an application.
- Ingestion : Intentional or unintentional oral ingestion.
- Multiple : Contact with pesticides occurred through two or more mechanisms.
- Other : Other known route of exposure not included in other exposure categories. This includes, but not limited to: 1) Residue from a spill and 2) Exposure to smoke or pyrolytic products from a fire where pesticides are burning.
- Unknown : Route of exposure is not known.

DPR continues exploring methods to improve reporting and increase the capturing of illness data to assure an accurate account of pesticide-related health problems in California. In the fall of 2004, DPR began participating in a project with OEHHA to improve the timeliness, quality, and completeness of illness reporting. This project is funded by a \$750,000 grant from the U.S. Environmental Protection Agency and negotiations are underway to reestablish cooperation with CPCS. Training for physicians to better recognize and report suspected pesticide illnesses is an important component of this project. Under a web-based reporting mechanism, physicians will be able to submit reportable diseases, including pesticide-related illness, via a normal reporting mechanism (California Morbidity Report) through the internet to the local health officer. This may result in significant improvements in information exchange among physicians, poison control centers, local health officers, CACs, and state regulatory and public health agencies. In addition, timely illness investigations by the appropriate local and state agencies will result in more meaningful findings.

This physician feedback project will be continued in 2005 for the 2004 data. Reporting physicians will be offered follow-up information regarding cases they have reported through the system.