



SENSOR

Dermatitis Project in Washington State Newsletter

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Safety and Health
Assessment and
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SHARP

Washington State
Department of
Labor and
Industries

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This newsletter has been produced with a user-friendly format. We are trying to get more information back to health care providers and health and safety professionals. With this in mind, we are presenting a case study followed by related data and a program update. We hope this newly formatted newsletter provides useful and interesting information.

A Case Study of the Wrong Product and the Wrong Glove

In October of 1999, the WA SENSOR Dermatitis program received information on two cases of work-related dermatitis at a painting company. This company had a paint stripping operation where two workers were responsible for removing the paint from kitchen cabinet doors.

The workers used a more aggressive paint stripper than typically used for that application. This stripper was acidic (carboxylic acid <10%) and contained a mix of solvents (xylene and oxygenated hydrocarbons ~85%), where the typical stripper contained only solvents.

The workers set up the task by making a shallow bath of paint stripper for the doors. The workers placed the doors in the bath, let them soak, turned them, and let them soak again for a total of about 10 to 15 minutes. The workers would then wipe or scrape the paint from the door. The job took approximately 6 hours to complete. Over the day, the workers had their gloved hands immersed in the paint stripper for approximately 1½ hours.

The work was done on a Friday. On that Sunday, the workers called their foreman and told him that the skin on their hands was coming off. The workers sought medical care that Monday. On Wednesday, the employees came back to work and did "modified work" until the skin on their hands healed enough for them to return to their normal positions.

The doctor treating the workers found that their skin had been exfoliated (the top layers of skin were removed) by the product. He treated them with a Silvadene ointment and wrapped their hands in closed dressings.

After the company's management was made aware of the incident, they investigated what the workers were doing and found that they had been using an aggressive paint stripper with inadequate personal protective equipment. The paint stripper typically used calls for neoprene gloves because it is a pure solvent material. The paint stripper that the workers used contains an acid and solvent and requires the use of a more impermeable glove made from Viton[®]. This was stated on the Material Safety Data Sheet (MSDS). The gloves were found to be degraded in numerous places, which allowed the chemicals to penetrate to the workers' skin.

THE EFFECTS:

THE CAUSES:

SOME SOLUTIONS:

This incident may have been prevented by using a less aggressive stripper and/or ensuring that the employees were aware of the additional precautions needed for working with that product. The MSDS for the product identified the glove type needed while working with the material. Relying on gloves as the last line of protection between the worker and a hazardous chemical can be effective, but as shown in this case study, can also lead to much pain and suffering if not chosen, used, or supervised properly.

This case study doesn't attempt to identify the root causes of this incident. In order to do so we need to answer the following types of questions:

- Is there a policy in place to deal with the health and safety issues related to new products?
- Was there a need to use a more aggressive stripper?
- How did the workers come to be using this more aggressive stripper?

The SHARP program's dermatitis registry was informed of these cases approximately a week after the cases were diagnosed. SHARP followed up with the employer to ensure that the exposure situation was under control. If we had not been informed of the cases by the physician in our sentinel provider network, we may never have seen the cases. This is because the workers are employed by a self-insured company and we do not have access to medical-only self-insured claims. A surveillance system needs to be continuous, act in a timely manner, and have follow-up. This case study shows an example of how the SENSOR program can work with health care providers, employers, and employees in Washington State to reduce the burden of work-related skin problems in our State's workplaces.

OTHER CHEMICAL RELATED SKIN DISORDERS

The Data

In looking at the data we collect from the workers' compensation system and sentinel medical providers, we find that the majority of cases and claims are due to exposure to various types of chemicals. Approximately 55% of the approved State-Fund dermatitis claims between 1994 and 1998 were due to chemicals (Figure 1). When those claims are broken down by chemical type, we see that a large portion of those are not categorized (53%). Eighteen percent of the claims are due to soaps or detergents and 8% are due to various solvents (Figure 2).

The sentinel provider (SP) data are similar to the workers' compensation data, but have some striking differences (Figure 3). Approximately 60% of the reports from SP data are due to chemicals. Of the chemical-related incidents, more than half are unspecified chemicals in the claims system, whereas in the SP data, only 30% of the reports don't specify the chemical. In the Sentinel Provider data, the second and third leading sources reported to SHARP are latex and epoxy (accounting for a total of 21% of the reports vs ~9% in the workers' compensation data). While chemical exposures are identified almost equally in both systems, the sentinel provider data have much more detail, which can be used to assist with our prevention activities.

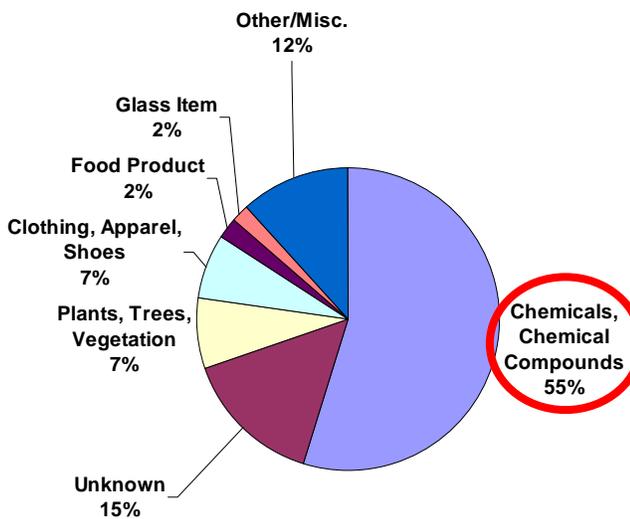


Figure 1 Sources of State-Fund dermatitis claims, 1994-1998, n=5025

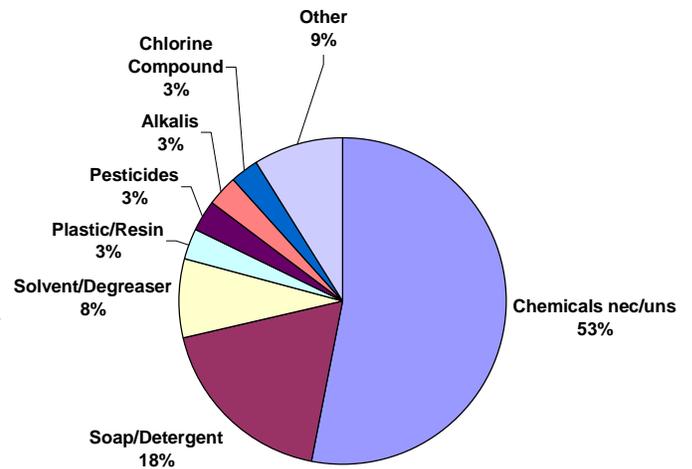


Figure 2 Chemical categories causing dermatitis claims, 1994-1998, n=2743 (nec/uns - not elsewhere classified/unspecified)

To better understand "who is being exposed to what", Table 1 was developed. This table highlights the industry groups with the most chemical-dermatitis claims and the most common sources. For the most part, "Chemicals" is the most common source, but certain patterns are revealed. In industries where there is a need for

clean hands and working surfaces, soap/detergents and chlorine compounds are common sources. Pesticides are a common cause of chemical-related dermatitis in agriculture, while alkalis, most likely cement and similar materials, are a common cause in construction special trades. In transportation equipment manufacturing, plastics/resins are a frequent cause. These claims may be the advanced composite materials claims identified in our previous work. The personal services industry, which includes beauticians, has numerous claims due to beauty products. This issue has been investigated further by the Oregon SENSOR Program (Contact us for more information on their work).

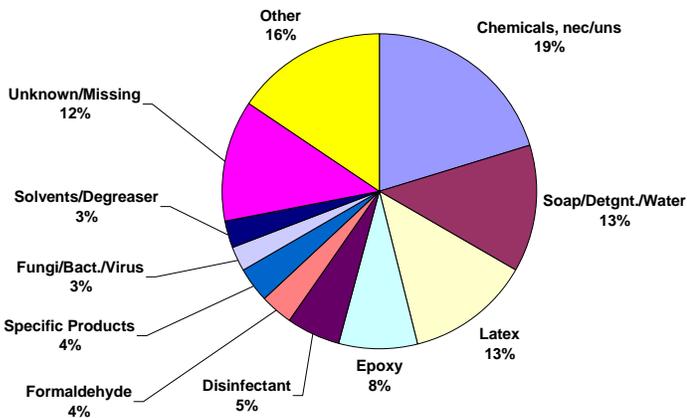


Figure 3 Sources of Sentinel Provider cases, 1993-1999.

We have completed site visits and developed educational materials to help deal with the problems found in using advanced composite materials, which include epoxies, and have completed a survey of acute care hospitals on their activities and knowledge related to latex allergies (see below). The Sentinel Provider reports were essential in our determination that these exposures were important in Washington State. We feel that these differences are due to the structure of the workers' compensation insurance system in our state. We are not able to access medical-only self-insured claims. In the State-Fund system, 88% of dermatitis claims are medical only. The SP network gives us access to data in a different mix of companies and industries. This is one of the reasons why the Sentinel Provider data are important for our activities.

Table 1 Most common industry groups reporting dermatitis WC claims and their exposures.

Industry Group	Number of Claims							Total
	Chemical*	Soap/ Detergent	Solvent/ Degreaser	Plastic/Resin	Pesticide	Alkalis	Chlorine Compound	
Eating and Drinking Places	193	206	26			6	38	486
Agricultural Production - Crops	117	2	4		56	1	1	184
Construction Special Trades Contractors	71	1	14	9	1	22		137
Health Services	60	56	2	2	2	2	3	136
Business Services	88	16	6	4	4	6	1	134
Hotels, Rooming Houses etc.	51	45	4		2	1	3	109
Mfg. Transportation Equipment	65	1	15	20		1		107
Auto Dealers and Gas Stations	44	24	19	1				93
Wholesale Trade - Nondurable Goods	67	6	3	1	7		1	91
Food Stores	27	32	3				11	77
Personal Services (Beauty Products n=32)	36	6	1	1		1		77
Total	1453	504	212	87	86	81	79	2743

*"Chemical" indicates chemicals that are not specified or not elsewhere classified

FUTURE ACTIVITIES **Soaps and Detergents**

Data from both sources indicate that soaps and detergents are causing a large number of cases. The current direction of our field work and intervention activities is looking at these exposures. We find this a challenging endeavor given the need of health care, food service, and cleaning personnel to adequately wash their hands and materials with which they work, to ensure cleanliness and disinfection. We will keep you posted as we continue these activities. We feel certain that our new staff member, Christina Marino, MD (Dermatology), MPH will come up with a creative approach.

If you have any cases/clusters of interest, we want to talk with you directly about possible workplace follow-up activities.

RECENT ACCOMPLISHMENTS OF THE PROGRAM

Recent Educational Materials and Reports (please contact us to get a copy of any of these materials)

- *Latex Sensitivity in Washington State Acute Care Hospitals: A Needs Assessment and Survey of Awareness of the Issues*; SHARP Technical Report #58-1-1999.
- "Caution: Allergic reactions for latex glove users", *Northwest Stylist*, 1998, M. Cohen and M. Miller.
- *A Guide to Preventing Dermatitis while Working with Advanced Composite Materials*, SHARP Technical Report #55-3-1999.
- *Preventing Occupational Dermatitis: General Information*, SHARP Technical Report # 56-1-1999.
- *Dermatitis at a facility (1) manufacturing aerospace components from advanced composite materials*. SHARP Technical Report # 49-01-1998

- *Dermatitis at a facility (2) manufacturing aerospace components from advanced composite materials.* SHARP Technical Report #49-03-1998
- *Dermatitis at an advanced Composite "Pre-preg" Manufacturer.* SHARP Technical Report #49-02-1998

WHAT WE'RE DOING

The Project

The Washington State Department of Labor and Industries, Safety and Health Assessment and Research for Prevention (SHARP) Program continues to conduct statewide surveillance of work-related skin disorders. This project is sponsored by the National Institute for Occupational Safety and Health (NIOSH). NIOSH considers occupational skin disorders an area of interest in their Sentinel Event Notification System for Occupational Safety and Health (SENSOR) projects and has included dermatitis on the National Occupational Research Agenda (NORA). As part of this project, SHARP has developed and maintained a model surveillance system. This project has several additional goals:

- Evaluation and description of occupational risk factors associated with skin disease in order to plan prevention activities,
- Identification of high risk industries and companies so work-site follow-up visits can be conducted, and
- Development of educational materials and summaries of data analyses for dissemination to relevant audiences for prevention purposes.

INTERNET RESOURCES

Internet Sites

<http://www.haz-map.com>
<http://www.cdc.gov/niosh/latexalt.html>
http://www.nationaljewish.org/MSU/11n2MSU_Contact_Derm.html
<http://telemedicine.org>
<http://bodd.cf.ac.uk/BoDDHomePage.html>

HOW TO CONTACT US

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