



**Kommunal.**

**vision**



## A zero-tolerance vision for blood-borne infection caused by sharps in healthcare

Report by a joint project conducted by Swedish Municipal Workers' Union, Vision and the Swedish Association of Health Professionals



in conjunction with  **NOVUS**

## Foreword

A safe and secure working environment is a right. The results of the study show that while we have made significant progress, there are still shortcomings that need to be addressed.

We therefore call upon all of our members to jointly demand to work with safe products, to receive information and training, and to be given rapid, high-quality mental and physical care in the event that a needle-stick or cutting injury should nevertheless occur.

Together, we can make our zero-tolerance vision for blood-borne infection caused by sharps a reality.

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Chairperson

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Swedish Municipal Workers' Union – Kommunal - organizes workers in public services in municipalities and county councils

Vision organizes people who work in private or public services in municipalities, county councils or churches.

Swedish Association of Health Professionals – Vårdförbundet - is the trade union and professional organisation of four registered professions; nurses, midwives, biomedical scientists and radiographers who work in private or public health services.

Novus is the research and investigation company that helped us with the statistics.

## Instructions for the English reader

This report is a translation of a report that was originally published in Swedish.

There are two types of tables in this report. The translated green tables show the results from the three trade unions who participated in the survey. The black and white tables following after every "green" table contain results from different occupational groups within the Swedish Association of Health Professionals

The black and white tables could not be translated as they come from PDF files in the old format. They contain the same questions and answer options as the green tables. This is how you should read them: Check the number on the left-hand side of the green table and look up the corresponding number in the black and white table that follows. That way you will understand the questions and answer options, and you will be able to interpret the percentages.

<b>1. Do you use safety-engineered devices in the case of:</b>	<b>1</b>	<b>Stickskyddade produkter</b>
<b>1.1...infusion cannulae (peripheral catheters)?</b>	<b>1.1</b>	<b>...infusionskanyler (perifera infarter)?</b>
Yes		Ja
Partially		Delvis
No		Nej
Don't know		Vet ej
Not applicable		Ej relevant
<b>1.2...hypodermic needles?</b>	<b>1.2</b>	<b>...injektionskanyler?</b>
Yes		Ja
Partially		Delvis
No		Nej
Don't know		Vet ej
Not applicable		Ej relevant
<b>1.3...blood sampling products?</b>	<b>1.3</b>	<b>...blodprovstagningsprodukter?</b>
Yes		Ja
Partially		Delvis
No		Nej
Don't know		Vet ej
Not applicable		Ej relevant

In the text the Swedish version of specific parts of the directive are shown as example below.

**17 §** As needed and at no cost to employees, the employer shall provide vaccination and other preventive medical measures and controls to determine whether employees may have been exposed to or are at risk of harmful exposure to infectious agents or other biological agents.

The translation of the report was made possible by funding from BD



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## Summary and conclusions

Infection has become an increasingly significant problem within the healthcare sector. Blood-borne pathogens primarily include hepatitis B, hepatitis C and HIV however there may also be other pathogens, although these are less common.

The purpose of the study was to examine the situation with respect to how hazardous operations are handled as well as the safety thinking in place prior to the entry into force of the Work Environment Authority's amending regulation AFS 2012:7, which amends regulation AFS 2005:1 "Microbiological Work Environment Risks - Infection, Toxigenic Effect, Hypersensitivity". If possible, the aim is to identify which subject areas in the regulation work well, and which do not. One way to reduce the risk of blood-borne infection is to use safety- engineered devices. The transition to safety- engineered devices has advanced the furthest in the case of blood sampling products, approximately 60 %. In the case of peripheral intravenous lines, the transition has reached approximately 50 %. In the case of safety-engineered hypodermic needles, the transition has reached approximately 35 %.

The results of the study lead to a number of conclusions regarding continued work towards achieving **a zero-tolerance vision for blood-borne infection caused by sharps in the healthcare sector**. The joint conclusions of Swedish Municipal Workers' Union, Vision and the Swedish Association of Health Professionals are as follows:

- To **use safety- engineered devices** when available on the market and to examine the possibility of replacing or eliminating sharp instruments and tools.
- To practice **safe working methods** in the workplace. The working methods include procedures for selecting products, handling products and yellow sharps containers, and the need for personal protective equipment. The working methods also need to be adapted in order to conform to environmental and hygienic requirements, as well as patient safety.
- All relevant professional groups should **receive training** in how to use safety- engineered devices and how to practice safe working methods. Many people in many different workplaces require training.
- **Training material** should be developed which can be used by different professional groups across many different workplaces at all times of day. The training material must therefore be based on an e-learning model. Preferably, this material should be developed by an independent operator in collaboration with labour market parties.
- Personnel should **participate in the development of specifications** prior to the procurement of safety- engineered devices . This is to ensure that products are as user-friendly, safe and functionally adapted as possible.
- That operational management should have a contingency plan in place for rapidly assessing the need for **post-exposure treatment** in the event of a needle-stick or cutting injury, and should also offer **psychological support**.

## Background

Blood-borne pathogens are not only found in the blood, but may also be found in other bodily fluids, especially if there are traces of blood in them. For this reason, it is necessary to avoid coming into contact with the bodily fluids of others when providing care to and looking after people. Hepatitis B, hepatitis C and HIV are traditionally classified as blood-borne viruses. Yet there may also be other pathogens that can be transmitted through blood and bodily fluids, although these are less common.

In order for someone to become infected by a blood-borne pathogen, it must enter the body through broken skin or through mucous membranes. For this reason, it is important to try to avoid contact with bodily fluids by organizing work in a manner conducive to this aim, and by using technical aids. Despite practising solutions of this kind within the healthcare sector, it is nevertheless often necessary to use personal protective equipment such as safety gloves and safety clothing.

Infection has become an increasingly significant problem within the healthcare sector. Different tasks are associated with different risks. There is a risk of infection in all healthcare work when personnel come into close contact with other people. The risk of infection increases during work in which infectious agents or infected material is handled, when handling used syringes and cannulae, and in certain cases during cleaning.

Personnel providing care to or taking care of people are often subject to sharps injuries. People can carry an infection without displaying any symptoms. For this reason, every sharps injury must be regarded as a serious risk when caused by sharp objects that have been in contact with bodily fluids or other potentially infectious materials.

Sharps injuries within healthcare and nursing care put personnel at risk, and there are various reasons why such injuries occur. Causes include workloads that are too high, anxious patients, anxious relatives, or other events that create stress.

The consequences of a sharps injury can be severe, but most sharps injuries are referred to as zero injuries; i.e. injuries not resulting in sick leave. The injury sustained by the person in question is disinfected and dressed, but the injured employee is often able to continue working after treatment and testing. Even if the injury does not lead to any direct sick leave, it may still have serious consequences leading to sick leave sometime after the injury itself. Consequences may include:

- Infection, primarily hepatitis B or C, or HIV.
- Worry and anxiety about contracting life-threatening infections

### EU directive

Within the EU, attention has been drawn to the incidence of needlestick and cutting injuries in that HOSPEEM (European Hospital and Healthcare Employers Association) and EPSU (European Public Services Union) have agreed to prevent injuries caused by sharp instruments within healthcare and nursing care. The agreement specifies general principles for how to avoid injuries and is the basis for Council Directive 2010/32/EU implementing the Framework Agreement on prevention of sharps injuries in the hospital and healthcare sector concluded by HOSPEEM and EPSU. The Directive has been implemented in Swedish legislation through the Work Environment Authority's amending

regulation AFS 2012:7<sup>1</sup>, which amends regulation AFS 2005:1 “Microbiological Work Environment Risks - Infection, Toxigenic Effect, Hypersensitivity”.

## **Purpose**

In order to draw attention to the amending regulation and to highlight and describe the situation prior to the entry into force of the amending regulation, Swedish Municipal Workers’ Union, Vision and the Swedish Association of Health Professionals conducted a survey in November/December 2012.

The purpose of the survey was to examine the situation with respect to how hazardous operations are handled as well as the safety thinking in place prior to the entry into force of the amending regulation. If possible, the aim is to identify which subject areas in the regulation work well, and which do not.

## **Objective**

The objective is a zero-tolerance vision for blood-borne infection caused by sharps in healthcare. The risk of needlestick injuries in the workplace can be significantly reduced by using safety- engineered devices.

The objective is also, through the dissemination of information, to ensure that each employee's safety awareness is increased, while also ensuring that requirements are imposed instructing the procurement of safety- engineered devices.

## **Joint work**

Collaboration between all three unions will increase the impact of efforts, as will the requirements for employers to take responsibility for creating safe procedures relating to these operations. A joint approach significantly increases the likelihood of achieving success, as the unions, viewed in the aggregate, affect almost every part of the sector.

One measure that impacts and increases the use of safety- engineered devices is the establishment of joint requirements by Swedish Municipal Workers’ Union, Vision and the Swedish Association of Health Professionals, in which we call on employers to procure these products while at the same time urging our union trustees to demand the procurement of safety- engineered devices .

Our ambition is:

- Through joint action, to emphasize the need to increase safety for all who are involved in operations where there is a risk of sharps (needlestick and cutting) injuries.

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<sup>1</sup> Effective date 2013-05-01



## Organization

The study was carried out by a work group consisting of Stefan Lundberg of the Swedish Association of Health Professionals, Lena Jonasson Fischer of Swedish Municipal Workers' Union and Eva-Lotta Nilsson of Vision. Per Fernström and Annelie Åström of Novus contributed to survey design and data processing.

## Target groups for the study

<b>Swedish Municipal Workers' Union</b>
Assistant nurses, including podiatrists
<b>Vision</b>
Dental assistants, including dentistry/orthodontic assistants
<b>Swedish Association of Health Professionals</b>
Midwives working in the maternity/obstetrics ward
Biomedical analysts working in clinical chem. laboratories
Radiology nurses
Nurses involved in ambulance operations
Nurses involved in surgical operations
Managers
Nurses in all sectors excluding the above

## Scope/method

The study was conducted in the form of a web survey addressed to a sample of union members.

There were no e-mail addresses available for the target group of Swedish Municipal Workers' Union's members; rather, in this case respondents were invited to take the survey via a postcard with personal login information allowing the respondent to complete the online survey in question.

## Questionnaire

The study was conducted using a questionnaire containing approximately 40 statements. Novus' responsibility was to comment on the questions in the interest of quality assurance. Logos from all of the trade unions were used in the web survey. The mailing for Swedish Municipal Workers' Union also included all logos on the postcard inviting respondents to take the web survey.

Swedish Association of Health professionals/Vision/Swedish Municipal Workers' Union invites you to take a membership survey.

The survey is about how we handle hazardous operations in the healthcare sector, and how we prevent the risk of sharps (needlestick and cutting) injuries through training, information and routines.

### **Background of the study**

Many needlestick accidents occur every year in the healthcare sector, and there are many different reasons for why they occur. We are conducting this survey about how hazardous operations are handled as well as the state of safety thinking in order to highlight and draw attention to the fact that the Work Environment Authority is implementing an amending regulation, and in order to increase awareness among employees who work with sharps.

The survey represents a collaboration between the Swedish Association of Health professionals, Vision and Swedish Municipal Workers' Union, and is being conducted by the research firm Novus. Your responses will be treated anonymously, and no one will see that you have participated in the survey, or how you have responded.

The more people respond, the more certain our conclusions become – which is why your opinions are very important to us.

Click on the following link to access the survey. If clicking the link does not work, you can copy the entire link and paste it into your web browser instead.

### **Survey period**

The fieldwork was performed from 1 November 2012 - 20 December 2012. In order to ensure the highest possible response rate, 4 reminders were issued (for Swedish Municipal Workers' Union, a single reminder in the form of a new postcard):

#### Vision and the Swedish Association of Health Professionals

#### Swedish Municipal Workers' Union

2/11:	4297 mailings – Vision	2/11: 2005 postcard mailings
2/11:	2201 mailings - Swedish Association of Health Professionals	12/11: Reminder 1, mailing of postcards
9/11:	Reminder 1	20/12:END
19/11:	Reminder 2	
28/11:	Reminder 3	
7/12:	Reminder 4	
20/12:	END	

## Deliverable

The delivery consisted of tables. For Vision and Swedish Municipal Workers' Union, the sampling was random and the results have not been weighted. Because the sampling for the Swedish Association of Health Professionals comprised a quota sample, the results have been weighted as follows:

	<u>Weighting</u>
Midwives in the maternity/obstetrics ward <i>sampling 200 population 1270 =&gt;15%</i>	1%
Biomedical analysts working in clinical chem. laboratories <i>sampling 200 population 3346=&gt;6%</i>	4%
Radiology nurses <i>sampling 200 population 2933=&gt;7%</i>	3%
Ambulance nurses <i>sampling 200 population 2093=10%</i>	2%
Surgical nurses <i>sampling 200 population 4333=&gt;4,5%</i>	5%
Managers <i>sampling 200 population 6803=&gt;3%</i>	8%
Other nurses <i>sampling 1200 population 67229=&gt;1.5%</i>	76%

## Response frequency

In total, the survey was sent to 8701 persons, of which 2503 participated in the survey. A total of 439 addresses bounced for Vision and the Swedish Association of Health Professionals. Total response frequency, including Swedish Municipal Workers' Union, thus amounts to 30 %. This is how it looks broken down by according to union:

	<u>Participant frequency</u>	<u>Number of responses</u>	<u>Sampling size</u>
Vision	40%	1722	4297
Swedish Association of Health Professionals	32%	696	2400
Swedish Municipal Workers' Union	4%	85	2004

The total response frequency for Vision and the Swedish Association of Health Professionals (after removing bounces) is 39%. In order to ensure the quality of responses for Swedish Municipal Workers' Union, a non-response analysis was performed (see below).

## Non-response analysis – Swedish Municipal Workers' Union

In order to see whether Swedish Municipal Workers' Union's responses reflect the views/experiences of members in general, a non-response analysis was conducted among those who did not respond to the survey.

In total, 113 persons were contacted with the questions that the non-response analysis comprised:

What would you say is the primary reason you did not wish to respond to the survey previously sent to you via a postcard in the mail?

What is your profession?

On the whole, do you think that there are adequate rules and routines in place regarding how to work in order to avoid sharps (needlestick and cutting) injuries where you work?

Have you suffered a sharps injury yourself?

The most frequent comment in response to the first question (why the survey was not responded to) was that the recipient was unaware of having received an invitation (39 %), followed by the belief that the subject did not seem relevant (14 %).

Among those who responded to the second question, a total of 93% indicated that they work as an assistant nurse, compared to 78% in the primary study.

With respect to the two questions taken from the survey, the responses came in as follows:

### **QUESTION: On the whole, do you think that there are adequate rules and routines in place regarding how to work in order to avoid sharps (needlestick and cutting) injuries where you work?**

In the non-response analysis, a total of 86 % indicated that they did have sufficient rules and routines in place, whereas this figure came in at 60 % for those who did respond to the survey:

	Non-response study	Primary study	Swedish Association of Health Professionals	Vision
Yes	86%	60%	66%	82%
Partially	8%	31%	27%	15%
No	3%	6%	4%	2%
Don't know	2%	4%	2%	0%

**Comment:** More people responded in the affirmative in the non-response study, but if the alternative "Partially" is included, this amounts to 94% in comparison with 91%. The proportion of respondents who do not believe that there are sufficient rules and routines in place amounts to 3% and 6%, respectively, resulting in the conclusion that while one can debate the degree of affirmative responses, the proportion of respondents who disagree is fairly consistent. The results from the other unions confirm this level.

**QUESTION: Have you suffered a sharps injury yourself?**

In the non-response analysis, a total of 32% of respondents indicated that they had suffered a sharps injury themselves, compared to 49% in the primary study:

	Non-response study	Primary study	Swedish Association of Health Professionals	Vision
Yes	32%	49%	55%	58%
No	63%	51%	45%	41%
Don't know	5%	0%	0%	1%

**Comment:** In all three primary groups, approximately half of the respondents indicate that they had suffered needlestick injuries themselves, yet only one in three respondents responded affirmatively in the non-response study. One hypothesis that should be taken into consideration is that people affected by this issue may be somewhat overrepresented, and that the actual figures could theoretically be somewhat lower. But it may also be the case that Swedish Municipal Workers' Union's members in particular are not as exposed to sharps.

## Results – general

Despite the relatively low number of responses for Swedish Municipal Workers’ Union, we can discern that many questions are responded to in similar fashion across the unions. It seems as if members of the Swedish Association of Health Professionals and of Swedish Municipal Workers’ Union respond more similarly to one another, whereas Vision’s<sup>2</sup> response values are generally somewhat higher. However, the general picture leads one to the same broad primary conclusions irrespective of which union one looks at, in spite of moderate differences in terms of percentage. Note that Swedish Municipal Workers’ Union’s response frequency is low, meaning that the results should be interpreted with caution.

The report presents the statistical results in considerable detail. The comments on the results discuss the results on a global level. We leave it to the reader to study the results in greater detail based on the reader's own interests. For those interested, we also recommend “Sharps injuries in the healthcare and nursing sector”. Schmidt, Östlund, Antonsson. Report IVL Swedish Environmental Research Institution 2012.

### Responses by organization

	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers’ Union
Number of interviews	696	1722	85

### Responses by employer

The Swedish Association of Health Professionals and Vision are mainly represented at the county council level. The Swedish Municipal Workers’ Union’s representation is divided between the county council level and the municipal level.

	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers’ Union
Number of interviews	696	1722	85
County Council/ Region/County Council-owned company	78%	98%	54%
Municipality/municipal company	12%	1%	39%
Private/cooperative/foundation	9%	1%	8%
Other	1%	0%	-

<sup>2</sup> Vision organizes members in the public sector. For this reason, it is not possible to draw any conclusions regarding private dental care.

## Responses by profession

Responses are presented by profession below. Most respondents were nurses or dental nurses.

	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers' Union
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
Midwife	2%	-	-
Radiology nurse	4%	-	-
Nurse	85%	0%	-
Assistant nurse	-	1%	78%
Biomedical analyst	4%	-	-
Podiatrist	-	-	28%
Dental assistant	-	97%	-
Dental assistant/orthodontic assistant	-	1%	-
Manager	3%	0%	-
Other	5%	1%	2%

## Responses by number of years in the profession

Approximately 80% have been employed for a long time, i.e. 11 or more years

	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers' Union
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
0-5 years	4%	9%	6%
6-10 years	14%	8%	18%
11 or more years	81%	83%	76%

## Premises, furnishings and equipment<sup>3</sup>

The most important requirement in the regulation is that sharp objects that may come into contact with bodily fluids **shall** be equipped with a functioning, integrated safety mechanism.

**8 §** Premises, furnishings and equipment shall be designed so as to avoid the risks associated with biological agents, to limit the spread of biological agents, and to facilitate any decontamination required.

**8 a §** If the risk assessment in business activities covered by Sections 22 and 24 reveals a risk of sharps injuries, sharp objects intended for use on humans or animals and which may come into contact with bodily fluids shall be equipped with a functioning, integrated safety mechanism. The purpose is to reduce the risk of sharps injuries to the user. This is the case if there are products with functioning, integrated safety mechanisms developed for this purpose available on the market.

So what does the survey indicate?

Here we focus on the progress made in terms of transitioning to and using safety- engineered devices . Use of the various product groups (see below) varies among the professional groups.

Peripheral venous catheters (PVC's) are used primarily by the Swedish Association of Health Professionals. In this area, the transition to safety- engineered devices has reached approximately 50%

Vision reports high values, 75 %, in the case of hypodermic needles. The Swedish Association of Health Professionals and Swedish Municipal Workers' Union are considerably behind, at 34% and 42%, respectively.

The Swedish Association of Health Professionals and Swedish Municipal Workers' Union are at 60% when it comes to the use of blood sampling products. The question is not relevant to Vision.

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<sup>3</sup> Most sections below are introduced by an orange panel summarizing the paragraph or paragraphs of AFS 2012:7 which the questions pertain to.



<b>1. Do you use safety-engineered devices in the case of:</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
<b>1.1...infusion cannulae (peripheral catheters)?</b>			
Yes	50%	12%	35%
Partially	14%	2%	8%
No	21%	26%	13%
Don't know	2%	8%	19%
Not applicable	12%	51%	25%
<b>Do you use safety engineered devices in the case of:</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>1.2...hypodermic needles?</b>			
Yes	34%	75%	42%
Partially	21%	8%	11%
No	35%	11%	14%
Don't know	3%	4%	16%
Not applicable	7%	3%	16%
<b>1.3...blood sampling products?</b>			
Yes	60%	6%	59%
Partially	13%	0%	7%
No	12%	29%	9%
Don't know	2%	6%	8%
Not applicable	13%	59%	16%

### **Comparison within the Swedish Association of Health Professionals**

Total values in terms of use within the Swedish Association of Health Professionals' professional groups matches closely with the procurement survey conducted by the Association in late 2011. See the next section.

The transition to safety- engineered devices has advanced the furthest in the case of blood sampling products, approximately 60 %. An in-group comparison reveals that midwives report the highest value at 80%.

In the case of peripheral intravenous lines, the transition has reached approximately 50 %. Ambulance personnel report the highest values at 94%.

It is not possible to draw any conclusions based on the procurement survey with regard to conversion to safety engineered hypodermic needles. See the next section. However, here we see that the conversion has reached 34%. Ambulance personnel report somewhat lower values, with 27% stating that they use safety- engineered devices. Midwives and surgical support staff also report somewhat lower values, with approximately 30% stating that they use safety- engineered devices.

In conclusion, we note that the values are generally low and that continued efforts are required in order to increase the proportion of those who use safety- engineered devices to 100%.

1	Stickskyddade produkter											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
	<b>Totalt</b>											
	Antal intervjuer	696	59	71	59	49	61	57	340	60	92	544
	Vägt antal intervjuer	696	10	26	23	17	34	54	532	31	100	565
1.1	...infusionskanyler (perifera infarter)?											
	Ja	50%	47%	15%∇	59%	94%▲	54%	58%	49%	47%	53%	50%
	Delvis	14%	22%	6%	14%	4%	10%	7%	15%▲	3%	16%	14%
	Nej	21%	10%	10%	14%	2%∇	30%	23%	22%	22%	17%	22%
	Vet ej	2%	3%	7%	2%	-	3%	-	2%	8%▲	2%	2%
	Ej relevant	12%	17%	62%▲	12%	-	3%	12%	11%∇	20%	12%	12%
1.2	...injektionskanyler?											
	Ja	34%	31%	10%∇	32%	27%	28%	53%▲	34%	32%	27%	35%
	Delvis	21%	19%	10%	12%	10%	16%	9%∇	24%▲	12%	26%	20%
	Nej	35%	41%	13%∇	27%	63%▲	46%	28%	36%	41%	40%	34%
	Vet ej	3%	3%	8%	5%	-	5%	-	3%	5%	1%	3%
	Ej relevant	7%	7%	59%▲	24%▲	-	5%	11%	4%∇	10%	5%	8%
1.3	...blodprovstagningsprodukter?											
	Ja	60%	81%	32%∇	5%∇	24%∇	54%	67%	64%▲	29%∇	62%	62%
	Delvis	13%	15%	4%	3%	6%	15%	7%	15%▲	14%	8%	14%
	Nej	12%	3%	7%	15%	20%	16%	7%	12%	12%	16%	11%
	Vet ej	2%	-	4%	2%	4%	8%▲	2%	1%∇	8%▲	1%	1%
	Ej relevant	13%	-	52%▲	75%▲	45%▲	7%	18%	8%∇	37%▲	13%	12%∇

## Procurement of safety-engineered devices in county councils and regions

Between October and December of 2011, a survey was conducted regarding the procurement of safety products/safety- engineered devices within county councils and regions. The survey was responded to by the local departments of the Swedish Association of Health Professionals. The departments returned 16 usable responses.

The transition to safety- engineered devices has advanced the furthest within the blood sampling products area, where the proportion of products transitioned to safety- engineered devices is approximately two thirds. With respect to infusion cannulae (peripheral catheters), approximately half have migrated to safety- engineered devices .

Transition to safety- engineered devices	0 – 25 %	26 – 50 %	51 – 75 %	76 – 100 %
Blood sampling products	0	2	3	11
Infusion cannulae (peripheral catheters).	1	3	4	8

In the case of cannulae for injection and withdrawal of drugs, it was not possible to distinguish the products, as the same product can be used for both purposes. For this reason, reporting was not prepared in tabular form. However, some county councils do report a certain degree of migration to safety- engineered devices even within this area.

According to information provided by suppliers of medical devices (2012), there are County Council agreements in place and a decision has been made to achieve 100% conversion to safety products in Femklövern, Region Skåne, Jönköping County Council as well as Region Halland.

It is also noted that Stockholm, Västernorrland, Kalmar, Kronoberg and Blekinge have achieved more than 70% conversion, but that conventional products are still procured through the County Council agreement.

Finally, it is noted that Östergötland, Jämtland, Värmland, Norrbotten, Gotland, Gävleborg, Västra Götaland and Västerbotten have reached over 40% conversion on average, but that conventional products are still procured through the County Council agreement. In terms of the existing municipal agreements, no municipality in Sweden has made a decision to convert to 100% safety products.

## Decontamination, handling and handover of contaminated waste

The most important requirement in the regulation pertains to stricter rules for the "yellow container".

**11 §** Handling and handover of waste and contaminated material shall proceed in accordance with predefined routines in order to avoid health risks. Contaminated waste shall be packaged securely so that nothing can leak out. Blood and other bodily fluids that have not been decontaminated shall be transported in a secure manner and so that spills and leakage do not occur. Certain objects that have been used on humans or animals must be handled and handed over in such a way that they do not cause injury or risk transmitting infection. Containers for sharps waste must be secured against breakthrough by sharp objects. Such containers may not be reused. Those who transport or dispose of waste and contaminated material must receive the necessary information about the material and the risks associated with its handling and the need for safety measures in advance.

So what does the survey indicate?

Almost all respondents indicate that they have functioning routines for the handling of sharps waste. Vision has the highest values at 93 %. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 83 % and 81 %, respectively.

Almost all respondents indicate that containers for waste are readily accessible in the workplace. Vision has the highest values at 97%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 88 % and 82 %, respectively.

In terms of emptying frequency, the values are lower, with Vision reporting the best results at 65% The Swedish Association of Health Professionals and Swedish Municipal Workers' Union returned a value of approximately 30 %.

Overfilled containers for sharps waste are a risk factor.

<b>2. Sharps waste: "Yellow container"</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
<b>2.1 Do you believe that you have functioning routines in place for the handling of sharps waste at your work unit?</b>			
Yes	83%	93%	81%
Partially	13%	6%	18%
No	2%	1%	1%
Don't know	1%	0%	-
Not applicable	1%	0%	-
<b>2.2 In your opinion, are containers for sharps waste (yellow containers) readily accessible at your work unit?</b>			
Yes	88%	97%	82%
Partially	9%	2%	11%
No	2%	0%	4%
Don't know	1%	0%	1%
Not applicable	1%	0%	2%
<b>2.3 Are the containers for sharps waste (yellow containers) collected before they become overfilled?</b>			
Yes, always	30%	65%	27%
Yes, often	42%	26%	49%
Yes, sometimes	16%	3%	8%
No	6%	2%	8%
Don't know	2%	3%	7%
Not applicable	4%	1%	-

## Comparison within the Swedish Association of Health Professionals

No real differences between the groups are discernible with regard to the existence of functioning routines for the handling of sharps waste (total 83 %) and ready accessibility in the workplace of containers for waste (total 88 %). Biomedical analysts report the best results, approximately 50%, in terms of the "yellow container" always being collected before it becomes overfilled. Paramedics are not quite as fortunate, with only 18% of them indicating that the "yellow container" is always collected before it becomes overfilled.

2	Stickande och skärande avfall "Gula burken"											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
	<b>Totalt</b>											
	Antal intervjuer	696	59	71	59	49	61	57	340	60	92	544
	Vägt antal intervjuer	696	10	26	23	17	34	54	532	31	100	565
2.1	<b>Anser du att ni har fungerande rutiner för hantering av stickande och skärande avfall på din arbetsenhet?</b>											
	Ja	83%	86%	89%	92%	86%	90%	96%▲	81%▽	72%	77%	85%▲
	Delvis	13%	14%	8%	8%	12%	8%	4%▽	14%▲	27%▲	15%	12%
	Nej	2%	-	-	-	2%	2%	-	3%	-	5%	2%
	Vet ej	1%	-	1%	-	-	-	-	1%	1%	2%	0%
	Ej relevant	1%	-	1%	-	-	-	-	2%	-	2%	1%
2.2	<b>Anser du att behållare för stickande och skärande avfall (gula burkar) finns lätt tillgängliga på din arbetsenhet?</b>											
	Ja	88%	95%	87%	95%	73%	93%	95%	86%	74%▽	82%	89%▲
	Delvis	9%	5%	10%	5%	20%	7%	5%	9%	20%▲	10%	8%
	Nej	2%	-	1%	-	6%	-	-	2%	6%	3%	2%
	Vet ej	1%	-	1%	-	-	-	-	1%	-	3%▲	0%▽
	Ej relevant	1%	-	-	-	-	-	-	2%	-	2%	1%
2.3	<b>Hämtas behållarna för stickande och skärande avfall (gula burkar) innan de blir överfyllda?</b>											
	Ja, alltid	30%	25%	48%▲	34%	18%	38%	42%	28%▽	31%	21%▽	32%
	Ja, ofta	42%	51%	30%	47%	43%	39%	42%	42%	25%▽	45%	42%
	Ja, ibland	16%	10%	8%	12%	33%▲	15%	5%▽	17%	28%	25%▲	13%▽
	Nej	6%	10%	6%	3%	2%	3%	5%	6%	12%	5%	6%
	Vet ej	2%	3%	8%▲	3%	-	2%	2%	2%	4%	2%	2%
	Ej relevant	4%	-	-	-	4%	3%	4%	4%	-	2%	5%

## Personal protective equipment

The most important requirement in the regulation states that protective equipment shall be used in order to avoid blood-borne infection.

**13 §** Protective clothing shall be worn in work that may entail exposure to infectious agents, and otherwise as needed. Protective clothing must be stored separately from other clothing. Protective clothing and other personal protective equipment shall be removed when leaving the work area. They shall be handled so as to avoid the spread of biological agents.

Safety gloves shall be used in work entailing a risk of skin contact with biological agents if such agents may cause health problems upon contact with the skin.

Respiratory protection shall be used in work entailing a risk of inhaling biological agents where technical measures are insufficient for preventing such ambient air pollution from causing health problems.

So what does the survey indicate?

In terms of access to protective equipment, Vision reports the highest value at nearly 100%. Access to protective equipment is lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 80% and 76%, respectively.

The value in terms of using protective equipment is lower than those for access. With regard to the use of protective equipment, Vision reports the highest value at nearly 83%. The use of such equipment is lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 60% and 65%, respectively. It is concerning that, in the case of the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, about 30% indicate that they only partially use the protective equipment needed in order to avoid blood-borne infection.



<b>3. Protective equipment, etc.</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
<b>3.1 Do you have access to the protective equipment, gloves, visors, clothing, etc. required in order for you to avoid blood-borne infection?</b>			
Yes	80%	98%	76%
Partially	17%	2%	21%
No	0%	0%	2%
Don't know	1%	0%	-
Not applicable	2%	0%	-
<b>3.2 Do you use the protective equipment required in order to avoid blood-borne infection?</b>			
Yes	60%	83%	65%
Partially	35%	15%	32%
No	2%	1%	-
Don't know	1%	0%	2%
Not applicable	3%	1%	1%

### Comparison within the Swedish Association of Health Professionals

In terms of access to protective equipment (80% in total), no real differences between the groups can be distinguished.

However, paramedics appear to have a somewhat lower frequency of use than other professional groups.

Working in a manner secured against needlesticks entails having access to proper personal protective equipment such as gloves, protective apron and/or visor, depending on the activity in question. Yet it is also necessary to use the equipment available.

3	Skyddsutrustning m m											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
	<b>Totalt</b>											
	Antal intervjuer	696	59	71	59	49	61	57	340	60	92	544
	Vägt antal intervjuer	696	10	26	23	17	34	54	532	31	100	565
3.1	<b>Har du tillgång till den skyddsutrustning, handskar, visir, kläder etc. som behövs för att du ska kunna undvika blodsmitta?</b>											
	Ja	80%	92%	90%	88%	90%	97%▲	89%	77%▽	69%	83%	80%
	Delvis	17%	7%	6%	10%	8%	3%▽	9%	19%▲	31%▲	14%	16%
	Nej	0%	-	3%	2%	2%	-	-	0%	-	-	1%
	Vet ej	1%	2%	-	-	-	-	-	1%	-	-	1%
	Ej relevant	2%	-	1%	-	-	-	2%	3%	-	3%	2%
3.2	<b>Använder du den skyddsutrustning som behövs för att undvika blodsmitta?</b>											
	Ja	60%	66%	69%	66%	53%	61%	63%	59%	71%	54%	60%
	Delvis	35%	31%	24%	31%	47%	39%	23%▽	37%	26%	41%	35%
	Nej	2%	3%	-	2%	-	-	7%▲	1%	3%	2%	1%
	Vet ej	1%	-	1%	-	-	-	-	1%	-	-	1%
	Ej relevant	3%	-	6%	2%	-	-	7%	3%	-	3%	3%

## Knowledge, information and instructions

The most important requirement in the regulation is that all employees must possess suitable training and sufficient knowledge, and must have received handling and safety instructions.

**14 §** The employer shall ensure that the person supervising work as well as all employees who may be exposed to microbiological work environment risks possess suitable training and sufficient knowledge regarding the biological agents that may arise during the activities. New and temporary personnel shall receive introductory training when commencing work. Training and skills must be updated as needed.

Those who may be exposed to bodily fluids from humans or animals covered by Sections 22 and 24 must possess special training.

The training must provide knowledge regarding

- good hygienic working environment practice,
- routines required under Section 16,
- how to handle sharp objects and contaminated materials, including in the form of waste
- how to use safe products in order to protect oneself against sharps injuries,
- the importance of vaccinations and
- how to reduce the risk of infection in the wake of an adverse event.

All those performing work that may entail risks caused by biological agents in the workplace must receive sufficient information about these risks, and how to avoid them.

**15 §** The employer shall ensure that employees have received handling and safety instructions about how to perform the work with satisfactory safety.

The employer shall ensure that the instructions have been correctly understood by all parties concerned, and that they are complied with.

These instructions shall also include measures required in order to protect others than those to whom the instructions are addressed.

Instructions are to be repeated as necessary and supervised jointly by employers and employees so as to adapt them to new or changing circumstances.

If deficiencies are detected, the instructions shall be changed.

Handling and safety instructions for the use of infectious agents must be formulated in writing and otherwise as needed in order to avoid illness or accidents. Such written instructions must always be posted in the workplace.

These instructions shall always include the measures to be taken in response to adverse events.

So what does the survey indicate?

In terms of compliance with the rules, Vision comes in highest at 83%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 68% and 73%, respectively.

All the unions come in at just over 60% with regard to having received sufficient knowledge during vocational training.

In terms of adequate information in the workplace, Vision comes in highest at 82%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 60% and 58%, respectively.

In terms of knowing what to do in case of a needlestick injury, Vision comes in highest at 79%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 73% and 66%, respectively.

<b>4. Rules, routines, information and training</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
<b>4.1 In your opinion, does your team follow the work rules for how to avoid sharps injuries in your work unit?</b>			
Yes	68%	82%	73%
Partially	28%	16%	26%
No	2%	1%	1%
Don't know	1%	0%	-
Not applicable	2%	0%	-
<b>4.2 In your opinion, was sufficient knowledge provided during your vocational training about how to work in order to avoid sharps injuries and blood-borne infection?</b>			
Yes	64%	62%	61%
Partially	24%	23%	22%
No	9%	11%	14%
Don't know	2%	3%	1%
Not applicable	1%	1%	1%
<b>4.3 In your opinion, have you received sufficient information in the workplace about how to work in order to avoid sharps injuries and blood-borne infection?</b>			
Yes	60%	82%	58%
Partially	26%	15%	27%
No	11%	2%	14%
Don't know	1%	0%	1%
Not applicable	2%	0%	-

4.4 Do you know what to do in the event of a sharps injury?			
Yes	73%	79%	66%
Partially	25%	19%	25%
No	1%	1%	9%
Don't know	0%	0%	-
Not applicable	0%	0%	-

The values are lower when it comes to theoretical and hands-on training regarding safety engineered devices.

In terms of theoretical instruction, Vision comes in highest at 65%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 47% and 53%, respectively.

In terms of hands-on training, Vision comes in highest at 59%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 36% and 41%, respectively.

In terms of whether the transition to safety engineered devices has entailed a change in working methods, Vision comes in highest at 59%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 36% and 41%, respectively.

Notably, just over 20% report not having received any theoretical information, and approximately 30% have not received any hands-on training. This is when over 40% indicated that it was necessary to change working methods.

<b>5. Safety- engineered devices</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>5.1 Theoretical information</b>			
Yes	47%	65%	53%
Partially	23%	11%	18%
No	27%	16%	22%
Don't know	1%	3%	-
Not applicable	3%	5%	7%
<b>5.2 Hands-on training</b>			
Yes	36%	59%	41%
Partially	24%	11%	19%
No	36%	22%	32%
Don't know	1%	3%	1%
Not applicable	3%	5%	7%
<b>5.3 Has the transition to safety- engineered devices required you to change your working methods?</b>			
Yes	15%	16%	11%
Partially	34%	26%	22%
No	35%	37%	39%
Don't know	4%	8%	9%
Not applicable	12%	13%	19%

In terms of whether the respondents believe, on the whole, that there are sufficient rules and routines in place in order to avoid sharps injuries, Vision comes in highest at 82%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 66% and 60%, respectively.

In terms of whether the respondents believe, on the whole, that the entire team possesses sufficient knowledge to be able to work safely, Vision comes in highest at 77%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 56% and 49%, respectively.

<b>6. In Conclusion</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
<b>6.1 On the whole, do you think that there are adequate rules and routines in place regarding how to work in order to avoid sharps injuries where you work?</b>			
Yes	66%	82%	60%
Partially	27%	15%	31%
No	4%	2%	6%
Don't know	1%	0%	4%
Not applicable	1%	0%	-
<b>6.2 On the whole, do you think that your team possesses sufficient knowledge regarding how to work in order to avoid sharps injuries where you work?</b>			
Yes	56%	77%	49%
Partially	33%	19%	40%
No	5%	3%	2%
Don't know	4%	1%	8%
Not applicable	1%	0%	-

## Comparison within the Swedish Association of Health Professionals

In terms of compliance with rules, knowledge imparted in vocational training, information in the workplace and knowledge regarding what to do in case of injury, the results lie between 60% and 70%. It is worth noting that approximately 25% agree only partially.

There is room for improvement here.

4	Regler, rutiner, information och utbildning											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
	<b>Totalt</b>											
	<b>Antal intervjuer</b>	<b>696</b>	<b>59</b>	<b>71</b>	<b>59</b>	<b>49</b>	<b>61</b>	<b>57</b>	<b>340</b>	<b>60</b>	<b>92</b>	<b>544</b>
	<b>Vägt antal intervjuer</b>	<b>696</b>	<b>10</b>	<b>26</b>	<b>23</b>	<b>17</b>	<b>34</b>	<b>54</b>	<b>532</b>	<b>31</b>	<b>100</b>	<b>565</b>
4.1	<b>Anser du att ni följer reglerna om hur ni ska arbeta för att undvika stick- och skärskador på din arbetsenhet?</b>											
	Ja	68%	63%	83%	80%	69%	69%	84%▲	65%▽	65%	54%▽	70%▲
	Delvis	28%	32%	13%	19%	29%	31%	16%▽	30%▲	34%	39%▲	26%▽
	Nej	2%	3%	-	-	-	-	-	2%	1%	2%	2%
	Vet ej	1%	2%	3%	2%	2%	-	-	1%	1%	3%▲	0%▽
	Ej relevant	2%	-	1%	-	-	-	-	2%	-	2%	2%
4.2	<b>Anser du att du fick tillräckliga kunskaper i din yrkesutbildning om hur du ska arbeta för att undvika stick- och skärskador och blodsmitta?</b>											
	Ja	64%	61%	62%	68%	55%	57%	53%	66%	77%	67%	63%
	Delvis	24%	25%	25%	25%	31%	33%	28%	23%	18%	23%	24%
	Nej	9%	14%	6%	5%	12%	7%	14%	9%	5%	10%	10%
	Vet ej	2%	-	6%	2%	2%	3%	5%	1%	-	-	2%
	Ej relevant	1%	-	1%	-	-	-	-	1%	-	-	1%
4.3	<b>Anser du att du fått tillräcklig information på din arbetsplats om hur du ska arbeta för att undvika stick- och skärskador och blodsmitta?</b>											
	Ja	60%	54%	62%	63%	55%	67%	82%▲	58%▽	37%▽	47%▽	64%▲
	Delvis	26%	36%	28%	27%	33%	18%	11%▽	27%	30%	38%▲	23%▽
	Nej	11%	7%	8%	10%	12%	10%	5%	12%	29%▲	13%	10%▽
	Vet ej	1%	3%	-	-	-	3%	2%	1%	3%	-	1%
	Ej relevant	2%	-	1%	-	-	2%	-	2%	-	2%	2%
4.4	<b>Vet du vad du ska göra om du råkar ut för en stick- eller skärskada?</b>											
	Ja	73%	64%	72%	61%	51%▽	75%	89%▲	72%	50%▽	61%▽	76%▲
	Delvis	25%	31%	23%	37%	45%	21%	7%▽	26%	47%▲	35%▲	22%▽
	Nej	1%	2%	4%	2%	2%	3%	2%	1%	2%	4%▲	1%▽
	Vet ej	0%	2%	1%	-	2%	-	2%	0%	1%	-	1%
	Ej relevant	0%	2%	-	-	-	-	-	1%	-	-	1%



Within the Swedish Association of Health Professionals, 27% report not having received any theoretical information, and approximately 36% report having not received any hands-on training. This is remarkable in view of the fact that approximately 50 % report that it was necessary to change working methods.

Radiological nurses constitute a positive exception, with 68% reporting having received theoretical information and 61% having received hands-on training.

5		Stickskyddade produkter										
5.1		Teoretisk information										
5.2		Praktisk övning										
5.3		Har övergången till stickskyddade produkter inneburit att du behövt ändra din arbetsteknik?										
		Cellinnehåll: Kolumn% Chi2 level(W):5%										
		Occupations in the sample of respondents							Number of years in the occupation			
		Totalt	Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years
Ja		47%	44%	39%	68%▲	51%	49%	51%	45%	56%	36%▽	48%
Delvis		23%	20%	17%	19%	20%	20%	23%	24%	16%	23%	23%
Nej		27%	36%	20%	10%	29%	25%	19%	28%	27%	35%▲	25%
Vet ej		1%	-	-	-	-	-	-	1%	-	2%	1%
Ej relevant		3%	-	24%▲	3%	-	7%	7%	2%▽	1%	4%	3%
Ja		36%	31%	34%	61%▲	43%	36%	39%	35%	45%	38%	35%
Delvis		24%	20%	13%	20%	27%	20%	21%	25%	8%▽	22%	25%
Nej		36%	49%	25%	15%▽	31%	38%	33%	38%	46%	35%	36%
Vet ej		1%	-	-	-	-	-	-	1%	-	2%	1%
Ej relevant		3%	-	28%▲	3%	-	7%	7%	1%▽	1%	4%	3%
Ja		15%	12%	10%	10%	24%	16%	18%	15%	18%	14%	15%
Delvis		34%	32%	14%▽	36%	33%	33%	35%	35%	19%	39%	34%
Nej		35%	51%	24%	36%	39%	21%	30%	37%	43%	32%	35%
Vet ej		4%	3%	4%	5%	-	13%▲	2%	4%	7%	6%	4%
Ej relevant		12%	2%	48%▲	14%	4%	16%	16%	10%▽	12%	10%	12%

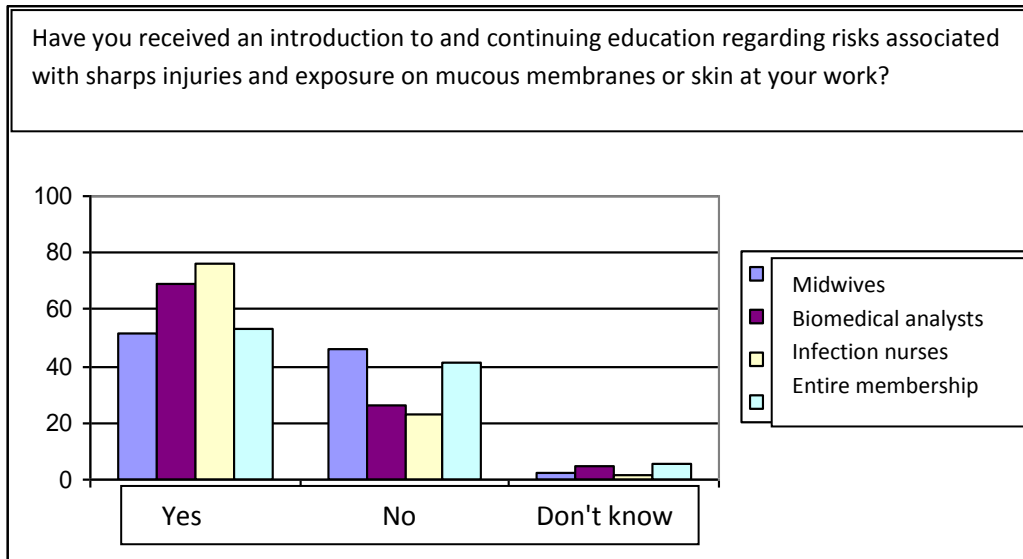
Within the Swedish Association of Health Professionals, 66% believe that they have sufficient rules and routines in place in order to avoid sharps injuries. 27% agree only in part.

Further, 56% consider that the entire team possesses sufficient knowledge to be able to work safely. 33% agree only in part.

The fact that nearly a third of respondents agree only in part shows that the level of information and knowledge has room for improvement.

6	Sammanfattningsvis											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Totalt	Occupations in the sample of respondents						Number of years in the occupation			
			Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years
	Antal intervjuer	696	59	71	59	49	61	57	340	60	92	544
	Vägt antal intervjuer	696	10	26	23	17	34	54	532	31	100	565
6.1	<b>Anser du sammantaget att ni har tillräckliga regler och rutiner för hur ni ska arbeta för att undvika stick- och skärskador på din arbetsenhet?</b>											
	Ja	66%	68%	77%	64%	57%	69%	86%▲	64%▽	55%	48%▽	70%▲
	Delvis	27%	29%	18%	32%	41%	26%	12%▽	28%	34%	39%▲	24%▽
	Nej	4%	3%	1%	2%	2%	2%	2%	5%	11%	7%	3%▽
	Vet ej	1%	-	3%	2%	-	3%	-	1%	1%	4%▲	1%▽
	Ej relevant	1%	-	-	-	-	-	-	1%	-	2%	1%
6.2	<b>Anser du sammantaget att ni har tillräckliga kunskaper i hela arbetslaget om hur ni ska arbeta för att undvika stick- och skärskador på din arbetsenhet?</b>											
	Ja	56%	56%	63%	58%	59%	62%	61%	55%	41%	47%▽	59%▲
	Delvis	33%	34%	28%	36%	35%	34%	30%	34%	40%	36%	33%
	Nej	5%	5%	3%	3%	4%	-	5%	6%	12%	8%	4%▽
	Vet ej	4%	5%	6%	3%	2%	3%	4%	4%	6%	7%	3%▽
	Ej relevant	1%	-	-	-	-	-	-	2%	-	2%	1%

However, when compared with the survey conducted by the Swedish Association of Health Professionals in 2005, the values have improved significantly. In the 2005 survey, approximately 50% reported that they had received information regarding the risk of sharps injuries and exposure to blood on the mucous membranes and skin in the workplace, whereas approximately 40% reported not having received information regarding the risk of sharps injuries and exposure to blood on the mucous membranes and skin in the workplace. See table on next page.



***Proportion of individuals per sampling group (as a percentage) reporting having received information regarding the risk of sharps injuries and exposure to blood on the mucous membranes and skin in the workplace. (Source: Swedish Association of Health Professionals)***

## **Actions and reporting in the event of illness and adverse events**

The most important requirement in the regulation is that there should be a contingency plan in place for actions to be taken in response to adverse events, and that, if the adverse event entails a risk of transmission of infection, the employer must ensure that the person affected by the adverse event is cared for immediately.

**16 §** The employer shall ensure that there is a contingency plan in place for actions to be taken in response to adverse events.

The employer shall ensure that there are routines in place for

- reporting of adverse events and ongoing documentation of the same,
- actions to limit the consequences of adverse events,
- cooperation with affected persons in order to determine the causes of adverse events or illness and
- actions to avoid the recurrence of adverse events or illness.

Actions in response to adverse events must be drilled regularly. The drills must vary based on a range of conceivable events.

**16 a §** Employees shall report adverse events to management as soon as possible, as well as any health problems that may be related to the biological agents occurring in the workplace.

**16 b §** If the adverse event entails a risk of transmission of infection, the employer must ensure that the person affected by the adverse event is cared for immediately. The actions shall also include contact with medical experts to assess the need for post-exposure prophylaxis and medical checks.

**16 c §** There shall be a separate contingency plan in place for actions to take in response to incidents that may lead to infectious substances in risk classes 3 or 4 causing grave or widespread harm. This shall include an evacuation plan. All those who may be affected shall be informed of the plan. The actions provided for in the contingency plan, including the evacuation plan, must be drilled at least once a year.

So what does the survey indicate with regard to routines and cooperation?

In terms of functioning routines for reporting incidents and accidents in the work unit, Vision comes in highest at 87%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 74% and 67%, respectively.

In terms of functioning routines for rapid deployment of post-exposure treatment in the work unit, Vision comes in highest at 65%. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 49% and 40%, respectively.

In terms of good cooperation between the employer and safety officers/employee representatives in the work unit, Vision comes in highest at 74 %. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 49 % and 53 %, respectively.

<b>7.1. Do you believe that your work unit has functioning routines in place for reporting incidents and accidents, e.g. sharps injuries?</b>			
	<b>Swedish Association of Health Professionals</b>	<b>Vision</b>	<b>Swedish Municipal Workers' Union</b>
Yes	74%	87%	67%
Partially	17%	10%	21%
No	3%	1%	6%
Don't know	4%	1%	6%
Not applicable	2%	0%	-
<b>7.2. Do you believe that your work unit has functioning routines in place for rapid deployment of post-exposure treatment in the event of sharps injuries?</b>			
Yes	49%	65%	40%
Partially	20%	19%	19%
No	8%	4%	13%
Don't know	21%	11%	28%
Not applicable	2%	1%	-
<b>7.3 Do you believe that there is good cooperation at your work unit between the employer and safety officers/employee representatives in order to ensure a good working environment and to investigate the causes of accidents and incidents?</b>			
Yes	49%	74%	53%
Partially	31%	19%	31%
No	12%	3%	12%
Don't know	8%	4%	5%
Not applicable	1%	0%	-

## Comparison within the Swedish Association of Health Professionals – routines for reporting etc.

Within the Swedish Association of Health Professionals, 74% report having functioning routines in place in the work unit. Managers report the highest value at 91%

Just under 50% believe that there are functioning routines in place for rapid deployment of post-exposure treatment. Here too, managers report the highest value at 72%. Just under 50% believe that there is good cooperation in place between the employer and safety officer in order to ensure a good working environment and to investigate the causes of accidents and incidents. Here as well, managers report the highest values at 72%.

Cellinnehåll: Kolumn% Chi2 level(W):5%	Totalt	Occupations in the sample of respondents						Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years
		<b>7.1 Anser du att ni har fungerande rutiner för rapportering av tillbud och olyckor, t ex stick- och skärskador på din arbetsenhet?</b>									
Ja	74%	68%	77%	73%	73%	77%	91%▲	71%▽	63%	63%▽	76%▲
Delvis	17%	20%	13%	17%	20%	13%	7%▽	19%	18%	23%	16%
Nej	3%	7%	6%	3%	2%	5%	-	4%	5%	8%▲	2%▽
Vet ej	4%	5%	4%	7%	4%	5%	2%	4%	14%▲	6%	3%▽
Ej relevant	2%	-	-	-	-	-	-	2%	-	-	2%
<b>7.2 Anser du att ni har fungerande rutiner för att snabbt sätta in postexponeringsbehandling vid stick- och skärskador på din arbetsenhet?</b>											
Ja	49%	47%	49%	44%	51%	51%	72%▲	46%▽	35%	39%▽	51%▲
Delvis	20%	14%	15%	19%	24%	20%	14%	20%	12%	24%	19%
Nej	8%	14%	7%	8%	4%	11%	2%	9%	15%	9%	8%
Vet ej	21%	25%	27%	27%	20%	18%	12%	22%	38%▲	27%	19%▽
Ej relevant	2%	-	1%	2%	-	-	-	3%	-	2%	3%
<b>7.3 Anser du att ni har en bra samverkan med arbetsgivare och skyddsombud/arbetstagarrepresentanter för att skapa en god arbetsmiljö och utreda orsakerna till olyckor och tillbud på din arbetsenhet?</b>											
Ja	49%	49%	61%	54%	53%	57%	72%▲	45%▽	34%	45%	50%
Delvis	31%	24%	20%	27%	24%	18%	25%	33%▲	35%	27%	31%
Nej	12%	10%	8%	10%	18%	11%	-▽	13%	12%	20%▲	10%▽
Vet ej	8%	17%	11%	8%	4%	13%	4%	8%	19%▲	8%	8%
Ej relevant	1%	-	-	-	-	-	-	1%	-	-	1%

So what does the survey indicate in terms of actions?

In terms of whether rapid assistance is provided in order to assess the need for post-exposure treatment, no real differences can be discerned between Vision (64%) and the Swedish Association of Health Care Professionals (62 %), while Swedish Municipal Workers' Union comes in somewhat lower at 43 %.

In terms of whether psychological support is offered, around 90 % of all unions answered negatively.

The fact that around 25% do not receive rapid assistance to assess the need for post-exposure treatment, and that 90% have not been offered psychological support is problematic, as it is well-known that anxiety not addressed in a timely manner can have grave psychological consequences. The risk of contracting a serious illness means that the victims of sharps injuries feel strong concerns. Such concern naturally has serious implications for well-being, and may also affect mental health. Such anxiety certainly concerns one's own health, but there are also fears about having transmitted a disease to a relative or of doing so in the future. A sharps injury can thus cause health problems – even if one is not infected.

One plausible explanation may be found in AFS 2005:1 amending 2013-05-01, specifically in the comment on Section 16: *It is important for there to be routines in place for taking rapid action in response to adverse events as required, e.g. in case of acute hypoxia, anaphylactic shock or risk of infection requiring rapid post-exposure treatment. In order for this to work, the employees also need to know who to turn to in an emergency. See also AFS 1999:7 regarding first aid and crisis support.*

As of 2013-05-01, the following applies:

**16 b §** If the adverse event entails a risk of transmission of infection, the employer must ensure that the person affected by the adverse event is cared for immediately. The actions shall also include contact with medical experts to assess the need for post-exposure prophylaxis and medical checks.

This is clarified in the comments on Section 16 b as follows: *If the employer makes sure in advance to establish contact with a care provider with expertise in assessing the need to administer post-exposure prophylaxis and medical checks, it will be possible to provide rapid care, mental as well as physical, to victims of adverse events, e.g. sharps injuries. If this is the case, the employer may be considered to have fulfilled the requirements under 16 b §. In addition, there are already rules in place regarding psychological care for personnel which employers are required to comply with, as enshrined, inter alia, in the National Board of Occupational Safety and Health's (AFS 1999:7) and in the Work Environment Authority's regulations on systematic work environment management (AFS 2001:1).*

Between 73% and 82% of respondents reported the event to their supervisors, who investigated the event in 22% to 41% of cases, whereas some type of action was only taken in 7% to 16% of cases.

<b>8. Sharps injuries Think about the last time you suffered a sharps injury</b>			
	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers' Union
Number of interviews	696	1722	85
<b>8.1 Did you receive rapid assistance from your employer in order to assess the need for post-exposure treatment?</b>			
<*>Number of interviews	284	804	30
Yes	62%	64%	43%
No	29%	24%	50%
Don't know	9%	12%	7%
<b>8.2 Were you offered psychological support?</b>			
Yes	6%	5%	-
No	90%	88%	93%
Don't know	5%	7%	7%
<b>8.3 Did you report the event to your supervisor?</b>			
Yes	82%	78%	73%
No	15%	18%	23%
Don't know	4%	4%	3%
<b>8.4 Did your supervisor/employer investigate the event?</b>			
Yes	22%	41%	23%
No	54%	39%	63%
Don't know	24%	20%	13%
<b>8.5 Did your supervisor/employer take any action other than that indicated above in response to the event?</b>			
Yes	15%	16%	7%
No	60%	59%	67%
Don't know	25%	25%	27%



### **Comparison within the Swedish Association of Health Professionals – actions**

In response to the question regarding rapid assistance to assess the need for post-exposure treatment, 62% responded in the affirmative and 29% responded negatively.

90% answered no to the question of whether psychological support was provided.

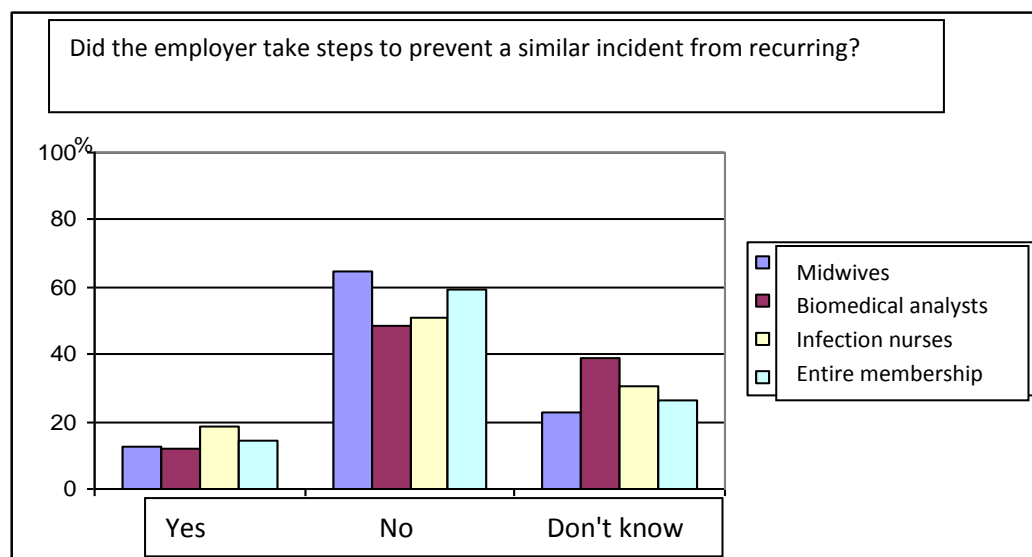
Approximately 80% of respondents reported the event to their supervisors, who investigated the event in 22% of cases, whereas some type of action was only taken in 15% of cases.

8	Stick- och skärskador Tänk på den senaste gån											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
	<b>Totalt</b>											
	Antal intervjuer	696	59	71	59	49	61	57	340	60	92	544
	Vägt antal intervjuer	696	10	26	23	17	34	54	532	31	100	565
8.1	<b>Fick du snabb hjälp av din arbetsgivare för att bedöma behovet av postexponeringsbehandling?</b>											
	<*>Antal intervjuer	284	24	19	27	20	33	16	145	23	46	215
	<*>Vägt antal intervjuer	289	4	7	11	7	18	15	227	12	49	228
	Ja	62%	50%	58%	70%	75%	79%	56%	60%	66%	56%	62%
	Nej	29%	46%	32%	15%	20%	15%	44%	30%	26%	33%	28%
	Vet ej	9%	4%	11%	15%	5%	6%	-	10%	8%	10%	9%
8.2	<b>Fick du erbjudande om psykologiskt stöd?</b>											
	<*>Antal intervjuer	284	24	19	27	20	33	16	145	23	46	215
	<*>Vägt antal intervjuer	289	4	7	11	7	18	15	227	12	49	228
	Ja	6%	-	-	4%	-	6%	6%	6%	-	5%	6%
	Nej	90%	100%	100%	85%	95%	82%	94%	90%	89%	91%	90%
	Vet ej	5%	-	-	11%	5%	12%	-	4%	11%	4%	4%
8.3	<b>Rapporterade du händelsen till din chef?</b>											
	<*>Antal intervjuer	284	24	19	27	20	33	16	145	23	46	215
	<*>Vägt antal intervjuer	289	4	7	11	7	18	15	227	12	49	228
	Ja	82%	63%	84%	78%	95%	76%	81%	82%	79%	83%	81%
	Nej	15%	33%	16%	22%	5%	21%	19%	14%	21%	14%	15%
	Vet ej	4%	4%	-	-	-	3%	-	4%	-	4%	4%
8.4	<b>Har din chef/arbetsgivare gjort någon utredning av händelsen?</b>											
	<*>Antal intervjuer	284	24	19	27	20	33	16	145	23	46	215
	<*>Vägt antal intervjuer	289	4	7	11	7	18	15	227	12	49	228
	Ja	22%	25%	37%	44%	25%	33%	19%	20%	32%	23%	22%
	Nej	54%	54%	42%	41%	50%	55%	75%	53%	55%	52%	54%
	Vet ej	24%	21%	21%	15%	25%	12%	6%	27%▲	13%	25%	24%
8.5	<b>Vidtog din chef/arbetsgivaren någon annan åtgärd än, vad som angivits ovan, med anledning av händelsen?</b>											
	<*>Antal intervjuer	284	24	19	27	20	33	16	145	23	46	215
	<*>Vägt antal intervjuer	289	4	7	11	7	18	15	227	12	49	228
	Ja	15%	4%	16%	15%	5%	27%	12%	14%	18%	16%	15%
	Nej	60%	58%	63%	59%	75%	58%	81%	58%	64%	49%	62%
	Vet ej	25%	38%	21%	26%	20%	15%	6%	28%	18%	36%	24%

As indicated above, approximately 80% of respondents reported the event to their supervisors, who investigated the event in 22% of cases, whereas some type of action was only taken in 15% of cases.

Reporting frequency has increased relative to the Swedish Association of Health Professionals' 2005 report, while otherwise there have been no major changes.

Just over 60% of all respondents stated that they reported the incident to management, which indicates that the number of incidents that go unreported within the healthcare sector is considerable. Only one in five of such reports resulted in an investigation, whereas actions were only taken to prevent the recurrence of similar incidents in 14% of cases. Chart 3 provides a percentage-based comparison between the four sampling groups. It is not possible to discern significant differences between the groups.



**Chart 3: Number of persons per sampling group (stated as a percentage) who responded to the question about whether the employer took actions to prevent similar incidents from occurring.**

## Preventive medical measures and controls

The most important requirement in the regulation states that the employer shall provide vaccination free of charge.

**17 §** As needed and at no cost to employees, the employer shall provide vaccination and other preventive medical measures and controls to determine whether employees may have been exposed to or are at risk of harmful exposure to infectious agents or other biological agents.

So what does the survey indicate in terms of hepatitis B vaccinations?

In terms of free vaccinations offered by the employer, Vision comes in highest at 81 %. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 58 % and 42 %, respectively.

In terms of whether employees are vaccinated against hepatitis B, Vision comes in highest at 86 %. The values are lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union, at 76 % and 54 %, respectively.

The ambition level needs to be raised here, as vaccination provides good protection against hepatitis B.

9. Vaccination			
	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers' Union
Number of interviews	696	1722	85
<b>9.1 Have you been offered free vaccination against hepatitis B by your employer?</b>			
Yes	58%	81%	42%
No	35%	13%	54%
Don't know	5%	5%	2%
Not applicable	1%	0%	1%
<b>9.2 Have you been vaccinated against hepatitis B?</b>			
Yes	76%	86%	54%
No	21%	9%	36%
Don't know	3%	5%	8%
Not applicable	0%	0%	1%

## Comparison within the Swedish Association of Health Professionals

Within the Swedish Association of Healthcare professionals, just below 60% have been offered vaccination free of charge. However, approximately 75% have been vaccinated against hepatitis B.

The ambition level needs to be raised here, as one person in five lacks vaccination protection.

9	Vaccination											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
	<b>Totalt</b>											
	Antal intervjuer	696	59	71	59	49	61	57	340	60	92	544
	Vägt antal intervjuer	696	10	26	23	17	34	54	532	31	100	565
9.1	Har du erbjudits kostnadsfri vaccination mot Hepatit B av din arbetsgivare?											
	Ja	58%	71%	68%	63%	63%	75%▲	68%	55%▽	34%▽	61%	59%
	Nej	35%	20%	20%	34%	33%	21%	26%	38%▲	54%▲	30%	35%
	Vet ej	5%	7%	8%	3%	4%	3%	5%	6%	9%	6%	5%
	Ej relevant	1%	2%	4%	-	-	-	-	1%	2%	3%	1%▽
9.2	Är du vaccinerad mot Hepatit B?											
	Ja	76%	86%	75%	75%	86%	85%	74%	75%	78%	75%	76%
	Nej	21%	10%	17%	17%	6%	11%	21%	22%	17%	24%	20%
	Vet ej	3%	3%	8%	8%	8%	3%	5%	3%▽	6%	1%	4%
	Ej relevant	0%	-	-	-	-	-	-	0%	-	-	0%

## Occurrence of sharps injuries

In terms of being aware of a colleague having sustained an injury, Vision comes in highest at 86 %. The values are somewhat lower for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union at 79 % and 67 %, respectively.

In terms of the respondents themselves having sustained an injury, the values are relatively similar across the unions, ranging between 59% and 49%.

In terms of the respondents' own injuries, approximately 4% occurred over the past month, approximately 10% during the last year, and approximately 60% between 1 and 10 years ago, while just over 20% occurred more than 10 years ago. Swedish Municipal Workers' Union's answers are difficult to evaluate, as there were few respondents.

10. Sharps injuries			
	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers' Union
Number of interviews	696	1722	85
10.1 Do you know of a colleague who has suffered a sharps injury in your work unit?			
Yes	79%	86%	67%
No	15%	9%	20%
Don't know	6%	5%	13%
10.2 Have you yourself suffered a sharps injury?			
Yes	55%	58%	49%
No	45%	41%	51%
Don't know	0%	1%	-
10.3 I have suffered one or more sharps injuries...indicate the time range that comes closest			
...within the last month	4%	3%	2%
...2-11 months ago	8%	12%	21%
...1-10 years years ago	63%	66%	48%
...more than 10 years ago	26%	19%	33%
Don't know	0%	2%	-

## Comparison within the Swedish Association of Health Professionals

Within the Swedish Association of Health Professionals, approximately 55% have suffered a sharps injury. Such injuries are more common in surgical activities.

Cellinnehåll: Kolumn% Chi2 level(W):5%	Totalt	Occupations in the sample of respondents							Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years	
		<b>Har du själv råkat ut för en stick- eller skärskada?</b>										
10.2	Ja	55%	58%	41%	56%	47%	66%	51%	56%	42%	54%	56%
	Nej	45%	41%	58%	44%	53%	34%	49%	44%	58%	46%	44%
	Vet ej	0%	2%	1%▲	-	-	-	-	-	-	-	0%

In terms of the respondents' own injuries, approximately 4% occurred over the past month and approximately 8% over the past year. Other injuries are further in the past.

10.3

Jag har råkat ut för en eller flera stick- eller skä

Cellinnehåll:  
Kolumn%  
Chi2 level(W):5%

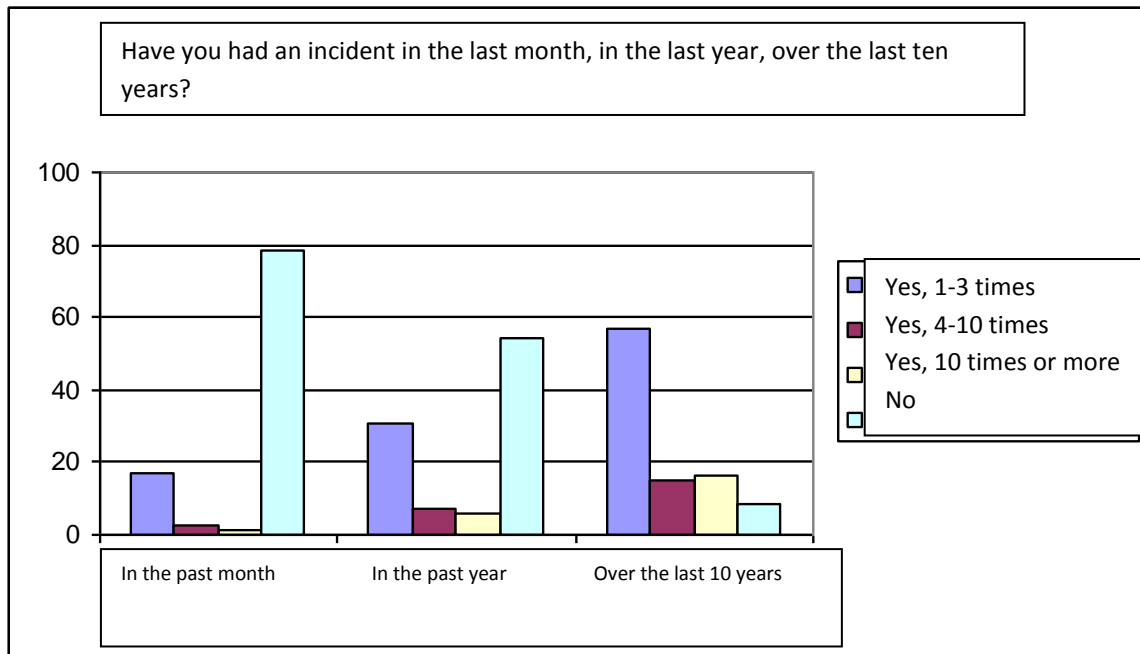
	Totalt	Occupations in the sample of respondents						Number of years in the occupation			
		Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years
<b>Antal intervjuer</b>	<b>696</b>	<b>59</b>	<b>71</b>	<b>59</b>	<b>49</b>	<b>61</b>	<b>57</b>	<b>340</b>	<b>60</b>	<b>92</b>	<b>544</b>
<b>Vägt antal intervjuer</b>	<b>696</b>	<b>10</b>	<b>26</b>	<b>23</b>	<b>17</b>	<b>34</b>	<b>54</b>	<b>532</b>	<b>31</b>	<b>100</b>	<b>565</b>
<b>&lt;*&gt;Antal intervjuer</b>	<b>378</b>	<b>34</b>	<b>29</b>	<b>33</b>	<b>23</b>	<b>40</b>	<b>29</b>	<b>190</b>	<b>25</b>	<b>49</b>	<b>304</b>
<b>&lt;*&gt;Vägt antal intervjuer</b>	<b>384</b>	<b>6</b>	<b>11</b>	<b>13</b>	<b>8</b>	<b>22</b>	<b>27</b>	<b>297</b>	<b>13</b>	<b>54</b>	<b>317</b>
... under den senaste månaden	4%	9%	7%	6%	-	2%	7%	4%	1%	3%	4%
... för 2-11 månader sedan	8%	24%	21%	6%	4%	18%	-	8%	37%▲	8%	7%
... för 1-10 år sedan	63%	44%	38%	73%	83%	62%	48%	65%	57%	80%▲	61%▽
... för mer än 10 år sedan	26%	32%	28%	15%	13%	18%	45%▲	26%	10%	9%▽	30%▲
Vet ej	0%	-	7%▲	3%	-	-	-	-	-	-	0%

So has the number of sharps injuries decreased? Here, we compare the survey figures to the Swedish Association of Health Professionals' 2005 report. We can confirm that the number of injuries

- in the last month has decreased from around 20% to 4%
- over the past year has decreased from around 45% to 8%
- over the past 10 years has decreased from 90% to 63%

The explanation probably lies in the fact that access to and the proportion of employees using safety- engineered devices has increased dramatically in recent years. The proportion of injuries that took place at earlier times is therefore decreasing at a relatively slower pace.





***Proportion of individuals as a percentage of all respondents who indicated how often they have sustained sharps injuries or been exposed to blood on the mucous membranes or skin in connection with their work, distributed over time.***

## Causes of the injury

Injuries occurred most frequently during handling/transport of the equipment used after patient contact. Stressful working conditions are also cited as a frequent cause.

### In what contexts do injuries occur?

The report "*Sharps injuries in the healthcare and nursing sector*". Schmidt, Östlund, Antonsson. Report IVL Swedish Environmental Research Institution 2012 states as follows:

"The respondents have experience working within a variety of disciplines in the healthcare sector. Many of the respondents work in inpatient care, i.e. medicine, operation and surgery, yet respondents within outpatient care, i.e. clinics, home care and group homes, are also represented. Only seven of the respondents have worked within emergency care.

Nearly half of the injuries (33/81) occurred in retirement homes, geriatric wards, homes for the demented, group homes or in home care/home nursing. 23 of these cases were related to insulin, i.e. the injury occurred during handling of an insulin syringe or pen, or during glucose sampling. Six of these respondents have been assigned to traineeships since the injury occurred, or are relatively new employees. Most of the injuries occurred in common care settings when working with needles, e.g. when taking blood samples or giving an injection.

Most injuries reported in the interviews (65/81) occurred while working with needles or syringes. About half (32/65) were injured when trying to recap the needle. In spite of the existing rules, instructions and accepted practice, they nevertheless attempted to replace the needle guard. Such recapping was sometimes used as a last resort to protect the needle tip. Replacing the needle guard onto the needle tip with one hand was mentioned as something the respondents had learned to do.

In the other incidents involving work with needles or syringes (33/65), the respondents were injured in other ways, in several cases (14/33) while attempting to detach and discard the needle."

11. When I was injured Fill in the information applicable to the event/events below. Multiple selections are possible The sharps injury occurred...			
	Swedish Association of Health Professionals	Vision	Swedish Municipal Workers' Union
<b>Number of interviews</b>	<b>696</b>	<b>1722</b>	<b>85</b>
...in connection with direct patient contact	48%	22%	63%
...while handling/transporting the equipment after patient contact	40%	64%	40%
...while placing used equipment in containers for sharps waste, i.e. the "yellow container"	12%	18%	17%
...in connection with a stressful working conditions – working under time constraints	35%	35%	37%
...when concentration/focus was disrupted or impacted by the environment	16%	8%	23%
...while working in an inappropriate/awkward work posture	19%	5%	13%
...during night work	7%	0%	3%
...while working in the patients home	5%	0%	17%
...on another occasion, namely	10%	6%	-

## Comparison within the Swedish Association of Health Professionals

Within the Swedish Association of Health Professionals, the injury occurred most frequently in connection with direct patient contact, with 48% of respondents indicating this alternative. Midwives are highest, at 83%. After that, respondents cite handling/transport of used equipment after patient contact, at 40%. The third most common reason cited is stressful working conditions, at 35%.

With respect to working in an inappropriate/awkward work posture, the mean reported value is 19%. 46% of midwives cite this as a reason, which is hardly surprising, with paramedics selecting this option 35% of the time.

For night work, the mean is 7%. Paramedics indicate this option 30% of the time.

11	När jag skadade mig Här fyller du i det som är tillämpligt											
	Cellinnehåll: Kolumn% Chi2 level(W):5%	Totalt	Occupations in the sample of respondents							Number of years in the occupation		
			Midwife	Biomedical scientist	Radio-grapher	Ambulance nurse	Operating Room Nurse	Head/ chief	Other areas of occupations	0-5 years	6-10 years	11 or more years
	<b>Antal intervjuer</b>	<b>696</b>	<b>59</b>	<b>71</b>	<b>59</b>	<b>49</b>	<b>61</b>	<b>57</b>	<b>340</b>	<b>60</b>	<b>92</b>	<b>544</b>
	<b>Vägt antal intervjuer</b>	<b>696</b>	<b>10</b>	<b>26</b>	<b>23</b>	<b>17</b>	<b>34</b>	<b>54</b>	<b>532</b>	<b>31</b>	<b>100</b>	<b>565</b>
	<b>&lt;*&gt;Antal intervjuer</b>	<b>284</b>	<b>24</b>	<b>19</b>	<b>27</b>	<b>20</b>	<b>33</b>	<b>16</b>	<b>145</b>	<b>23</b>	<b>46</b>	<b>215</b>
	<b>&lt;*&gt;Vägt antal intervjuer</b>	<b>289</b>	<b>4</b>	<b>7</b>	<b>11</b>	<b>7</b>	<b>18</b>	<b>15</b>	<b>227</b>	<b>12</b>	<b>49</b>	<b>228</b>
	... i samband med direkt patientkontakt	48%	83%	32%	37%	60%	58%	62%	47%	54%	63%▲	45%▽
	... vid hantering/förflyttning av använd utrustning efter patientkontakt	40%	12%	11%	37%	30%	21%	31%	43%▲	6%▽	33%	43%▲
	... vid placering av använd utrustning i behållare för stickande och skärande avfall "gula burken"	12%	-	16%	11%	20%	12%	6%	12%	13%	5%	13%
	... i samband med stressad arbetssituation – arbete under tidspress	35%	46%	42%	11%	30%	33%	44%	36%	46%	48%▲	32%▽
	... vid händelse då koncentration/fokus stördes eller påverkades av omgivningen	16%	8%	26%	15%	30%	18%	19%	14%	13%	34%▲	12%▽
	... vid arbete i olämplig/ besvärlig arbetsställning	19%	46%	21%	19%	35%	18%	12%	18%	13%	20%	19%
	... vid nattarbete	7%	12%	-	-	30%▲	15%	12%	6%	-	4%	8%
	... vid arbete i patientens hem	5%	-	-	-	20%	-	6%	6%	-	4%	6%
	... vid annat tillfälle, nämligen	10%	4%	11%	22%	-	18%	6%	9%	13%	9%	10%

## Summary

Despite the relatively low number of responses for Swedish Municipal Workers' Union, we note that many questions are responded to in similar fashion across the unions. It appears that members of the Swedish Association of Health Professionals and of Swedish Municipal Workers' Union respond more similarly to one another, whereas Vision's<sup>4</sup> response values are generally somewhat higher. However, the general picture leads one to the same broad primary conclusions regardless of which union one looks at, in spite of moderate differences in terms of percentage.

### Transition to safety-engineered devices

Here we focus on the progress made in terms of transitioning to and using safety-engineered devices. It is not possible to draw any higher-level conclusions based on the total results, since usage of the various product groups varies across the professional groups. Vision reports higher values, 75%, in the case of hypodermic needles. The Swedish Association of Health Professionals and Swedish Municipal Workers' Union are at 60% when it comes to the use of blood sampling products.

Total values in terms of use within the Swedish Association of Health Professionals' professional groups matches closely with the procurement survey conducted by the Association in late 2011. The reason that there appears to have been no change for a year is probably that the survey conducted in 2011 related to procurement data whereas the 2012 survey related to data from respondents in the workplace. It takes some time to implement a procurement to make the products available in the workplace.

The transition to safety-engineered devices has advanced the furthest in the case of **blood sampling products**, approximately 60%. An in-group comparison reveals that midwives report the highest value, at 80%.

According to information provided by suppliers of medical devices, it is estimated that the majority of healthcare institutions in all of Sweden's 21 counties have taken a decision to convert 100% to safety products when it comes to blood sampling products. This is the case for the application areas and sizes for which the product is available on the market, and where the safety function can be integrated into the sharp object.

In terms of **peripheral intravenous catheters**, conversion amounts to approximately 50%. Paramedics report the highest values at 94%.

According to information provided by suppliers of medical devices, it is estimated that the majority of healthcare institutions in all of Sweden's 21 counties have taken a decision to convert 100% to safety products when it comes to infusion products and peripheral intravenous lines. This is the case for the application areas and sizes for which the product is available on the market, and where the safety function can be integrated into the sharp object.

It is not possible to draw any conclusions based on the procurement survey with regard to conversion to safety engineered **hypodermic needles**. However, here we see that conversion has

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<sup>4</sup> Vision organizes members in the public sector. For this reason, it is not possible to draw any conclusions regarding private dental care.

reached 34%. Paramedics report worse values, with 63% indicating that they do not use safety-engineered devices. Midwives and surgical support staff also report lower values, with just over 40% stating that they do not use safety-engineered devices.

According to information provided by suppliers of medical devices, there is no example in any of Sweden's 21 counties where the majority of healthcare institutions have taken a decision to convert 100% to safety products with regard to injection products and insulin injections. This in spite of the fact that products are available on the market, and despite the example of insulin syringes being addressed specifically in AFS 2012:7: "For instance, using an insulin syringe or insulin pen without a safety feature when administering insulin to others in the course of one's work responsibilities entails non-fulfilment of the requirement in AFS 2012:7, Section 8 a".

According to information provided by suppliers of medical devices (2012), it is stated that there are County Council agreements in place and that a decision has been made to achieve 100% conversion to safety products in Femklöver, Region Skåne and Jönköping County Council as well as Region Halland. It is also noted that Stockholm, Västernorrland, Kalmar, Kronoberg and Blekinge have achieved more than 70% conversion, but that conventional products are still procured through the County Council agreement. Finally, it is noted that Östergötland, Jämtland, Värmland, Norrbotten, Gotland, Gävleborg, Västra Götaland and Västerbotten have achieved over 40% conversion on average, but that conventional products are still procured through the County Council agreement.

In terms of the existing municipal agreements, no municipal agreement in Sweden incorporates a decision to convert to 100% safety products.

In conclusion, we note that the values are generally low, albeit increasing, and that continued efforts are required in order to increase the proportion of those who use safety-engineered devices.

The goal of 100% conversion to safety-engineered devices is an important prerequisite for implementing a zero-tolerance vision in terms of needlestick injuries.

### **Training in how to use safety-engineered devices**

Another component is training in how to use safety-engineered devices. With regard to theoretical and hands-on training, approximately 20% report not having received any theoretical information, and approximately 25% have not received any hands-on training.

This is interesting, as over 40% indicated that it was necessary to change working methods. Improvements are needed here.

### **Personal protective equipment**

Access to protective equipment is good. Vision has the highest values at nearly 100%. However, the proportion of respondents actually using the equipment is lower, as approximately 20% indicate that they only partially use the protective equipment needed in order to avoid blood-borne infection. This leaves us somewhat confused. Perhaps stress and time constraints are to blame?

## **Sharps waste – "Yellow container"**

Almost all respondents indicate that they have functioning routines for the handling of sharps waste and that containers for waste are readily accessible in the workplace. In terms of emptying frequency, the values are somewhat lower.

Approximately 50% state that the yellow container is always collected before it becomes overfilled, whereas approximately 30% state that it is collected frequently.

Overfilled containers for sharps waste are a risk factor that should be easy to eliminate.

## **Knowledge, information and instructions**

In terms of compliance with rules, knowledge imparted in vocational training, information in the workplace and knowledge regarding what to do in case of injury, the results lie between 60% and 80%. It is worth noting that approximately 20% agree only partially.

By way of a general approximation, 80% believe that they have sufficient rules and routines in place in order to avoid sharps injuries. Furthermore, approximately 70% consider that the entire team possesses sufficient knowledge to be able to work safely. Vision's values are higher than those for the Swedish Association of Health Professionals and Swedish Municipal Workers' Union.

There is room for improvement here.

However, when compared to the survey conducted by the Swedish Association of Health Professionals in 2005, the values have improved significantly. In the 2005 survey, approximately 50% reported that they had been provided with information regarding the risk of sharps injuries and exposure to blood on the mucous membranes and skin in the workplace, whereas approximately 40% reported that they were not provided with information regarding the risk of sharps injuries and exposure to blood on the mucous membranes and skin in the workplace. See table on next page.

A review of the literature<sup>5</sup> discusses factors impacting healthcare professionals' compliance with safety routines in situations involving a risk of blood exposure. The authors' conclusion is that time constraints and heavy workloads cause employees within healthcare to deviate from safety routines. Cases where employees deem the risk of infection to be minor or where they do not believe they will be exposed to any blood may also cause them to depart from the safety routines. The two factors of greatest importance in the employees' adherence to safety routines were a positive attitude toward complying with work routines and fear of contagion.

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<sup>5</sup> Larsson Maria & Sairio Annica. *Factors impacting healthcare professionals' compliance with safety routines in situations involving a risk of blood exposure – a review of the literature*. Karlstad University 2008.

## **Preventive medical measures and controls – vaccination**

Approximately 75% have been offered vaccination free of charge by their employer. Vision's value is the highest at 80%, whereas Swedish Municipal Workers' Union is lowest at 42%.

Just over 80% have been vaccinated against hepatitis B. Vision's value is the highest at 86%, whereas Swedish Municipal Workers' Union's is lowest at 54%.

The level of ambition needs to be raised here, as vaccination provides good protection against hepatitis B.

## **Actions and reporting in the event of health problems and adverse events**

### **Routines for reporting, etc**

Just over 80% report that there are functioning routines in place for reporting incidents and accidents in the work unit. Vision's value is the highest at 87%, whereas Swedish Municipal Workers' Union's is lowest at 67 %.

Just under 60% state that there are functioning routines in place at the work unit for rapid deployment of post-exposure treatment. Vision's value is the highest at 65%, whereas Swedish Municipal Workers' Union comes in lowest at 40%.

Approximately 65% state that there is good cooperation in place between the employer and safety officers/employee representatives in the work unit. Vision's value is the highest at 74%, whereas the Swedish Association of Health Professionals' is the lowest at 49%.

### **Actions**

In response to the question regarding rapid assistance to assess the need for post-exposure treatment, 63 % responded in the affirmative and 26% responded negatively.

90% responded negatively to the question about whether psychological support was provided.

The fact that around 25% do not receive rapid assistance to assess the need for post-exposure treatment and that 90% have not been offered psychological support is problematic, as it is well-known that anxiety not addressed in a timely manner can have grave psychological consequences. The risk of contracting a serious illness means that the victims of sharps injuries feel strong concerns. Such concern naturally has serious implications for well-being, and may also affect mental health. Such anxiety certainly concerns one's own health, but there are also fears in play of having transmitted a disease to a relative or of doing so in the future. A sharps injury can thus cause health problems – even if one is not infected.

One explanation for this may be that the original version of AFS 2005:1, which remained in force until 2013-05-01, was unclear on this point



As of 2013-05-01, the following applies:

**16 b §** If the adverse event entails a risk of transmission of infection, the employer must ensure that the person affected by the adverse event is cared for immediately. The actions shall also include contact with medical experts to assess the need for post-exposure prophylaxis and medical checks.

This is clarified in the comments on Section 16 as follows: If the employer makes sure in advance to establish contact with a care provider with expertise in assessing the need to administer post-exposure prophylaxis and medical checks, it will be possible to provide rapid care, mental as well as physical, to the victims of adverse events, e.g. sharps injuries. If this is the case, the employer may be considered to have fulfilled the requirements under 16 b §.

In addition, there are already rules in place regarding psychological care for staff which employers are required to comply with, as enshrined, inter alia, in the National Board of Occupational Safety and Health (AFS 1999:7) and in the Work Environment Authority's regulations on systematic work environment management (AFS 2001:1).

Approximately 80% of respondents reported the event to their supervisors, who investigated the event in 35% of cases, whereas some form of action was only taken in 16% of cases.

### **Needlestick injuries**

So has the number of sharps injuries gone down? Here we compare the survey figures to the Swedish Association of Health Professionals' 2005 report. We can confirm that the number of injuries

- in the last month has decreased from around 20% to 4%
- over the past year has decreased from around 45% to 8%
- over the past 10 years has decreased from 90% to 63%

The explanation probably lies in the fact that access to and the number of employees using safety-engineered devices has increased dramatically in recent years. The proportion of injuries that took place at earlier times is therefore decreasing at a relatively slower pace.

### **Causes of the injury**

Injuries occurred most frequently during handling/transport of the equipment used after patient contact. Stressful working conditions are also cited as a frequent cause.

## Conclusions

The results of the study lead to a number of conclusions relating to continued work towards achieving a **zero-tolerance vision for blood-borne infection caused by sharps in the healthcare sector**.

The joint conclusions of Swedish Municipal Workers' Union, Vision and the Swedish Association of Health Professionals are as follows:

- ✓ To **use safety engineered devices** when available on the market and to review the possibility of replacing or eliminating sharp instruments and tools.
- ✓ To practice **safe working methods** in the workplace. The working methods include procedures for selecting products, handling products and yellow sharps containers, and the need for personal protective equipment. The working methods also need to be adapted in order to conform with environmental and hygienic requirements, as well as patient safety.
- ✓ All relevant professional groups should receive **training** in how to use safety- engineered devices and how to practice safe working methods. Many people in many different workplaces require training.
- ✓ **Training material** should be developed which can be used by different professional groups across many different workplaces at all times of day. The training material must therefore be based on an e-learning model. Preferably, this material should be developed by an independent operator in collaboration with labour market parties.

Personnel should participate **in the development of specifications** prior to the procurement of safety- engineered devices. This is to ensure that products are as user-friendly, safe and functionally adapted as possible.

- ✓ That operational management should have a contingency plan in place for rapidly assessing the need for **post-exposure treatment** in the event of a sharps injury, and should also offer **psychological support**.

## Attachment - Survey form

<b>PROFESSION</b>		
Midwife <input type="checkbox"/>	Biomedical analyst <input type="checkbox"/>	Nurse <input type="checkbox"/>
Radiology nurse <input type="checkbox"/>	Manager <input type="checkbox"/>	Podiatrist <input type="checkbox"/>
Assistant nurse <input type="checkbox"/>	Dental assistant <input type="checkbox"/>	Dental assistant/orthodontic assistant <input type="checkbox"/>
<b>TYPE OF WORKPLACE</b>		
Inpatient care/hospital <input type="checkbox"/>	Outpatient care/primary care/ Clinic outside of hospital <input type="checkbox"/>	In the patient's home <input type="checkbox"/>
Dental clinic <input type="checkbox"/>	Paramedic operations <input type="checkbox"/>	Surgical operations <input type="checkbox"/>
<b>EMPLOYERS</b>		
County Council/Region/County Council-owned company <input type="checkbox"/>	Municipality/municipality-owned company <input type="checkbox"/>	Private/cooperative/foundation * <input type="checkbox"/>
<b>NUMBER OF YEARS IN THE PROFESSION</b>		
1-5 years <input type="checkbox"/>	6-10 years <input type="checkbox"/>	11 or more years <input type="checkbox"/>

<b>RULES, ROUTINES, INFORMATION AND TRAINING</b>	Yes	Partially	No	Don't know	Not applicable
In your opinion, does your team follow the work rules for how to avoid sharps injuries in your work unit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you believe that your work unit has functioning routines in place for reporting incidents and accidents, e.g. sharps injuries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you believe that your work unit has functioning routines in place for rapid deployment of post-exposure treatment in the event of sharps injuries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you believe that there is good cooperation at your work unit between the employer and safety officers/employee representatives in order to ensure a good working environment and to investigate the causes of accidents and incidents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In your opinion, were you provided with sufficient information during your vocational training about how to work in order to avoid sharps injuries and blood-borne infection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In your opinion, have you been provided with sufficient information in the workplace about how to work in order to avoid sharps injuries and blood-borne infection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know what to do in the event of a sharps injury?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>PROTECTIVE EQUIPMENT, ETC.</b>	Yes	Partially	No	Don't know	Not applicable
Do you have access to the protective equipment, gloves, visors, clothing, etc. required in order for you to avoid blood-borne infection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you use the protective equipment required in order to avoid blood-borne infection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>SAFETY- ENGINEERED DEVICES</b>	Yes	Partially	No	Don't know	Not applicable
Do you use safety- engineered devices at your workplace when it comes to:					
a) infusion cannulae (peripheral catheters)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) hypodermic needles?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) blood sampling products?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you received training in how to use safety- engineered devices ?	Yes	Partially	No	Don't know	Not applicable
a) theoretical information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) hands-on training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the transition to safety- engineered devices required you to change your working methods?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>SHARPS WASTE: "YELLOW CONTAINER"</b>	Yes	Partially	No	Don't know	Not applicable
Do you believe that you have functioning routines in place for the handling of sharps waste at your work unit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In your opinion, are containers for sharps waste (yellow containers) readily accessible at your work unit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	Usually	No	Don't know	Not applicable
Are the containers for sharps waste (yellow containers) collected before they become overfilled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>VACCINATION</b>	Yes	No	Don't know	Not applicable
Have you been offered free vaccination against hepatitis B by your employer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been vaccinated against hepatitis B?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>SHARPS INJURIES</b>			
	Yes	No	Don't know
Do you know of a colleague who has suffered a sharps injury in your work unit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you suffered a sharps injury yourself?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>If so, please answer the following questions</b>			
	within the last month	over the past year	over the past 10 years
I have suffered one or more sharps injuries (indicate the time range that comes closest)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No	Don't know
Did you receive rapid assistance from your employer in order to assess the need for post-exposure treatment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were you offered psychological support?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you report the event to your supervisor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did your supervisor/employer investigate the event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did your supervisor/employer take any action other than that indicated above in response to the event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>WHEN I WAS INJURED</b> <i>Fill in the information applicable to the event/events below. Multiple selections are possible</i>	
The sharps injury occurred	
a) in connection with direct patient contact	<input type="checkbox"/>
b) while handling/transporting the equipment after patient contact	<input type="checkbox"/>
c) while placing used equipment and containers for sharps waste in the “yellow container”	<input type="checkbox"/>
d) in connection with stressful working conditions – working under time constraints	<input type="checkbox"/>
e) when concentration/focus was disrupted or affected by the environment	<input type="checkbox"/>
f) while working in an inappropriate/awkward work posture	<input type="checkbox"/>
g) during night work	<input type="checkbox"/>
h) while working in the patient's home	<input type="checkbox"/>

<b>IN CONCLUSION</b>	Yes	Partially	No	Don't know	Not applicable
On the whole, do you think that there are adequate rules and routines in place regarding how to work in order to avoid sharps injuries in the workplace?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On the whole, do you think that your team has adequate knowledge about how to work in order to avoid sharps injuries in the workplace?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







in conjunction with  **NOVUS**