Sharps Injury Prevention: Challenges and Effective Strategies
Dr. Terry Grimmond, Grimmond & Associates Ltd, New Zealand
A Webber Training Teleclass

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terry@terrygrimmmond.com

Hosted by Jane Barnett  jane@webbertraining.com
Learning Objectives

HIV and Hep Risk

Worldwide, among HCW...

40% of HBV and HCV infections
and 2.5% of HIV infections

...are acquired through accidental SI!

...these are just 3 of 50 diseases transmissible through accidental SI!

http://www.who.int/occupational_health/activities/5prevent.pdf
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Learning Objectives

2. Compare SI trends in Australia & NZ
3. List 5 proven strategies to reduce SI
4. Discuss research needs in Australia & NZ

Why US?
It has an ongoing national database

No national database in:
Canada
UK
Australia
NZ

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US OSHA History

1970: “You must protect employees”

1991: “You must protect employees against BBP”

But sharps injuries kept rising every year

In 2000...
38 SI/100 Occ Beds;
11.5 MucoC Exp/100 OB

800,000 HCW sustained SI
240,000 HCW sustained MC exp.
Why SI rate so high? No SED?

There were hundreds of SED...
1985 = 40 SED patents
1995 = 1,100

Hospital managers...“SED are expensive... can’t justify the expenditure”

Urgent need for law re Safety Engineered Devices (SED)

2001:
BBP Needlestick Safety & Prevention Act

- Develop an Exposure Control Plan
- Update the plan annually to reflect:
  - Changes in tasks, procedures and positions that affect occupational exposure.
  - Technological changes that eliminate or reduce occupational exposure.
  - Evaluation & adoption of appropriate, effective SED & workplace practices
  - Involvement & documentation of frontline staff in SED evaluation
- Maintain a log of SI.
- Provide information and training to workers
- Provide evaluation and follow-up of worker exposures


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### NSP Act

-38%

### Sharp Injury Trends - USA

- **SI Per 100 OB**
  - 0
  - 2000
  - 2001
  - 2002
  - 2003
  - 2004
  - 2005
  - 2006
  - 2007
  - 2008
  - 2009
  - 2010

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**CDC stated in 2001**  
"Will eliminate in 5yrs"

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Sharp Injury Trends - USA

Does not accommodate the recent changes in patient “throughput”
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Does not accommodate the recent changes in patient “throughput”

<table>
<thead>
<tr>
<th>Sharps Injuries SI)</th>
<th>2012</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI/100 FTE</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>SI/100 Nurse FTE</td>
<td>3.3</td>
<td>3.2</td>
</tr>
<tr>
<td>SI/1000 Adj patient days</td>
<td>0.43</td>
<td>0.36</td>
</tr>
</tbody>
</table>

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### When did Sharp Injury Occur?

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>During Use</td>
<td>48%</td>
</tr>
<tr>
<td>e.g. suturing, blood-draw</td>
<td></td>
</tr>
<tr>
<td>After Use but before Disposal</td>
<td>38%</td>
</tr>
<tr>
<td>e.g. clean-up, recap, walk w sharp</td>
<td></td>
</tr>
<tr>
<td>During Disposal</td>
<td>8%</td>
</tr>
<tr>
<td>e.g. Overfilled, protrude, puncture</td>
<td></td>
</tr>
<tr>
<td>Improper Disposal</td>
<td>5%</td>
</tr>
<tr>
<td>e.g. bed, table, floor, trash bag</td>
<td></td>
</tr>
</tbody>
</table>

### Who gets Stuck?

<table>
<thead>
<tr>
<th>Profession</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse/Nurse Asst</td>
<td>46%</td>
</tr>
<tr>
<td>Doctor</td>
<td>37%</td>
</tr>
<tr>
<td>Tech/Attend/Ther</td>
<td>16%</td>
</tr>
<tr>
<td>Envir Serv</td>
<td>4%</td>
</tr>
</tbody>
</table>

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% SI in Surgical procedures

Why is incidence not decreasing?
Why is incidence not decreasing?

- Workloads; Resources
- Regulations: Nil / Weak / Avoid
- Training not to “competency” level
- Competition with other issues (HAI)
- HCW safety culture is “bridesmaid”
- Don’t know recent rates in Aust/NZ!

Learning Objectives

1. Discuss Sharps Injury (SI) trends in US
ACIPC 2014 SI Survey
Terry Grimmond, Nicole Vause & Jane Woodley

- 10 Q's
- 151 hospitals responded
- 47% private (Aust total private = 45%)

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ACIPC 2014 SI Survey Results
Comparison with US...

<table>
<thead>
<tr>
<th></th>
<th>US EXPO-STOP 2015</th>
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</thead>
<tbody>
<tr>
<td>SI/100 Occ beds</td>
<td>25.2</td>
</tr>
<tr>
<td>SI/100 FTE</td>
<td>2.1</td>
</tr>
<tr>
<td>Nurse SI/100 FTE</td>
<td>3.2</td>
</tr>
<tr>
<td>Nurse as % of Total</td>
<td>46%</td>
</tr>
<tr>
<td>Dr as % of total</td>
<td>37%</td>
</tr>
<tr>
<td>Surg Proc as % of Total</td>
<td>42%</td>
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ACIPC 2014 SI Survey Results
Comparison with US:

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<th>US EXPO-STOP 2015</th>
<th>Aust ACIPC 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI/100 Occ beds</td>
<td>25.2</td>
<td>14.1</td>
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<td>52%</td>
</tr>
<tr>
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<td>36%</td>
</tr>
<tr>
<td>Surg Proc as % of Total</td>
<td>42%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Ponder...

Research Q's

Q1. What % of hollow-bore sharps used are Safety Engineered Devices (SED)?

? Method
### Comparison of Sharps Audits

<table>
<thead>
<tr>
<th></th>
<th>USA 2013*</th>
<th>Can (ON) 2016*</th>
<th>Aust 2013^</th>
</tr>
</thead>
<tbody>
<tr>
<td>% that were SED</td>
<td>50%</td>
<td>86%</td>
<td><strong>30%</strong></td>
</tr>
<tr>
<td>% SED NOT activated</td>
<td>22%</td>
<td>9%</td>
<td>19%</td>
</tr>
<tr>
<td>% “sharp” at disposal</td>
<td>44%</td>
<td>18%</td>
<td><strong>54%</strong></td>
</tr>
<tr>
<td>% Needles capped</td>
<td>33%</td>
<td>23%</td>
<td>21%</td>
</tr>
</tbody>
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Hierarchy of Hazard Controls

1. Elimination of hazards
   • e.g. Needle-less drug delivery systems, oral treatment

2. Engineering Controls
   • e.g. Safety engineered sharps devices

http://www.who.int/hiv/pub/prev_care/ilowhoguidelines.pdf?ua=1
“Safety Culture”

Best Practices of Low-Exposure Hospitals

New Hires

- 
- 
- 
- 
- 

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Best Practices of Low-Exposure Hospitals

On-going

- Simulation Lab
- Mandatory review every 2 yrs
- Mandatory online program
- Use vendors, clinical educators, include weekends, nights
- Mandatory post-injury education
- Monthly e-mail “Safety Tips”

Best Practices of Low-Exposure Hospitals

- Reporting; Praise for safe units
- Include in Committee Reports
- Trends & Transparency
- Management + employee investigation
- On-line reporting
- Workplace Controls
- procedure scripts (phlebotomy “I need you to hold still…”)
- Signs on door (“Do not enter – sharps procedure”)
- “I require them to own it & be accountable”

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Best Practices of Low-Exposure Hospitals

- "Drill Down" on every injury
- Attention to trends, problem procedures
- Passion and professional commitment
- Sharps C’tee Waiver before use of non-SED

"I don't feel our results are that good – our goal is zero"

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SI Research

No data = “No problem”

“No problem” = no resources

We need SI incidence back on radar

Research needs in Aust & NZ
The importance of Zero
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July 14 RESULTS OF QUALITATIVE RESEARCH ON IMPLEMENTATION OF INFECTION CONTROL BEST PRACTICES IN EUROPEAN HOSPITALS
Dr. Hugo Sax, University Hospital Zurich, Switzerland

July 21 BEHAVIOURAL AND ORGANIZATIONAL DETERMINANTS OF SUCCESSFUL INFECTION PREVENTION AND CONTROL INTERVENTIONS
Dr. Enrique Castro-Sánchez, Imperial College London, England

August 18 (Free Teleclass) USE OF HYPOCHLORITE (BLEACH) IN HEALTHCARE FACILITIES
Prof. William Rutala, University of North Carolina Hospitals

August 25 APPLICATIONS AND LIMITATIONS OF DIPS SLIDES AND PCR FOR REAL-TIME ENVIRONMENTAL CONTAMINATION EVALUATION
Dr. Tobias Ibfelt, Copenhagen University Hospital, Denmark
Sponsored by Virox Technologies Inc, (www.virox.com)

September 15 INFECTION CONTROL AND PET THERAPY

www.webbertraining.com/schedulept.php

THANKS FOR YOUR SUPPORT

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