

# Infection Prevention and Control in health Care Settings – Part 5

(Sharp Injury Prevention Programme)

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# Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program



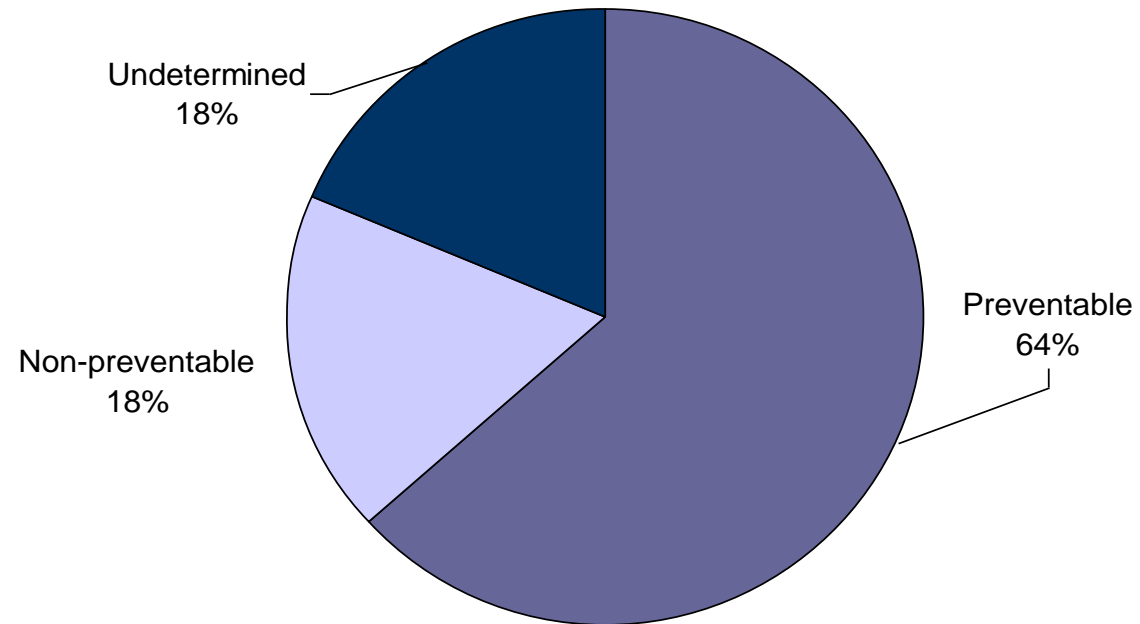
A workbook designed for:



- Infection Control & Occupational Health Personnel
- Healthcare Administrators
- Sharps Injury Prevention Committees

# Sharps Injuries Are Preventable

**Preventability of Needlestick Injuries involving  
Hollow-bore Needles in 78 NaSH Hospitals,  
June 1995 to December 2004 (n=11,625)**



# The Costs of Sharps Injuries

- Medical costs
  - ❖ \$71 to ~\$5,000 per exposure\*
- Lost time from work
- Emotional cost
- Long-term costs

\* O'Malley EM, et al. *Infect Control Hosp Epidemiol*, 2007

# Sharps Injuries

- Overview of Burden of Sharps injuries<sup>30</sup>
  - ❖ CDC estimates ≈ 385,000 sharps injuries annually among hospital-based healthcare personnel
  - ❖ Sharps injuries are a hazard
    - Increased risk for bloodborne virus transmission
    - Cost to workers and healthcare system

# Sharps Injuries - Operational Processes

**Essential activities of any  
Sharps injury prevention  
program**

# Sharps Injuries - Operational Processes

- **The 5 processes**

- ❖ Develop an institution-wide culture of safety in the work environment
- ❖ Promote reporting of sharps injuries and injury hazards
- ❖ Analyse sharps injury data for prevention planning
- ❖ Select/evaluate sharps injury prevention devices
- ❖ Educate and train healthcare personnel

# Sharps Injuries - Operational Processes

- **Culture of Safety**

- ❖ It is the shared commitment of management and employees to ensure the safety of patients and personnel
- ❖ Measure of safety culture are linked to:
  - Reductions in sharps injuries
  - Personnel compliance with safe work practices
  - Availability of devices and engineered safety features
- ❖ The CDC workbook provides:<sup>30</sup>
  - Strategies for creating a culture of safety
  - Survey form for measuring the safety “climate” among personnel



# Sharps Injuries - Operational Processes

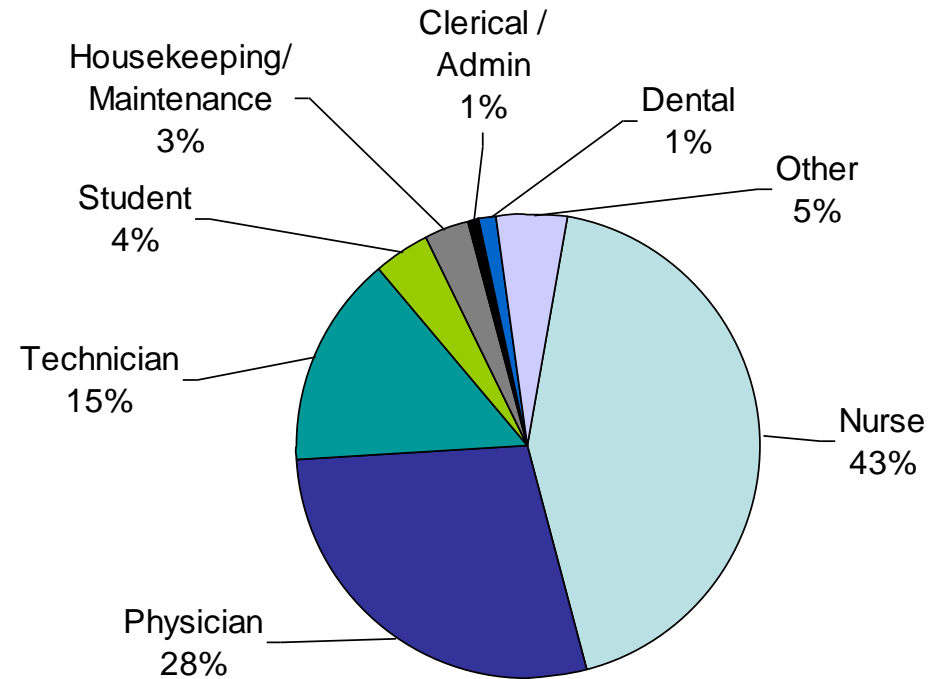
- Injury reporting

- ❖ Under reporting of sharps injuries continues to be an issue at healthcare facilities

- Varies by occupation, department and facility
- Is influenced by the safety culture and safety climate
- CDC study in 38 hospitals in 1996-2003 has shown that:
  - ◇ Only 45% of total injuries are reported

# Who Gets Injured

**Occupational Groups  
of Healthcare  
Personnel Exposed to  
Blood/Body Fluids,  
NaSH June 1995—  
December 2003  
(n=23,197)**



# *When* Do Sharps Injuries Occur?

- During use 41%
- After use/before disposal 40%
- During and after disposal 15%
- Other 4%

Source: NaSH, June 1995—December 2003

## *What* Devices are Involved in Sharps Injuries?

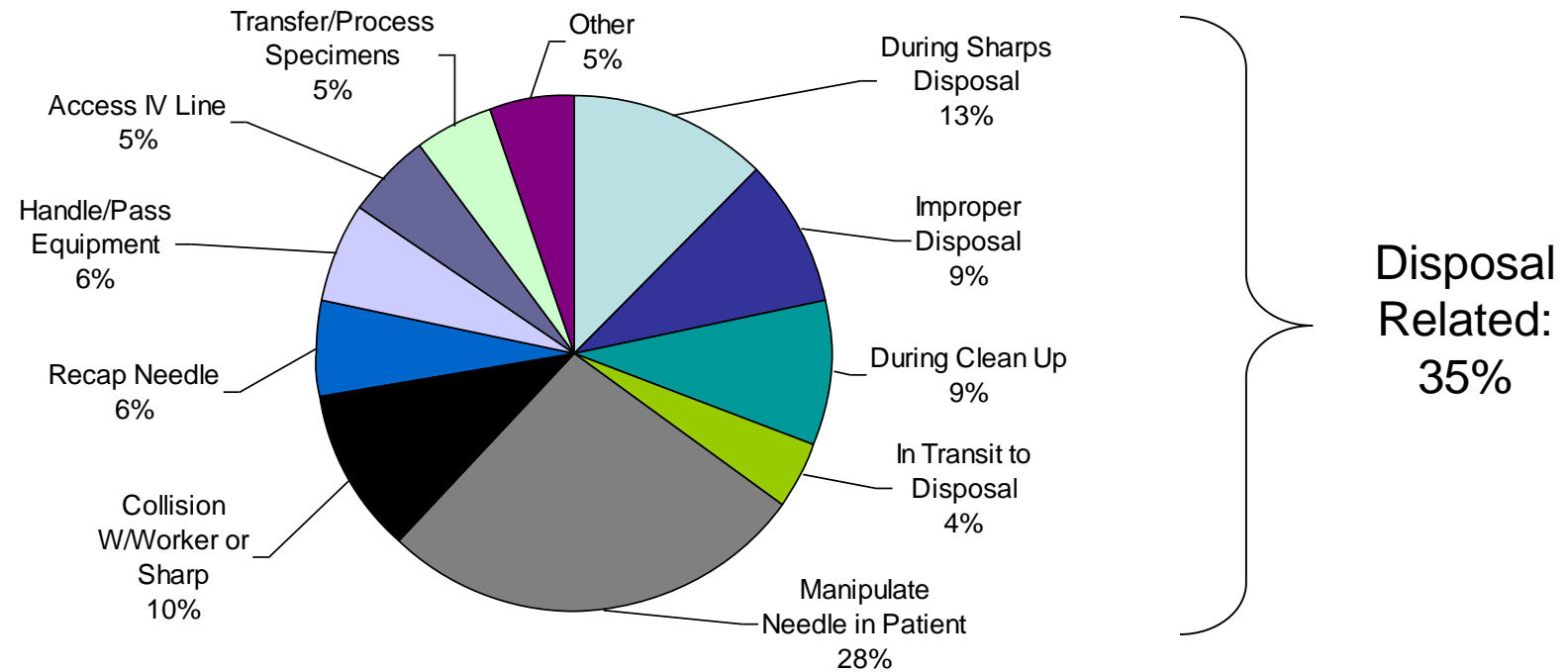
### **Six Devices Account for 78% of All Injuries**

- Disposable Syringes 30%
- Suture Needles 20%
- Winged-Steel Needles 12%
- Intravenous Catheter Stylets 5%
- Phlebotomy Needles 3%
- Scalpels 8%

Source: NaSH, June 1995—December 2003

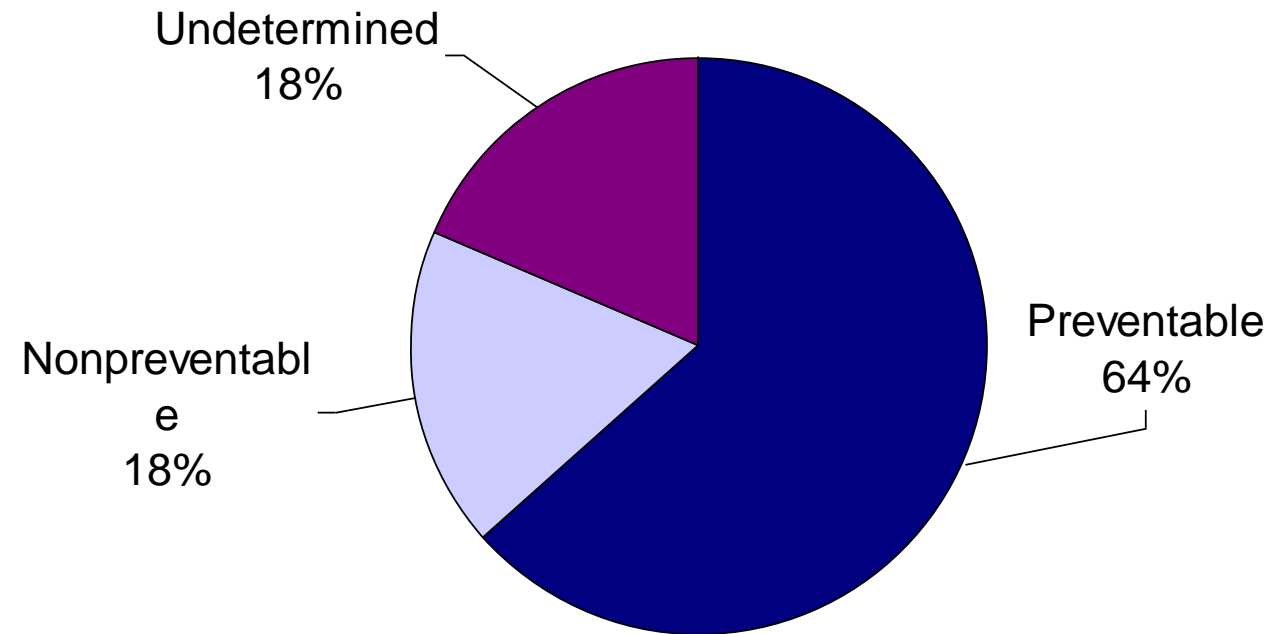
How

### Circumstances Associated with Hollow-Bore Needle Injuries NaSH June 1995—December 2003 (n=10,239)



# Sharps Injuries Are Preventable

**Preventability of Needlesticks in 78 NaSH Hospitals,  
June 1995--December 2004 (n=11,625)**



# What strategies exist to eliminate Sharps Injuries

- **Strategies**

- ❖ Eliminate or reduce the use of needles and other sharps
- ❖ Use devices with safety features to isolate sharps
- ❖ Use safer practices to minimise risk for remaining hazards

# Injuries Related to Work Practices

- Injuries occur because of the following
  - ❖ Passing or transferring equipment
  - ❖ Recapping contaminated needles
  - ❖ Colliding with co-workers
  - ❖ Decontamination/processing used equipment
- Injuries occur from sharps left in places
  - ❖ Laundry
  - ❖ Mattresses
  - ❖ Tables, trays, or other surfaces



# Sharps Injuries - Sharps Safety Practices

- ❖ Be prepared
- ❖ Be aware
- ❖ Dispose with care

# Sharps Safety Practices

- Be prepared

- ❖ Before beginning a procedure

- Organise equipment at the point of use
- Make sure work space has adequate lighting
- Keep sharps pointed away from the user
- Locate a sharps disposal container, or have one nearby
- Assess the patient's ability to operate
- Get help if necessary
- Ask the patient to sudden movement

# Sharps Safety Practices

- Be Aware

- ❖ During a Procedure

- Maintain visual contact with sharps during use
    - Be aware of staff nearby
    - Control the location of sharps to avoid injury to yourself and others
    - Do not handpass exposed sharps from one person to another
    - Use predetermined neutral zone for placing/retrieving sharps
    - Alert other when sharps are being passed

# Sharps Safety Practices

## ❖ Contd.

- Activate safety feature of devices with engineered sharps injury prevention features as soon as procedure is completed
- Observe audible or visual cues that confirm the feature is locked in place

# Sharps Safety Practices

- **During Clean up**

- ❖ Be accountable for sharps you use
- ❖ Check procedure trays, waste materials, and bedding for exposed sharps before handling
- ❖ Look for sharps/equipment left behind inadvertently
- ❖ Transport reusable sharps in a closed container
- ❖ Secure the container to prevent spillage

# Sharps Safety Practices

- Clean up and dispose with care

- ❖ While disposing of sharps

- Inspect container

- Keep hands behind sharps

- Never put hands or fingers into container

- If you are disposing sharps with attached tubing

- ◇ Be aware that tubing attached to sharps can recoil and lead to injury

- ◇ Maintain control of both tubing and the device during disposal

# Sharps Safety Practices

- Contd.

- ❖ After Disposing of sharps

- Visually inspect sharps container for overfilling
- Replace containers before they become overfilled
- Keep filled containers for disposal in a secure area

- ❖ If you find improperly disposed sharps in work environment

- Handle carefully
  - ◇ Keep hands behind sharps at all times
  - ◇ Use mechanical device if you cannot safely pick up sharps by hand

# Sharps Safety Practices

- Sharps injuries in the operating room
  - ❖ Cuts/needlesticks occur in as many as 15% of operations
    - Risk increases with longer, more invasive, higher blood loss procedures
  - ❖ Suture needle injuries are most frequent
    - Fingers need to manipulate needles and tissue
  - ❖ Up to 16% of injuries occur while passing sharps



# Sharps Safety Practices

## ❖ Needleless/no sharps alternatives

- Use alternative cutting methods such as blunt electrocautery and laser devices when appropriate
- Substitute endoscopy surgery for open surgery when possible

## ❖ Engineering controls

- Use round-tipped scalpel blades instead of sharp-tipped blades
- Use blunt suture needle

## ❖ Work practice controls

- Use instruments rather than fingers
- Give verbal announcement when passing sharps
- Use 'neutral zone' to avoid hand-to-hand passing of sharps

# Sharps Safety Practices

- Preventing sharp injuries

- ❖ Role of the HCWs

- Adhere to safe practices and assess and support co-workers in safer practices
- Report injuries or blood/body fluid exposures, sharp injury hazard, and near misses
- Participate in training for devices and properly use sharps safety features
- Participate in surveys and device evaluation

# Sharps Injuries - Culture of safety

- Culture of safety

- ❖ Defined “as the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine commitment to and style and proficiency of an organization’s health and safety management”
- ❖ The shared values within an organisation with regard to safety
- ❖ Expressed in the willingness to evaluate and learn from adverse events
- ❖ The shared perception, at a point in time, of the safety culture within an organisation

# Sharps Injuries - Culture of safety

- ❖ The degree to which employees feel that safety is an organisational value
- ❖ It is important to note the difference between safety culture and safety climate – as they are often used interchangeably
  - **Safety culture**
    - ◇ It is the shared values of the organisation with regard to safety issues
    - ◇ Safety culture can be evaluated by looking at the organisation's practice of reviewing and evaluating injuries and near misses and the follow-up measures taken to learn from and prevent similar incidents in the future

# Sharps Injuries - Culture of safety

- ❖ Additional components to a positive culture of safety are systems that acknowledge safe practices as well as reporting systems
- ❖ It is important that positive reinforcement of safe behavior is provided.
- ❖ This encourages employees to continue to follow safe practices and to raise safety issues and identify hazards to management
- ❖ At the same time accountability for unsafe practices is needed
- ❖ When evaluating unsafe practices, the focus should be on the work systems, and
  - The gaps that exist which allow for poor decision making

# Sharps Injuries - Culture of safety

- ❖ Reporting systems for injuries, safe behaviour, and near misses are necessary in a positive safety culture
- ❖ It is important that employees feel that they are able to report injuries, near misses and hazards without fear of reprisal or blame
- ❖ The type of environment where supervisors and/or management place on employees for injuries stifles injury reporting and communication about hazards
- ❖ A record of injuries and near misses help to identify hazards and systems that need to be corrected
- ❖ A record of safe behaviours helps to show what works in a facility and what is different about a group / department / procedure that is preventing injuries

# Sharps Injuries - Culture of safety

- ❖ Reporting of safety activities to staff as well as advertising changes made in direct response to hazards identified by staff is also important
- ❖ It helps to close the loop and lets staff know that management commitment to safety is real
- ❖ Both management plays and integral role in developing and maintaining a culture of safety
- ❖ As mentioned earlier, it is essential that staff be recognised for safe behaviours
- ❖ Ensuring that funds are available to purchase safety devices is vital to any prevention programme

# Sharps Injuries - Culture of safety

- ❖ It is also equally important to be sure that appropriate staff are hired to ensure that training is provided as often as necessary for staff in the use of safety devices
- ❖ Staff also plays an important role in developing and maintaining a culture of safety
  - Some of the roles of management and staff are similar
  - Others rely in exchange of ideas between both groups and open communication
- ❖ Peer support helps to sustain and reinforce positive behaviours



# Sharps Injuries - Culture of safety

- ❖ Open dialogue with management, who has the power to implement change, ensures a bottom up approach to prevention efforts, and
  - alerts management to the success or failure of various prevention measures
- ❖ Participation in training, particularly for new devices, is the best way to be able to evaluate devices
  - Because staff will have been instructed on proper use of a device and its safety mechanism
- ❖ Often those closest to frontline have the most valuable insight into what will be an effective solution
- ❖ Voicing these solutions in addition to identifying hazards is a key component to improving safety and reducing injuries

# Sharps Injuries - Culture of safety

- ❖ Engineering Controls
  - List of conventional devices identifying where they are used
  - Inventory of devices with safety features
  - Rigid sharps disposal containers
- ❖ Training on the use of devices with safety features
- ❖ Sharps injury Prevention Committee
  - Analysis and use of data in decision making
- ❖ Process for identifying and reporting hazards
- ❖ Process for reporting exposure incidents
  - Well developed post-exposure management protocols

# Sharps Injuries - Culture of safety

- ❖ Bloodborne pathogen training
  - Training on this topic shall be provided to all employees at risk of exposure
    - ◇ OSHA has a standard - that can be followed
  - In-service staff can be trained through bulletins, posters and other reminders about the need to report injuries immediately, as well as the reporting protocols
- ❖ Additional Measures taken to reduce sharps injuries include:
  - The formation of a Sharps Injury Prevention Committee
    - ◇ A multidisciplinary team of managers and staff who meet regularly to review identified hazards and possible solutions
    - ◇ And also use of utilising sharps injury data in prioritising prevention measures

# Sharps Injuries - Culture of safety

- A process for identifying hazards
  - ◇ Example: Safety rounds
    - \* These rounds allow management to see what type of issues and hazards need to be addressed
- In addition, a system for reporting hazards, either through an intranet based system or a paper reporting system
- This provides a mechanism for staff to alert management of hazards faced by employees
- Hazards can be reported anonymously or by name
- This system is used to acknowledge staff for their contribution to the safety process

# Sharps Injuries - Culture of safety

- ❖ All employees have been made aware of the process for reporting exposure incidents
- ❖ Regular training on who should be notified when an incident occurs, when to report, and where to go to receive treatment is provided for all employees
- ❖ In addition, posters containing this information are posted throughout the facility
- ❖ Comprehensive post-exposure management protocols have been developed and implemented
- ❖ Employees must be seen quickly and their injury treated urgently

# Sharps Injuries - Culture of safety

## ❖ Sharp Injury in the Operating Room

### ○ Safety culture factors

- ◇ Long shifts
- ◇ Use of sharp suture needles
- ◇ Use of long length of suture material
- ◇ Unable to leave OR
- ◇ Waiting until the end of the shift to report the exposure

### ○ Changes that can be made

- ◇ Shorter shifts to avoid fatigue

# Sharps Injuries - Culture of safety

- ◇ Use of blunt suture needles
- ◇ Shorter suture material
- ◇ Identify someone in the OR to call appropriate department to call for help (may be infection control department in Indian setting)
- ◇ Triage exposure over phone
- ◇ If necessary, Employee Health brings PEP to OR
- ❖ United States Public Health provides Guidelines for post exposure prophylaxis for HIV, HBV and HCV<sup>31</sup>
- ❖ For Post-Exposure Prophylaxis a protocol developed by the AIIMS, New Delhi may be followed<sup>32</sup>

# Sharps Injuries - Culture of safety

## ❖ Impact of the changes

- Reduction of hazards with suture needle
  - ◇ Reduction / elimination of injuries involving suture needles
- Improved reporting
- More timely post exposure management
- Improved employee safety and patient care



# Respiratory Hygiene / Cough Etiquette

- Respiratory hygiene<sup>33</sup>

- ❖ This is a new element of standard precautions
- ❖ This should be included in infection control practices
- ❖ The elements of Respiratory hygiene includes:
  1. education of healthcare facility staff, patients, and visitors;
  2. posted signs, in language(s) appropriate to the population served, with instructions to patients and accompanying family members or friends;
  3. source control measures (e.g., covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues, using surgical masks on the coughing person when tolerated and appropriate);

# Respiratory Hygiene / Cough Etiquette

1. Hand hygiene after contact with respiratory secretions
2. Spatial Separation, ideally >3 feet, of persons with respiratory symptoms in common waiting areas, whenever possible

# References

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**End of Part 5**