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Clean sharps such as glass ampules can also present a risk of injury and infection caused by bacteria and steps should also be taken to prevent such injuries.

RCN survey of blood and body fluid exposures in 2020

A survey of RCN members (RCN 2021) identified that of the 7,500 respondents, 15% had sustained a sharps injury (SI) in the previous 12 months, a 50% increase on the previous survey in 2008. 3% of respondents reported experiencing more than one SI in the same period. The top three timings for SI occurrence were, “before procedure” (29%), “during procedure” (26%) and “disposal-related” (32%). SI sustained “before procedure” was >20% in almost all roles, workplaces, (including) bank staff and ethnicities of respondents. The survey was undertaken during the early stages of the covid-19 pandemic and therefore may represent high workloads, fatigue, stress and urgency of procedures at that time.

Data on when SI had occurred was analysed against role and ethnicity as reported by respondents. Analysis based on reported data showed that Bank/agency staff experienced more SI than staff who did not work as bank/agency. Compared to acute hospital staff care/nursing home staff and mental health practitioners reported more SI. Black and Minority Ethnic staff also reported higher SI posing many questions in relation to access to education and training and availability of safety sharps. The impact of the pandemic on clinical practice associated with sharps handling and occurrence of SI is not yet known and the RCN has called for more frequent data collection to gain better insight into the incidence of SI and risk factors to inform future prevention strategies.

When do accidents occur?

According to data from the RCN

The risks of contracting an infection

In the UK a small, but significant number of health care workers including nurses, have developed potentially life-threatening diseases as a result of a sharps injury. Since the late 1990s at least 20 health care workers have contracted hepatitis C and there have been five documented cases of HIV.

Mucocutaneous exposure

The eye(s), the inside of the nose or mouth, or an area of non-intact skin of the health care worker is contaminated by blood or other body fluid.

Percutaneous exposure

The skin of the health care worker is cut or penetrated by a needle or other sharp object (for example, scalpel blade, trochar, bone fragment or tooth), which is contaminated with blood or other body fluid.

The risk of infection will depend on a number of factors. They include:

- the depth of the injury
- the type of sharp used (hollow bore needles are higher risk although subcutaneous needles also present a risk)
- whether the device was previously in the patient's vein or artery
- how infectious the patient is at the time of the injury.

When all these factors are taken into account, the risk of infection by a contaminated 6 (u)5.5 (g)10 (h s)5.6 (u)



Regulations	Key requirements	Application to sharps injuries
<p>Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 and the Health and Safety (Sharp Instruments in Healthcare) Regulations (Northern Ireland) 2013.</p> <p>Control of Substances Hazardous to Health Regulations 2002 (COSHH) / Control of Substances Hazardous to Health (Northern Ireland) 2003.</p>	<p>The Regulations implement the European Council Directive 2010/32/EU and require employers to ensure that risks from sharps injuries are adequately assessed and appropriate control measures are put in place. They build on existing law to provide specific detail on steps that employers must take</p> <p>Employers must identify any exposure to substances hazardous to health, assess the risks from exposure and put adequate measures in place to prevent or reduce and control the exposure (known as control measures) so far as is practicable to do so. There is also a requirement to provide suitable information and training and, where applicable, to monitor exposure, and provide health surveillance.</p>	<p>Assess the risks, identify appropriate control measures, including avoiding the use of sharps where practical to do so and using safer sharps devices. Providing appropriate</p> <p>s3ieing</p>

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Regulations	Key requirements	Application to sharps injuries
<p>Health and Safety (First Aid) Regulations 1981 and The Health and Safety (First-Aid) Regulations (Northern Ireland) 1982.</p>	<p>Employers to provide adequate and appropriate equipment, facilities and personnel to ensure their employees receive immediate attention if they are injured or taken ill at work.</p>	<p>Provide first aid treatment following a sharps injury – including out-of-hours support.</p>
<p>Safety Representatives and Safety Committee Regulations. 1977 and the Safety Representatives and Safety Committee Regulations (Northern Ireland) 1979.</p>	<p>Employers to consult with safety representatives on matters affecting the health and safety of members.</p> <p>Employers to allow safety representatives paid time off to:</p> <ul style="list-style-type: none"> • inspect documents relating to health and safety • investigate RIDDOR incidents and complaints from members • inspect the workplace. 	<p>Consult with safety representatives on the choice of equipment for example safety-engineered devices and gloves, and allow safety representatives paid time-off to inspect:</p> <ul style="list-style-type: none"> • sharps injury reports • wards and departments for safe working practices and safe working environment to prevent sharps injuries.
<p>BS EN ISO 23907:2 - 2019 - Reusable Sharps Containers</p>	<p>If procuring reusable sharps containers, employers should procure containers that complete with the minimum standard ISO 23907-2 which specifies requirements for reusable sharps containers intended to hold potentially hazardous sharps medical waste with or without sharps protection features and also specifies requirements for lifespan simulation, cleaning & decontamination, microbial validation, quality monitoring and performance testing.</p>	<p>Consult with a safety representative on the selection of the correct size and specification of reusable container relevant to the type of sharp item being disposed of.</p>

The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013

The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 came into force in the UK on the 11 May 2013. This was as a direct result of the European Directive 210//32/EU, which required member states to put into force regulation to comply with the directive.

Who has to comply with the regulations?

The regulations apply to all employers whose primary activity is to organise, manage and provide health care. This definition includes the NHS and independent sector providers, GP practices, hospices, nursing homes and includes situations where health care workers are providing care to people in their own homes.

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- the need for a well-trained, adequately resourced and secure health service workforce
- in accordance with their training, workers to take care, as far as possible, of their own health and safety and that of other persons affected by their actions
- prevention of exposure is a priority
- never assume there is no risk of exposure

Following a sharps injury

- the important role of safety representatives in prevention and the development of health and safety policies and practices
- the importance of partnership working and consultation with workers and their representatives on safe systems of work, selection of safety equipment and how best to carry out training, information and awareness raising
- the employers duty to ensure the health and safety of workers including psycho-social factors and work organisation, for example stress, shift work and working hours
- the need to promote a no blame culture to ensure that incident reporting procedures are followed and focus on systemic factors rather than individual mistakes.

The main requirements of the regulations

Employers have a duty to suitably and sufficiently assess the risk of sharps injuries under the COSHH regulations. Where risks are identified, the sharps in health care regulations requires the employer to take specific risk control measures, which are detailed below:

- where the employer has identified a risk, steps must be taken to avoid the unnecessary use of sharps (Regulation 5 (1)(a))
- where it is not reasonably practicable to avoid the use of medical sharps, the sharps regulations require employers to:
 - use safe sharps (incorporating protection mechanisms) where it is reasonably practicable to do so (Regulation 5(1) (b))
 - prevent the recapping of needles (Regulation 5 (1) (c))
 - place secure containers and instructions for safe disposal of medical sharps close to the work area (Regulation 5 (1) (d))

Definition of 'reasonably practicable'

'Reasonably practicable' implies that risks must be measured against the time or money required to avert them. The greater the risk the greater the amount of money and time that should be spent on reducing it.

The RCN believes that contaminated sharps and the risk of blood-borne viruses, in particular injuries from hollow bore needles justify expenditure on control measures such as safer needle devices. Such devices are often no more expensive than conventional devices.

- provide information to employees on the risks from injuries, relevant legal duties of employers and employees; good practice in preventing injuries; the benefits and drawbacks of vaccination and the support available to an injured person from their employer. The employer must work with safety representatives in developing and promoting this information (Regulation 6)

- provide appropriate training to ensure employees know how to work safely. The training must cover the correct use of safe sharps; safe use and disposal of sharps; what to do in the event of an injury and the employer's arrangements for health surveillance. (Regulation 6 (4))
- have arrangements in place in the event of a sharps injury. Which includes keeping a record of the incident; investigation of the circumstances of an incident and to take action to prevent a reoccurrence. The HSE advise that records of the incident should include details of the type of sharp involved, at what stage of the procedure the incident occurred and the severity of the injury
- ensure that injured employees who may have been exposed to a blood borne virus have immediate access to medical advice; are offered post exposure prophylaxis or other treatment as advised by a doctor and offered counselling where appropriate. (Regulation 7 (2))
- review, at suitable periods, the effectiveness of procedures and control measures (Regulation 5 (2)).

Duty on employees

The regulations also require employees to notify their employer of a sharps accident as soon as practicable after the event (Regulation 8). Clearly employers will need to have adequate processes in place to allow for prompt notification particularly for out of hours and community nurses. Employees must also be given information and training on reporting procedures (as required under Regulation 6).

Consequences of not complying with the law

Health and safety law is criminal law, and health care organisations can be subject to enforcement action if they fail to comply with the legal requirements relating to the prevention of sharps injuries. In 2010, a hospital trust was fined more than £20,000 after a health care worker contracted hepatitis C following a sharps injury. The trust was found guilty of breaching the Health and Safety at Work Act and the Control of Substances Hazardous to Health Regulations (HSE, 2010).

An HSE inspection initiative of 40 NHS organisations carried out in 2015/16 found that 83% failed to fully comply with the sharps regulations. 45% of the organisations were issued with HSE Improvement Notices, a form of enforcement action requiring organisations to take action to comply with the law within a certain time frame. These organisations would also have been charged a fee for the time HSE spent on making this intervention, currently at £163 per hour. (HSE 2016)

There are also a number of personal injury cases that have been taken under civil law, many of which are settled out of court. But, in 2009 the significant case of Fryers v Belfast Health and Social Care resulted in the High Court of Justice in Northern Ireland awarding £3,000 compensation to a hospital worker who sustained a needlestick injury. The worker was injured by a used needle that had been thrown into a yellow clinical waste bag. Treatment and a series of blood tests confirmed that there was no risk of developing an infection. However Mr Fryers went onto develop an adjustment disorder as a result of the stress caused by the injury.

Other requirements on health care providers

There are a number of health care standards and guidelines put in place by the UK devolved administrations to protect patients and employees from health care associated infections.

Approved Code of Practice for the Control of Substances Hazardous to Health Regulations L5 sixth edition (HSE 2013)

The importance of protecting HCWs from sharps injuries and ensuring appropriate management is reinforced in the following guidance:

Code of Practice on the prevention and control of infections and related guidance (2015) England (currently under review)

National infection prevention and control manual for England
england.nhs.uk/publication/national-infection-prevention-and-control

National Infection Control Manual (Wales)
phw.nhs.wales/services-and-teams/harp/infection-prevention-and-control/nipcm/chapter-1-standard-infection-control-precautions-sicps

Code of Practice for the Prevention and Control of Healthcare Associated Infections (2014) Wales

Health Protection Scotland National Infection Prevention and Control Manual, Standard Infection Control Precautions

The Regulation and Quality Improvement Agency (Northern Ireland)
<https://www.rqia.org.uk/>

Northern Ireland Regional Infection prevention and Control Manual
niinfectioncontrolmanual.net

Measures to prevent sharps injuries can best be implemented using the principles of good practice in schedule 2A of the COSHH Regulations and the Hierarchy of controls and principles of prevention frameworks. The Hierarchy of controls focuses on the most effective measure of removing the hazard first, rather than relying on training, behavioural or changes to work practices and the use of protective equipment, mirroring the COSHH principles of good practice to ensure adequate control. Used alongside risk assessment, the hierarchy provides a framework for reducing the risks of injury. Further details of applying the hierarchy are given in the risk assessment section below.

In reality it will be difficult, if not impossible, to eliminate all sharps from health care environments. So, the next effective step will be using engineering controls that include safer needle devices using innovative designs to limit the risk of injury. A combination of measures may also be necessary, for example, a safer needle device should only be introduced alongside training in its use.

Risk assessment

Risk assessment is central to UK and EU health and safety laws. The HSE provides a useful and simple model of risk assessment entitled

Existing data on sharps injury reports can be used to identify areas where high numbers of injuries are reported. However, there is often under reporting of sharps injuries in organisations, so figures should be treated with caution.

The matrix on page 23 entitled best practice risk assessment has been developed to support the risk assessment process by prioritising higher risk procedures and equipment.

Step 2: decide who might be harmed and how

The sharps regulations cover all workers that are under the managerial authority and supervision of health care employer/organisations. This extends not only to staff that are directly employed, but also some self-employed workers. For example, agency and bank nurses, any workers employed by organisations contracted to provide services for health care organisations such as cleaners and other ancillary staff. There are also requirements to protect student nurses while they are under the supervision of a health care provider.

There are many types of health care and hospital work that can expose individuals to the risk of sharps injuries. They include:

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Engineering controls

These are used to isolate or remove a hazard from a workplace. Examples include:

- adequate numbers of easily accessible sharps disposal containers
- environmental factors including good lighting and adequate space to carry out the procedure
- use of safety-engineered devices for all procedures (devices with needles that retract, sheath or blunt immediately after use).

Administrative controls

These are policies and practices that aim to limit exposure to the hazard. Examples include:

- health and safety responsibilities of all staff are clear, well co-ordinated and adequately resourced
- sharps injury prevention committee, which may be part of the health and safety committee
- a sharps policy that covers exposure prevention as well as treatment and follow-up
- reference to sharps injury prevention in infection control and procurement policies
- removal of all unsafe devices
- safe systems of work, particularly high risk areas such as theatres, obstetrics and emergency care
- consistent information and training that includes: safe systems of work; correct use and disposal of sharps; the use of safety-engineered medical devices incorporating sharps protection mechanisms; measures to be taken in the event of a sharps injury; and how to use personal protective equipment provided
- promotion of a no-blame culture
- incident reporting procedures and investigations that include feedback to staff/staff groups involved
- vaccination programmes and follow up procedures for example free hepatitis B.

Work practice controls

These controls aim to change the behaviour of workers to reduce exposure to occupational hazards. Examples include:

- no needle recapping or resheathing
- safe construction of sharps containers
- placing sharps containers at eye level and within arm's reach
- disposing of single-use sharps immediately after use in designated sharps containers
- sealing and discarding sharps containers when they are three-quarters full, this is for single-use sharps containers
- establishing means for the safe handling and disposal of sharps devices before the beginning of a procedure
- Exchange reusable sharps containers when the overfill protection (if fitted) is activated

Types of safety-engineered devices	Example
Needleless connector systems	Connectors use devices other than needles to connect one IV to another.
Protective sheaths	Sliding or hinged needle shields attached to disposable syringes.
Retractable needles or blades	Needles of sharps that retract into a syringe or back into the device.
Self-blunting	A blunt cannula seated inside a phlebotomy needle is advanced beyond the needle tip before the needle is withdrawn from the vein.
Reusable Sharps Containers	Safety engineered sharps containers that eliminate overfilling, have temporary and permanent closures, restrict hand access and comply with BS EN ISO 23907-2:2019.

Personal protective equipment (PPE)

Personal protective equipment provides barriers and filters between the worker and the hazard, in this case a sharp. Used properly it can prevent exposure to blood splashes, but will not prevent needlestick injuries or mucocutaneous exposures. Examples include:

- eye goggles
- masks
- gloves.

There is evidence that gloves can reduce the risk of infection, in particular double-gloving in operating theatres. In these circumstances, the glove material will remove up to 86 per cent of the blood on the outside of the needle, and the inner glove will remove most blood not removed by the outer glove (Mast et al., 1993).

Step 4: record your findings and implement them

In organisations which employ more than 5 people, the findings of the organisational risk assessment should be documented and form part of the action plan to reduce the risks of injury. The action plans should be time sensitive. The risk assessment can be organisation-wide if it is small, such as a GP practice or ward-based in a larger health care site such as a hospital.

The results of the risk assessment should be shared with all workers identified as being at risk.

Where staff are based in the community there may be a need to liaise with GP services to ensure risk assessment findings are implemented.

Performance indicators such as the increase in the number of safety devices being purchased can be used to ensure that risk assessments are being implemented.

Step 5: review your assessment and update if necessary

Steps should be taken to periodically review the effectiveness of the risk assessment and control measures in place. This could be reactive after an incident report, a proactive audit or workplace inspection, or consist of analysing performance indicators, for example, the number of devices being purchased. The assessment should be updated if necessary. The review should be conducted at least annually.

- single handed or automatic activation is preferred
- activation must manifest itself by means of an audible, tactile or visual sign to the health professional
- not reversible when activated.

(Safer Needle Network/Partnership for Occupational Safety and Health in Health Care, 2010).



Safety representatives and safety device users should always be consulted and involved in their selection and trial, together with specialist staff such as clinical procurement specialists, and infection prevention and control nurses.

The market in safety devices is constantly evolving and new products are being developed. The latest in a line of new innovations is a needleless injection system where an injection is delivered by high pressure rather than a needle. Many suppliers will provide organisational support, change management processes and training when new devices are introduced to a workplace.

Policies

Organisations should have an up-to-date policy on the prevention and management of sharps injuries. The policy should contain the following:

- a strategic/corporate aim acknowledging that
 - sharps injuries are a major health and safety problem and a commitment to reduce sharps injuries
 - definitions and causes of sharps injuries
 - arrangements for the prevention of exposure to blood-borne viruses that cross reference to any other relevant policies such as: roles and responsibilities – risk assessment procedures and control measures to prevent exposure – education and training – procedures for supervising new and inexperienced staff – safe working practices (for example no recapping) – safe disposal procedures – procedures in the

Sustainable options now exist to support users of sharps in healthcare settings in the form of reusable sharps containers. Evidence on the potential benefits of reusable sharps containers is growing. For example Grimmond et al (2021) found when 40 NHS trusts converted from single-use to reusable sharps containers, this contributed to a combined global warming potential reduction of 1.0 - 1.18 (e)2.1 (r)6.7 (o)1.3 (n)2.8 (s n)-rebat%7.2 (n)6, 32 (e on21 (y 0 6)

First aid

What employers should be doing

Employers should be aware of their legal duties under The Sharps Regulations and other existing legislation and the new regulations, which emphasise carrying out suitable and sufficient risk assessments on the prevention of sharps injuries. There should be a strategic level commitment to reducing sharps injuries. Employers need to work with competent staff such as occupational health, infection prevention and control and health and safety workers to:

- review current policies and procedures and risk assessments to ensure that they are complying with existing legislation and the new directive
- assess the need to implement further control measures including safety-engineered devices to reduce the risk of injuries
- where indicated by risk assessments introduce new safety measures, equipment and information and training to prevent sharps injuries among staff
- ensure adequate resources are available to support the review and the purchase and introduction of new safety measures.

The RCN expects this level of partnership-working to continue at a local level too. Safety representatives should be fully involved in any workplace initiatives to improve sharps safety, and given the time off that is necessary to attend meetings on sharps safety and carry out inspections.

What can safety representatives do?

- Ask for the issue of sharps safety and the sharps regulations to be put on your health and safety committee agenda.
- At the health and safety committee meeting ask what steps your employer is taking to ensure that they comply with the new regulations?
- Carry out themed workplace inspections and/or surveys of members to examine the impact of local policies, procedures and risk assessments.
- Ensure that you are consulted and fully involved in any work on the prevention of sharps injuries involved in policy and risk assessment reviews, purchasing decisions on safety devices and consulted on the development of training programmes.
- Ensure that employers are following the hierarchy of controls when carrying out risk assessments.
- Work with RCN learning representatives to ensure that training and education programmes on the prevention and management of sharps injuries are fit-for-purpose.
- Encourage members to report sharps incidents and seek follow-up treatment.
- Work with your employer to promote incident reporting for example through joint communications and initiatives and the provision of information in relation to policies and procedures.
- Ensure that all nursing staff have access to immediate follow-up support and, where appropriate, counselling following a sharps injury.

Centers for Disease Control and Prevention (2010) Workbook for designing, implementing and evaluating a sharps injury prevention programme . Available at: www.cdc.gov

Department: All clinical areas					

RCN quality assurance

Publication

This is an RCN practice guidance. Practice guidance are evidence-based consensus documents, used to guide decisions about appropriate care of an individual, family or population in a specific context.

Description

Sharps are commonly used in the delivery of health and care and can be found in all care settings. Sharps, whilst necessary can result in harm to the user with a risk of infection if

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