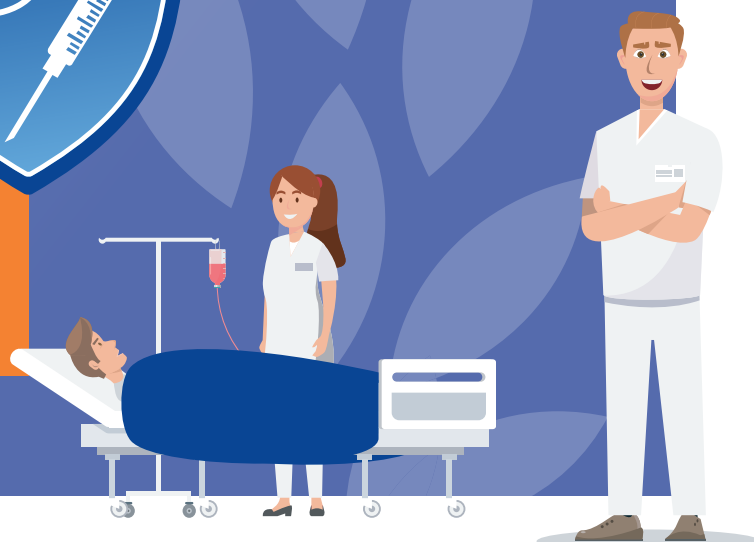


## PREVENTING NEEDLESTICK AND SHARPS ACCIDENTS IN THE HEALTH CARE SECTOR

### The way forward for Belgium



## Actively ensuring the safety of our health care professionals is of paramount importance

There's no longer any doubt about the major exposure of health care professionals to accidents involving needlesticks and sharps. Indeed, they are a high-risk group, as they increase their efforts every day to care for their patients, whether during a pandemic or not.

For several years now, beMedTech and the members of its 'Safety' working group have been paying particular attention to this issue. In 2020, the International Year of the Nurse<sup>1</sup>, they played an active role in the fight to prevent accidents caused by needlesticks and sharps. The survey of nurses and medical laboratory technologists (MLTs) carried out by the Catholic University of Leuven (KU Leuven) at their request showed that more than half (55%) of these health care professionals have already suffered a needlestick injury<sup>2</sup>.

In addition, a survey showed that the number of sharps injuries rose by 22% (equivalent to 264,000 injuries) between March 2020 and March 2021: 98% of those questioned said this increase was due to the increased pressure and stress caused by COVID-19<sup>3</sup>.

Finally, the latest study by beMedTech members concludes that the main cause of these accidents is the under-use of safe equipment: up to 7.8 x less safe equipment in Belgium than in neighboring countries for certain types of equipment<sup>4</sup>.

Consequently, beMedTech members affirm the importance of implementing an active security policy, and in this document put forward concrete recommendations for achieving this. These medical technology companies support health care professionals and facilities by offering a wide range of solutions enabling them to ensure the delivery of quality care and to work in the safest possible environment, in both inpatient and outpatient settings. BeMedTech's position is as follows: The safety of health care professionals must be a priority to guarantee patient safety.

## The state of play: over a million accidents a year in the EU

### 1. PREVALENCE

Needlestick and sharps accidents are not to be taken lightly. It is estimated that over a million accidents of this type occur every year in the EU<sup>5</sup>. This is why accidents involving needlesticks or sharps are one of the biggest threats to health care professionals.

The latest figures published in 2010 show that in Belgium, there are 9.4 accidental blood contacts per 100 occupied beds per year<sup>6</sup>. The survey results clearly show that Belgian nurses and MLTs are no exception. More than half (55%) of survey respondents have suffered a needlestick injury (nearly 64% of nurses, around 28% of MLTs)<sup>7</sup>.

**More than half (55%) of Belgian nurses and MLTs have had a needlestick accident.**

The risk is high, given that one in ten patients suffers from an infection<sup>7</sup>. A patient's blood may come into contact with a nurse or MLT's blood through a sharp instrument such as a syringe or scalpel. In addition to the high risk of infection by as many as 30 dangerous blood-borne pathogens, such as hepatitis B, hepatitis C, and HIV/AIDS, the psychological consequences can be difficult.

Almost 35% of the most recent needlestick injuries occurred during use of a needle<sup>4</sup>.

<sup>1</sup> For further information: [www.2020yearofthenurse.org](http://www.2020yearofthenurse.org)

<sup>2</sup> Hendrickx J. Résultats d'une enquête sur les accidents par piqûre auprès du personnel infirmier et des technologues de laboratoire médical [Results of a survey on needlestick injuries among nurses and medical laboratory technologists]

<sup>3</sup> Sharp injuries and Covid, 2020-2021, research by Ipsos Mori 2021 Research EBN.pdf Press release 2020: The knock-on effect of sharps injuries – Hospital Times

<sup>4</sup> Comparaison du % de matériel sécurisé utilisé en Belgique et aux Pays-Bas en 2020 [Comparison of the % of safe equipment used in Belgium and the Netherlands in 2020]. Source: beMedTech members, 2021

<sup>5</sup> Press Release 2018: Prikongevallenpreventie in Europa: een steekproef [Needlestick injuries prevention in Europe: a sample], IDEWE, 15-10-2018




<sup>6</sup> Latest available national figures (2010) from the EPINet (Exposure Prevention Information Network) national database

<sup>7</sup> Presentation by Dr. Vanacker H. Prik-, snij- en spatongevallen: incidentie en preventie [Needlestick, cut, and splash injuries: incidence and prevention], IDEWE, 19-08-2016

## CAUSES:

### 1. Under-use of safe equipment in Belgium

Thanks to the international presence of its members, beMedTech was able to compare the percentage of 'safe' medical devices in use in Belgium and the Netherlands, focusing on the most commonly used equipment with the highest risk of injury. Table 1 shows the consolidated results of this analysis. The evidence is clear: the use of 'safe' products in Belgium is much less common than in the Netherlands. Belgian service providers are therefore far less protected from accidents than their Dutch counterparts.

-  For injections, only 15% of hypodermic needles and syringes with needles (including blunt needles) are safe in Belgium, compared with 45.5% in the Netherlands.
-  For blood sampling, only 11% of needles are secure in Belgium, compared with 86% in the Netherlands, i.e. 7.8 x less.
-  55% of intravenous catheters used in Belgium are secure, compared with 87% in the Netherlands.

Belgian health care providers are **up to 7.8 x less well protected** than their Dutch counterparts in the case of blood sampling.

Material	Belgium % Safety 2020	Netherlands % Safety 2021
<b>NEEDLES</b>		
Hypodermic needles and syringes with needles (including blunt needles)	<b>14.76%</b>	<b>45.53%</b>
Blood sampling needles	<b>10.99%</b>	<b>85.99%</b>
Butterfly needles	<b>74.05%</b>	<b>76.72%</b>
<b>CATHETERS</b>		
Intravenous catheters	<b>55.03%</b>	<b>87.24%</b>




Table 1: Comparison of the % of safe equipment used in Belgium and the Netherlands in 2020. Source: beMedTech members, 2021

### 2. Difficult and non-harmonized implementation of the current legal framework in practice



The EU has long been concerned with the well-being of workers. As a result, there are a number of guidelines on the subject, whether or not they are specific to health care. However, in recent years, the problem of needlestick and sharps accidents has become a priority. This led to the publication of Directive 2010/32/EU<sup>8</sup>.

In summary, this directive stipulates that employers in the health care sector must:

-  ensure the safest possible working environment;
-  prevent medical sharps injuries, including needlestick injuries;
-  protect workers who are particularly exposed.

As always, the Member States were required to transpose this directive into their national legislation.



The Royal Decree of April 17, 2013 ensured the transposition of the European Union Directive into Belgian law<sup>9</sup>. The 'dynamic risk management system' was the starting point for this Royal Decree. Every health care facility is required to adopt a structural and systematic approach to safety and prevention within its organization.

As part of the risk analysis, the health care facility must identify all situations in which health care providers are likely to be injured and/or infected by medical sharps and exposed to blood or other potentially infectious materials in the course of their work. If necessary, the health care facility must take specific preventive measures. The Royal Decree includes provisions for the supply of medical devices with integrated safety mechanisms (safety devices), the supply of safety containers, the organization of training and awareness-raising sessions, and more.



In practice, the enforcement of these laws is the responsibility of employers such as hospitals, analysis laboratories, etc. Many health care establishments have stepped up their efforts to prevent needlestick and sharps accidents, by introducing internal accident procedures, annual risk reminders, and, in some cases, training courses. Unfortunately, these efforts are sometimes neither regular nor sufficient, as they require investment of time and money. What's more, they are not the same in all care facilities. The safety of health care professionals is therefore not evenly distributed. **What's more, the Labor Inspectorate responsible for ensuring compliance with the 2013 law does not have the human resources to inspect all establishments.**

### 3. Heavy financial and human consequences

Accidents involving needlesticks or sharps have a considerable financial impact: direct costs, costs of (preventive) examinations and treatment, possible costs of treatment in the event of infection, and even work incapacity for the health professional. According to one study, up to 37% of hepatitis B virus infections among health care professionals are directly attributable to their occupational exposure to needlestick or sharps injuries<sup>10</sup>. The direct cost of a needlestick or sharps accident is estimated at between 500 and 1,600 euros<sup>11</sup>.

<sup>8</sup> European Union Directive 2012/32/EU implementing the framework agreement on prevention of sharps injuries in the hospital and health care sector concluded by HOSPEEM and EPSU

<sup>9</sup> Royal Decree of April 17, 2013 concerning the protection of workers against the risks associated with exposure to biological agents at work, with a view to preventing sharps injuries in the hospital and health care sector

<sup>10</sup> d'Ettore G. Job stress and needlestick injuries: which targets for organizational interventions? Occupational Medicine 2016;66(8):678-680.

<sup>11</sup> Dulon M et al. Causes of needlestick injuries in three healthcare settings: analysis of accident notifications registered six months after the implementation of EU Directive 2010/32/EU in Germany. J Hosp Infect 2017;95(3):306-311.

A needlestick or sharps accident can also have serious consequences for the health care professional concerned, even if he or she is not contaminated. The impact, often prolonged, on his/her psychological well-being should not be underestimated<sup>12</sup>. The worker and his/her family often live for many months in uncertainty about the possible consequences of the injury on his/her health. In the case of HIV/AIDS, for example, it takes six months before we know whether or not an infection has been transmitted. Treatment with prophylactic agents can also cause discomfort<sup>13</sup>. Needless to say, the consequences for the person concerned and his or her family are even more serious if an infection occurs.

The costs can weigh heavily on the overall health care budget. No recent data are available for Belgium, but in Italy, for example, the total cost of needlestick injuries is estimated at over \$75 million<sup>14</sup>.

Accidents involving needlesticks or sharps **take a heavy financial and personal toll.**

## The way forward for Belgium

beMedTech supports the efforts made so far, but much remains to be done. beMedTech calls for an active security policy based on five key points:

### 1. RESUMPTION OF REPORTING AND MONITORING

The motto "to measure is to know" also applies here. For example, a standardized procedure needs to be put in place for internal reporting of needlestick and sharps accidents by health care establishments, in which each incident is reported. In fact, a large proportion of needlestick and sharps injuries go unreported and unrecorded. The survey confirms this problem. More than one in five respondents did not report their latest incident, generally because (they felt) there was no risk of contamination<sup>4</sup>.

More than one in five nurses and medical laboratory technologists say they did not report their latest needlestick or sharps accident.

In addition to streamlining internal incident reporting, a centralized national register is urgently needed. Until 2010, WIV-ISP (now renamed Sciensano) used the Exposure Prevention Information Network (EPINet) to centrally process data collected on needlestick, sharps, bite, and splash injuries in hospitals. Since then, no data are available at national level. Sciensano has expressed its willingness to transfer the EPINet software to FPS Employment, Labor, and Social Dialog (SPF ETCS) and to guide it in its implementation.

We insist that a decision be taken to register the data as soon as possible. Indeed, the effectiveness of political decisions can only be assessed if they are properly monitored, and therefore if consolidated data are available. It is also desirable for data to be standardized to enable comparisons between Member States.

### 2. MORE INTENSIVE INTRODUCTION OF SAFETY EQUIPMENT AND PROCEDURES




An international survey has shown that the use of safety devices, combined with awareness and training, can reduce the risk of needlestick injury by as much as 93%<sup>15</sup>. Similar results have also been obtained in our country, in various hospitals.

The survey seems to confirm that instruments fitted with a safety system reduce risk. In at least 85% of needlestick and sharps accidents, the instrument involved was not fitted with a safety system<sup>4</sup>.

**The use of safety devices can, in combination with awareness-raising and training, reduce risks by 93%.**

According to beMedTech's consolidated sales data, the transition to safety equipment looks set to be a difficult one. For example, only one in ten hypodermic needles sold is fitted with a safety system, while the figure for vacuum blood collection needles is around two in ten<sup>16</sup>.

In addition to the introduction of medical devices fitted with a safety system, the safety of health care providers in the workplace is enhanced by:

-  the development of more effective procedures for the safe use and disposal of medical sharps (including the provision of safety containers as close as possible to the point of use);
-  the development of safe operating procedures and specific protocols, for example in the event of (potential) contamination;
-  wearing protective equipment such as gloves and goggles.

### 3. GREATER BUDGETARY LEEWAY FOR HEALTH CARE FACILITIES

Of course, the slow introduction of safety-equipped equipment is linked to its higher purchase price. Its deployment requires a significant financial effort on the part of the health care establishment. However, a macro-economic study indicates that the replacement of conventional medical devices with equipment with safety features not only benefits health care providers in terms of quality of life, but also leads to a reduction in overall health care budget expenditure<sup>17</sup>.

beMedTech is calling on the authorities to release the necessary budgetary resources for health care establishments. Consideration should be given, for example, to possible forms of financing safety equipment, such as proportional compensation via the price per day of hospitalization, or a reduction in accident insurance premiums for health care establishments. Health care establishments could also benefit from financial support based on their good results on the basis of clear quality indicators such as the prevalence of incidents.

<sup>12</sup> Glenngård AH & Persson U. Costs associated with sharps injuries in the Swedish health care setting and potential cost savings from needle-stick prevention devices with needle and syringe. *Scand J Infect Dis* 2009;41(4):296-302

<sup>13</sup> Green B, Griffiths EC. Psychiatric consequences of needlestick injury. *Occupational medicine*. 2013;63(3):183-188.

<sup>14</sup> Mannocci A et al. How much do needlestick injuries cost? A systematic review of the economic evaluations of needlestick and sharps injuries among healthcare personnel. *Infect Control Hosp Epidemiol* 2016;37(6):635-646.

<sup>15</sup> Van Laer F. & Coenen E. Impact des aiguilles à ailettes sécurisées sur l'incidence des accidents par piqûres à l'UZA [Impact of safety butterfly needles on the incidence of needlestick injuries at Antwerp University Hospital (UZA)]. *NOSO info vol. XXIV no. 1 - 2020*

<sup>16</sup> Based on statistics made available by beMedTech to its members in 2017

<sup>17</sup> Larmuseau D. Safety-producten in België: een macro-economische gezondheidsstudie [Safety products in Belgium: a macroeconomic health study], 2007

#### 4. INVESTMENT IN TRAINING AND AWARENESS-RAISING FOR HEALTH CARE PROFESSIONALS

The KU Leuven survey also showed that lack of experience considerably increases the risk of accidents involving needlesticks or sharps. The survey also asked whether respondents had received sufficient training in the use of (safe) needlestick and injection equipment. Less than half (around 47%) of nurses and MLTs indicated that this was the case<sup>4</sup>. However, research shows that the risk of needlestick and sharps accidents is significantly lower among health care providers who have been properly trained to handle needlestick and injection equipment than among those who have not received any specific training<sup>18</sup>.

Awareness campaigns also seem to be paying off. Research shows that these campaigns raise awareness of occupational health and safety<sup>19</sup>. It is possible to raise awareness of the under-reporting of accidents and help promote an open culture where fear and taboos are broken. After all, no less than 25% of survey respondents indicated that they had not reported their latest needlestick or sharps accident out of fear<sup>4</sup>.

#### 5. A BINDING LEGAL FRAMEWORK AND TIGHTER CONTROLS

The wording of the current legislative framework leaves plenty of room for interpretation, leaving the extent of compliance largely to the discretion of the care facility. beMedTech is therefore calling on the authorities to introduce a binding legal framework within the existing Royal Decrees, which, among other things, makes the use of equipment with safety devices compulsory (following the example of the Netherlands and Germany, where safety equipment must be used both during surgical procedures and during regular care over extended periods). In practice, this is possible, for example, by including safety equipment in public procurement contracts.

The survey also shows that more control is needed: over 87% of nurses and MLTs surveyed believe that more intense and stricter control of the provision of safety-equipped equipment in the workplace would improve the safety of the working environment<sup>4</sup>. The new legislation must therefore also lay down stricter rules for the effective monitoring of compliance with obligations (as is done in the Netherlands by the Social Affairs and Employment Inspectorate of the Ministry of Social Affairs and Employment, the equivalent of the FPS for Employment, Labor, and Social Dialog in Belgium).

## An active safety policy

**beMedTech calls for an active safety policy to prevent needlestick and sharps accidents, based on five key points:**

- 1 Resumption of reporting and monitoring;
- 2 More intensive introduction of safety equipment and procedures;
- 3 Greater budgetary leeway for health care facilities to make the transition possible;
- 4 Investment in training and awareness-raising for health care professionals;
- 5 A more binding legal framework and tighter controls.

<sup>18</sup> S. Brusafferro et al. *Educational programmes and sharps injuries in health care workers*. *Occupational Medicine*, Volume 59, Issue 7, October 2009, Pages 512–514

<sup>19</sup> .R. Cunningham et al. *A safety information campaign to reduce sharps injuries: Results from the Stop Sticks campaign* *Journal of Communications In Healthcare* 3(3-4):164-184 · December 2010

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