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How Occupational Disease Surveillance Data Are Used to Reduce Occupational Disease in Connecticut

In Connecticut (CT), approximately 10,000 new cases of occupational disease occur each year. It is estimated that between 400 and 1,100 deaths are attributed to work-related diseases each year (1). In 1990, the Occupational Health Clinics Bill was passed in response to the need for a better understanding of occupational disease in CT. This bill provides funding for an integrated occupational disease surveillance system and for occupational disease clinics. The Department of Public Health (DPH) established the Occupational Disease Surveillance System (ODSS) in 1991 and completed its first full year of surveillance in 1992. Surveillance data are collected through information recorded on the *Physician's Report of Occupational Disease* form. Since 1949, physicians have been required to report any known or suspected cases of occupational disease to the Department of Labor (DOL), which forwards the reports to the DPH.

Physician reports of occupational disease provide a valuable source of data. These data assist the DPH, physicians, and others in understanding the nature and scope of occupational disease in CT and in identifying problems in industries. By identifying problems in workplaces through physician reports, the DPH can assist companies in improving health and safety conditions in the workplace. The data are also used for prevention efforts, occupational disease investigations and interventions, and educational materials.

The physician reports of occupational disease are strictly confidential. A worker's identity is never revealed unless permission is obtained directly

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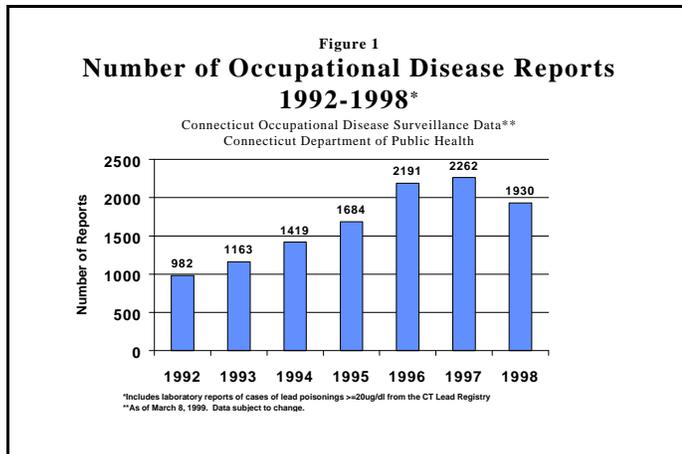
from the worker. The reports can not be used in litigation such as a Workers' Compensation Commission (WCC) claim. State or federal Occupational Safety and Health Administration (OSHA) can not obtain physician reports in order to inspect or fine a company.

The Connecticut ODSS data

In the ODSS, the number of physician reports has steadily increased from 1992 through 1997 with a slight decrease in 1998 (Figure 1). The top four disease categories, cumulative trauma disorders (CTDs), poisonings due to toxic materials, respiratory diseases, and skin diseases, have remained constant. In 1998, CTDs accounted for 38.8% of the physician reports; skin diseases, 26.3%; poisonings due to toxic materials, 16.1%; and respiratory diseases, 4.1%.

Although the number of reports has increased and trends in the types of occupational diseases are apparent, the data are still not reflective of the extent of occupational disease in CT. The CT DOL Occupational Safety & Health Statistics Unit conducts an annual survey of occupational illnesses and diseases in a sample of CT industries utilizing data recorded by employers on the OSHA 200 logs. From the 1996 annual survey, the DOL recorded 6,021 cases of occupational disease, compared with 2,191 physician reports sent to the DPH. Also, when

comparing the 1995 cumulative trauma data in the ODSS (608 cases) to the 1995 WCC's employer first report of injury data for cumulative trauma (740 cases), there was very little overlap (53 cases) between the two systems (2).



Occupational disease investigations

The DPH's primary concern is reducing occupational exposures that cause disease, disability, and unemployment in workers. If there is a cluster (two or more cases of a disease) or a sentinel event in a company that indicates that other workers may be affected, the DPH by statute may initiate an investigation (C.G.S. 31-400). Each year, the DPH conducts approximately 30-50 occupational disease investigations. The investigation may involve contacting a physician or visiting the site of potential exposure. When the investigation is completed; the DPH will assist companies by educating them about occupational disease, suggesting changes in their operation to reduce employee exposures, and informing them of available resources, including the *free consultation* service of CONN-OSHA. The DPH offers a partnership role with the company to improve the work environment. There are situations in which the DPH will refer a company to OSHA or CONN-OSHA such as when a hazard exists and a company is unwilling to work collaboratively with the DPH.

In addition to DPH investigations, funding to occupational health clinics from the Occupational Health Clinics bill supports comprehensive care for workers, which includes return to work strategies, an industrial hygiene evaluation of the workplace,

and consultative services for physicians in CT. Currently, there are five occupational medicine clinics and seven auxiliary clinics funded by the Occupational Health Clinics program in CT. The five clinics are Johnson Occupational Medicine Center, Enfield; Northwest CT Occupational Medicine, Torrington; St. Francis Hospital & Medical Center, Hartford; UConn Health Center Division of Occupational & Environmental Medicine (DOEM), Farmington; and Yale Occupational & Environmental Medicine Program, New Haven.

Is intervention effective?

A recently published study by authors from the UConn DOEM evaluated the effectiveness of conducting industrial hygiene work site visits for patients with suspected occupational disease. They found that patients were 10.4 times more likely to stay employed if their employers implemented any one of the recommendations from the site visit and 13.3 times more likely to stay if the priority recommendation was adopted. Employers were 3.7 times more likely to implement the priority intervention if they believed a worker's illness was work-related, which highlights the importance of the physician's role in working with the patient's employer (3). This study demonstrates that work site intervention can be beneficial to workers and result in change in workplaces.

Conclusion

Since 1991, physician reports have provided valuable data for monitoring occupational disease in CT, identifying disease clusters, targeting public health education efforts, and workplace interventions. The ODSS is the only physician-based reporting system for occupational disease in CT. In order to continue our efforts, it is important for the DPH to receive physician reports.

Based on the ODSS data, the DPH has developed a variety of educational materials on occupational health issues such as occupational asthma, lead poisoning, latex allergy, and cumulative trauma. If you have

any questions or would like to receive information for your patients, or to obtain information on reporting please contact the DPH, Occupational Health Program at (860) 509-7744.

References

1. "Occupational Disease in Connecticut", State of Connecticut, Departments of Public Health & Labor and the Occupational Health Surveillance Work Group, February 1990.
2. Personal communication. Timothy Morse, PhD at University of Connecticut Health Center, Division of Occupational and Environmental Medicine on 3/31/99.
3. Bracker A, Blumberg J, Hodgson M, Storey E. Industrial hygiene recommendations as interventions: A collaborative model within occupational medicine. *Applied Occupational and Environmental Hygiene* 1999; 14:85-96.

Don't be misled! It could be LEAD!

Lead toxicity is a frequent problem in adults as well as children. Symptoms of lead toxicity are non-specific and may mimic other disorders. Taking detailed occupational and social histories is important when making the diagnosis.

Case Study:

JS is a thirty-two year old white male presenting with nausea, lack of appetite, lethargy, insomnia, irritability, and forgetfulness. He describes his health status as "terrible". Previous visits to other physicians resulted in diagnoses of depression, ulcers, and chronic fatigue syndrome.

Social history: JS is married and the father of two small children. Ten months ago, he bought an old Victorian house, which he is renovating himself on weekends. JS's hobbies include hunting, camping and boating.

Occupational history: JS works with his brother in an indoor firing range. During the last two months, they have been removing and replacing the old, poorly functioning ventilation system in the range. Both men have worked there for the past 5 years, and bought the business 2 years ago.

From this information, there are several clues that could point to the problem degrading JS's health.

- **Indoor firing range-** Lead dust can accumulate on all surfaces including walls, floors, and in ventilation ducts.
- **Home renovation-** Scraping and sanding surfaces painted prior to 1978 frequently results in lead dust. Removing old windows/sills can also produce lead dust.
- **Boating-** Old wooden boats need to be scraped, sanded and repainted. This generates lead dust, as marine paints are currently still permitted to contain lead.

Follow-up

In this case study, JS's blood lead level (BLL) was 87 µg/dL. Normal background levels for adults in this country range from 2-5 µg/dL. Because JS works with his brother in an environment where lead exposure is likely, his brother had a blood lead test. His BLL result was 83 µg/dL. When these results were reported to the health department, they suggested the children and other household members be tested. Lead dust can be carried home on work clothes and shoes, and home renovations may have caused a lead exposure. The entire family was treated for lead poisoning and counseled on ways to reduce and limit their exposure to lead.

When taking an occupational history, recognize that there are many industries that use lead, such as automobile repair, telecommunications, and construction and renovation. People with occupations that involve lead include painters, glaziers, and welders. Even some hobbies involve lead such as electronics (lead solder), ceramics/pottery, and hunting/shooting.

Diagnosis and treatment

Lead can affect all systems of the body. Clinically, the most sensitive are the nervous, hematopoietic, gastrointestinal, cardiovascular, musculoskeletal, renal and reproductive systems. There is a wide range of individual susceptibility to lead poisoning. Symptoms can begin in some people with a blood lead level of 25 µg/dL. In general, the number and severity of symptoms worsen with increasing blood lead level. Although patients with lead poisoning can have no symptoms, lead poisoning should be

<i>In This Issue...</i>	Occupational Disease Surveillance, Lead Toxicity
<p>considered when patients present with symptoms described below.</p> <p>Mild Toxicity</p> <ul style="list-style-type: none"> ◆ Mild fatigue or exhaustion ◆ Emotional lability, difficulty concentrating ◆ Sleep disturbances <p>Moderate Toxicity</p> <ul style="list-style-type: none"> ◆ Headache ◆ General fatigue or somnolence ◆ Muscular exhaustion, myalgia, arthralgia ◆ Tremor ◆ Nausea, weight loss ◆ Diffuse abdominal pain, constipation or diarrhea ◆ Decreased libido <p>Severe Toxicity</p> <ul style="list-style-type: none"> ◆ Colic (intermittent, severe abdominal cramps) ◆ Peripheral neuropathy ◆ Encephalopathy <p>Reporting Requirements and DPH Response</p> <p>Physicians are required to report BLLs ≥ 20 $\mu\text{g/dL}$, including demographic information, for all persons within 48 hours. For persons ≥ 16 years of age, occupational information is also</p>	<p>required. For BLLs ≥ 20 $\mu\text{g/dL}$, the patient is notified by letter by the DPH and is sent a survey and educational information, with copies of the patient letter sent to the local health department. For BLLs ≥ 40 $\mu\text{g/dL}$, the patient is also contacted by phone.</p> <p>The DPH provides information to physicians who may seek assistance managing patients exposed to lead. The pamphlet entitled, "<i>Occupational Lead Exposure: What Physicians Should Know About OSHA Regulations & CT Reporting Requirements</i>" is available from the DPH. The DPH can provide referral information to the network of occupational medicine clinics. The <i>Healthy People 2000</i> goal is to eliminate all cases of lead poisoning ≥ 25 $\mu\text{g/dL}$. To receive more information about lead poisoning, such as a copy of the <i>Workplace Lead Fact Sheet</i>, in English and/or Spanish, please contact the Adult Blood Lead Surveillance Program at (860) 509-7744.</p> <p><i>The editor would like to thank Carolyn Jean Dupuy, Juanita Estrada, Milinda Daye and Marian Heyman of the Occupational Health Program for their contributions to this issue.</i></p>

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