Sharps Injuries among Nurses in Massachusetts Hospitals, 2002-2009

Findings from the Massachusetts Sharps Injuries Surveillance System

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Sharper images: Despite needlestick law, nonsafe sharps practices still go unchecked
By Ed Frauenheim February 12, 2001 Nurse Week
Photo: Courtesy of the White House

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
MDPH Sharps Injury Prevention Regulations

105 CMR 130.1001 et seq.

Requires hospitals to:

• Incorporate the use of safe needle / sharps devices

• Maintain a written exposure control plan
  – with procedures for selecting safe devices

• Maintain a Sharps Injury Log

• Submit the Sharps Injury Log to MPDH annually
Methods

• Population under surveillance:
  – All health care workers in Massachusetts hospitals licensed by MDPH

• Reportable exposure incident:
  – BBP exposure that is the result of events that pierce the skin or mucous membranes

• Reporting period:
  – January 1 – December 31

• Data elements:
  – Date of exposure
  – Unique exposure ID
  – Employment status
  – Occupation
  – Department
  – Device
  - Was it a safety device?
  - What is the mechanism?
  - Is it part of a prepackaged kit?
  - Manufacturer / Brand / Model
  - Purpose or procedure
  - How the injury occurred
  - Who was holding the device?
Sharps Injuries among Massachusetts Hospital Workers, 2002-2009, N=25,500

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009

- 2.5% p<0.001)
Sharps Injuries among Employees of Acute Care Hospitals by Occupation, Massachusetts, 2002-2009, N=21,348

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009

- Physician: (-0.6%, p=0.943)
- Nurse: (-6.1%, p<0.001)
Sharps Injuries among Hospital Workers by Occupation, Massachusetts, 2002-2009, N=25,500

- Nurse: 38%
- Physician: 34%
- Technician: 19%
- Support Services: 4%
- Other Medical Staff: 1%
- Dental Staff: <1%
- Other / Not answered: 3%
- RN/LPN: 88%
- Nursing Assistant: 5%
- Patient Care Tech: 3%
- Nurse Practitioner: 2%
- Nurse Anesthetist: <1%
- Nursing Student: <1%
- Home Health Aide: <1%
- Nurse Midwife: <1%

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Sharps Injuries among Nurses by Department, Massachusetts, 2002-2009, N=9,714

- Inpatient Units: 41%
- OR and Procedure Rooms: 26%
- ICU: 11%
- ED: 10%
- Outpatient Areas: 6%
- Laboratories: <1%
- Other Areas and Unknown / Not Answered: 6%

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Sharps Injuries among Nurses by Procedure or Purpose for which Device was Used, Massachusetts, 2002-2009, N=9,714

- Blood procedures: 20%
- Injection: 39%
- Line Procedures: 15%
- Suturing: 8%
- Making the incision: 4%
- Other: 9%
- Unknown: 5%

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Sharps Injuries among Nurses by Device, Massachusetts, 2002-2009, N=9,714

- Hypodermic Needle & Syringe: 47%
- Other Hollow Bore: 7%
- Vacuum Tube Collection Set: 5%
- IV Stylet: 8%
- Winged Steel Needle: 11%
- Suture Needle: 8%
- Scalpel: 3%
- Other: 10%
- Unknown / Not Answered: 1%

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Sharps Injuries among Nurses by Devices with and without Sharps Injury Prevention Features, Massachusetts, 2002-2009, N=9,714

Unknown / Not answered
7%

NO sharps injury prevention features
37%

Sharps injury prevention features
56%

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Sharps Injuries among Nurses by Device Involved in the Injury, Massachusetts, 2002-2009, N=9,714

Device

- Hypodermic needle & syringe
- Winged Steel Needle
- Suture
- Scalpel
- IV sylet
- Vacuum tube
- Other H-B
- Other / Unknown

Number of Injuries

- NO sharps injury prevention features
- Sharps injury prevention features
- Unknown/Not answered

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Sharps Injuries among Nurses by Procedure and When the Injury Occurred, Massachusetts, 2002-2009, N=9,714*

- **During Use of the Item**
  - Injection: 2,737
  - Blood procedures: 1,356
  - Line procedures: 1,031
  - Suturing: 665

- **After Use, Before Disposal**
  - Injection: 3,720
  - Blood procedures: 1,757
  - Line procedures: 1,005
  - Suturing: 410

- **During or After Disposal**
  - Injection: 1,082
  - Blood procedures: 443
  - Line procedures: 222
  - Suturing: 106

*Injuries occurring before use or timing unknown and those classified as “other procedures” are not shown (n=2,365)

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Conclusions

- Continued need to increase use of devices with sharps injury prevention features
  - Ensure involvement of nurses and other users
  - Include language regarding sharps injury prevention in contracts

- Need to evaluate devices with sharps injury prevention features
  - More training?
  - Better device design?

- Need to evaluate work-practice controls to address injuries after use of the device

- Need to broaden training for student nurses
  - Use of devices with sharps injury prevention features
  - Reporting of sharps injuries during training

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
Future Directions

- Evaluate mechanism of sharps injury prevention feature
- Continue to work with nursing students
- Target prevention efforts at certain high risk procedures
  - Look at work practices
- Prepare a report looking at injuries with devices lacking sharps injury prevention features
  - Identify manufacturers of devices involved in injuries

Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009
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Data Source: MDPH Annual Summary of Sharps Injuries, 2002-2009