

Mr. Justice Campbell, Members of the Committee, Ladies and Gentlemen.

I am an Occupational Hygienist with the Occupational Health Clinics for Ontario Workers, and will be speaking to the issue of protection of workers in their place of employment. The Occupational Health Clinics for Ontario Workers were established to help prevent work related illnesses and injuries, and to improve workers' physical, mental and social well-being. OHCOW is a not-for-profit organization, funded by the WSIB, staffed by specialists in occupational health including occupational health doctors and nurses, Ergonomists, Occupational Hygienists.

The role of the Occupational Hygienist on the team is to participate in the recognition and control of workplace hazards. This is done through a step by step risk assessment process, which includes anticipation of areas of hazard, recognition of specific hazards, evaluation of the exposure, control to a non-hazardous level, and review of the outcome. These steps, if judiciously applied by a team headed by a health and safety professional, can significantly reduce and possibly eliminate adverse health outcomes from hazardous exposure. In preparing this presentation I consulted with the multidisciplinary team with whom I work, and their collective contributions have been incorporated.

Severe Acute Respiratory Syndrome, SARS, was a workplace hazard. For workers in the health care industries, worldwide, this was a terrifying threat to their health and the health of their families. It was recognized as a health threat globally by the World Health Organization at the end of February 2003. On March 31, 2003, an editorial in the New

England Journal of Medicine noted that medical personnel, physicians, nurses, and hospital workers were “commonly affected.” In May, the SARS Provincial Operations Centre was advising health care providers, not that masks had to be fitted and fit-tested, but that a proper fit would “enhance their effectiveness.” In fact, standards around respirators, while not guaranteeing complete protection, require that the mask be fit-tested. By mid-May the Centres for Disease Control in Atlanta were reporting a cluster of SARS cases in Toronto that occurred “despite apparent compliance with infection-control precautions.”

SARS has had a devastating effect on the economic well-being of Toronto and by extension all of Ontario. In addition, in the health care sector, where morale was not high even before the outbreak, the effects are still being felt. One way to promote the recovery is to take meaningful steps to ensure we are adequately prepared for future threats. In health care as in all industries, the first step toward the protection of health and safety is to anticipate and identify the risks.

Risk assessment is the science associated with evaluating whether an event has the potential to occur, and if so, with what frequency, with what range of outcomes, and under what conditions. In 1983, the US National Research Council defined a risk assessment as “a systematic scientific characterization of potential adverse effects resulting from human exposures to hazardous agents or situations.” If this sounds like something that should be done by some “workplace expert”, front-line workers may be missing out on an opportunity to participate in designing a healthier and safer workplace. Looking beyond the jargon, a Risk Assessment is very simply an examination of what

hazards could be present, and how illness or injury can be avoided. Expertise is valuable in guiding the process and identifying resources, but no-one can understand a job as well as the person doing it, and that is where the expertise of the Joint Health and Safety Committee comes in.

The steps toward a satisfactory identification and assessment of risk should include the following:

1. Identify the potential hazard using all sources of information available- observation, review of pertinent literature, discussion with experts and stakeholders, review of activities and control measures, and other information such as maintenance records, material safety data sheets, manufacturer's specifications for performance of PPE, process flow diagrams;
2. Characterize the exposure. This is an ongoing exercise as workplaces are continually acquiring new equipment, replacing products, and meeting changing needs. Along with an inventory of hazardous goods on site, there is a need to identify who is at risk.
3. To the extent possible, quantify the level of risk. How often, for instance, do workers encounter the hazard, and at what intensity? Is the hazard obvious, or can a person be unaware of being exposed to it? What is the worst case outcome?
4. And finally, list and critically examine the assumptions that were made. Are they fair? Has human error been considered? Is there a bias, and if so, which way?

Risk assessments constitute a significant factor in health and safety decision-making, so it is important that all possible sources of error and assumptions which have been made are recognized by users. Uncertainty may result from any of a number of causes:

- Poor definition of the hazardous exposure
- Short observation periods
- Measuring incorrect or incomplete routes of exposure
- Interaction of multiple exposures
- Misdiagnosis of cause of illness or outcome
- Differences between experimental group and group at risk, for example gender, age at first exposure, concurrent exposures/conditions of work such as shift length and time.

No risk assessment can be completely free of all uncertainty. The best the assessor can do is recognize the limitations, try to minimize their impact as much as possible, and when in doubt, place health outcome as the principle driver.

Public security workers (police, fire, correctional workers) and health care providers (nurses, physicians, paramedics, health support personnel) have been in the spotlight recently due to the transmission of SARS within the health care setting. Despite measures to isolate and provide protective gear, transmission and death has occurred. The question now that it seems to be under control is, what lessons can be learned and how can things be done better? Were workers optimally prepared for the SARS outbreak? There is an opportunity now that the dust has settled to review the state of readiness, and revise the plan as necessary. While the collective sigh of relief can be heard across the province,

this is the time to evaluate and re-tool. There is no way to predict when or where the next transmissible organism will strike, nor is it safe to assume that it will behave like SARS.

Workers in Ontario have the right to be kept safe at their worksites. Health and Public Security workers are entitled to the same level of safety, but the law requires that they do so in harmony with the professional obligation not to place others in harm's way. These two rights can co-exist, and most of the time, they do. One of the ways that the right to a safe workplace can be protected is with a proactive health and safety committee. If hazardous situations can be anticipated, response plans that are protective can be developed. A combination of knowledge, resources, preparation and personal protective equipment prevents untold numbers of injury and death on the job. Constant review of new technologies and better methods is key to achieving optimum protection. While it may never reach 100%, zero injury remains the constant goal.

The Occupational Health and Safety Act requires that a Health and Safety Committee be established at workplaces with 20 or more regular employees. The committee must consist of 4 or more people, at least half of whom shall be workers who do not exercise managerial functions. The worker representatives are selected by the workers, the employer selects the remaining members. At least one member representing workers and one member representing the employer must be certified under the Workplace Health and Safety Agency (as per Section 13 of the Occupational Health and Safety Act). In brief, the role of the committee is to identify hazards, make recommendations for the improvement of health and safety, recommend programs, measures and procedures

respecting health or safety of workers, obtain hazard information from the employer, obtain information about and participate in testing for the purposes of health and safety. These responsibilities are stated in the Occupational Health and Safety Act, Section 18. The committee shall designate one or more worker representative members to investigate cases where a worker is killed or critically injured. In the case of SARS, the deaths of 2 nurses and 1 doctor in Toronto, and all cases of employees who became ill with severe acute respiratory syndrome, would fit this category. And the members of the committee are entitled to paid time to prepare for and attend meetings, and carry out duties that are part of their membership responsibilities, including the investigation of the cases mentioned above. Participation in the occupational health and safety management of a workplace is a privilege which should be available to all workers, but it often falls to the workers with more flexible schedules and somewhat more autonomy in their work. While all members of the joint health and safety team are valued contributors, balance and diversity are important if all work is to be reviewed. Therefore it is important when selecting members that this is recognized as an integral part of all job classifications, and autonomy around scheduling work not be used as a criterion.

### **Anticipate**

Preparation for the management of a hazard is best done before the hazard is present. The facts that make us vulnerable to exotic viruses have been before us for a long time-increased international travel, greater crowding on aircraft, in emergency rooms, and the possibility of exposure to viruses for which there is no vaccine and no known effective treatment. While this was dealt with theoretically as part of the terrorism alert plan, it

seems to have been a surprise to risk management people when it occurred. While the world stockpiled Smallpox vaccine and Ciprofloxacin, a novel virus was making its presence felt in China.

A set of random events, it seems, made Toronto one of the next targets. While there may not have been enough information to prevent that, we have the knowledge to protect against transmission of airborne viral disease. While all the discussion about bioterrorism has been about inhalable viral spread, health care workers apparently did not have the facilities to routinely isolate fevers of unknown origin, were not fit-tested and equipped with appropriate respiratory or dermal protection, were far too mobile within the health care community, and in large part, were left out of the health and safety management and planning activities. I have heard from several sources that the Infection Control teams in a number of SARS-affected institutions operated without input or consultation with the Joint Health and Safety Committees.

### **Recognize**

The World Health Organization recognized the atypical pneumonia-like illness in China, and issued a communication to the rest of the world in early March 2003. If the classification of infectious agents which are handled in microbiology labs (as per the US Department of Health and Human Services) was applied, this virus would initially have been classified as level 3-“indigenous or exotic agents with a potential for respiratory transmission and which may cause serious and potentially lethal infection”, or perhaps even level 4- “dangerous and exotic agents that pose a high risk of life-threatening disease, that may be transmitted via the aerosol route, and for which there is no available

vaccine or therapy.” In the practice of microbiology, these agents are handled with extreme caution. By April, we knew that of 138 cases of suspected SARS in a hospital in Hong Kong, 69 (50%) were health care workers despite isolation of patients suspected of having the disease. The physician group who authored this report, published in the New England Journal of Medicine on April 7<sup>th</sup> 2003, characterized the high infectivity as “alarming.” Health care workers have been recognizing for a long time that understaffing, over-crowding, early discharge and non-inclusive management have had a significant negative effect on the ability to provide the highest level of health care in Canada. Public health, acute care, continuing and long term care providers have all voiced their concerns that the cuts have been too deep, that we’ve been left vulnerable.

## **Control**

In the workplace context, while the precautionary principle endorses a philosophy of extreme caution until the hazard is well understood, often the opposite approach is taken. Asbestos, lead, vinyl chloride monomer, benzene and a host of other entities, now universally recognized to pose severe health hazards, were used copiously and handled cavalierly until the epidemiology could not be ignored.

One of the questions to ask with respect to the transmission of SARS is, “were any interests placed ahead of the safety of workers?”

In determining how to control a hazardous exposure, it is important to take into account the chance of human error. No worker wants to make a mistake, no one sets out to



undertake a task with more risk than necessary. The best controls will be those that have a failsafe or backup mechanism built in.

## **Evaluate**

Those who fail to learn from history are doomed to repeat it. Not only is it important and valuable to revisit a risk assessment, it is important to predetermine the frequency which will be needed. And each risk assessment should be viewed in the context of any incidents or accidents it was designed to prevent.

An example might be the transmission of SARS in the workplace. This needed to be an extremely dynamic risk assessment, keeping pace with the daily information release, and reviewed in the context of each new case. Mapping the movements of the virus through the health care worker and patient populations is one source of information. Remember, initially there was no information about how the virus was transmitted or even what the virus was. Still there are unanswered questions, some of which will be addressed in labs for some time to come.

## **Future Considerations**

It would be hopelessly naïve to imagine that SARS was a one-of-a-kind event. Whether a synthesized or deliberately released weapon of terror, or an illness carried by an innocent traveller, we will meet this crisis again. Toronto is well funded, well equipped, has a gold-mine of professional expertise readily available, and has enough political power to be heard on the national stage.

What if this outbreak were to happen in a community with only a single health care facility?

Was it possible to anticipate the SARS outbreak? Without equivocation it must be concluded that this was an event that we should have anticipated.

1. It has been forecast in science (the threat of “superbugs”), in science fiction through books (The Andromeda Strain), movies (Outbreak)
2. We have seen new, virulent infectious agents come “out of nowhere” in the past- HIV, Ebola, Hanta, Polio, Swine Flu etc.
3. WHO had identified the “atypical pneumonia” in China and issued a warning.
4. After September 11, 2001, facilities everywhere were alert to the risk of terrorist attack, and Smallpox virus was cited more often than other modes of attack.
5. A number of Doomsday scenarios were reviewed in anticipation of Y2K.

Was it the extraordinary dedication to duty that put health care workers in harm's way? Or was it disregard for the occupational health and safety of these workers by administrators and legislators? We have heard about health care workers involved in this crisis being quarantined, others becoming ill, some individuals who extended their work hours and their work weeks to respond to the emergency. And deaths. Failure to address

the reason that a viral outbreak became a disaster scenario would be to compound the injustice visited upon these employees.

The Occupational Health and Safety Act requires the employers “take every precaution reasonable in the circumstances for the protection of a worker.” Wasn’t it reasonable to anticipate that health care workers would come into contact with sick people?

Employers have to take seriously their obligation to anticipate and identify hazards if this magnitude of disaster is to be avoided in future. Resources for doing this include the Joint Health and Safety Committee, working hand in hand with the Infection Control committee and the management personnel for health and safety. As well, the Occupational Health Clinics for Ontario Workers, the Canadian Centre for Occupational Health and Safety, the Ministry of Labour, the Workplace Safety and Insurance Board, the Workers’ Health and Safety Centres, the National Institute for Occupational Safety and Health, the National Institutes of Health, The Centers for Disease Control, Labour Unions, the Ontario Federation of Labour, the Canadian Labour Congress, professional associations can provide assistance.

Although there has been much public debate and resolution about the shortcomings in the public health system and how to remedy them (and I’m not arguing against dedicating adequate resources to public health) there has been little public discussion about how employers can provide protection for their employees. There is nothing noble about becoming critically ill or dying in the service of an employer who has made a decision not to protect workers.

Only a breach of the risk assessment process could have resulted in the widespread exposure within the health care facilities, and the bystander exposures of family members.

I will make three recommendations:

1. That the current Occupational Health and Safety Act and legislated protection for workers in all industries including health care be enforced; and
2. That the Health and Safety Act and all regulations pertaining to health and safety conditions in places of employment be regularly reviewed and revised to keep pace with the dynamic workplace; and
3. That the precautionary principle, which effectively states that in the absence of proven safety, assume that a hazard exists, be incorporated into the text and the spirit of legislation dealing with workplace health and safety.