

International Trends in Sharps Injury Prevention

Dr. Terry Grimmond, Grimmond and Associates, New Zealand

A Webber Training Teleclass

**International Trends
in
Sharps Injury Prevention**

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Hosted by Paul Webber
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Disclosures

- *Grimmond and Associates are consultants to The Daniels Corporation, a producer of reusable sharps containers.*
- *No corporate sponsorship was requested or received.*

Objectives...

1. Recall hierarchy of controls to reduce SI
2. Outline international trends in SI rates and prevention.
3. Describe surveillance evidence confirming impact of safety devices on SI.
4. Identify 2 strategies to make implementing safety-devices easier and more effective.

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Hierarchy of Controls to Reduce SI

- ▶ **Elimination of hazards**
 - Needleless IV systems
 - Procedures without sharps (patches, laser, etc)
- ▶ **Engineering Controls**
 - Sharps injury prevention devices
- ▶ **Administrative Controls**
 - Protective Policies e.g. Universal Precautions
 - Resources demonstrating commitment to safety
 - SI Prevention Committee/Training on safe devices
- ▶ **Work Practice Controls**
 - No re-capping; no needle removal; sharps container nearby
- ▶ **Personal Protective Equipment**

<http://www.osach.ca/products/SEMS/background4.html>

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How do we Measure Sharps injuries?

Denominators

- per 100 Licensed Beds
- per 100 Occupied Beds
- per 1000 FTE (Total or workgroup)
- per 100,000 Devices

Early SI Research (McCormick & Maki)

1975-79

Total SI/1000 Employees	60
During disposal	25%
Injections (IV/IM)	22%
Blood draw	17%
Waste, Linen collection	17%
Recapping	9%
Surgery	0%

	1975-79
Rate/1000 Employees	
Nurses	69
Drs	16
Housekeepers	127

Their Recommendations...

- Increase staff education
- Sharps Containers in every Pt room
- No recapping
- Encourage reporting

2nd Study (McCormick & Maki)

	1 st Study 1975-79
Total SI/1000 Employees	60
During disposal	25%
Injections (IV/IM)	22%
Blood draw	17%
Waste, Linen collection	17%
Recapping	9%
Surgery	0%

2nd Study (McCormick & Maki)

	1 st Study 1975-79	1987-88
Total SI/1000 Employees	60	188
During disposal	25%	4%
Injections (IV/IM)	22%	16%
Blood draw	17%	13%
Waste, Linen collection	17%	20%
Recapping	9%	10%
Surgery	0%	16%

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2nd Study (McCormick & Maki)

	1975-79	1987-88
SI Rate/1000 Employees		
Nurses	69	180
Drs	16	150
Housekeepers	127	306
Phlebotomists	n/av	407

2nd Recomm. (1991)...

- Prevent sharps containers overflowing
 - Transfer all phlebotomy to Phleb. Team
 - OR protocol for transfer of used sharps
 - Encourage HBV vaccination
 - Education not complete answer
 - Must adopt Safety Devices (? \$\$ on PPE)
- (Janine Jagger proposed SD in 1988)

Examples of Safety devices...

- Needleless IV delivery systems
- Needles that retract into syringe or tube holder
- Hinged or sliding shields attached to needles
- Protective encasements to receive an IV stylet
- Self-blunting needles
- Blunt suture needles
- Sheathed scalpels
- Sharps Containers

An Effective Safety device has...

- Engineering to reduce BBP hazard
- Published proof of SI reduction
- High clinical acceptance
- Passive Safety (if clinically OK)
- Affordability
- Compliance (FDA, Standards, etc)

Factors influencing staff acceptance of Safety devices...

- Perceived risk of infection
- Design of device
- Training in use of device
- Length of time to become adept
- Ease of use
- Required changes in technique
- Previous experience with safety devices

Other features recommended by staff

- Device is needleless
- Safety feature is integral
- Is passive
- Easily activated with one hand behind sharp
- Has obvious activation e.g. "click"
- Safety feature can't be deactivated at disposal
- Performs reliably
- Easy to use and practical
- Comes in a variety of sizes/gauges
- Is safe and effective for patients

NIOSH Alert: Preventing Needlestick Injuries in Health Care Settings.
www.cdc.gov/niosh/docs/2003-108/

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Who Gets Stuck?

	2000	2007
Drs	15%	34%
Nurses	48%	36%
Tech/Atten/Phleb	22%	22%
Supp Serv	7%	3%

Data from combined EPINet, Mass DoH

The Top Four Stickers....

	Mass.	EPINet	France	Can
Hypo needle	29%	33%	33%	32%
Suture n.	23%	22%	7%	12%
Scalpel	7%	8%	4%	4%
Butterfly n.	9%	6%	6%	8%

Doing What Procedure?

	USA	France	Can
Injection	24%	23%	24%
Suturing	23%	7%	13%
Blood draw	13%	16%	15%
Cutting	9%		7%
Line procedures	9%		10%

Container-associated SI

- During disposal
- Protrusion
- Bounce-out
- Penetration
- Left on Container

} >90%

	US	Can	Fr	Jap
% of total SI	6-10%	12%	7%	12%

- Trends in Sharps Containers**
- All patient rooms
 - Counter-balanced doors
 - Larger apertures (take care with hand entry)
 - Larger size (take care with strain injuries)
 - Movement to Reusables (ecology, safety)
 - Safer containers (Standards)

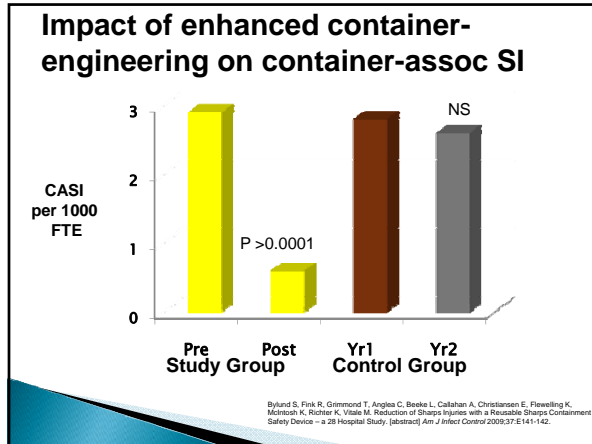
Strengthening of Sharps Container Standards

	1990 UK	1992 Aust DSC	1994 Aust RSC	1998 US ECRI	1999 France	2001 US Stnd.	2007 Canada	2008 South Africa
PerformT ests	++++ ++	++++	++++ ++	++++ ++	+++++	+	++++ ++++	++++ ++++
Design Specs.	++++	+++	++++ +	++++ ++++ +	+++++		++++ ++++ ++++	++++ ++++ ++

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European Parliament resolution with recommendations to the Commission on protecting European healthcare workers from blood-borne infections due to needlestick injuries (2006/2015(INI))

Shall:

- Record all SI data
- Use targeted Safety Devices
- Eliminate recapping
- HBV Vacc;
- Fast SI response + PEP if indic.

EU July 2009

First EU wide agreement between Hospital and Healthcare trade unions and employers to prevent medical sharps injuries

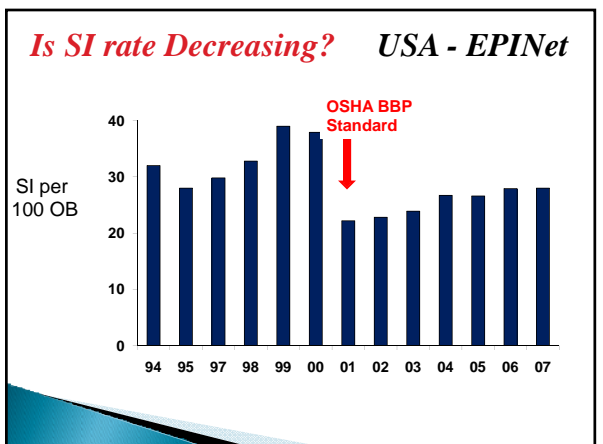
www.epsu.org/a/5500

HCW Risk in Developing Countries

- High % patients BBP +ve
- High incidence sharps injury
- Low use of safety devices
- High workloads (through emigration, death)
- High viral loads in patients
- Less access to ARV Rx
- Injection culture

Lee R. Occupational transmission of bloodborne diseases to healthcare workers in developing countries: meeting the challenges. J Hosp Infect 2009; 72: 285-291.

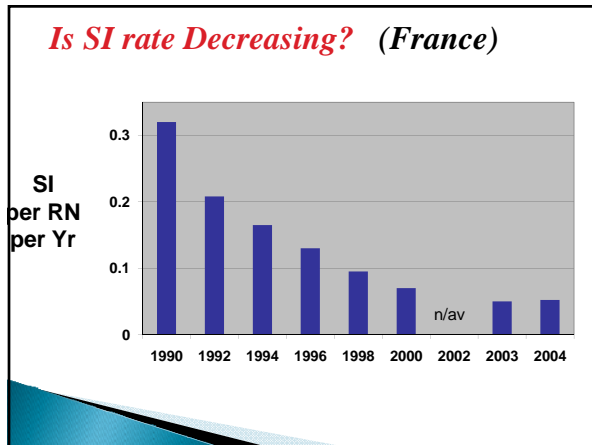
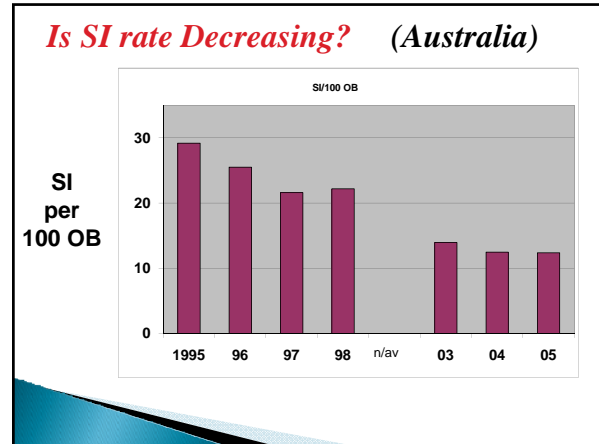
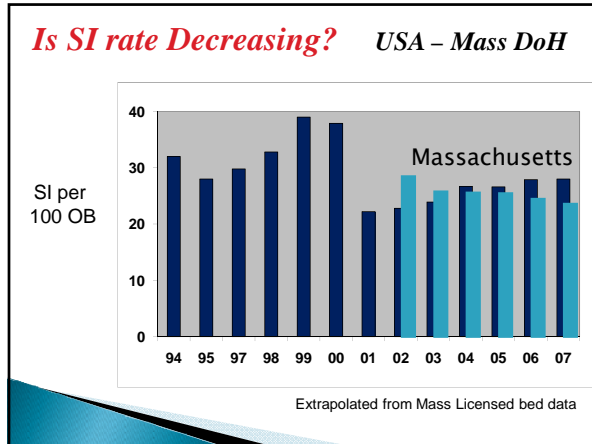
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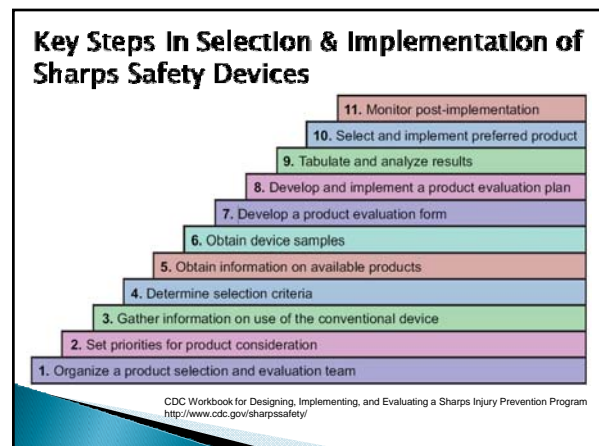
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- Am Nurses Assoc – 2008 Study Workplace Safety and Sharps Injuries**
- 700 nurses, independent nationwide survey.
 - 64% said SI & BBP major concerns.
 - 55% believe their workplace safety climate negatively impacts their own personal safety.
 - 75% SI involved a standard (non-safety) syringe.
 - 74% stuck by a contaminated needle.
 - 66% said insufficient opportunity to influence selection of sharps safety devices.
- www.nursingworld.org

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Increasing Motivation

- **Internal Feedback**
 - Reports
 - Monthly Newsletters
 - “Best performance”
- **External**
 - Assoc newsletters
 - Conference papers
 - Journals
 - Press

SI Resources

Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program. www.cdc.gov/sharpsafety/

The International Health Care Worker Safety Center at the University of Virginia. www.healthsystem.virginia.edu/internet/epinet/

Safer Medical Device Implementation in Health Care Facilities. www.cdc.gov/niosh/topics/bbp/safer/

NIOSH Alert: Preventing Needlestick Injuries in Health Care Settings. www.cdc.gov/niosh/docs/2000-108/

NIOSH. Selecting, evaluating, and using sharps disposal containers. www.cdc.gov/niosh/sharps1.html

Premier Safety Institute. www.premierinc.com/needlestick

OSACH: Planning Guide to the Implementation of Safety Engineered Medical Sharps. www.osach.ca/products/SEMS/index.html

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The Next Few Teleclasses

17 Feb. 10	(South Pacific Teleclass) Influenza H1N1 – The Southern Hemisphere Experience Speaker: Dr. Lance Jennings, Christchurch School of Medicine
18 Feb. 10	Stopping URI's and Flu in the Family Speaker: Dr. Elaine Larson, Columbia University
25 Feb. 10	Influenza in the Hospital Who Gets it From Whom Speaker: Dr. Allison McGeer, Mount Sinai Hospital, Toronto
4 Mar. 10	(Novice) An Introduction to Infection Prevention and Control in Healthcare Speaker: Gail Bennett, ICP Associates Inc.
11 Mar. 10	(Novice) MRSA Prevention Basics Speaker: Dr. Bill Jarvis, Jason & Jarvis Associates
18 Mar. 10	(Novice) How to Prepare for CIC Certification Without Becoming Certifiable Speaker: Susan Cooper, Southeastern Ontario Infection Control Network
23 Mar. 10	(Free Teleclass) Voices of CHICA Speaker: Directors & Guests of the Community & Hospital

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