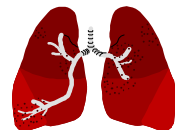




Occupational Airways



A quarterly newsletter of the Occupational Health Surveillance Program, Division of Environmental Epidemiology and Occupational Health (EEOH), Connecticut Department of Public Health (DPH), 150 Washington Street, Hartford, CT 06106 (860) 240-9029

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WELCOME!

Welcome to the first issue of **Occupational Airways**, the quarterly newsletter of the Occupational Health Surveillance Program. The main focus of this newsletter is occupational asthma. It is designed to address current issues around occupational asthma and to be a reference for health care providers. The newsletter will also include information about other work-related respiratory diseases and disorders.

This introductory issue discusses the Occupational Disease Surveillance System, the recently initiated asthma interview protocol, surveillance data, and a worker case review. Thank you for your continued support and reporting of occupational diseases!

Occupational Disease Surveillance System (ODSS)

The Occupational Disease Surveillance System (ODSS) is managed by the Environmental Epidemiology and Occupational Health Division (EEOH) of Department of Public Health (DPH) in collaboration with the Department of Labor (DOL) and the Workers' Compensation Commission (WCC). The surveillance system stems from passage of the 1990 Occupational Health Clinics Bill, which provides funding of occupational health clinics and the establishment of an integrated surveillance system. The purpose of the surveillance system is :

- to monitor work-related diseases in CT's work force
- to identify clusters of disease
- to monitor trends over time
- to target public health education efforts
- to identify the need for workplace interventions

DPH began the ODSS in 1991 and completed its first full year of surveillance in 1992. Surveillance data is acquired through information recorded on the *Physician's Report of Occupational Disease* form. Title 3, Sec. 31-40a of the CT General Statutes requires reporting of occupational disease to DOL, which in turn sends the reports to DPH. For more information, call DPH at (860) 240-9029.

DATABASE OVERVIEW

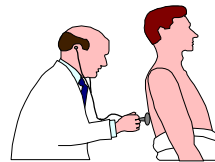
As of May 1995, 917 occupational disease reports were submitted for 1994. Respiratory diseases and disorders were the fourth most commonly reported disease category in 1994, following repetitive trauma, poisonings due to toxic materials and skin diseases and disorders. Asbestos-related diseases, Silicosis, Bronchitis, Berylliosis, Asthma and Reactive Airway Dysfunction Syndrome (RADS) are the majority of diseases reported in this category.

Occupational Asthma

Occupational asthma, as defined by Chan-Yeung and Malo, is "a disease characterized by variable airflow limitation and/or nonspecific bronchial hyperresponsiveness due to causes and conditions which are attributable to a particular occupational environment and not to stimuli encountered outside the workplace". Occupational asthma may encompass both immunological and nonimmunological causes.¹

Occupational asthma is triggered by a number of substances (vegetable, animal or chemical) which are found in a variety of work settings.² There are over two hundred agents implicated in work-related asthma.¹ An interim list of asthmagens is available from DPH by request. An effort to develop a consensus list of asthmagens for the National Institute for Occupational Safety & Health (NIOSH) is currently being undertaken by the Association of Occupational & Environmental Clinics (AOEC).

There is significant interest in occupational asthma both because it is very debilitating and because of the possibilities for prevention with proper workplace environmental controls. Occupational asthma and RADS are target conditions for the national Sentinel Event Notification System for Occupational



Risks (SENSOR) program which is funded by NIOSH. Although Connecticut is not one of the states funded to participate in the SENSOR program, DPH uses the SENSOR case definition for occupational asthma. For more information about the SENSOR program, call DPH at (860) 240-9029.

OCCUPATIONAL ASTHMA SURVEILLANCE IN CT

In 1994, there were 14 cases of occupational asthma and 1 case of RADS reported to the ODSS. From January to June of 1995, nine cases of occupational asthma and 2 cases of RADS have been reported. These figures represent almost a third of the respiratory diseases and disorders reported for both years. Suspected causal agents included dust, isocyanates, formaldehyde, chlorine, ammonia, solvents, buffing compounds, colophony solder, polyethylene, dust mites, adhesive lacquer, acids and physical conditions like cold (temperature). Types of occupations reported were

	11/91-12/93	1994	1995 (1/95-6/95)	ODSS Total
Asthma	41	14	9	64
RADS	6	1	2	9
Total	47	15	11	73

assemblers, auto technicians, carpenters, salesmen, maintenance workers, correctional officers, spray painters, factory workers, machinists, solderers, HVAC technicians

and meat packers. Overall, seventy-three (73) reports have been received for patients who were diagnosed with occupational asthma or RADS from November 1991 to the first half of 1995 (see Table 1). These figures are not an accurate representation of the number of work-related asthma cases in CT because of physician underreporting.

MARK YOUR CALENDARS!!!

May 8, 1996

Turning Diagnosis into Prevention
an occupational medicine seminar

Look for further details in the next issue.

Occupational Asthma Interview Protocol

In the spring of 1995, the DPH occupational asthma interview protocol was initiated. The goal of the interview protocol is to learn more about workplace practices and conditions leading to exposures that may cause asthma in workers. The interview protocol entails contacting both the reporting physician and the patient. Initially, a letter and packet of information is sent to the reporting physician discussing the asthma interview protocol. Secondly, the physician is contacted by telephone to obtain permission to administer a questionnaire to the patient. Lastly, the patient is contacted by letter explaining the project and, subsequently, the questionnaire is administered by telephone. Currently, DPH is in the process of conducting the telephone interviews.

CASE REVIEW

Worker A is a 27 year old female who was employed as a solderer at a small metal parts manufacturer for 11 months. After 3 months, she began experiencing wheezing, coughing, chest tightness and shortness of breath throughout the day. Colophony solder was identified as the causative agent. It is known to cause asthma. Worker A was diagnosed with occupational asthma based on the timing of her symptoms in the setting of an exposure to a known asthma agent.

Between 30-50 people work in the soldering section at that plant. Several workers in her section and other sections (molding) had symptoms similar to Worker A's. Worker A said that she and other workers would retreat into the restroom throughout the day to use their inhalers. She described the factory as an open room which allowed all the soldering fumes and chemical vapors from various sections to mix together. Worker A had to leave her job because of her condition and is currently unemployed. Since removal from the exposure, her symptoms have improved. DPH received another report of asthma for an employee working with colophony at this same company.

Colophony is a common base in organic soldering fluxes. Colophony is made from turpentine (a pine tree resin). The active material in organic rosin-based flux is abietic acid. Alcohols, organic solvents and glycols may be added to rosin flux to make activated rosin flux, which provides active

corrosive cleaning of the base metal to be soldered. Some of the activators, when heated, liberate acids such as hydrochloric acid that are mucosal irritants and can cause bronchoconstriction. Some colophony fluxes also contain aminoethylethanolamine, which is a sensitizer. The employer was advised that the colophony exposure during soldering can be controlled with local exhaust ventilation.

Case studies indicate exposure to colophony can be insidious, with symptom-free periods lasting one to six years before the onset of asthma. The American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) Committee recommends that employers achieve concentrations as low as possible through the use of engineering controls and appropriate personal protective equipment. Introduction of workplace controls will prevent the onset of new asthma cases.

In addition to soldering flux, colophony is also used as hot melt glue (especially as adhesives for can labels), in hair sprays, paints, pine-essence cleaners and in cigarettes (as adhesives and filter fillings). Patients have also been reported to develop symptoms upon exposure to pine dust.^{3,4,5}

REFERENCES

- 1 Chan-Yeung, M. and J-L. Malo. Aetiological agents in occupational asthma. *EUR Respir J* 1994; 7:346-371.
- 2 Morse, T. *Wheezing from work: Occupational asthma in Connecticut*. Workers' Compensation Commission and UConn Health Center, Section of Occupational and Environmental Medicine, 1994.
- 3 Burgess, W. *Recognition of health hazards in industry*. New York: John Wiley & Sons, 1981.
- 4 American Conference of Governmental Industrial Hygienists. *Rosin core solder thermal decomposition products*, 1994.
- 5 Burge, PS, G. Edge, R. Hawkins, et al. Occupational asthma in a factory making flux-cored solder containing colophony. *Thorax* 1981, 36:828-834.

The New Physician's Report of Occupational Disease form is now available

Report your cases of occupational asthma now!

The *Physician's Report of Occupational Disease* form has been revised (10/95) to be more user-friendly. To obtain a copy of the new report form or for more information on occupational asthma, please call DPH at (860) 240-9029.

Your suggestions, comments, and contributions are most welcome! Please consider submitting a short article, case study or paper review for inclusion in future issues of Occupational Airways. All correspondence can be sent to DPH to the attention of Juanita Estrada.

HAPPY HOLIDAYS!

