



Department of Pesticide Regulation



Paul Gosselin
Acting Director

MEMORANDUM

Arnold Schwarzenegger
Governor

TO: Sue Edmiston, Agriculture Program Supervisor III
Worker Health & Safety Branch **HSM-04022**

FROM: Kathy Orr, Associate Environmental Research Scientist *[original signed by K Orr]*
Worker Health & Safety Branch
(916) 445-4196

DATE: July 6, 2004

SUBJECT: PHYSICIAN FEEDBACK 2002

The purpose of this project was to develop a feedback mechanism to physician's who properly reported pesticide-related illnesses in 2002. This feedback mechanism was initially established for year 2000 cases (released in 2002). When the annual illness summary report is released, 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 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 Department of Pesticide Regulation (DPR). Annual reporting of pesticide incidents by doctors via PIR accounted for 42 percent of the cases reported in 2002. Between 1997 and 2001 the number of cases received as a PIR ranged from 27 to 57 percent with an average of 39 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).

After DPR explored several different methods to improve the completeness and timeliness of pesticide illness reporting in California, the physician feedback project was initiated. In 1994, DPR initiated an effort to enhance physician reporting and familiarity of the requirement. This objective was met 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 which meet the following criteria: a) exposures occurred to an identified pesticide b) patient is symptomatic c) patient is being seen by a health care provider. This series of contracts started with only the Fresno Center. The second was statewide. In 2001, renewed United States Environmental Protection Agency (U.S. EPA) funding allowed DPR to negotiate a new contract with CPCS. 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.

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 are addressed by the cooperation 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 (attachment I) describing our objective with a prepaid response card (attachment II) offering them the opportunity to accept or decline further information when the next year's data is released. 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 summary letter (attachment III) notifying them of the 2002 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 - 2002. They were advised that the case was thoroughly investigated by the local county agricultural commissioner 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.

Four hundred thirty-four individual physicians filed 775 PIRs in the year 2002. Five hundred eight of the 775 PIRs were facilitated by CPCS. A total of 330 letters announcing the release of the 2002 data were sent out to 2002 filers where the physician was identified. The addresses for the remaining 104 physicians were not available. An additional 86 were sent out to those physicians who requested to remain on the list.

Seventy-one postcard responses were received from physicians with 26 requesting 20 county summaries from 16 distinct counties. Forty-four physicians requested to remain on the list. The overall response rate for 2002 feedback project was 21 percent with 8 percent requesting data, excluding 46 letters, which were returned to sender as undeliverable.

Table 1: Summary of Physician Requests for 2001 County Specific Data

County	Number of Requests	County	Number of Requests
Calaveras	1	Napa	1
Contra Costa	1	Orange	1
Fresno	1	Riverside	3
Glenn	1	San Diego	1
Kern	1	San Joaquin	2
Mendocino	2	San Luis Obispo	1
Merced	1	Shasta	1
Monterey	1	Yolo	1

Sixty-three percent of the physicians who responded to the mailing reported cases related to non-agricultural pesticide use in contrast to 29 percent related to agricultural pesticide use. The remaining eight 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. Forty-six percent of the cases were occupational in nature, with the balance (54 percent) being a non-occupational exposure. Eighty-five of the reported cases involved individuals less than six years of age (Table 2). Table 3 contains statistics of the cases reported by physicians in 2002.

Table 2: Properly Reported Pesticide Illness Reports 2001 by Age

Less than 6 years old	6-18 years old	Greater than 18 years old	Unknown
85	61	608	21

This physician feedback project will be continued in 2004 for the 2003 data. Reporting physicians shall be offered follow-up information regarding cases they have reported through the system.

Table 3: 2002 Physician Reported Pesticide Illness Reports in California¹ Associated With² Pesticide Exposure Summarized by the Type of Activity and Type of Exposure

Occupational³

Type of Activity ⁴	Type of Exposure ⁵								
	Drift	Residue	Direct Spray/Squirt	Spill/Other Direct	Ingestion	Multiple	Other	Unknown	Total
Mixer/Loader	6	0	2	16	0	0	1	1	26
Applicator	22	1	9	16	0	2	2	19	71
Mechanical	1	0	0	0	0	0	0	0	1
Packaging/Processing	3	1	0	0	0	4	0	0	8
Field Worker	19	49	0	0	0	0	0	1	69
Routine Indoor	6	8	0	3	0	1	3	1	22
Routine Outdoor	9	0	1	0	0	0	0	1	11
Transport/Storage/Disposal	0	0	0	2	0	0	6	0	8
Emergency Response	0	0	0	0	0	0	4	0	4
Other	2	6	0	3	0	0	14	0	25
Total Occupational Cases	68	65	12	40	0	7	30	23	245

Non-Occupational³

Applicator	46	0	12	15	0	2	4	11	90
Routine Indoor	9	20	3	2	15	2	4	5	60
Routine Outdoor	10	3	2	1	6	0	2	2	26
Transport/Storage/Disposal	0	0	0	0	0	0	1	0	1
Mixer/Loader	6	0	0	9	1	1	3	0	20
Other	2	0	2	7	28	4	2	4	49
Unknown	0	0	0	0	0	0	1	0	1
Total Non-Occupational Cases	73	23	19	34	50	9	17	22	247
Total Occupational/ Non-Occupational	141	88	31	74	50	16	47	45	492

Table 3 footnotes:

¹ **Source:** California Department of Pesticide Regulation, Pesticide Illness Surveillance Program.

² **Associated With:** Includes cases classified as definitely, probably or possibly related to pesticide exposure

Definite : High degree of correlation between pattern of exposure and resulting symptomatology. Requires both medical evidence (such as measured cholinesterase inhibition, positive allergy tests, characteristic signs observed by medical professional) and physical evidence of exposure (environmental and/or biological samples, exposure history) to support the conclusions.

Probable : Relatively high degree of correlation exists between the pattern of exposure and the resulting symptomatology. Either medical or physical evidence is inconclusive or unavailable.

Possible : Some degree of correlation evident. Medical and physical evidence are inconclusive or unavailable.

³ **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).

⁴ **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.

Table 3 footnotes (con't):

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

⁵ **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.

Table 3 footnotes (con't):

- | | |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. |

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Attachment I

<MONTH> <DAY> <YEAR>

<Salutation><FNAME><LNAME>
<HOSPITAL_CLINIC>
<Address1>
<CITY>, <STATE>, <ZIP>

Dear <Salutation> <LNAME>:

In 2002, you reported a pesticide-related illness or injury case(s) to the local health officer in accordance with the Health and Safety Code section 105200. Each case you reported was thoroughly investigated by the local county agricultural commissioner. The data from the investigation and medical records were entered into our pesticide illness surveillance database. These data are used to identify pesticide-related illness trends and evaluate the effectiveness of our pesticide regulatory program.

The annual summary report of cases reported during 2002 is now available. It can be viewed and down loaded from our department web site at <http://www.cdpr.ca.gov/docs/whs/pdf/hs1851.pdf>. Printed copies are available by request. The enclosed response card includes the option of requesting a printed copy.

We also offer you the option of receiving specialized reports, describing the distribution of pesticide incidents in your county by pesticides involved and exposure circumstances. If you have particular questions about the results or operations of the Pesticide Illness Surveillance Program, please feel free to contact me electronically at korr@cdpr.ca.gov or by mail at:

Pesticide Illness Surveillance Program
Worker Health and Safety Branch
Department of Pesticide Regulation
California Environmental Protection Agency
Post Office Box 4015
Sacramento, California 95812-4015

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Please take a few moments to fill out the postage paid card included with this letter. We would like to hear from you. Thank you for helping us keep track of pesticide health effects in California.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathy Orr". The signature is fluid and cursive, with a large, stylized "K" and "O".

Kathy Orr
Associate Environmental Research Scientist
Worker Health and Safety Branch
(916) 445-4196

Attachment II

«SAL» «FIRST» «LAST»
«CLINIC»
«ADD»
«CTY», «STATE» «ZIP_CODE»

I would like to continue to receive notifications of report availability

- NO: remove my name from your mailing list
- YES: keep my name and address on file as you have them
- YES: Correct my name and address to:

Send printed information

- Program description
- Annual narrative summary
- Statewide summary tabulations
- Profile for _____ County

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Attachment III

<MONTH> <DAY> <YEAR>

«SAL» «First_Name» «Last_Name»
«CLINIC»
«Address»
«CTY», «STATE» «ZIP_CODE»

Dear «SAL» «Last_Name»:

In response to our previous mailing, you indicated interest in receiving announcements of reports on health effects from pesticide exposure. The Department of Pesticide Regulation has continued to identify, investigate, and record such events. We appreciate your efforts to help us maintain effective safety standards, and will continue to notify you of report availability unless you indicate that you no longer want to receive notification. Cases identified from 2002 have been thoroughly investigated by the county agricultural commissioners. The data from the investigations and medical records were entered into our pesticide illness surveillance database. These data are used to identify pesticide-related illness trends and evaluate the effectiveness of our pesticide regulatory program.

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Kathy Orr
Associate Environmental Research Scientist
Worker Health and Safety Branch
(916) 445-4196