Objectives

• Brief history – hypodermic syringes
• Needlestick injuries
• Safe Needle Devices
  What is a safe needle device?
  Examples
  Considerations
  Obstacles

Disclaimer

• The specific mention or photograph(s) of a safe needle device or product is not an endorsement of that product or company.

The word "syringe" is derived from "syrinx" and "syringos," Greek words for "pipe" and "tube"
More Recent History
1954
Glenn Murdoch – New Zealand
Disposable Hypodermic Syringe

D’Iorio Restaurant
Waterbury, Connecticut, USA
1957
Louie’s Steakhouse
Columbus, Nebraska, USA

Portsmouth Hospital, Dominica, West Indies

Source: http://www.needlestickforum.net/

Figure 1: Breakdown of Needlestick Injuries by Procedure

U.S. EPINet 1999 and 2001 Percutaneous Injury Rates

1999: 28 healthcare facilities (72 cases; 93 injuries; average daily cases = 0.51; average injuries = 2.53)
2001: 41 healthcare facilities (133 cases; 186 injuries; average daily cases = 0.97; average injuries = 4.53)

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SHARPS Injury Control Program
California Department of Health Services

OSHA
United States Department of Labor
Occupational Safety and Health Administration
www.osha.gov
Bloodborne Pathogen Standard
29 CFR 1910.1030

SHARPS Injury Control Program Report
http://www.dhs.cahealthnet.gov/ohb/sharps/

Resources
International Sharps Injury Prevention Society
http://www.isips.org/

Resources
The Needlestick Forum
http://www.needlestickforum.net/

International Health Care Worker Safety Center
http://www.med.virginia.edu/medcntr/centers/epinet/

European Agency for Safety and Health at Work
http://europe.osha.eu.int/good_practice/sector/healthcare/

UNISON
www.unison.co.uk

What is a “Safe Needle Device”?

A “safe needle” device incorporates engineering controls to prevent needlestick injuries before, during or after use through built-in safety features.

Efficacy of Safer Needle Devices

Q. Can safer needle devices prevent needlestick injuries?

A. All needlestick injuries are not preventable, but research has shown that almost 83% of injuries from hollow-bore needles can be prevented (Ippolito et al, 1997). Many of these needlesticks can be prevented by using devices that have needles with safety features or eliminate the use of needles altogether (e.g., needleless IV connectors, self-re-shielding needles, and blunted surgical needles).
What are some of the types of safety features used in safer needle devices?

The types of safety features used in safer needle devices can be categorized according to certain aspects of the safety feature, i.e., whether the feature is active or passive and whether the engineering control is part of the device (Chiarello, 1995).

- **Passive safety features** remain in effect before, during and after use; health care workers do not have to activate them. Passive features enhance the safety design and are more likely to have a greater impact on prevention.

- **Active devices** require the health care worker to activate the safety mechanism. Failure to do so leaves the worker unprotected. Proper use by health care workers is the primary factor in the effectiveness of these devices.

- **An accessory safety device** is a safety feature that is external to the device and must be carried to or temporarily or permanently fixed to the point of use. This design also is dependent on employee compliance and according to some researchers, is not desirable.

- **An integrated safety design** means that the safety feature is built in as an integral part of the device and cannot be removed. This design feature is preferred.
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HYPODEST - Disarming the Weapon in Used Needles
Portable Needle Destroyer

Marketing and Commercial Development Worldwide
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NOMO Stick
Taiject Medical Device Co Ltd

Safety I.V. Set syringe disposal kit. Insert - Lock - Dispose
Taiject Medical Device Co Ltd

BD Eclipse™ Shielding Hypodermic Needle

Prior to activation
Once activated

Clave Needle-Free Connector
A UNISON GUIDE
“NEEDLE SAFETY AT WORK”

http://www.unison.org.uk/acrobat/B337.pdf

www.tdict.org
Training for Development of Innovative Control Technology
USA

**During Use**
1. Safety feature can be activated using a one handed technique
2. Safety feature does not obstruct vision of the tip of the sharp
3. Use of this product requires you to use the safety feature
4. Product does not require more time to use than a non-safety device
5. Safety feature works well with a wide variety of hand sizes
6. Device is easy to handle while wearing gloves
7. Device does not interfere with uses that do not require a needle
8. Device offers a good view of any aspirated fluid.
9. Device will work with all required syringe & needle sizes

**After Use**
10. There is a clear and unmistakable change (audible or visible) that occurs when the safety feature is activated.
11. The safety feature operates reliably
12. The exposed sharp is permanently blunted or covered after use and prior to disposal
13. This device is no more difficult to process after use than non-safety devices

**Training**
14. User does not need extensive training for correct operation
15. The design of the device suggests proper use
16. It is not easy to skip a crucial step in the proper use of device

Of the above questions, which three are the most important to your safety when using this product?

Are there other questions that you feel should be asked regarding the safety/utility of this product?

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- Staff involvement in the evaluation and selection of safer devices, and the proper education and training of staff in their use was an extremely effective means of preventing percutaneous injury.
- The use of safer devices was not reported to affect delivery of patient care.
- A comprehensive safety and health programme may be the most effective way to reduce the risk of bloodborne pathogen transmission.
Increased costs and staff resistance to change were the two most frequent obstacles to adopting safer needles.

Safer devices are generally more expensive than conventional devices, but the total additional cost for a facility is a small fraction of the total costs.

Reductions in needlestick incidence will result in substantial financial benefits from reduced post-exposure testing and treatment, as well as health benefits from reduced transmission of disease.

Final Comments

- Many products exist in the market place
- Do your research
- Determine what works best for you and your institution
- Safer devices are generally more expensive than conventional devices, but the total additional cost for a facility is a small fraction of the total costs.

Thank You!

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