

European Healthcare Workers at Risk!

It is estimated that 1 million
needlestick injuries are suffered
by healthcare workers
in Europe each year



More than 20 dangerous bloodborne
pathogens are transmitted by
contaminated needles, including
Hepatitis B, Hepatitis C and HIV



These injuries are preventable!

“The fact that these potentially life-threatening risks have to be faced by European healthcare workers on a daily basis raises serious questions about the national implementation of the applicable EU Worker Safety Directives.”



A Call for Action!

from European
and International organisations representing
nurses, patients, public service workers
and medical professionals



PROTECTING HEALTHCARE WORKERS IN EUROPE:

RESOLUTION BY EUROPEAN AND INTERNATIONAL ASSOCIATIONS CALLING FOR EU ACTION TO PREVENT MEDICAL SHARPS INJURIES

Why we need EU Action?

Injuries caused by needles and other sharp medical devices and the related risk of potentially fatal disease transmission remain a major threat to the health and safety of healthcare workers across the European Union today.

In addition, the distress, sickness and absenteeism resulting from sharps injuries constitute a considerable strain on the already limited human resources in the medical profession.

We call upon the EU Institutions to take the lead in the battle against sharps' injuries and to prioritise this issue so that it receives the attention it deserves and ensure implementation of proven best practices across the European Union.

What is our Common Aim?

We call on the EU Institutions to communicate clear policy and requirements to Member States in view of ensuring

* **Consistent compliance with existing EU Worker Safety and Health Directives** among EU healthcare providers, and in particular:

- * **Better information and education** of healthcare workers on the risks of exposure, prevention methods and effective incident reporting
- * **Safer working practices**, including the use of protective clothing, safe disposal, and effective response in case of injury
- * **Use of 'Sharps Protection' Technology** especially for high-risk medical procedures.

What are the specific risks to Healthcare Workers?

Percutaneous injury from hollow bore blood filled sharp objects is the primary route through which healthcare workers occupationally acquire blood borne and potentially fatal diseases. High-risk procedures include blood collection, IV cannulation and percutaneously placed syringes. Suture needles, scalpel blades and glass items used daily by hospital staff also offer real risk if these devices have been in contact with contaminated blood.

The majority of sharps injuries are suffered by nurses and occur in patient rooms and the operating theatre, but doctors and other medical staff are also victims. Ancillary staff such as cleaners and laundry staff and other downstream workers, are also at risk. Additionally medical devices incorporating needles are frequently used for self-treatment outside of the conventional healthcare setting and this can create additional dangers for the general public.

In an average hospital, workers incur approximately 12 to 30 needlestick injuries per 100 beds each year¹. However, it is estimated that between 60% and 80% of incidents go unreported². If suffering an injury from a contaminated 'sharp', the risk of transmission of infections is 1 in 3 workers for hepatitis B, 1 in 30 for hepatitis C and 1 in 300 for HIV³.

The victim's mental suffering can be considerable. A lengthy process of diagnostic procedures must be followed before it is known whether a serious disease has been contracted or not. It needs to be recognised that the risk of sharps injuries may be a strong disincentive to taking up a medical career and may increase the scarcity of experienced medical staff.

European Healthcare Workers and Patients at Risk!

Approximately 10 % of workers in the European Union are employed in the health and welfare sector, with a significant proportion employed in hospitals. This makes healthcare one of the biggest employment sectors in Europe, covering a vast range of different jobs. According to European data the work-related accident rate in the healthcare sector is 34 % higher than the EU average⁴. High on the hazards list are exposures to biologic agents, especially HIV, hepatitis C and hepatitis B viruses, via sharps injuries.

It is estimated that 1 million needlestick injuries occur in Europe each year. Between 60% and 80% of incidents go unreported². Figures from Unison and the Royal College of Nursing estimate that there are over 100,000 such injuries each year in the UK alone. The recently issued UK National Audit Office Report⁵ on health and safety in the National Health Service confirms that, despite the current applicable EU Directives and national legislation regarding health and safety at work and biological agents, needlestick injuries remain the second most common cause of occupational injury in the UK health service.

The prevalence of both hepatitis C and HIV is growing fast, with WHO reporting HIV approaching 40 millions cases worldwide, and an estimation of more than 5 million Europeans infected with hepatitis C. However, since people who contract the hepatitis C virus often remain symptom-free for many years, most cases remain most undiagnosed, potentially creating additional risks of cross-infection.

It has recently been reported that four healthcare workers in Britain have died after being infected with HIV through hospital accidents involving needles. Nine others have also contracted the Aids virus after suffering similar injuries while working in hospitals, but are still alive.

In a German study it was shown that 1 out of 15 needlesticks involved blood from a Hepatitis C positive source⁶. Applying this data to the estimated 500,000 needlestick injuries per year that occur in Germany⁷, would mean over 32,500 exposures to Hepatitis C. With a sero-conversion rate of 1 out of 30, this would mean that, based on these current estimations, over 1,000 health care workers convert to this deadly virus every year in Germany alone as a result of accidental needlestick injuries. In addition to the risks facing healthcare workers, this also raises serious questions about the potential for cross-infection of Hepatitis C to patients.

The costs associated with each needlestick injury can vary considerably, but are significant. The provision of post exposure prophylactic (PEP) alone can be several thousand Euros per case. For an injury resulting in transfer of a serious bloodborne virus it has been estimated that, in certain cases, the cost could be as high as EUR 1,000,000⁸.

Conclusion

European healthcare workers face potentially life-threatening infections, due to needlestick injuries, every day. Their patients are also potentially at risk from cross-infection. Despite the efforts, to date, of the European Commission and the European Agency for Safety and Health at Work, the approach taken to protecting healthcare workers from needlestick and other medical sharps injury by healthcare employers in the majority of the member states has not been adequate, and a significant disparity is beginning to grow with regard to the protection of healthcare workers across the EU.

Available Solutions

“Better health and safety performance in the healthcare sector will benefit not only workers but also everyone receiving treatment and reduces costs.”

European Agency for Safety and Health at Work FACTS Issue 29 Safety and Health Good Practice on-line for the Healthcare Sector ISSN 1681-2123

Independent studies show that solutions are available today which can prevent more than 80% of needlestick injuries. A combination of training, safer working practices and the use of medical devices incorporating needlestick protection technology, can prevent many of these potentially fatal injuries.

For example a recent independent study showed that safety education and safer procedures (including disposal) can lead to a 59% reduction in sharps' injuries, and a combination of safety education, safer procedures and the use of medical devices incorporating needlestick/sharps protection technology can lead to an **84% to 100% reduction** in the number of needlestick injuries (depending upon application).

(Ref. Advances in Exposure Prevention; vol. 3, no. 4; Libourne study GERES day 09/2001)

There has been significant technical progress in recent years. The medical technology solutions that are available in Europe today, to help protect healthcare workers include: -

- Medical devices with automatic shielding, retraction or blunting of the needle.
- Medical devices which include a needle shielding, retraction or blunting feature that is manually operated.
- Medical devices with shielded cutting blades.
- Needle-free systems for certain applications.

Conclusion

Unfortunately, in the EU today, we do not see a consistent application of the necessary safety measures or the available medical technology to help protect healthcare workers from needlestick injury. A number of member states are taking appropriate steps to implement the necessary measures, but many are not. Hence, in general, member states are not placing adequate emphasis on prevention of these potentially fatal occupational injuries, in accordance with Council Resolution 2002/C 161/01, on a new Community strategy on health and safety at work (2004 – 2006).

Legislation

As a result of the following applicable EU worker safety directives, which the member states are required to transpose into national law, employers are legally obliged to eliminate, or reduce to the extent possible, occupational risks that threaten their workers. They are also responsible for adapting their operations to technical progress, by using newer technology, which can reduce or eliminate risk.

EU Council Directive 89/391/EEC

Concerns the **Safety and Health of Workers**, and requires that, if risks cannot be totally eliminated, they must be combated at source. Dangerous practices must be replaced by the non-dangerous or the less-dangerous. Employers are also responsible for adapting their operations to technical progress, by using newer technology, which can reduce or eliminate risk.

EU Council Directive 89/655/EEC,

Deals with **Work Equipment** and obliges employers to provide a safe working environment. In this context medical devices are 'work equipment', and they must be chosen with a view to avoiding or minimising risk.

EU Council Directive 2000/54/EC

Consolidating previously existing legislation concerning **Biological Agents**. Employers must assess risk, prevent workers' exposure to biological risks, or, if prevention is not technically practicable, reduce it to the lowest risk level for adequate protection by means of workplace design, engineering control measures, hygiene measures and safe handling of waste. In addition, employers are required to make available their risk assessment information to Competent Authorities upon request.

The USA experience:

US Legislation Introduced to Prevent Needlestick Injuries

In the USA, Congress was prompted to take action in response to growing concerns over bloodborne pathogen exposures from sharps injuries and in response to recent technological developments that increased employee protection. On November 6th 2000, the 'Needlestick Safety and Prevention Act' was signed into law, requiring all healthcare facilities in the USA to evaluate, purchase and provide medical devices incorporating needle protection for their staff. Healthcare employers in the USA are also now required to maintain a sharps injury log and involve non-managerial potentially exposed health care workers in the evaluation and implementation of work practice controls and devices incorporating needle protection. (US Federal Register, 2001)

Conclusion

Applicable EU legislation exists today. Unfortunately, this broad legislation concerning worker safety, although effective in many sectors, has not led to appropriate measures being consistently applied in the healthcare setting. Even the more specific EU requirements concerning biological agents has failed to protect healthcare workers from needlestick and other medical sharps injuries, and the associated exposure of workers and their patients to potentially fatal bloodborne pathogens.

What needs to be done?

The European Agency for Safety and Health at Work recommends the following preventative measures to combat needlestick injury:

- ✓ **Eliminate the use of needles where safe and effective alternatives are available.**
- ✓ **Implement the use of devices with safety features and evaluate their use to determine which are most effective and acceptable.**
- ✓ **Modify work practices that pose a needle injury hazard to make them safer. Avoid recapping needles.**
- ✓ **Train workers in the safe use and disposal of needles in appropriate sharps containers.**

European Agency for Safety and Health at Work. FACTS 29. ISSN 1681-2123

A small number of Member States are tackling this issue, but many are not. For some years now, the public healthcare sector in France has been notable, and unusual, for its growing adoption of measures to prevent needlestick injuries. The Circulaire DGS-DH No. 98/249 du avril 1998 provides binding guidelines to hospital authorities regarding the practices to prevent needlestick injury. This has led to a substantial reduction in needlestick injury in the public healthcare sector, as demonstrated by many individual and multi-centre studies. However, in contrast with this improvement, in the private hospital centre in France, where these measures have not been widely introduced, the rate of needlestick injury remains as high as before.

In Germany, we have seen the October 2003 introduction of the TRBA 250 (Technical Rules for Biological Agents) which includes specific requirements that must be introduced to protect healthcare workers from needlestick injury. In the UK, following the recent National Audit Office Report on safety in the NHS, which confirmed that needlestick was the second highest cause of occupational injury, the Department of Health has publicly acknowledged its concern at the number of needlestick injuries that take place within the NHS each year. The Department has committed to issuing new guidance on the subject, to include risk assessment and the introduction of safer technology. In Spain also, we understand that measures are being taken to improve the situation.

Conclusion

The above preventative requirements, laid down by the European Agency for Safety and Health at Work, are clearly appropriate, and have been proven effective through independent study. Unfortunately, at this time it appears that they are not implemented, or even being considered for implementation, by the majority of healthcare providers across the EU.

To ensure that the applicable preventative measures are consistently applied across the EU, to protect our healthcare workers, requires action from the European Commission to provide a legislative linkage between the requirements and compliance with applicable worker safety directives.

A Call for Action

The fact that these potentially life-threatening risks are faced by European healthcare workers on a daily basis, raises serious questions about the national implementation of the applicable EU worker safety Directives.

It must also be noted that there is a clear disparity developing regarding the protection provided for healthcare workers across the EU.

Conclusion

The preventative measures recommended by the European Agency for Safety and Health at Work have been proven effective in reducing needlestick injuries. These measures need to be urgently and consistently implemented across the EU.

We believe that the Commission has a clear responsibility to take urgent and concrete action to protect healthcare workers, and their patients from these potentially fatal injuries. We also believe that the Commission is best placed to do so.

The most directly applicable Directive is 2000/54/EC, concerning biological agents. This would therefore, appear to be the most appropriate vehicle for implementing the additional requirements that are needed to guide healthcare employers in effectively meeting their legal responsibilities for risk management in the healthcare context discussed.

The specific requirements to protect healthcare workers from needlestick and other medical sharps injuries could be provided as an additional annex to Directive 2000/54/EC. As this addition to the annexes would be implemented on the basis of technical progress, the procedure laid down in Article 17 of Directive 89/391/EEC would apply.

David Byrne, the EU Commissioner for Health and Consumer Protection, recently spoke of well managed health systems being positive, forward looking investments⁹. This is correct, and most would agree that the most valuable asset of the health system is its staff, who deserve to be protected from avoidable occupational risk.

Arguably this is the most important investment of all.

Healthcare Workers' Stories

Source: Extracts from 'Demanding Safety'; Karen Daley, R.N., M.P.H., *Advances in Exposure Prevention* – Vol 4, No. 4

"After drawing blood from an elderly patient with mild dementia, I turned to dispose of the butterfly needle in the sharps container, which was above my eye level. Suddenly I felt a stinging pain. I had been stuck on the index finger of my right hand by another needle that had become wedged in the container's hinged opening. The needlestick was deep and bled profusely through the puncture site in my glove."

I filled out an accident report and saw the nurse practitioner in our 'fast track' area who offered me post-exposure prophylaxis (PEP) for HIV as part of the occupational health protocol."

The results from my six-month HIV and HCV tests came back on December 23, two days before Christmas. They indicated that I was positive for both viruses."

"I can't describe to you how drastically one moment – the moment of my needlestick – has changed my life. Since January, I have had to come to terms with the fact that I am infected with not one, but two potentially life-threatening viruses."

Source: Extracts from Speech by Ana Salegui – Spanish Nurses Association
(At European Parliament Event of Eliminating Sharps Injuries, March 2003)

"It happened after I finished collecting blood from a patient. I really thought I was going to die. I want to talk about this sentence that we should spread. 'No more needlestick injuries.' This is not an isolated case. I was infected with the blood. That patient died six hours later. I knew she was HIV positive. ...it was necessary to wait for the test results... It was a period full of stigmatization, discrimination. ..I am the voice of many people who can no longer speak. I am the voice of many colleagues, many people who are hidden. .. Behind each accident, behind each needlestick injury there is a whole case of a family who suffers the consequences. I am living proof that talks for all those people who day-after-day, today in 2003, they know there is a high safety material and they know they can avoid these tragedies to happen again.

Source: Extracts from 'One Unnecessary Needle = HIV + HCV'; Lisa M. Black, R.N., B.S.N., *Advances in Exposure Prevention* – Vol 4, No. 3, 1999

"As I assembled my supplies I noticed that Mr. Jones' IV line was not equipped with the needleless IV access system that the hospital had made available in order to prevent needlestick injuries. Because the IV line was occluded, I was unable to change over to the needleless system."

I filled a syringe with saline irrigation solution and inserted the needle into the rubber port on the patient's IV line. Using a push-pull method, I attempted to aspirate the blood clot from the occluded catheter and then flush the solution through the line. During this procedure, however,

Mr. Jones startled and his arm jerked – a motion which caused the needle that had been inserted through the rubber stopper of his IV line to dislodge and to puncture my left palm.”

I was sent immediately to the emergency department and had blood drawn for baseline tests for HIV, HBV and HCV, which eventually came back negative. I was started on a regimen of AZT, 3TC and Crixivan within two hours of my blood exposure. I was instructed to take some of the pills with food, others on an empty stomach, and continue this regimen around the clock for one month, returning for frequent blood counts to monitor my response to these potentially toxic chemicals. Although the drugs made me ill, I adhered to the regimen faithfully.”

“I was assigned to care for Mr. Jones again, ten nights later, when he finally lost his battle against AIDS and died.

The weeks after my needlestick were the most tumultuous of my life. I experienced severe fatigue and nausea from HIV medications, difficulty with tasks that required concentration, and trouble with short-term memory.”

“My three-month post-exposure blood work came back negative. I felt like the weight of the world had been lifted from my shoulders.”

“On July 27, 1998, nine months and nine days after my needlestick injury, I learned that I had, indeed, been infected with HIV.”

“There are no words to adequately describe the horror of the moment when I learned that I was HIV positive.”

“In October 1998, during some routine follow-up blood work, my liver enzymes were found to be severely elevated. Subsequent testing revealed that I was seropositive for hepatitis C (HCV).”

Source: Ridzon R, Simultaneous transmission of HIV and HCV from a needle stick injury. N Engl J Med 1997; 336:919-922.

In July 1990 a 48 y/o HCW sustained a deep NSI after she drew blood on an AIDS patient. She refused zidovudine PEP and 8 months later was diagnosed with HCV, and 3 months thereafter with HIV. 28 months after the NSI she developed hepatic coma and died.

Source: Health and Safety Bulletin news item, 1998

In 1992 a Junior Doctor was pricked accidentally by a colleague. No infection was transmitted, but she developed incapacitating needle phobia which finished her career. In her claim she blamed lack of occupational health support: the hospital had no needlestick injury policy. She received £465,000 in damages.

Source: "UK Safer Needles for Safer Healthcare Network"

Laundry worker Susan Robertson was emptying a bag of infected linen when a discarded needle pricked her thumb. She informed her manager and was sent to the Occupational Health Department where she filled out an accident report form and had a blood test. She was told to return if she developed flu-like symptoms. To her knowledge, Susan was not tested for either Hepatitis C or HIV. She merely received a letter saying she should have a Hepatitis B booster vaccination. In the months following the injury Susan suffered from many different illnesses. She had problems sleeping and she and her family were under constant stress wondering whether her illnesses were related to the needlestick injury. Her fight for compensation took 3 years. Eventually she received an out of court settlement for £2500, as the hospital was found to be negligent in its disposal of the needle that injured her. Susan says: « What people don't realise is that this accident damaged me and my family psychologically. We were under constant stress thinking about the effects of the injury. »

Source: SIROH, Italy HCV Infection of a Nurse

Infectious diseases nurse suffered a needlestick whilst disposing a winged steel needle in a sharps container. The device had been used for drawing blood from an AIDS patient with NHL (CD4+ count: 50 cells/mm³) who tested HCV-Ab negative the day of the accident and died within ten days. The nurse was given PEP within 1 hour for 25 days. Demonstration of occupationally acquired HCV infection with seroconversion and ALT elevation at 3 months. HIV negative at 12 months.

Questions and Answers

Is this really such a big problem?

In a number of European countries stakeholders awareness is growing (EPINETAC in Spain, GERES in France, SIROH in Italy), as a direct result of studies showing that there is a serious problem for which currently available and effective solutions exist.

The European Agency for Safety and Health at Work has listed healthcare and laboratory workers high on the list of those occupations at risk of serious infection, which can result from needlestick injuries.

European Agency for Safety and Health at Work. FACTS 41: Biological Agents ISSN 1681-2123

Cross-infection to patients is also a matter of concern. For example, the New England Journal of Medicine. (Volume 343. Number 25, December 21, 2000) reports the transmission of Hepatitis C virus from a patient to an anaesthesiology departments assistant and then to five patients.

Other independent publications include: -

Ir Med J. 1992 Sep;85(3):102-4

Phlebotomy practices/needles stick injuries/hepatitis B status/among interns in a Dublin hospital.

Gaffney K, Murphy M, Mulcahy F

Department of Genitourinary Medicine, St James's Hospital, Dublin.

Needlestick injury is the most important risk event for human immunodeficiency virus (HIV) and hepatitis B Virus (HBV) transmission to health-care workers. We examined phlebotomy practices, the frequency of needle stick injuries, the reporting of such injuries and hepatitis B status among interns in St James's Hospital during a six month period. This study took the form of a questionnaire. The response rate was 100%. 72% had at least one needlestick injury during this time period, 23% had injuries from known HIV sero-positive or hepatitis B surface antigen positive patients, less than 5% of all injuries were reported and only 41% of interns were definitely hepatitis B immune. The majority (77%) resheathed needles by hand.

Quotidien du Médecin : 28 Mai 1997 - n°6074

« Fréquence élevée des AES chez les étudiants en médecine effectuant des gestes infirmiers »

High incidences of NSI in the medical student population practicing nursing procedures.

200 medical students in Nice teaching hospital have answered a questionnaire made by the hospital. 25% of the students declared that they have been victim of NSI at least once. The level goes to 37% with the students at the end of the DCME cycle. In 58% of the cases the accidents occurs during an on call period. The highest risk procedure is the arterial blood drawing (44%). One out of two student does not respect the safety procedure. The rate of underreporting is very high giving a falsely low NSI rate.

Le Point 22/11/2002 N° 1575 Page 90

« Des chirurgiens à risque »

Surgeons at risk

926 patients from the Institute hospitalier Jacques Cartier (Essone) have to undergo an HIV testing after it was discovered that a surgeon was sero positive. Blood transfusion lot have been tested and found non responsible for the contamination. According to a recent study the surgeons get injured in 11.7% of the cases and the rate goes up for thoracic surgery to 16.7%. This brings to three the number of patients contaminated by their doctors in France.

BMJ 2001;322:397-398 (17 February)

Exposure of healthcare workers in England, Wales, and Northern Ireland to bloodborne viruses between July 1997 and June 2000: analysis of surveillance data

Barry Evans, consultant epidemiologist, Winnie Duggan, research nurse, Juliet Baker, research nurse, Mary Ramsay, consultant epidemiologist, and Dominique Abiteboul, occupational physician, on behalf of the Occupational Exposure Surveillance Advisory Group

A total of 813 initial reports were received of exposure of healthcare workers to bloodborne viruses between July 1997 and June 2000: 725 reports of exposure to only one of the bloodborne viruses, 83 to two, and five to all three. After records with missing information were excluded, the most commonly reported exposed groups were nurses and midwives (45% (308/678) of the health professionals exposed) and doctors (38% (255/678)) (table), and percutaneous injuries were the most commonly reported type of exposure (70%). Six week follow up reports were received for 507 of the incidents. These recorded that 64% (323) involved exposure during a procedure, 20% (100) after the procedure but before disposal of equipment, and 13% (64) during or after disposal; in 4% (20) the nature of the incident was not reported. Post-exposure prophylaxis was recorded for 138 of the healthcare workers exposed to HIV: 43 were known to have fully completed four weeks of treatment, 19 workers completed the course for some drugs, and 38 completed none. In 38 workers post-exposure prophylaxis was started but the length of treatment was not recorded. Side effects caused by post-exposure prophylaxis were recorded in 77 healthcare workers. One transmission occurred among 293 exposures to HIV despite post-exposure prophylaxis, and none in 462 exposures to hepatitis C virus. However, reports of follow up at six months have not been received for all of these.

Lot F Séguier JC, Fégueux S, Astagneau P, Simon P, Aggoune M et al,

Probable transmission of HIV from an orthopaedic surgeon to a patient in France.

Ann Intern Med, 1999;130, 1-6.

There is a risk of healthcare worker transmission of bloodborne viruses to patients, and there have been a number of published cases, such as a surgeon in France, who is thought to have acquired HIV occupationally. 983 past patients were recalled for HIV testing, at substantial cost, both financial and emotional, and one transmission from surgeon to patient was subsequently identified.

Do the Preventive Measures Really Work?

The public healthcare sector in France has been notable, and unusual, for its adoption of preventative measures, implementing improved education, procedures and safer technology, and, as such, is a source of reliable independent data regarding the effectiveness of these measures.

A recent French study showed that safety education and safer procedures (including disposal) can lead to a 59% reduction in sharps' injuries, and a combination of safety education, safer procedures and the use of medical devices incorporating needlestick/sharps protection technology can lead to an 84% to 100% reduction in the number of injuries (depending upon the application).

(Ref. Advances in Exposure Prevention; vol. 3, no. 4; Libourne study GERES day_09/2001)

A four-year study of occupational blood and body fluids exposures in health care workers in Northern France, published in 2003, showed that widespread improvements in procedures and engineering controls were implemented in the Northern France network before and during the study period. Significant reductions were observed in reports of BBF exposures and Needlestick Injuries, particularly in nurses.

Ref. Four-year surveillance from the Northern France network

Am J Infect Control. 2003 Oct;31(6):357-63. Tarantola A, Golliot F, Astagneau P, Fleury L, Brucker G, Bouvet E; CCLIN Paris-Nord Blood and Body Fluids (BBF) Exposure Surveillance Taskforce.

Other studies by the GERES in France have shown a reduction from 0,26NSI/Year/nurse down to 0,06 NSI/year/nurse.

(Abiteboul, 2002)

Abiteboul D, Lolom I, Lamontagne F, Tarantola A, Deschamps JM, Bouve Et, and the GERES group. GERES (Groupe d'étude sur le risque d'exposition des soignants aux agents infectieux). AES : Peut on se protéger ? Enquête multicentrique sur les AES des infirmier(e)s de Médecine et réanimation. GERES Day, Hospital Bichat June 2002 Paris.

A study from a group in Cannes (Louis, 2002) indicating that if all the elements of a safe practice are incorporated (best practices, education, individual protection and safety engineered devices) the reduction of needlestick injuries for phlebotomy can approach 100%!

Louis N, Vela G, Groupe Projet. Évaluation de l'efficacité d'une mesure de prévention des accidents d'exposition au sang au cours du prélèvement de sang veineux. Bulletin Épidémiologique Hebdomadaire 2002 ;51 : 260-261.

Other independent studies include:

Le Bulletin du CCLIN Paris Nord N]19, Octobre 2001

Resultats de la surveillance 1995-1998 des AES sur le reseau CCLIN Paris Nord

Results of the accidental blood exposures monitoring from 1995 to 1998 in the Paris North CCLIN network.

A ; Tarantolla, F. Golliot, P. Astagneau, G. Brucker, E. Bouvet, pour les correspondants du réseau AES CCLIN Paris Nord.

GERES (Groupe d'étude sur le risque d'exposition des soignants aux agents infectieux)
Paris

[Article in French]

54 hospitals participated for at least one year and 25 for the entire duration of the study (1995 - 1998). The study includes common denominators (number of admission in the hospitals or number of medical staff). Nurses, student's nurses and medical help declare 2/3 of the accidents. 77,7% of accidents are Needle sticks injuries, 11,2% are cuts and 10% are splashes. Blood drawing is sited in 24% of cases, injections in 14% and catheters in 10,3% of the cases. The increased awareness by nurses of accidental blood exposure risks creates a real safety culture. The combination of safety culture and availability of safety-engineered devices creates a drastic reduction in NSI and more generally in blood exposure accidents.

Journal of Hospital Infection, Volume 55, Issue 4, December 2003, pages 290-294

Preventability of percutaneous injuries in healthcare workers: a year-long survey in Italy.

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The aim of the study was to examine the preventability of percutaneous injuries either through the adoption of correct behaviour or by the use of needles with safety features. We analysed the report forms of occupational needlestick or sharps injuries in a sample of healthcare workers exposed to the risk of percutaneous injuries in the period between 1 June 2000 and 31 May 2001; the forms were returned to the regional SIROH (Italian Study on Occupational Exposure to HIV) centre in which all hospitals of the Piemonte region (Italy) participate. Percutaneous injuries caused by needles (injection, phlebotomy, infusion), suture needles and scalpels were analysed; three samples were extracted according to the type of device that caused the injury. In the sample of 439 needlestick-related percutaneous injuries, 74% were caused by incorrect health worker behaviour and 26% were unpreventable, seventy-nine percent of accidents caused by incorrect behaviour and 24% of accidents could have been prevented by using needles with safety features. In the sample of 221 suture needle and 114 scalpel injuries, incorrect health worker behaviour was identified in 26.2% and 14%, respectively, and unpreventable causes in 73.8% and 50.9%, respectively. A high rate of percutaneous injuries, especially those involving needles for injection, phlebotomy, infusion, and scalpels, could be prevented by adopting safe work behaviour practices and using personal protection equipment. The introduction of devices with safety features could lead to a significant reduction in the number of injuries from needles.

Br Dent J 2001 Jan 27;190(2):88-92

Introducing safety syringes into a UK dental school--a controlled study.

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AIM: How an appropriate safety syringe was chosen, how the change-over to it was achieved and what outcome measures were used to measure the effectiveness of this change.

INTRODUCTION: One third of all reported sharps injuries in dental practice are due to the use of non disposable dental syringes with most injuries being sustained during removal and disposal of the disposable needle from the non-disposable syringe.

METHOD: After evaluation of all available disposable safety syringes they were introduced into a dental school after appropriate education of all staff and students. Risk management provided data on all reported needle-stick injuries in the dental school and a control unit using non disposable syringes for a period of two years.

RESULTS: Avoidable needle stick injuries reduced from an average of 11.8 to 0 injuries per 1,000,000 hours worked per year as compared with a control unit who reduced their frequency from 26 to 20 injuries per 1,000,000 hours worked. The cost of safety syringes is comparable to non-disposable syringes but the reduction in cost of management of needle stick injuries including the psychological effects are significant.

CONCLUSION: Education plays a vitally important role in the effective implementation of the change to safety syringes which is advocated for all dentists.

**Eliminating 'Sharps' Injuries
Do the Preventive Measures Work?**

GERES, France, Study. 1990 2000 (Public Hospitals)

NSI incidence	1990	1992	2000	p (χ^2 90-2000)
Nb/10⁵ procedures	18,1	14,7	4,7	P <0,0001
Nb / HCW / year	0,32	0,21	0,07	P <0,0001

"This decrease in NSI is certainly due to better adherence to standard protection practices but the use of safety engineered devices has also had a major influence on the results"

Eliminating 'Sharps' Injuries Do the Preventive Measures Work?

GERES, France, Multi centric study 1990 to 2000, Results for 2000.

NSI per system purchased. Safety vs Conventional

Devices	Number of system purchased	NSI	NSI/10 ⁵ system purchased	P
Catheters				
- safety	28010	1	3.6	
- conventional	107641	17	15.8	0.15
Wing sets				
- safety	146127	7	4.8	
- conventional	120674	16	13.2	0.03
Blood drawing				
- safety	205929	3	1.4	
- conventional	122837	6	4.9	0.07
Total				
- safety	380066	11	2.9	
- conventional	351152	39	11.1	< 0.001

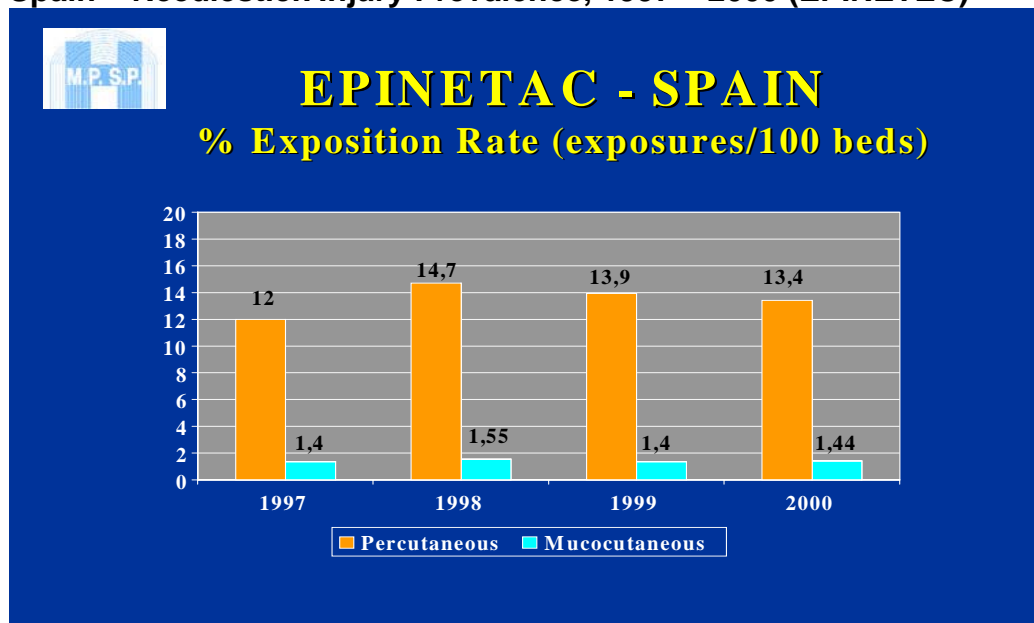
A Selection of Typical National Data Regarding Needlestick Injury

UK Needlestick Injury Prevalence (Epinet™) Jan 2002 to June 2002

Hospital ID	Beds	Days	Bed Days	NSI's	NSI's per year	NSI's / 100 Beds
103	447	180	80460	31	62	14
105	550	180	99000	25	50	9
106	742	180	133560	43	86	12
107	760	180	136800	34	68	9
108	1192	180	214560	52	104	9
112	1009	180	181620	27	54	5
114	1222	180	219960	44	88	7
116	600	180	108000	36	72	12
117	410	180	73800	40	80	20
121	1526	180	274680	77	154	10
123	896	180	161280	26	52	6
124	900	180	162000	86	172	19
125	430	180	77400	34	68	16
129	451	180	81180			Missing
134	600	180	108000	44	88	15
135	800	180	144000	84	168	21
136	557	180	100260	37	74	13
145	528	180	95040	45	90	17
140	1335	180	240300	59	118	9
141	1066	180	191880	101	202	19
Totals	16021	3600	2883780	925	1850	See Below

Average per 100 beds 12.74

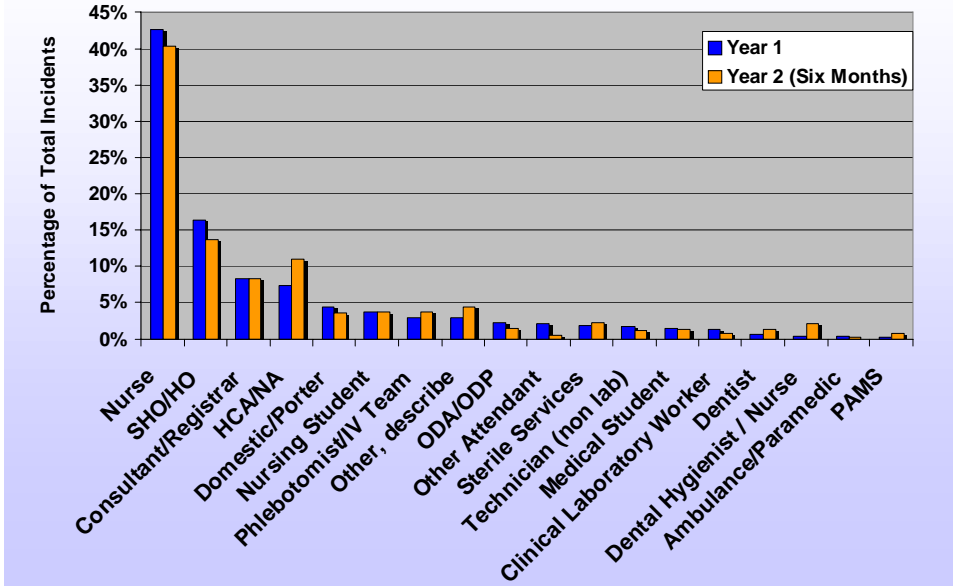
Spain – Needlestick Injury Prevalence, 1997 – 2000 (EPINETEC)



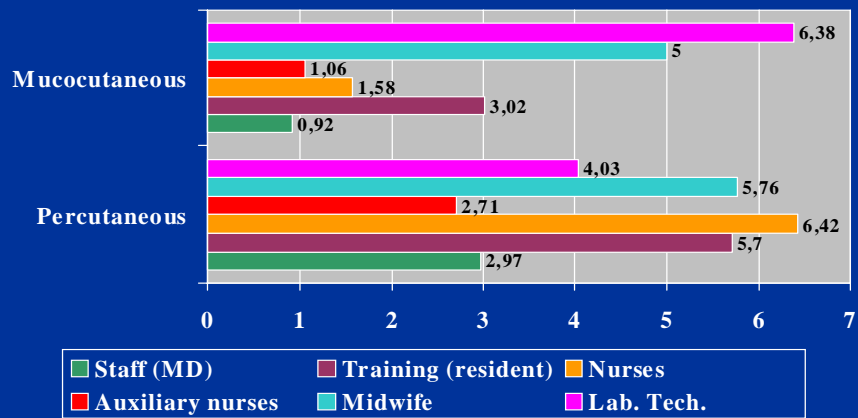
Job Category of Victims

(UK) Job Category of Injured Worker

Comparison Year 1 and Year 2



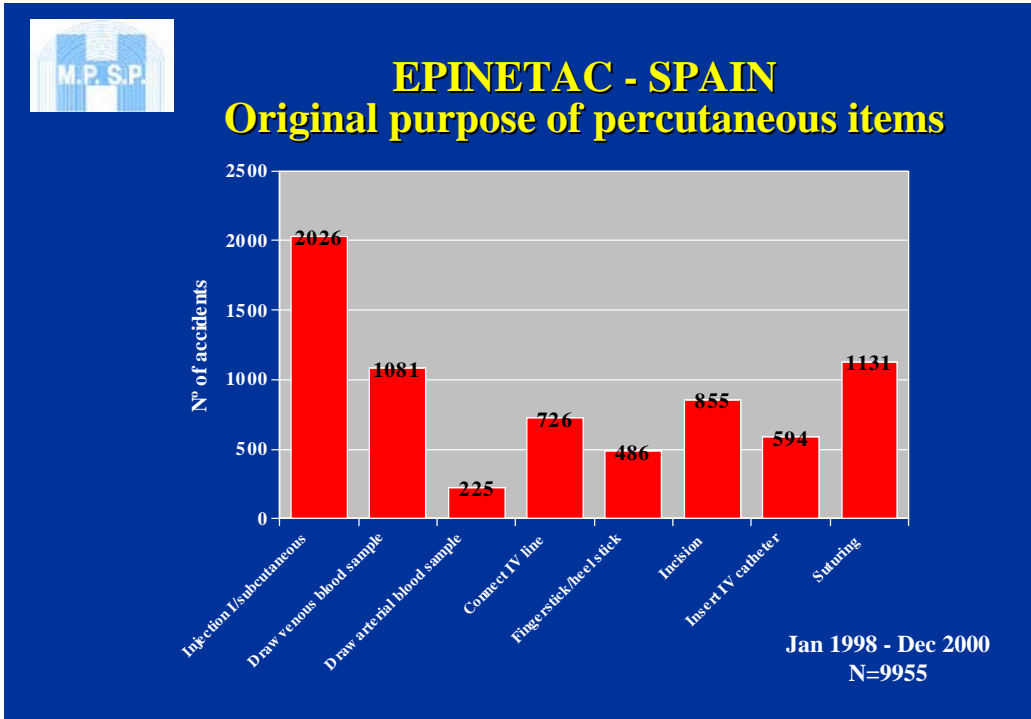
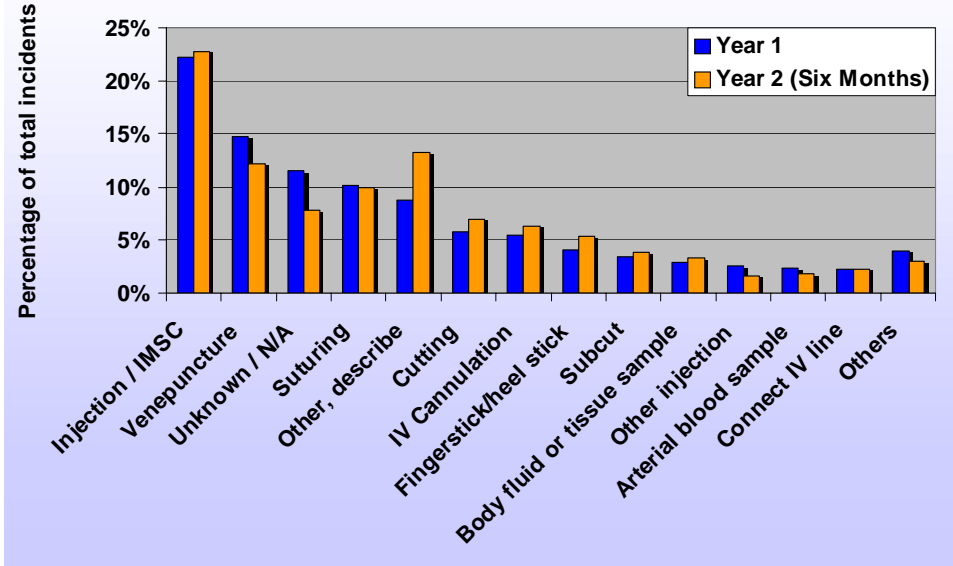
EPINETAC - SPAIN
Injuries Rate by Job Categories



Original purpose of medical sharp causing injury

(UK) Original Purpose of Sharp Item

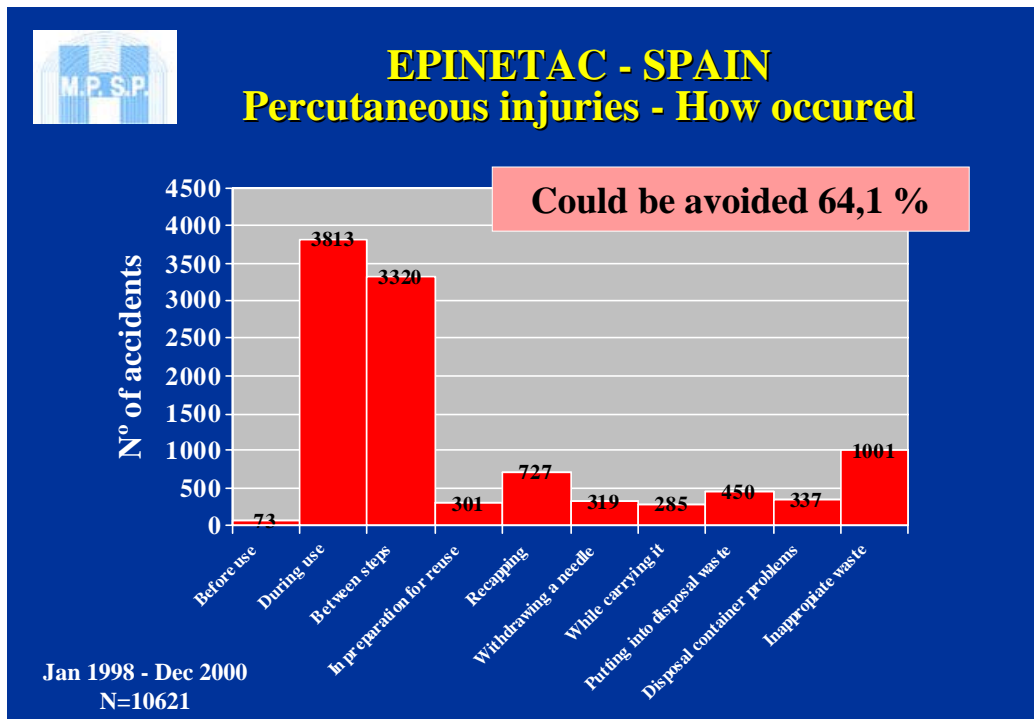
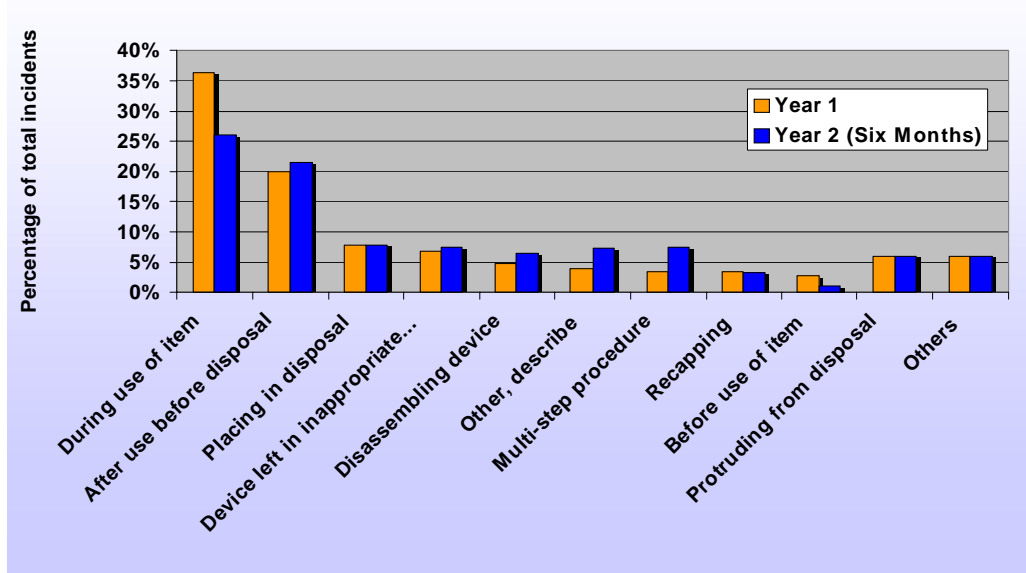
Comparison of Year 1 and Year 2



When Injury Occurred

(UK) When Injury Occurred

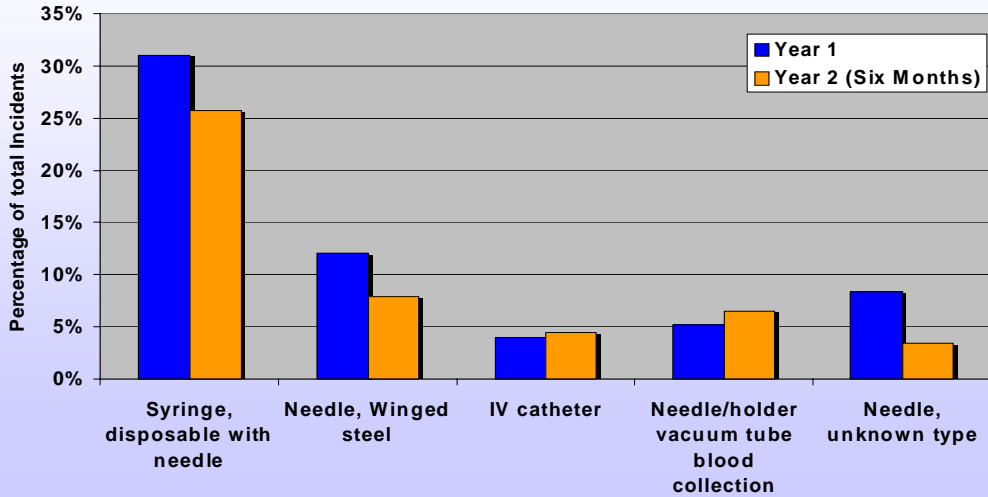
Comparison Year 1 and Year 2



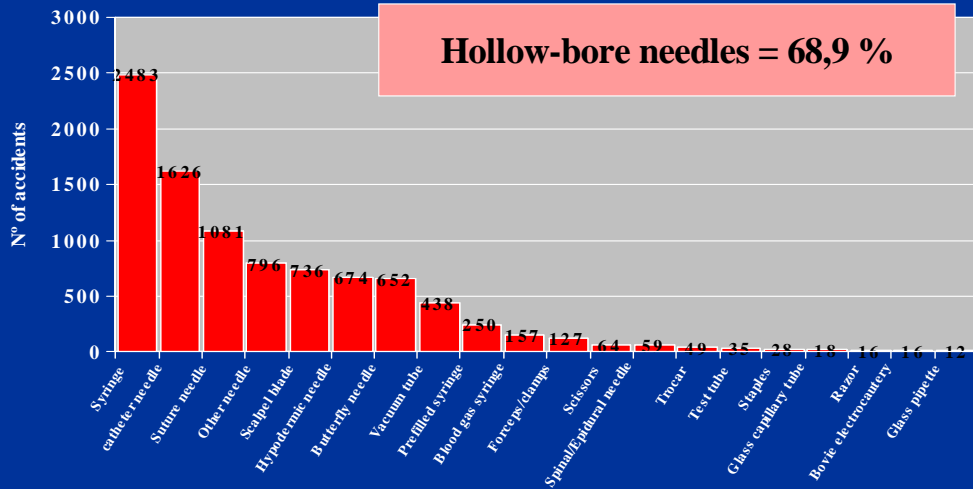
Type of device causing injury

(UK) Type of Device - Hollow Bore

Comparison Year 1 and Year 2



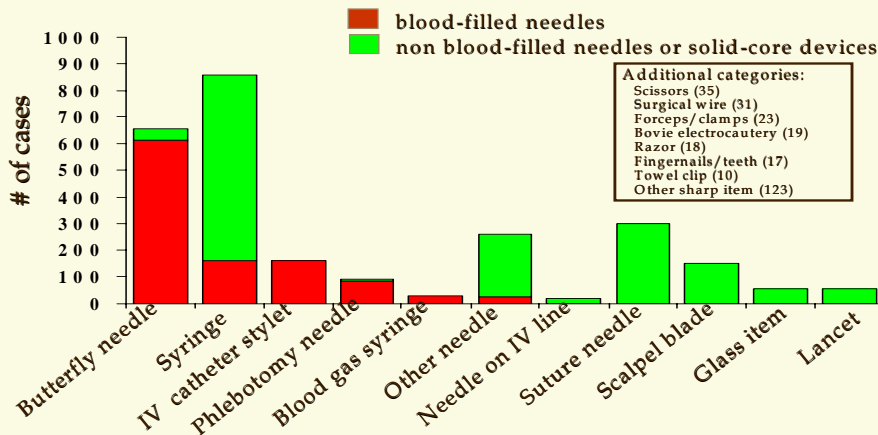
EPINETAC - SPAIN
Items causing sharp-object injuries



Jan 1998 - Dec 2000
N=10472

Italy - Items Most Frequently Causing Sharp Object Injuries, SIROH-EPINet, 1994

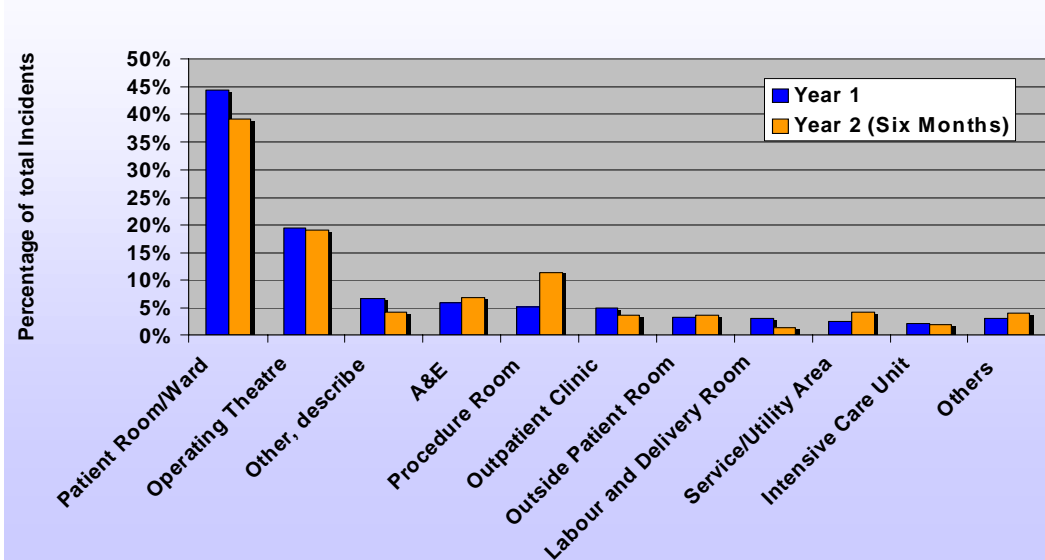
26 Italian hospitals, cases=2,915



Where Injury Occurred

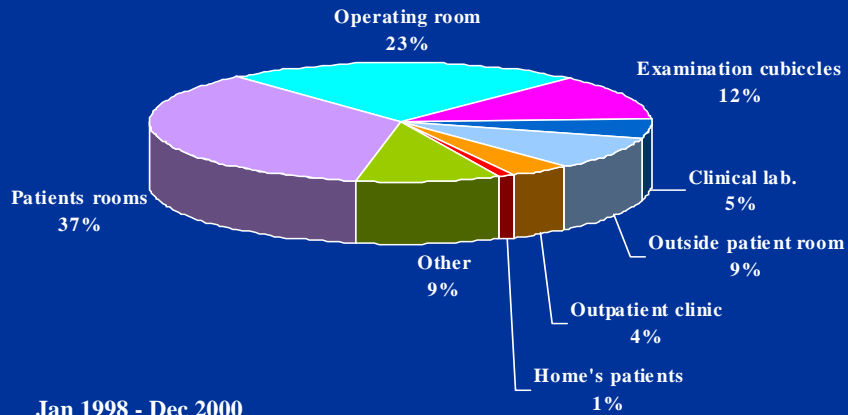
(UK) Where the Injury Occurred

Comparison Year 1 and Year 2





EPINETAC - SPAIN Percutaneous exposures - Where occurred

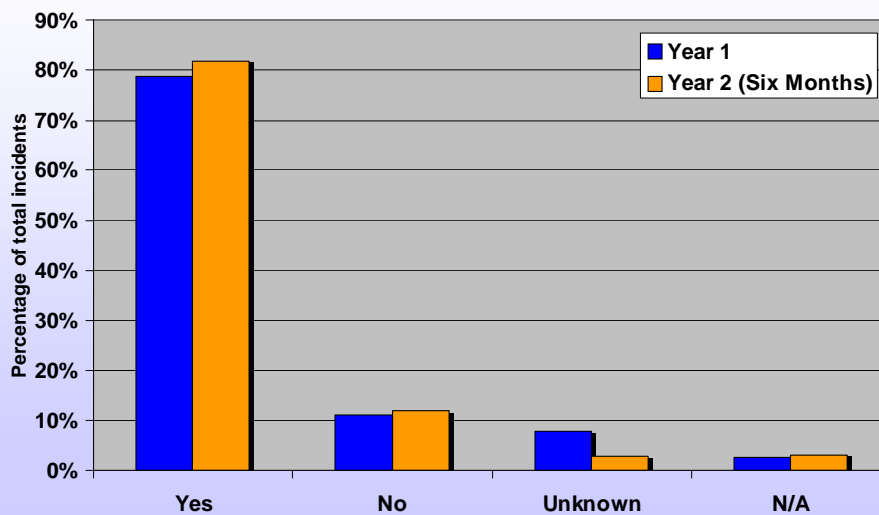


Jan 1998 - Dec 2000
N=10542

Source patient status?

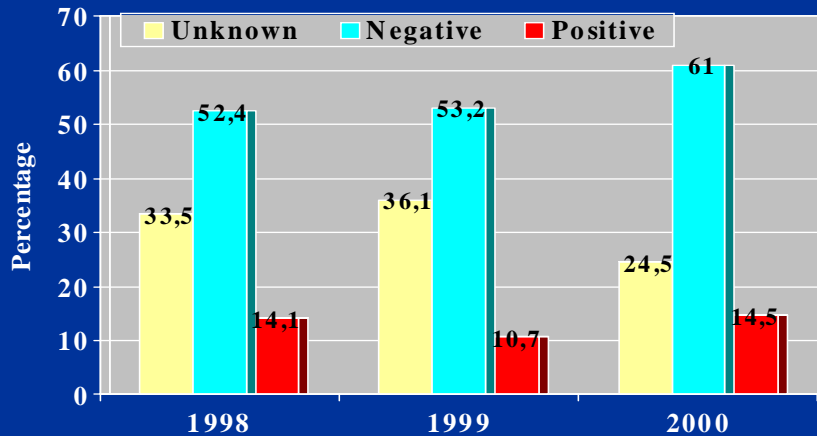
(UK) Source Patient Identifiable

January 2002





EPINETAC - SPAIN Serologic Status of Patient Sources



Jan 1998 - Dec 2000
N=10591



EPINETAC - SPAIN Knowledge Serologic Status Before Injuries (Positive Sources)

HCV Infection : YES 45%
HCV + HIV coinfection : YES 70%

	Global	HBV	HIV	HCV
YES	711 (50.1%)	81 (40.1%)	254 (68.5%)	573 (50.3%)
NO	709 (49.9%)	121 (59.9%)	117 (31.5%)	567 (49.7%)

Jan 1998 - Dec 2000
N=10420

Needlesticks: What are the Risks?

- Source Patient Infection rates:

SIROH Italy 1994-1998: 22,923 Sticks

	Patients	General Population
HIV	5.6%	0.1%
HBV	5.1%	1.0%
HCV	21.2%	1 to 10%

What are the risks from needlestick injuries?

Reported occupationally acquired HIV infection (OAI) by country

Source: Unpublished PHLS Summary Report 1984 - 2001

Region	Definite OAI	Possible OAI	Total
Europe			
France	13	29	42
Spain	5	0	5
Italy	5	0	5
Germany	3	26	29
UK	5	8	13
Belgium	2	1	3
Switzerland	2	1	3
Netherlands	0	2	2
Denmark	0	1	1
Total	35	68	103
USA	55	136	191

A Call for Action to Protect Europe's Healthcare Workers



Standing Committee of Nurses of the EU (PCN)



European Federation of Public Service Employees (EUROFEDOP)



European Dialysis and Transplant Nurses Association / European Renal Care Association (EDTNA/ERCA)



The International Alliance of Patients' Organisations (IAPO)



European medical technology association



European Institute of Medicine (EOM)



European Medical Association (EMA)

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 Risk of Hepatitis C Virus Transmission following Percutaneous Exposure in Healthcare Workers, 2003 – G De carli, V Puro, G Ippolito, and the Studio Italiano Rischio Occupazionale da HIV (SIROH) Group.
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- 3 CDC Recommendations for prevention and control of hepatitis (HCV) infection and HCV-related chronic disease. MMWR Morb Mort Weekly Rep 1998, 47 1-40.
- 4 European Agency for Safety and Health at Work. FACTS issue 29.
- 5 The National Audit Office UK, 2003. A Safer Place to Work – Improving the management of health and safety risks to staff in NHS trusts. www.nao.gov.uk
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- 7 Prof. Hofmann "Kanülenstichverletzungen im Gesundheitsdienst-Häufigkeit, Ursachen und Präventionsstrategien" , Georg Thieme Verlag, 2002)
 Prof. Hofmann Technischer Infektionsschutz im Gesundheitswesen. ECOMED Verlag, 2003)
 www.nadelstichverletzung.de
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- 8 NHS, Scotland 2001
- 9 Commissioner David Byrne, speaking at the European Health Forum, Bad Gastein, 3 October 2003.