



Safety Net

A Quarterly Newsletter from the
Office of Environmental Health and Safety
Dalhousie University



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FROM THE DIRECTOR'S DESK *ChemEx*



December 10, 2002 was a landmark day. For the first time since we launched our on-line ChemEx inventory, we received four requests for chemicals in a single day. And, in line with much of our recent experience, two were required urgently.

When compared to the traffic on a commercial system, four orders in a day may not seem like much. But receipt of four requests, in addition to the ongoing work of maintaining the program, is keeping Ian Brown busy. Ian is our student whose part-time work includes shelving new materials, updating the computer and delivering requested chemicals. In fact, he has been busy all year. In 2002, we processed requests for over five hundred items - a 40 % increase over the number of items requested in 2001.

YEAR	2002	2001	1992-2002
Chemicals exchanged	365	365	5,758
Value of chemicals	\$40,500	\$32,000	\$300,500

In a decade of operation, ChemEx - Dalhousie's surplus laboratory chemical exchange - has donated almost 5800 chemicals to research and teaching labs at Dalhousie and neighbouring institutions. The value of these chemicals has now reached \$300,000. If one factors in avoided costs for shipping, customs, brokerage fees as well as what participating institutions would have had to spend on disposal, ChemEx has saved participants somewhere between \$500,000 and \$750,000.

HOW WELL DO YOU KNOW THE RISKS?

One frustration faced by people working in health and safety, is the "poor" understanding that the general public has of the risks associated with many hazards. How well do your perceptions match those of the Harvard Centre for Risk Analysis.

HAZARD	ANNUAL RISK OF DEATH* (One Chance in ...)
Heart Disease	397
Cancer	511
Stroke	1,699
All Accidents	3,014
Vehicle Accidents	6,745
Alzheimer	5,752
Alcohol	6,210
Suicide	12,091
Homicide	15,440
Food Poisoning	56,424
Drowning	64,031
Fire	82,977
Bicycle Accident	376,165
Lightening	56,424,800

(* Based on US data)

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CELLULITIS

What do a prominent Halifax lawyer and two Killam Learning Commons contractors have in common? They recently all suffered seemingly insignificant cuts at work. In each case an opportunistic bacteria took advantage of the cut to cause a potentially life-threatening infection.

The condition called Cellulitis, is much more common than most people realize. It occurs when a bacteria - often streptococcus (the strep throat bacteria) or staphylococcus, gain entry to underlying tissue through a break in the skin. A burn, accidental injury, surgical incision or even dermatitis, can provide the opening. Although Cellulitis can develop anywhere, it is most commonly seen on the hands or the legs. An infection in the tissue surrounding the eye can be very serious.

Preventing Hand Injuries:

- Use the correct tool for the job.
- Keep cutting tools sharp so you do not have to use excessive force.
- Always ensure that machine guards are properly positioned.
- Disconnect power tools before servicing or changing bits or blades.
- Maintain good housekeeping. Keep the workplace tidy and put sharp tools away after use.
- Don't handle sharps unnecessarily. Sweep up broken glass - do not pick it up by hand.
- Package sharps properly for disposal.
- Wear work gloves.

First Aid for Minor Cuts:

- Wear disposable gloves if available.
- Wash your hands with soap and water before offering first aid.
- Avoid coughing or breathing on the wound.
- Wash the wound and surrounding area with clean water. Swipe away from the wound.
- Do not touch the wound or the side of the dressing that will be in contact with the wound. Apply a dressing and bandage it in place.
- For serious, badly contaminated or puncture wounds, have the victim seek medical aid immediately.
- If a cut or rash becomes red, swollen, warm and sore, see a doctor immediately.
- If the cut or rash is spreading or painful, or the victim develops a fever, seek emergency medical treatment.

Once the infection becomes established, the bacteria releases materials which damage surrounding tissue. The result is the redness, local heating, swelling and pain that are characteristic of Cellulitis. The inflamed area expands as the infection spreads. Untreated, the infections can spread rapidly and invade the lymphatic system or the blood stream. Early treatment with antibiotics usually leads to complete recovery.

Since there is no way to tell which cut is going to lead to Cellulitis, prudence suggests taking steps to prevent injury. Should an injury occur, effective first aid is the next line of defense.

A Personal Account - Cellulitis

As I started to recover from the surgery, I kept picturing the work gloves in my office. I had discovered them early on in the packing process and carefully laid them out in plain view where they remained, a sensible, practical visual cue. That I ignored. So, I cleaned up various parts of the old Victorian basement using my bare hands, to move and shift a variety of dirty items, including what I believe to have been the culprit item, a collection of mini venetian blinds, just sharp enough to give me a scrape on my index finger, so inconsequential I don't recall that it even bled.

Fourteen uneventful hours later, packing and hefting boxes was increasingly difficult as my finger became swollen, misshapen and red. A telephone conversation with a doctor on call led to my going to the hospital where I expected I would be given some antibiotics and sent home. I planned to be back to packing and moving as soon as they kicked in. As I waited in Emergency I was shivering hard, the redness from my finger spreading into my hand. I didn't see the angry red streaks going up my arm. Later I was told the infection from the tiny cut to my finger had become life-threatening due to its rapid progression up my arm and

into my lymph nodes. The

medical response was quick and sure-footed once I was seen by the emergency department doctor and a plastic surgeon. In a state of disbelief I signed, awkwardly with my left hand, the consent for the proposed treatment - emergency surgery under a general anaesthetic. Post-operatively I was treated with a broad spectrum antibiotic, first by intravenous and then orally, and a couple of weeks of soaking and dressing my hand. The diagnosis of my raging infection was cellulitis, quite common, but particularly virulent in my case. As a friend said to me when I got home from my hospital stay, I dodged that bullet.

And what have I learned? There is always dirty work to be done, at home, in the garden, at work, and small cuts and scrapes are inevitable. The use of work gloves and disinfecting even minimal injuries with hydrogen peroxide may prevent a serious infection. Going for medical help if the infection is getting worse is a prudent "better safe than sorry" approach. And, for those of us who spend too many hours at the office, a health crisis is not the best way to get some time off work.

WINDCHILL FACTOR

For millennia, people have understood that it feels colder outside when it is windy. We now understand that, as wind carries away the warm layer of air that surrounds us, our bodies cool more quickly. Air movement also evaporates moisture from the skin, creating an additional cooling effect.

In 1939, scientists working in Antarctica devised a formula to take into account the combined effect of temperature and wind speed yielding a single index describing how cold one feels. Over the years, Canadians complained that "wind chill" measure produced by this formula didn't accurately reflect how it actually feels outdoors on cold and windy days. And who knows better than a Canadian, what it feels like outdoors on a cold winter day?

In response to these complaints, Canadian scientists, along with American counterparts, have developed a new formula based upon experiments conducted on volunteers. The new formula produced a revised wind chill index which more closely parallels actual

human response to cold. Your favourite morning radio station now uses the new index when you hear that "The temperature outside is -10 and the wind is blowing at 20 km per hour, giving a wind chill of -18".

Wind chill is important to all Canadians. But it is vital to those who work outdoors. Facilities Management staff, as well as faculty, staff and students engaged in field work, must contend with both winter cold and summer heat. To help them avoid the injuries that can arise in very cold or very hot situations, the Safety Office recently prepared a document entitled "Work Under Extremes of Temperature". Drawing upon a number of sources including the new wind chill index, the document provides information on how the body responds to high and low temperature and offers general direction on the types of precautions that should be considered as thermal environments become more stressful. Copies of the document are available from the Safety Office or from the web site (www.dal.ca/safety) in the Trades, Custodial and Workshop Safety section.

		WIND CHILL								
		Air Temperature C° (Celsius)								
		5	0	-5	-10	-15	-20	-25	-30	-35
Wind Speed km/hr	5	4	-2	-7	-13	-19	-24	-30	-36	-41
	10	3	-3	-9	-15	-21	-27	-33	-39	-45
	15	2	-4	-11	-17	-23	-29	-35	-41	-48
	20	1	-5	-12	-18	-24	-31	-37	-43	-49
	25	1	-6	-12	-19	-25	-32	-38	-45	-51
	30	0	-7	-13	-20	-26	-33	-39	-46	-52
	35	0	-7	-14	-20	-27	-33	-40	-47	-53
	40	-1	-7	-14	-21	-27	-34	-41	-48	-54

Wind chill	above -25	little danger	
Wind chill	-25	increased danger	frost bite possible in 10 minutes
Wind chill	-35	great danger	frost bite possible in 2 minutes

SURVIVING YOUR **COLD**

They don't call it the common cold for nothing. Many of us will come down with a cold this season. Although there is no cure, there are a few things that you can do to reduce the chances you will catch a cold this winter.

Keeping the **Cold** at Bay:

1. Give your body a fighting chance. Eat, sleep and exercise properly.
2. Wash your hands frequently and thoroughly using hot soapy water to reduce the chances that you will infect yourself.

If you catch a cold, the infection will run its course, usually lasting between 3 to 10 days. You can however reduce the discomfort.

1. Drink fluids. Fluids help keep mucous membranes lubricated and may reduce the chances of developing complications.
2. Wash your hands frequently to prevent re-infecting yourself.
3. Eat normally or at least as normal as you can and rest. Get at least 8 hours sleep at night and get more rest if you feel you it.
4. Medications can help. Although there is no treatment, your pharmacist can advise you on medications to alleviate the symptoms.
5. Stay at home until you feel better. Don't "**share**" your cold with your co-workers.

NOTICE BOARD

WHMIS Training Programs

Contact the Safety Office for scheduling or inquiries.

Radiation Training

April 29, May 1

Contact Pauline Jones, Radiation Safety Officer
494-2055

ChemEx - Chemical Exchange Database

www.dal.ca/safety

Smoking Cessation Program

Contact Human Resource Development for next scheduled session - 8886

First Aid Kits

To replenish your Departmental first aid kit, contact Shirley Sherman in Purchasing - 6573

Bill Louch, Director Safety Office	1241/2495
Jan Taylor McIntyre, Administrative Secretary Safety Office	2495
Pauline Jones, RSO Radiation Safety Office	2055
Kathie Wheadon-Hore, Chair Health & Safety Committee	2127
Facilities Management	2470
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SAFETY NET

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POSTAGE

ADDRESS CORRECTION REQUESTED