United States General Accounting Office

GAO

Report to Senator Harry M. Reid, U.S. Senate

July 1995

PESTICIDES

EPA's Efforts to Collect and Take Action on Exposure Incident Data

GAO/RCED-95-163

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-261118

July 12, 1995

The Honorable Harry M. Reid
United States Senate

Dear Senator Reid:

Pesticides—herbicides, insecticides, fungicides, and rodenticides, among others—are designed to kill and control living organisms such as unwanted species of plants, insects, and animals. Nonagricultural pesticides—those not intended for use in producing or preserving foods or crops—are used in places where people live, work, and play, such as homes, buildings, gardens, lawns, parks, and golf courses. Because pesticides are designed to destroy or control living organisms, exposure to them can be hazardous.

In response to your concerns about the potential health risks to consumers of exposure to pesticides through accidents, misuse, or lack of awareness of their hazards, we agreed to determine whether the Environmental Protection Agency (EPA) (1) collects information on exposure to or incidents arising from the use of nonagricultural pesticides in order to evaluate the extent of risk to human health, (2) takes action when the information it receives on such incidents indicates potential health risks, and (3) receives sufficient information to assess whether unacceptable risks are occurring. While we focused our review on exposure to nonagricultural pesticides, our discussion of EPA's monitoring activities also encompasses agricultural pesticides because the agency's current system for monitoring incidents of exposure includes both agricultural and nonagricultural pesticides.

Results in Brief

Since the 1970s, EPA has collected data on incidents of exposure to pesticides. Beginning in 1992, the agency has used a computerized management information system—the Incident Data System—to organize and track reports on such incidents.

Using these data, EPA has taken a number of measures to protect public health. For example, after analyzing data from emergency rooms, hospitals, and poison control centers, the agency determined that most uses of arsenical (arsenic-based) ant baits could no longer be used in homes because of the potential high risk to children.

Although EPA has been able to take some actions using the data collected on incidents, the reports it receives frequently contain insufficient information for the agency to determine whether the pesticide involved presents an unacceptable risk to human health. Key data such as whether the pesticide product was misused, what symptoms the victim exhibited, and how the exposure occurred are often missing from the information EPA receives. As a result, there is often no clear evidence of cause and effect, and EPA has little or no basis to assess risk and determine whether new or revised regulatory measures are needed.

EPA has recognized the limitations of its data on incidents of exposure to pesticides. In September 1994, it established a work group to develop a long-term plan for collecting and managing these data. Although the work group has already identified several specific actions that could improve the agency's ability to collect data on such incidents, it is still gathering data and has not yet developed a long-term plan with milestones for putting the most cost-effective improvements into effect. EPA has also proposed a rule that would require pesticide registrants to submit more detailed data, when available, on incidents of exposure to the agency. EPA believes this rule will improve the quality of reports on incidents, as well as increase their number, since it will clarify the responsibilities of those who register the pesticides with EPA—primarily the producers.

Background

Nonagricultural pesticides encompass a wide range of products—including home and garden insecticides and fungicides, sterilants, insect repellents, and household cleaning agents—and the potential for exposure is significant. The effects of exposure on humans depend on the characteristics of the pesticide, dosage, duration of the exposure (usually through inhalation, skin contact, or ingestion), and physiological reaction of the person affected. Some people suffer no effects; others experience symptoms ranging from relatively mild headaches, skin rashes, eye irritation, and general flu-like symptoms to more serious chemical burns, paralysis, and even death. Chronic and delayed-onset illnesses such as cancer may only appear years after repeated exposure to small doses of a pesticide.

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), EPA is responsible for ensuring that pesticides, when properly used, do not have any unreasonable adverse effects on the environment (any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any

pesticide).[1] The act authorizes EPA to register pesticide products, specify the terms and conditions of their use before they are marketed, and remove unreasonably hazardous pesticides from the marketplace. Thus, registrations are basically licenses for specified uses of pesticide products. The act also requires that EPA reassess and reregister thousands of older pesticide products on the basis of current scientific standards.

The process requires the pesticides' registrants to complete studies of various health and environmental effects, which are then reviewed by EPA to determine whether the products can be reregistered and thus remain on the market. Section 6(a)(2) of FIFRA also requires that registrants of pesticides report to EPA any additional factual information that they may obtain about unreasonable adverse effects that their registered pesticides have on the environment. According to EPA, the additional information on adverse effects that the registrants must report includes toxicology studies, human epidemiological and exposure studies, and efficacy studies, as well as incidents of pesticide exposure.

In addition, the act requires that EPA monitor, among other things, the extent to which humans, animals, and the environment are incidentally exposed to pesticides, trends over time, and the sources of contamination. According to EPA, the data on incidents of pesticide exposure often augment the extensive studies performed by registrants as part of reregistration. This review focused on the data on incidents of exposure reported to EPA.

When EPA identifies risks during its review of data on incidents, the agency may initiate one or more actions. These actions include restricting pesticide uses by placing specific instructions for use on the product's label (for example, requiring protective equipment), canceling specific uses of the pesticide, and/or canceling the pesticide's registration, thus removing the pesticide from the marketplace.

EPA Collects Data on Incidents From Registrants and Other Sources

From 1978 through 1981, EPA coordinated and collected information on incidents of pesticide exposure through its Pesticide Incident Monitoring System. The system's reports originated from registrants and from sources such as state and local agencies, poison control centers, health clinics, and hospitals that provide this information voluntarily. After this system was eliminated because of funding cuts, EPA continued to receive reports of incidents involving pesticides from registrants and from the voluntary

[1] 7 U.S.C. 136(bb).

sources. However, the agency did not have an automated system for monitoring data on such incidents until 1992, when it developed the Incident Data System to organize and track data originating from both pesticide registrants and the voluntary sources. This system stores data on incidents involving humans, domestic animals, wildlife (fish, birds, and mammals), and groundwater and surface water.

Although most—about 87 percent, according to an Office of Pesticide Programs official—of the reports on incidents in EPA's system come from registrants, EPA also receives supplementary data from voluntary sources. FIFRA does not require states or sources other than registrants to collect or submit data on exposures. However, some states have established mandatory reporting regulations specifically for pesticide-related illnesses. EPA currently receives data on incidents routinely from five of these states—either directly or indirectly. California and Washington voluntarily send annual summary reports to EPA directly, while the agency receives quarterly reports on incidents in New York, Oregon, and Texas from the National Institute of Occupational Safety and Health,[2] which collects data from these states.[3] According to an EPA health statistician, other states may report some data on incidents to EPA, but not routinely.

Written reports on incidents are forwarded to a single location at EPA headquarters, where they are cataloged and screened to determine whether they warrant detailed attention and/or consideration in registration or reregistration reviews. Aggregate reports are periodically generated from the data entered into the computerized system to determine if patterns are emerging that could cause concern.

However, EPA has a backlog of data to be entered into the Incident Data System, thus limiting the effective use of the data it receives. Although the agency currently has a number of people involved in collecting and analyzing data on pesticide incidents, only a portion of each individual's work time is spent dealing with incidents, and no one has been assigned full-time to data collection efforts such as entering data into the system. Since the system became operational in June 1992, EPA has received about 12,575 reports. While about 8,125 of the reports had been entered into the system as of April 1995, information on about 3,250 incidents had not yet

[2]The National Institute for Occupational Safety and Health, part of the Centers for Disease Control and Prevention, is the federal institute responsible for conducting research and making recommendations for the prevention of work-related illnesses and injuries.

[3]These data are collected under the Sentinel Event Notification System for Occupational Risks program, which is designed to encourage the development, implementation, and evaluation of state-level surveillance systems and to implement measures to prevent certain work-related illnesses.

been entered because of limited staff resources. Another estimated 1,200 reports, which the registrants say contain confidential information, will not be entered into the system until the agency determines the validity of these claims.

EPA Has Taken Measures to Protect Public Health Using Data on Incidents

According to EPA staff, data on incidents of exposure played a significant part in 19 instances in which the agency took measures to protect the public health between 1989 and 1994. For example, after analyzing data from emergency rooms, hospitals, and poison control centers, the agency determined that most uses of arsenical (arsenic-based) ant baits could no longer be used in homes because of the potential high risk to children. In another instance, EPA, after reviewing cases involving the deaths of two individuals who died when they entered structures treated with methyl bromide, required that the product's label be revised to extend the period before people are allowed to reenter a treated area.

In a third case, EPA determined that many reports of adverse reactions to pet care products likely resulted from misuse of the product or accidental exposure. Specifically, it appeared that some animals and humans had reacted adversely as a result of overdoses or repeated applications at too frequent intervals, or simultaneous applications of multiple pesticide products to pets and their environment. In several incidents, cats were injured by pet care products intended for dogs only. In this case, the aggregate number of incidents and other data in the Incident Data System on all pet care products led EPA to draft a proposed Pesticide Regulation Notice. EPA intends for the proposed notice to provide registrants of pesticide products with instructions on how a product's label should be changed to reflect the proper intervals for repeated use of the product and to restrict the use of the product to animals for which it was specifically intended. At the time of our review, the proposed notice had not been finalized. (App. I lists other examples of actions that EPA has taken using data on incidents involving nonagricultural pesticides.)

Information That EPA Collects on Exposure Incidents May Not Always Be Sufficient

Although EPA has been able to take some actions using data on incidents of exposure, the data the agency receives may not always be sufficient and its ability to assess risk and take action based on such data may be limited. The reports on incidents that EPA receives from registrants, as well as some of the voluntary reports such as those received from states, often vary in detail and lack key information needed to assess risk. For example, the reports frequently lack information on what pesticide caused the

incident, how the exposure occurred, and what symptoms the victim suffered. EPA believes this type of information is essential in assessing risks and thus determining whether the label on a product should be changed or its use restricted or cancelled.

Also, EPA cannot be sure that the reports it receives from registrants and voluntary sources are representative of incidents of exposure occurring nationwide. In addition, according to experts involved in these issues, underreporting of such incidents is widespread because, among other things, health care professionals may not always be adequately trained to recognize pesticide poisoning.

EPA's Data Often Lack Information Necessary to Assess Risk

Although pesticide registrants are required to report to EPA any additional factual information on the unreasonable adverse effects of their registered pesticides, their incident reports vary in detail. Section 6(a)(2) of FIFRA, which requires the registrants to report to EPA, does not require specific information, and EPA does not require standardized formats. An official in EPA's Office of Pesticide Programs said that registrants interpret FIFRA's reporting requirements in a variety of ways. Also, some registrants report frequently, while others do not.

In reviewing recent reports received by EPA, we found that some registrants do not always include important information such as whether the product was misused or how frequently the victim was exposed to a pesticide. For example, one registrant submitted several reports that identified the pesticide involved and described the symptoms suffered but did not mention whether the product was used according to the label's instructions or whether the victim was exposed to the pesticide once or repeatedly. EPA believes some reports may lack important data simply because the data was unavailable to the registrants, while other reports may exclude data due to registrant interpretation of reporting requirements.

The data that the states provide to EPA voluntarily also frequently lack important information, such as whether the product was misused, whether the victim was repeatedly exposed to the pesticide, what symptoms the victim suffered, how the exposure occurred, and—in some cases—what pesticide caused the incident. Information on laboratory tests, which would help confirm the exposure and health effects, is seldom present. In reviewing some of the data received by EPA, we found that although two states, in their 1994 quarterly reports, summarized the number of

pesticide-related incidents, they did not provide detailed information about the exposures. One state reported 11 occupational (work-related) pesticide poisonings for the quarter, of which 3 were confirmed (that is, cause and effect had been determined), but did not disclose the names of the pesticides involved or other details of the exposures. Another state's quarterly report summarized several incidents of occupational pesticide poisonings in that state but revealed the name of only one pesticide. The report indicated that state agencies were further investigating some incidents to determine what action should be taken.

Although EPA believes that any information about pesticide exposures can be useful, without some of the significant details about an incident of exposure EPA is unable to identify trends or patterns among pesticides that cause problems, assess their potential risks, or take corrective action. When the information EPA receives from the registrants, as well as voluntary sources such as states, does not have much of the data needed for assessing risk, it is of limited use.

In this connection, officials in the Office of Pesticide Programs emphasized that FIFRA does not mandate that the states have mechanisms for collecting data on incidents and does not require states to report incidents to EPA. The officials also said that although EPA receives some data from states, the agency does not depend on the states for reports of incidents.

Reports to EPA May Not Be Representative of Incidents Occurring Nationwide

Reports on incidents of exposure that EPA receives from registrants and from voluntary sources may not be representative of incidents occurring nationwide. For example, the nation's poison control centers typically receive far more reports of exposure than EPA does. These centers recorded over 150,000 incidents of humans being exposed to pesticides in 1992-93. In contrast, about 12,575[4] incidents of humans and animals being exposed to pesticides have been reported to EPA since 1992.

[4]This figure includes the backlog of about 4,450 incidents of exposure not yet entered into EPA's Incident Data System. Also, the total number of incidents on which EPA receives data may actually be higher than 12,575 because some summary data involving multiple similar incidents may be entered into the system and counted as one incident.

EPA has sometimes used data from a data base maintained by the American Association of Poison Control Centers,[5] but the agency has generally not had funds to routinely pay the fees for such data. The association's data base contains considerable amounts of data on individual exposures, including the type of substance or product,[6] age of the patient, means of exposure, symptoms, and type of treatment—if any—and the medical outcome. While the association publishes summary data annually in the September issue of the American Journal of Emergency Medicine, it charges a fee for detailed data. For example, exposure data on a single poison for 1990-93 would cost $4,400. Abstracts of individual case records, when available, are priced at $150.

As an alternative to purchasing these data directly, however, EPA can require registrants to purchase the data when the agency determines that a pesticide poses a high risk to public health. In 1993, for example, EPA's Acute Worker Risk Strategy Work Group identified 28 chemicals as acutely toxic to agricultural workers—based on data from California, data on toxicity, and data on usage. In this case, EPA issued a data call-in notice[7] requiring the pesticides' registrants to submit data from the American Association of Poison Control Centers. Using data from California and from the poison control centers, EPA's worker risk group has proposed measures to reduce risk for aldicarb, azinphos-methyl, carbofuran, methamidophos, and methomyl pesticides.[8]

Data Are Underreported

Apart from pesticide registrants, FIFRA does not give EPA authority to require individuals, states, or organizations to report exposure to or

[5]The American Association of Poison Control Centers, a nationwide organization of poison centers, maintains a national poisoning surveillance data base containing information on the volume and characteristics of incidents of poisoning voluntarily reported to regional and local centers. According to an association official, these centers are usually funded by states and/or community or university hospitals. While the centers contribute to an extensive data base on incidents of exposure, they operate primarily to provide information on poisons, consultation, and outreach to health professionals and the general public. In 1993, 64 centers contributed to the association's data base, representing portions of 43 states and the District of Columbia and covering about 70 percent of the incidents of human poisoning reported to poison centers in the United States.

[6]Although the association collects data on individual brands, the association's policy generally prohibits the release of data that identify brands.

[7]A formal request for data.

[8]Based on EPA's review of data on incidents from the poison control centers and California for 28 pesticides, aldicarb, azinphos-methyl, methamidophos, mevinphos, and methomyl were determined to be among pesticides that are most acutely toxic to farm workers. Subsequently, in 1994, uses of mevinphos were voluntarily cancelled because of the high risk of serious poisoning. Additionally, data from the poison control centers showed that carbofuran was one of the agricultural pesticides provoking the highest number of incidents.

incidents involving pesticides to EPA. The voluntary nature of the data collection system is a major contributor to underreporting of incidents. However, underreporting also results from a lack of training within the medical community in recognizing pesticide poisonings and lack of familiarity with state reporting requirements.

In our 1993 report on agricultural pesticides,[9] we reported that state officials cited underreporting as a serious problem because, among other reasons, health care professionals lacked adequate training in recognizing and diagnosing pesticide-related illnesses and were unfamiliar with state reporting requirements and/or unwilling to report cases to state officials. State and federal officials indicated that even when reports were made, it was frequently difficult to verify incidents and determine their cause because of delays in reporting and a lack of information about the circumstances of these illnesses.

While these reasons were cited for agricultural pesticides and farm workers, the same appears to be true for nonagricultural pesticides and consumers. For example, an EPA Health Statistician told us that he believed the medical community's incomplete understanding or recognition of pesticide poisonings was one reason why the data that EPA collected on incidents were not sufficient in helping the agency take the necessary action.

With respect to health care professionals' familiarity with state reporting requirements, a toxicologist at the University of California at Berkeley reported that physicians in California—the state with the most comprehensive registry of pesticide-related illnesses in the nation—are often not aware that such illnesses must be reported to the appropriate local health officers. According to the report he coauthored, Preventing Pesticide-related Illness in California Agriculture,[10] one-quarter of physicians surveyed in rural California did not know that suspected and confirmed pesticide-related illnesses must be reported to county health officers.

[9]Pesticides on Farms: Limited Capability Exists to Monitor Occupational Illnesses and Injuries (GAO/PEMD-94-6, Dec. 15, 1993).

[10]William S. Pease, Rachel A. Morello-Frosch, David S. Albright, Amy D. Kyle, and James C. Robinson (Berkeley, California, The Regents of the University of California: 1993).

EPA Has Taken Initiatives to Improve Collection of Data on Incidents

EPA has recognized that its approach to data collection needs improvement, and in September 1994, its Office of Pesticide Programs established a work group to focus on potential improvements. This work group was established to develop a long-term plan for collecting, storing, manipulating, and using data on incidents.

EPA recently completed the first phase of this effort, in which the work group identified the (1) critical and desirable data elements, (2) use and potential use of the data collected, (3) current and potential sources of data, and (4) gaps between the data EPA needs and the data it already has.

A second phase—to identify potential improvements in data collection and analysis—will include identifying (1) how much different system configurations would cost, (2) who should have access to these systems, (3) whether one or more data collection systems are needed, (4) how the agency should be structured internally for the data collection system, and (5) who should operate the system. Further efforts by the work group will include exploring the potential for more routinely requiring registrants to purchase data from the poison control centers as part of specific projects.

A December 1994 report by the work group indicated that additional phases may also be undertaken. Although the work group coordinator said the group plans to establish deadlines for the second phase, as of May 1995 EPA did not have a formal plan with milestones for completing any of the phases for this group's work or for implementing any improvements the work group identified.

EPA has also proposed a new rule, which it calls the 6(a)(2) rule, aimed at improving the quality of the data on incidents the agency receives from pesticide registrants and making the processing of this information easier for the registrants and the agency.[11] Although registrants are required under FIFRA to submit any factual data on adverse effects they may have, EPA is concerned that incidents may be underreported by the industry as a whole. The currently available guidance on reporting on incidents, developed in the 1970s, is not very detailed. On the basis of the proposed rule, registrants will be given specific regulatory requirements on what data they must report to EPA on incidents of exposure, when such data are available. For example, the specific information being requested in the proposed rule includes the name of the company submitting the information to EPA, the EPA registration (or identification) number of the

[11]The proposed rule was published in the Federal Register for comment on September 24, 1992 (57 F.R. 44290). EPA calls it the 6(a)(2) rule because it would codify EPA's interpretation of section 6(a)(2) of FIFRA.

pesticide involved, and a detailed summary including specific information about the incident being reported. EPA believes its new rule will clarify the registrants' responsibilities and should result in significantly greater numbers of reports on incidents. EPA expects the new rule to be finalized in 1995.

In addition, officials from the Office of Pesticide Programs said that the office is considering a major reorganization as part of an effort to streamline operations and that options for managing information on incidents will be considered as part of this effort.

Furthermore, EPA staff have been working with four companies that submit large numbers of reports on incidents of exposure to determine the feasibility of electronic submission of reports. Officials in the Office of Pesticide Programs believe that if the registrants put the data in a format compatible with the data in the agency's Incident Data System, staff will be able to enter these data directly into the system. The officials also said that they plan to ask these companies to consider electronically resubmitting reports they had previously submitted on paper. Eliminating the need to manually key these data into the system could help reduce most of the backlog. EPA believes this effort is a cost-effective method of improving its handling of incidents of exposure.

Conclusions

While EPA has a system for collecting, reviewing, and acting on incidents of exposure to pesticides and has taken action on some data on incidents, the system does not currently ensure that EPA always has sufficient information to determine whether action to protect public health is necessary. Although EPA has been able to take some actions using its data on incidents, the agency may not be appropriately responding to all cases of adverse health effects caused by pesticide use. Better, more complete data on incidents involving pesticides would help EPA determine whether additional actions are necessary to protect public health.

EPA has already begun to take some steps to improve its collection and analysis of data, and its work group is continuing to identify additional areas for improvements. We support the agency's efforts because they should lead to better management of data on incidents. Similarly, EPA's proposed 6(a)(2) rule should lead to an improvement in the quality of data submitted by registrants.

Agency Comments

We requested comments on a draft of this report from EPA. On June 12, 1995, we met with a section head, Policy and Special Projects Staff, Office of Pesticide Programs, to obtain the agency's comments on the draft report. During this meeting, we were provided with comments from the Director, Office of Pesticide Programs. EPA believes our report accurately explains that EPA regards data on incidents of exposure as an important supplement to laboratory studies, and is seeking ways to improve the quality and quantity of the data submitted to the agency, as well as for improved ways of managing and using the data in making regulatory decisions.

EPA believes the draft report did not clearly state the importance of its proposed 6(a)(2) rule, which is to accomplish two significant objectives. First, the rule will explain to registrants exactly what facts EPA wants them to report. Secondly, the rule is intended to solve the perceived problem of underreporting by registrants due to lack of clear guidance in the form of an enforceable regulation. The agency pointed out that the proposed rule does not place new or additional requirements on registrants, but only clarifies what is already required under FIFRA. We agree that the rule is important for improving the quality of data on incidents.

EPA was also concerned that in a period of serious resource constraints, it will be very difficult to make all the improvements to its collection of data on incidents that would be desirable. As noted in our report, acquiring adequately detailed information from nonregistrant sources can cost substantial amounts of money. EPA believes that managing increased numbers of reports will require the investment of scarce funds and personnel in data management systems. In its comments, EPA said that although electronic data submission and other reporting innovations may help to achieve economies, some improvements may not be possible at all if resources are cut significantly in the future.

EPA also provided some technical comments, and we have made changes in appropriate sections of our report to accommodate these comments.

Objectives, Scope, and Methodology

Our objectives were to determine whether EPA collects data on incidents of exposure to pesticides and takes action based on these data, and whether such data are sufficient to allow the agency to determine if unacceptable risks to public health are occurring. To accomplish these objectives, we interviewed officials from EPA's Office of Pesticide Programs, including the Chief, Special Projects and Coordination; Incident Data Officer for

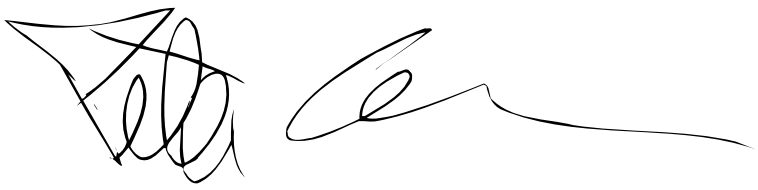
Humans and Domestic Animals; Coordinator, Ecological Incident Monitoring; Chief, Certification and Training Branch; and Section Head of Special Review and Groundwater. We also reviewed documents and records from EPA's Incident Data System.

To obtain views on incidents of pesticide exposure from others outside of EPA, we discussed the adverse health effects of nonagricultural pesticides with representatives of industry and of environmental and other nonprofit organizations. In addition, we visited California, Florida, and Oregon, and collected and reviewed these states' data on incidents of exposure. We selected these states because they collect data on such incidents and because two of these states—California and Florida—have climates in which a greater use of nonagricultural pesticides is likely to be required.

We conducted our review between March 1994 and May 1995 in accordance with generally accepted government auditing standards.

As arranged with your office, we plan no further distribution of this report until 10 days after the date of this letter unless you publicly announce its contents earlier. We will then send copies to the Administrator of EPA. We will also make copies available to others on request.

Please call me at (202) 512-4907 if you or your staff have any questions. Major contributors to this report are listed in appendix II.



Peter F. Guerrero
Director, Environmental
Protection Issues

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Abbreviations

EPA	Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act

Actions EPA Has Taken on Nonagricultural Pesticides

While EPA does not routinely receive complete data on incidents involving nonagricultural pesticides, it sometimes receives information on specific cases that is detailed enough to assist it in taking actions to protect public health. Table I.1 lists examples of EPA's use of such data to take actions between 1989 and 1994.

Table I.1: EPA's Actions to Protect Public Health

Pesticide	Data collected, used, and/or analyzed by EPA	Action taken
Chlorine	EPA reviewed data from hospitals' emergency rooms, newspaper clippings generated by manufacturers, and field information from state agencies to identify the types and severity of poisonings that could result from the use of chlorine in swimming pools.	EPA restricted the use of chlorine in swimming pools.
Lawn care products	Through an increase in the number of incidents reported by the National Pesticide Telecommunications Network,[a] EPA identified a public perception of risk from lawn care pesticides.	EPA developed guidance for the states on how to establish posting and notification programs for lawn care products.
Pet care products with adverse effects on human and animal health	Through its Incident Data System, EPA identified a large number of pets being adversely affected by consumers' misuse of these products. The data also revealed that human health was being adversely affected.	EPA has completed a Pesticide Registration Notice instructing registrants to clarify warnings and instructions on the products' labels to prevent misuse by consumers.
Personal-use insect repellent	Using information collected from EPA's regional offices and from state agencies, EPA found cases in which certain insect repellents were causing adverse reactions.	EPA distributed a physician's advisory through the Centers for Disease Control and poison centers as well as a consumer brochure on proper use.
Mercury[b]	On the basis of (1) reports on a child with acrodynia,[c] (2) over 40 publications on the relationship between that disease and mercury, and (3) levels of mercury that the Centers for Disease Control found in household air and occupants' urine in Detroit homes, EPA assessed the risk of acrodynia resulting from the use of mercury in household paint.	EPA canceled all uses of mercury in household paints.
Arsenical ant bait	EPA used data from hospitals' emergency rooms, hospitals, a poison control center, and the state of Texas to determine that this pesticide product had a small margin of safety for young children.	EPA canceled most uses of sodium arsenate in household ant bait.

(continued)

Pesticide	Data collected, used, and/or analyzed by EPA	Action taken
Disulfoton	A parent informed EPA of an incident involving a child who overcame a child-resistant package containing 2 percent disulfoton powder (a pesticide used on ornamental plants and house plants).	EPA required the manufacturer to retest the product's child-resistant packaging for efficacy.
Methyl bromide	EPA learned of an investigation of two cases (one in California and one in Iowa) in which two people died after reentering structures treated with methyl bromide.	EPA required revisions to the pesticide's label requiring longer ventilation periods before people reentered treated structures.
Boric acid	Data reviewed by a poison control center permitted EPA to determine how much boric acid powder or how many tablets resulted in poisonings of children.	EPA required revisions to the product's label to restrict the number of tablets used in one application of the product.

[a]The National Pesticide Telecommunications Network is a toll-free telephone hotline funded by EPA to provide information on pesticide use, toxicology, health effects, and safety to the general public and professional communities (including physicians, veterinarians, poison control centers, attorneys, and commercial pesticide applicators). Subcontractors linked by telephone to the network also provide medical emergency services for humans and domestic animals.

[b]Mercury was added to paints to preserve the paint in the can by controlling the growth of microbes, principally bacteria, and to preserve the paint from mildew attack after it was applied to an exterior surface.

[c]Acrodynia is a rare form of childhood mercury poisoning.

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