

**Brief**

**On**

Mandatory Implementation of Safety  
Engineered Sharps Devices and Exposure  
Control Plans

By

The New Brunswick Nurses Union

June 2011

## Executive Summary

Needlestick injuries and other sharps-related injuries which expose health care workers to bloodborne pathogens continue to be an important public health concern. Canadian health care workers are at risk from injuries of “sharps” devices that can result in the transmission of disease such as HBV, HCV and HIV. There are more than 70,000 of these injuries per year in Canada. These injuries generate significant costs for the Canadian health care system and result in great stress for the victim and their families.

Most of these injuries are preventable, through the use of safety –engineered sharps devices that reduce the risk of injury to health care workers at the source. Injury prevention through engineering controls, like the use of safety-engineered medical devices is not included into current New Brunswick legislation. As a result, sharps injuries continue to occur.

Existing Occupational Health and Safety legislation is based on recommendations made in the early 1990s. At that time, there was not a good understanding of the issues related to exposure to blood borne pathogens and the technology to prevent sharps injuries did not exist. Over the last several years, there have been significant developments in technology that reduce the risk of sharps injuries and there is much more data on the source and nature of these incidents.

New Brunswick, Newfoundland and Quebec are the only provinces who have not amended their OH&S act to mandate a comprehensive injury prevention approach to workplace sharps. Amending existing regulations to mandate the use of safety-engineered sharps, to require exposure control plans and to improve health care worker education on this issue, can eliminate up to 70% of sharps injuries in acute care facilities across Canada.

These changes can be implemented for a net annual Canada-wide of \$27 million. This investment can eliminate 24,402 accidents, over 2,440 high-risk accidents, and up to 100 occupationally acquired diseases in acute care facilities alone each year, not to mention thousands other injuries that can be prevented in other health care facilities. This is an issue in which governments, health care providers, health care workers, manufacturers and the public have a common interest. Implementing an effective solution requires that all stakeholders work together.

## The issue

Health care workers are exposed to a wide range of hazards in the workplace, especially from medical equipment. Injuries from needles and other sharps devices, including disposable needles, IV catheters, blood collection needles, suture needlestick, lancets and scalpels, continue to expose health care workers to serious and potentially fatal infections from bloodborne pathogens such as Hepatitis B (HBV), Hepatitis C (HCV) and the Human Immunodeficiency Virus (HIV).

Health care workers in Canada experience a high number of injuries from sharps devices – more than **70,000 each year, or 194** injuries per day (See Appendix A). Each one of these events carries the risk of potentially fatal disease, specifically HBV, HCV or HIV (among others).

This issue directly affects roughly **750,000** Canadian women and men who work in health care.<sup>1</sup>

These injuries cost the Canadian health care system an estimated **\$45 to \$73 million** per year (Appendix B).

It costs the NB Health care an estimated **2.6 million** every year to treat sharps injuries;

On an annual basis, the net saving to the NB Health Care system would be over **\$860,000** (Appendix c)

These injuries significantly affect the quality of life of health care workers and their families who live with the emotional turmoil of not knowing if they have contracted a disease for up to one year and often a lifetime.

Most of these accidents are preventable, through the use of safety-engineered sharps devices that reduce the risk of injury to health care workers at the source.

For a modest net investment of less than \$278 million incrementally per year (shared across all provinces in Canada), as many as 70% of sharps injuries in Canadian hospitals alone can be eliminated. This translates into a potential elimination of 24,042 injuries and up to 100 occupationally acquired diseases per year in acute care facilities alone (Appendix B) not to mention thousands of other injuries that can be prevented in other health care settings.

## Recommendations

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<sup>1</sup> Canadian Institute of Health Information. Canada's health Care Providers. 2001

NBNU believes that our provincial government has the opportunity to achieve improved health care worker safety by building on existing occupational health and safety regulation. The way to achieve this would be to adopt a comprehensive injury prevention approach to workplace sharps safety. Specifically, NBNU recommends amendments to the occupational health and safety regulations that:

**Recommendation # 1:**

**Mandate that every workplace where there is a risk of exposure to blood borne pathogens has an exposure control plan developed with the input of front-line workers through the institution through their joint health and safety committees;**

**Recommendation # 2**

**Mandate the use of safety-engineered sharps devices approved by Health Canada;**

**Recommendation # 3**

**Mandate that employers provide health care workers with mandatory training through the health and safety committee to include educational programs to build awareness of the risks associated with blood borne pathogens, and with information on the safest available alternative products and practices to eliminate these risks. Such training is to be provided on an ongoing basis;**

**Recommendation # 4**

**Mandate that clearly established post-exposure protocols are developed, easily accessible and communicated to employees to ensure that timely, effective medical attention is provided to any worker who receives a skin-piercing sharps injury, including immediate post-exposure evaluations and follow-up. These protocols should include steps to prevent recurrences; and**

**Recommendation # 5**

**Mandate that exposure control plans are reviewed at least annually to reflect changes in technology and practices that will help eliminate exposure to blood borne pathogens.**

# Introduction

## Clinical Risks

Injuries from needlesticks and other sharps remain a major concern in Canadian healthcare, numbering around 70,000 per year, or on average 192 per day.

Health care workers who use, or may come into contact with, medical devices incorporating sharps are at risk of injuries that can lead to serious or fatal blood borne infections. These include human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV) and others. They are also at risk of developing psychological problems associated with the trauma of being exposed.

All occupational exposure to blood or other potentially infectious materials (OPIM) place health care workers at risk for infection with blood borne pathogens. Blood is defined as human blood. Human blood components and products made from human blood. Other potentially infectious materials (OPIM) means:

- a) the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
- b) any unfixed tissue or organ (other than intact skin) from human (living or dead); and
- c) HIV-containing cell or tissue cultures, organ cultures, and HIV-or HBV containing culture medium or other solutions; and blood, organs, tissues from experimental animals infected with HIV or HBV.<sup>2</sup>

After a needlestick exposure to an infected patient, a health care worker's risk of infection depends on the pathogen involved, the immune status of the worker, the severity of the needlestick injury and the availability and use of appropriate post-exposure prophylaxis.

The Canadian Centre for OH&S data suggests that the rate of transmission to health care workers after a needlestick exposure for HBV, HCV and HIV is as follows:

HIV - .3%

HBV – 1%-40%

HCV – 0% - 7%<sup>3</sup>

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<sup>2</sup> [www.osha.gov/sltc/bloodborne pathogens/index.html](http://www.osha.gov/sltc/bloodborne pathogens/index.html)

<sup>3</sup> [www.ccohs.ca/osanswers/diseases/needlestick\\_injuries.html](http://www.ccohs.ca/osanswers/diseases/needlestick_injuries.html) (2010)

The Hepatitis C virus is ten times more transmissible than HIV and there is currently no vaccine available. Chronic infection develops in 75%-80% of HCV patients with active liver disease developing in 70%.<sup>4</sup>

Health Canada indicates that in an average hospital, workers incur approximately 16.83 needlestick or other sharps injuries per 100 beds per year.<sup>5</sup> This translates to more than 24,000 reported accidents each year in Canada in acute care facilities alone. Many more accidents occur outside hospital settings. Research data also indicates that the incidence of sharps injuries is greatly under-reported. As many as 60% of incidents remain unreported.<sup>6</sup> Taking a conservative estimate of 39% of accidents going unreported<sup>7</sup> and looking across all types of health care facilities, there are an estimated 70,000 sharps injuries each year in Canada (details by province are presented in Appendix A)

Nurses account for the largest number of sharps injuries – **58% of the total**<sup>8</sup>. Not just medical personnel are at risk of injury from needles and other sharps. Ancillary staff, such as housekeepers and laundry workers, **experiences** a significant proportion of such injuries; laboratory and other technical support staff are also exposed to risk.

Health care is a fast-paced and complex environment. Frontline workers regularly provide care in difficult and crowded situations to often uncooperative and very sick patients.

Health care workers, employers, governments and the public should not have to accept such risks as “part of the job”. There is a great deal that can be done to eliminate the risk – including the use of safety-engineered devices, improved work practices, education and training, legislation/regulation that mandate prevention and stricter enforcement of health and safety laws.

## Implications of needlestick injuries

Sharps injuries impose a significant economic burden on the Canadian health care system. Using widely accepted methodology and conservative estimates, we approximate that total direct costs to be between \$45 and \$73 million dollars per year in

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<sup>4</sup> CDC (1999). *Record summary of the request for information on occupational exposure to blood borne pathogens due to percutaneous injury*. Washington, DC: US> Department of Labor, Occupational Safety and Health Administration.

<sup>5</sup> Health Canada: [http://www.ccohs.ca/oshanswers/diseases/needlestick\\_injuries.html](http://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html) (2010)

<sup>6</sup> CDC (Centers for Disease Control and Prevention). *Evaluation of safety devices for preventing percutaneous injuries among health care workers during phlebotomy procedures*. Minneapolis St-Paul, New York City and San Francisco, 1995.

<sup>7</sup> Ibid

<sup>8</sup> Health Canada: [http://www.ccohs.ca/oshanswers/diseases/needlestick\\_injuries.html](http://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html) (2010)

Canada (Refer to Appendix B for details on methodology used). In addition, health care employers can face compensation claims, legal liability and serious difficulty in attracting suitable staff and retaining trained staff.

The cost of sharps injuries is significant, socially, financially and emotionally. The most valuable asset of any health care establishment is its people. They need to be protected from occupational injuries that expose them to the risk of acquiring a serious disease that can debilitate them for many months, result in permanent disability or even be fatal.

In addition to the risk of acquiring a seriously debilitating or fatal disease, the social and emotional impact of a needlestick or other sharps injury can be very significant. Even where there is no subsequent infection, the victim's social and emotional suffering before it is known whether a serious disease has been contracted – up to 12 months and often a lifetime in some cases. Where infection does develop, treatment may be required over an extensive period of time and, in some cases, for the remainder of the victim's life. The enormous cost of follow-up testing and treatment is additional to the human costs in terms of anxiety, stress and personal anguish.

The benefits of using medical devices that incorporate additional safety features – when added to better education, hands-on-training and working practices designed to eliminate the risk of injury – fully justify the investment required. Moreover, the additional cost of safety –engineered devices is only a fraction of the costs currently incurred as a result of workplace sharps injuries.

## Implications for New Brunswick

In 2006 there was an estimate of 584 reported sharps injuries, however the real number, given that we know that 58% of injuries are unreported brings the number of estimate injuries to 1,391.<sup>9</sup>

It is also important to note the number of infections that result, on average each year. While the resulting number is not large (six), each of those infections could result in the death of a worker and a million-dollar Work-safe NB claim, and every needlestick could produce one of those six.<sup>10</sup>

New Brunswick has no or poor monitoring of needlestick and sharps injuries. Subsequently, no real data exists provincially to identify the significance of this issue. The NB Health Authorities have agreed to start sending their stats to the Canadian

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<sup>9</sup>Rachlis. C. *Injury and Cost Data for New Brunswick*. S.A Murray Consulting Inc, Ottawa, Ontario. September 2006

<sup>10</sup> Rachlis. C. *Injury and Cost Data for New Brunswick*. S.A Murray Consulting Inc, Ottawa, Ontario. September 2006

Needlestick Surveillance Network (CNSSN), so this will provide a real picture of the number of injuries in this province. However, since this is only at the conceptual stage, data is not expected to be gathered and shared soon.

The study by S.A. Murray Consulting Inc. (SAMCI) has established that the NB health care system currently is paying more than \$2.6 million every year to treat sharps injuries and that is just the costs of initial testing and lost time associated with testing. (Appendix C). We also know that the work done by the Center for Disease Control that \$2.2 million of that could be avoided through the use of safety-engineered devices.<sup>11</sup>

Using actual NB figures and market costs for the most common categories of devices, the study calculates that the cost of replacing conventional devices with safety-engineered devices is \$1,339,505. This may seem like a lot of money, but the same study reports that by using those devices mean that \$2.2 million in injury testing does not have to happen anymore. In other words, the idea is to take money that is now used to treat injuries and use it to buy safer devices that do not cause injuries.<sup>12</sup>

On an annual basis, the net saving to the NB Health care system is \$863,250. If we keep the numbers separate: a new cost for safety-engineered sharps of \$1,339,505 and saving (avoided costs) of \$2,660,332. Although this cost is for acute care only, most observers believe that injuries and costs would be similar in long-term care, home care and the rest of the health care system and that the non-acute system is about the same size as acute. **So the total picture in terms of costs and savings would be twice this.**<sup>13</sup>

## The Need for Legislative/Regulatory Changes

Typically, current regulations focus on reducing the risk of injuries through traditional measures such as:

- Universal precautions;
- Safe work practices;
- Safe work conditions;
- Use of personal protective equipment;
- The control of infections; and
- Education and training.

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<sup>11</sup> Rachlis. C. *Injury and Cost Data for New Brunswick*. S.A Murray Consulting Inc, Ottawa, Ontario. September 2006

<sup>12</sup> Ibid

<sup>13</sup> Ibid

Injury prevention through engineering controls, like the use of safety-engineered sharps devices is not an element of current regulations. Even where engineering controls are incorporated into provincial measures, the regulations are not specific enough to achieve the protection already in place for health care workers. (Details by province are presented in Appendix D)

NBNU believes that the research and technological development that have occurred over the last decade point to the need to move forward from reduced-risk work practices, education and training and the use of personal protective device equipment to the goal of eliminating the risk of occupational injury at the source. In our view, strong and widely verified research data clearly establishes that:

Health care workers experience a high number of sharps injuries;  
A high proportion of sharps injuries are incurred after use and before disposal of sharps devices – in other words, after the successful execution of medical procedures; and  
Safety engineered sharps devices that use technology that has been developed over the last decade is highly effective in preventing these injuries.<sup>14 15</sup>

It is clear that traditional measures to control infections (universal precautions, safer work practices, safer work conditions, education and training, use of personal protective equipment) are valuable and should be maintained but are insufficient and need to be supplemented.

These measures were introduced in the early 1990's based on Center for Disease Control (CDC) recommendations. The recommendations did not include the use of safety engineered sharps because at the time, there was a lack of data on their effectiveness. Since that time, much more data has been produced and the technology of the devices has advanced considerably.

Health Canada shares this conclusion. In their report, *Prevention and Control of Occupational Infections in Health Care* (March 2002), lists "control measures in descending order according to their effectiveness in reducing the risk of exposure to infectious diseases, "beginning with engineering controls. It further notes:

"Engineering Controls can decrease or reduce the hazard, whereas the use of Personal

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<sup>14</sup>CDC (Centers for Disease Control). *Evaluation of Safety devices for preventing percutaneous injuries among health care workers during phlebotomy procedures*. Minneapolis St- Paul, New York City and San Francisco, 1993-1995. Pages 21-25.

<sup>15</sup> Jagger J, Tereskertz PM et al. *Engineering devices to minimize bloodborne pathogen exposure*. Chapter 83in: APIC Text of Infection Control and Epidemiology (revised). Washington DC. 2000.

Protective Equipment only provides a barrier between the health care workers and the Hazard” (page 12)

The same report also noted:

“Early attempts to control exposures to blood and bodily fluids focused on the use of safety guidelines and education. However, evidence indicated that this did not lead to fewer needlestick injuries. Engineering controls were recommended as a more effective way to control health care worker exposures... (Page 212).

Mandating the use of engineering controls creates a safer work environment for health care workers and helps to ensure that injury prevention measures will be implemented consistently across the spectrum of health care sector workplaces.

While the widespread introduction of sharps disposal systems in the early 1990's significantly reduced the number of accidents, a large proportion of the accidents (33%) occur between use and disposal.<sup>16</sup>

Health Canada and EPINet (University of Virginia) data both show that an additional 10-12% of accidents occur during disposal of the device. Here again, safety-engineered devices will protect workers from injury.

While the current work practice standard requires that all accidents be reported, a number of studies indicate that about half of all needlesticks go unreported (this is supported by US and Canadian studies). Many reasons are cited for underreporting, including:

- Health care workers may consider that the event was low risk, either because the injury was not serious or the source patient was healthy;
- The culture in the medical community makes it difficult to admit “mistakes”;
- Health care workers doubt the helpfulness of the person/institution to whom they report;
- Health care workers experience organizational difficulties or problems with operational procedures.

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<sup>16</sup> Health Canada. *Update: Surveillance of health care workers exposed to blood/body fluids and bloodborne pathogens*: April 2000-March 2001. *CCDR* 2001: pages 201-212.

Even though safety-engineered devices have been available for over a decade in the Canadian market, they account for only 10% of the Canadian sharps usage. The procurement and budgeting processes in hospitals and other care facilities make it difficult for workers to access the safer devices, because the budget impacts typically occur at the level of individual wards and laboratories and equipment purchasing officers rarely have access to in-house injury data essential to a business case rationale for safer devices. In addition, while most of the additional cost of the devices is offset by reduced lost-time, testing and treatment costs, these savings occur across various parts of the health care system, as opposed to the operational units where the devices are used.

## Supporting Evidence

Studies at the University of Virginia suggest that the use of medical devices incorporating safety features that reduce unnecessary needles or shield hands from used needles can prevent more than 78% of injuries.<sup>17</sup> This is supported by the Centres for Disease Control Hospital Infections Program, which estimates that 86% of needlestick injuries are preventable by eliminating unnecessary needles, using needles with safety features, and using safer work practices.<sup>18</sup> Applying the University of Virginia methodology to the Health Canada Needlestick Surveillance Network data indicates that 70% of Canadian accidents are preventable (Appendix B)

## Economic Impact

The acquisition cost of safety-engineered sharps is higher than that of conventional devices to the greater number of parts, increased complexity of manufacturing and the increased capital required for production. In short, safety is engineered into the device making it more expensive. However, savings as a result of substantially lowered injury rates offset most of the additional cost of the device.

The cost of a needlestick accident in the health care setting is estimated to be \$480<sup>19</sup>. The cost of high-risk needlestick accident where the source patient is known or suspected of having HIV or Hepatitis is estimated to be between \$820 and \$1625. The

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<sup>17</sup> Jagger J, Tereskertz PM et al. *Engineering devices to minimize bloodborne pathogen exposure*. Chapter 83in: APIC Text of Infection Control and Epidemiology (revised). Washington DC. 2000.

<sup>18</sup> CDC (Centers for Disease Control). *Evaluation of Safety devices for preventing percutaneous injuries among health care workers during phlebotomy procedures*. Minneapolis St- Paul, New York City and San Francisco, 1993-1995. Pages 21-25.

<sup>19</sup> Bd Canada. *BD Safety Conversion initiative Needlestick Algorithm*.2002

cost of treatment and lost time for a health care worker who develops one of these diseases is approximately \$120,000 per year.

After a needlestick exposure to an infected patient, a healthcare worker's risk of infection depends on the pathogen involved, the immune status of the worker, the severity of the needlestick injury, and the availability and use of appropriate post-exposure prophylaxis,

## What is happening across Canada?

Canada's occupational health and safety programs are organized and administered at the provincial level; accordingly, regulations relevant to sharps safety and needlestick prevention have been promulgated by each provincial authority. Those provinces that have passed some type of needle safety legislation as of October 2010 are listed below. Provinces and territories that have not passed legislation are: New Brunswick, Newfoundland/Labrador, Prince Edward Island, Quebec; Yukon, Nunavut and Northwest Territories.

### **Alberta:**

The Alberta government promulgated a provincial-level [Occupational Health and Safety Code](#) (OHS Code) in November 2003 which set standards for protecting the health and safety of workers. Two sections specifically address the hazard of bloodborne pathogen exposures in healthcare workers:

*Part 2, "Hazard Assessment, Elimination and Control,"* states that employers must conduct a hazard assessment to identify existing or potential hazards (including biological hazards) within the workplace, and that employers must then implement measures to eliminate or control the hazards. Engineering controls are specified as the preferred method to eliminate or minimize hazards. *Part 35, "Health Care and Industries with Biological Hazards,"* requires employers to ensure that: (1) sharps containers are available and used; (2) workers do not recap needles; (3) all biological hazards are included in the hazard assessment; (4) written policies and procedures governing the storage, handling, use and disposal of biohazardous materials are established; (5) protocols for post-exposure management of exposed workers are in place.

These requirements were effective April 2004; the Code was updated in 2006.

### **British Columbia:**

In 2007, British Columbia's WorkSafe BC, the provincial body governing occupational safety, amended the Occupational Health and Safety Regulation [Guidelines Part 6 - Biological Agents;6.33-6.40] to require safety-engineered needles for any procedures involving use of hollow-bore needles (e.g., withdrawing blood or body fluids, accessing a vein or artery,

administering medications or fluids). This requirement applies to all workplaces, including physicians' offices and clinics, patients' homes, and long-term care facilities, in addition to hospitals. Facilities with potential employee exposure to blood and body fluid are also required to have in place an exposure control plan. The revised requirement took effect January 1, 2008. On October 1, 2008, a broader requirement took effect requiring the use of safety-engineered devices for *any* medical procedure; it covers non-hollow-bore sharp device categories, such as suture needles, scalpels, and lancets.

**Manitoba:**

The Manitoba government passed Bill 23, the [Workplace Safety and Health Amendment Act](#) (Needles in Medical Workplaces), on June 9, 2005 (S.M. 2005, c. 15; 3rd Session, 38th Legislature). The law requires that all healthcare workplaces protect workers by implementing safety-engineered needles whenever feasible. Safe work practices in relation to needle use are also required. (Appendix E-1)

**Nova Scotia:**

The [Safer Needles in Healthcare Workplaces Act](#), passed in 2006, came into effect in January 2007. Under this act, healthcare facilities in Nova Scotia are required to implement safety-engineered needles, with certain exceptions, and to provide instruction and training in their use. Compliance was required no later than one year after the law took effect. (Appendix E-2)

**Ontario:**

[Ontario Regulation 474/07 Needle Safety](#)

Under the Ontario Occupational Health and Safety Act, the regulation requires hospitals to use safety-engineered needles and needleless devices to replace conventional hollow-bore needles by September 1, 2008. A Ministry of Labour (MOL) news release, dated August 23, 2007, states, "The government intends to mandate the use of safety-engineered needles or needle-less systems in long-term care homes, psychiatric facilities, laboratories and specimen collection centres in 2009 and in other health care workplaces (home care, doctor's offices, ambulances, etc.) in 2010."

**Saskatchewan:**

[Needle Safe Devices and Improved Exposure Control Plans](#) (Document ID 12283) -*Saskatchewan's Occupational Health and Safety Act* was revised on October 19, 2005, to mandate the use of safer needles in health care and correctional facilities. The revised regulations require employers or contractors to develop and implement an exposure control plan to eliminate or minimize worker exposure if workers are required to handle, use or produce an infectious material or organism or are likely to be exposed at a place of employment. For tasks and procedures in which it is reasonably anticipated that a worker or self-employed person may incur a percutaneous injury from a contaminated hollow bore needle, the employer or contractor must: (a) identify, evaluate and select needles with engineered sharps injury protections or needleless systems, in

consultation with representatives of those workers or self-employed persons who will use the selected device; and (b) ensure that the needles with engineered sharps injury protections and needleless systems selected pursuant to clause (a) are used. An employer or contractor must maintain an injury log for all exposures involving a percutaneous injury with a sharp that may be contaminated. The requirements took effect July 1, 2006. (Appendix E-3)

According to the Saskatchewan Workers' Compensation Board, there has been a significant decrease in total claims as a result of needlestick injuries since the new regulation came into effect.

## New Brunswick's Occupational Health and Safety Act

The wording of the New Brunswick *Occupational Health and Safety Act*<sup>20</sup> allows for a very liberal interpretation of the sections which require the employer to provide a safe working environment as well as proper equipment to ensure the safety of its employees. Furthermore, it is even more liberal and blurred in regards to provisions for needle safety legislation in the healthcare system.

Section 9(1)(a) and 9(2)(a) of the act states that:

9(1) *Every employer shall*

(a) *Take every reasonable precaution to ensure the health and safety of his employees.*

9(2) *Without limiting the generality of the duties under subsection (1), every employer shall*

(a) *Ensure that the necessary systems of work, tools, equipment, machines, devices and materials are maintained in good condition and are of minimum risk to health and safety when used as directed by the supplier or in accordance with the directions supplied by the supplier.*

## The Collective Agreements

### 1. Nurses, PART III ARTICLE 39 – SAFETY AND HEALTH

39.01 The Hospital shall continue to make reasonable provisions for the safety and health of its employees during their hours of employment. **Protective devices and other equipment deemed necessary to protect employees properly from injury shall be supplied by the Hospital.** Both the Hospital and

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<sup>20</sup> S.N.B. 1983, O-0.2 (OHSA)

the Union shall cooperate to the fullest extent possible towards the prevention of accidents, and in reasonable promotion of safety and health, including promoting an environment free from abuse and harassment. **[Emphasis Added]**

## **2. Nurse Managers and Nurse Supervisors ARTICLE 39 – SAFETY AND HEALTH**

39.01 The Hospital shall continue to make reasonable provisions for the safety and health of its employees during their hours of employment. **Protective devices and other equipment deemed necessary to protect employees properly from injury shall be supplied by the Hospital.** Both the Hospital and the Union shall cooperate to the fullest extent possible towards the prevention of accidents, and in reasonable promotion of safety and health. **[Emphasis Added]**

## **3. Nursing Homes ARTICLE 35 – SAFETY AND HEALTH**

39.01 The Home shall continue to make reasonable provisions for the safety and health of its employees during their hours of employment. **Protective devices and other equipment deemed necessary to protect employees properly from injury shall be supplied by the Home.** Both the Home and the Local Union shall co-operate to the fullest extent possible towards the prevention of accidents, and in reasonable promotion of safety and health, including promoting and environment free from abuse and harassment. **[Emphasis Added]**

One would think that the interpretation of the three collective agreements which NBNU negotiated would imply that the employers already have an obligation to provide safety-engineered medical devices within their facilities; however none of them directly mandate the use of safety-engineered medical devices and this leaves a very liberal interpretation of those articles. It is obvious with the number of needle/sharps injuries occurring every single day that the precautions taken do not provide an acceptable level of protection against injury.

## **NBNU's Proposal for Change**

The facts demonstrate that changes are required in this area to ensure the safety of our healthcare professionals. Several provinces have already implemented changes through new legislation.

Safety engineered devices are generally of three types: needleless systems (e.g. needleless IV connectors), sharps with engineered sharps injury protection (e.g. self-sheathing needles on syringes), and substitution methods such as use of plastic (instead of glass) blood collection tubes or blunt suture needles.

A number of sources have identified the desirable characteristics of safety-engineered sharps<sup>21 22 23 24 25 26 27 28</sup>. These characteristics include the following:

The device is needleless;

The safety feature is an integral part of the sharps device and not an accessory;

The device preferably works passively (i.e. requires no activation by the user). If user activation is necessary, the safety feature can be engaged with a single-handed technique and allows the worker's hands to remain behind the exposed cap;

The user can easily tell whether the safety feature is activated;

The safety feature cannot be deactivated and remains protective after disposal to protect users and the waste handlers, and for environmental safety;

The device performs reliably;

The device is easy to use and practical;

The device is safe and effective for patient care.

## **Recommendations**

**NBNU recommends that the Provincial Government amends the *Occupational Health and Safety regulations* to include specific provisions including:**

**Universal Coverage: the legislation applies to every workplace where workers may be exposed to bloodborne pathogens;**

**Exposure Control Plan: The employer, through the joint health and safety committee, must formulate an exposure control plan that identifies the various elements of bloodborne pathogen exposure. The employer must**

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<sup>21</sup> OSHA (1999). *Record summary of the request for information on occupational exposure to blood borne pathogens due to percutaneous injury*. Washington, DC. US Department of Labor, Occupational Safety and Health Administration.

<sup>22</sup> FDA (1992) *FDA Safety Alert: needlestick and other risks from hypodermic needles on secondary IV administration sets – piggyback and intermittent IV*. Rockville, MD: Food and Drug Administration.

<sup>23</sup> Jagger.J et al> *Rates of needlestick injury caused by various devices in a university hospital*. N Engl J Med .1988.

<sup>24</sup> Chiarello. L.A. *Selection of needlestick prevention devices: a conceptual framework for approaching product evaluation*. AmJ Infection Control. 1995..

<sup>25</sup> Quebbeman. EJ. *How to select and evaluate new products on the market*. Surg Clin North Am. 1995

<sup>26</sup> Pugliese. G. *Using safer needle devices: the time is now*. Report of then National Committee on Safer Needle devices. Arlington Tx. Johnson and Johnson Medical. 1998.

<sup>27</sup> Fisher.J *Training for development of innovative control technology project*, San Francisco, Ca. San Francisco General Hospital. 1999.

<sup>28</sup> ECRI. *Needlestick prevention device*. Health Devices. 1999.

**solicit input from non-managerial (e.g. frontline) workers institution-wide, through the joint health and safety committee, in formulating a plan to prevent these exposures, and utilize the safest available medical devices, with the goal of eliminating occupational exposure to bloodborne pathogens. Additionally, employers must ensure that the Exposure Control Plan is accessible to employees and is well communicated within the health care institution;**

**Mandatory Adoption of Engineering Controls: The exposure control plan must include the use of safety-engineered sharp devices, with the goal of eliminating the risk of exposure. At least annually, the plan must be updated, through a process of identifying, evaluating and selecting appropriate, Health Canada approved safety-engineered devices, and this process must be documented. (engineering controls are defined as controls that isolate or remove the bloodborne pathogen hazard from the workplace. They are described as “safer medical devices used to prevent percutaneous injuries before, during or after use through safer design features.”)**

**With regard to safety-engineered sharps, NBNU recommends that:**

- a) Regulations must be open to changes in technology and practices that will help eliminate exposure to blood borne pathogens;**
- b) Regulations should not specify the use of any particular manufacturer’s product nor should they require the use of a specific safety-engineered technology. Users should have the ability to evaluate and select the safest and most effective technology for their circumstances;**
- c) The employer must provide safety engineered sharps devices with the goal of eliminating occupational exposures, as directed by the joint health and safety committee.**

**Effective Training and Education: The employers, through the joint health and safety, must provide health care workers with educational programs to build awareness of the risks associated with bloodborne pathogens and with information on the safest available alternative products and practices to eliminate these risks. Employers need to offer interactive training sessions whenever safer medical devices are implemented, including additional training for employees with no experience in handling human pathogens. This training must include legislative protections available to employees and the right to refuse any unsafe device. Such training is to be provided on an ongoing basis;**

**Sharps Injury Log:** That each health care employer must maintain a sharps injury log with detailed information on skin-piercing injuries including the type of device involved, the manufacturer, brand and model, the department or work area where the exposure occurred and an explanation of how the incident occurred. The information must be forwarded to the appropriate government enforcement agencies and be reviewed by the joint and safety committee at every meeting;

**Post-exposure Protocol:** Timely, effective medical attention must be provided to any worker who receives a skin piercing sharps injury, including immediate post-exposure evaluation and follow-up. A clearly established post-exposure protocol, developed in conjunction with joint health and safety committee, must be easily accessible and communicated to employees.

## Conclusion

Canadian health care workers are at risk from accidental needlestick injuries that can result in the transmission of disease such as HCV, HBV, and HIV. There are more than 70,000 of these injuries each year (Appendix A). These incidents generate significant costs for the Canadian Health Care system and result in great stress for the victims.

Existing occupational health and safety legislation is based on recommendations made in the early 1990's. At that time, the technology to prevent sharps injuries did not exist and there was not a good understanding of the issues related to exposure to blood borne pathogens. Since then there have been significant developments in technology that reduce the risk of sharps injuries and there is much more data on the source and nature of these incidents.

NBNU believes that the focus of occupational health and safety measures should shift to injury prevention – i.e. eliminating the risk of exposure to blood borne pathogens at the source. Specifically, we respectfully urge the provincial government to amend the *OHS regulations* to require a comprehensive program to including the mandated use of safety-engineered sharps devices, strict enforcement by government agencies of the employer's implementation of the program, improved exposure control plans and mandatory post-exposure protocols, to eliminate health care worker exposure to blood borne pathogens.

Preventing injuries by eliminating hazards is the logical first stage in improving workplace safety and the purpose of adopting safety-engineered devices, in conjunction with strict enforcement by government agencies of the program.

Building on existing regulations to mandate safety engineered sharps, requiring exposure control plans and improving health care worker education on this issue could eliminate 70% of sharps injuries;

These changes can be implemented across Canada for a modest net incremental of \$27 million per year (Appendix B). This investment could prevent up to 24,402 accidents and up to 100 occupationally acquired diseases each year for health care workers working in acute care facilities alone across Canada.

For NB, this would mean that on an annual basis, the net saving to our Health care system would be at least \$860,000. Although this cost is for acute care only, it is believed that injuries and costs would be similar in long-term care, home care and the rest of the health care system. So the total picture in terms of costs and savings would be twice this.

This is an issue in which our provincial government, our health care providers, our health care workers, manufacturer and the public have a common interest. Implementing an effective solution requires that all stakeholders work together.

**Acknowledgement**

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