Sharps Injury Prevention: Challenges and Effective Strategies

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Hosted by Jane Barnett
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Webber Teleclass Disclosure

- *Grimmond and Associates are consultants in sharps injury prevention and healthcare waste management to the healthcare industry including users and producers of medical devices.*
- *No corporate sponsorship was requested or received for this session.*
- *An honorarium to cover telephone expenses and session time was received from Webber Training*

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Learning Objectives

1. Discuss Sharps Injury (SI) trends in US
2. Compare US trends with Australia & NZ
3. List 5 proven strategies to reduce SI
4. Discuss research needs in Australia & NZ

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HIV and Hep Risk

Worldwide, **among HCW**…

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

…**are acquired through accidental SI**[1]

…**these are just 3 of 60 diseases transmissable through accidental SI!**[2]

[1]WHO-ICN: Preventing Needlestick Injuries among HCW: http://www.who.int/occupational_health/activities/5prevent.pdf.
[2]Tarantola A, et al. Infection risks following accidental exposure to blood or body fluids in health care workers: A review of pathogens transmitted in published cases. Am J Infect Control 2006;34:367-75.

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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

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In 2000…

38 SI/100 Occ Beds;

11.6 MucoC Exp/100 OB

800,000 HCW sustained SI

240,000 HCW sustained MC exp.

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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)

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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 occup expos
  - Technological changes that eliminate or reduce occup exposure.
  - Evaluation & adoption of appropriate, effective SED & work practice controls
  - 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**

OSHA Bloodborne Pathogens Standard 1910.1030. US Department Labour, Occupational Safety and Health Administration. Jan 18, 2001. http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051.

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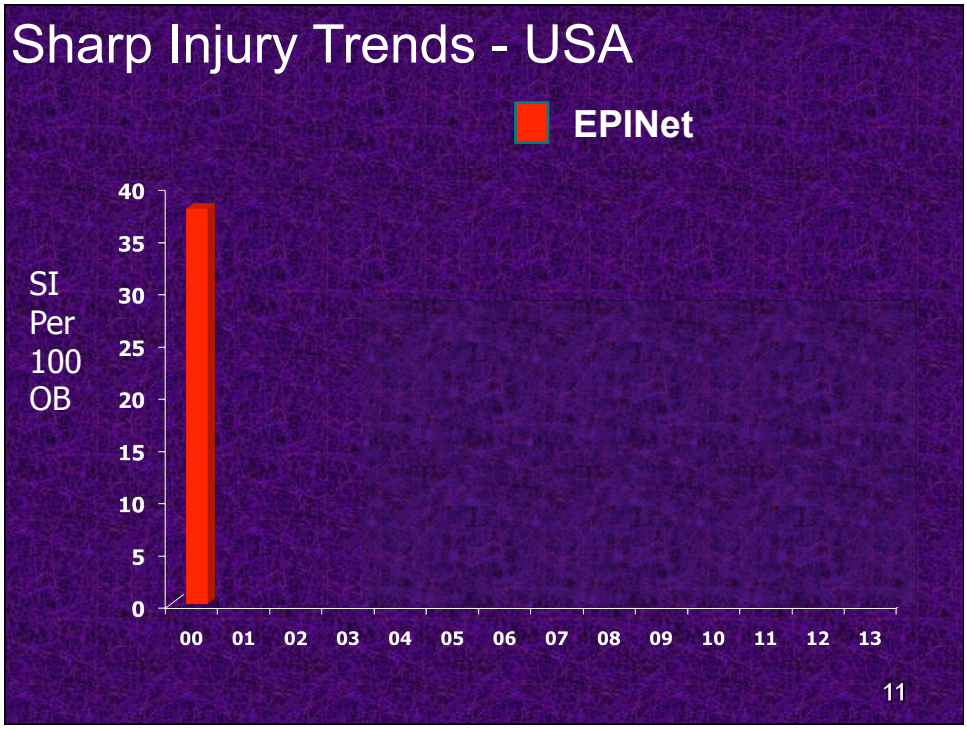
Sharp Injury Trends - USA
EPINet
SI Per 100 OB
40
35
30
25
20
15
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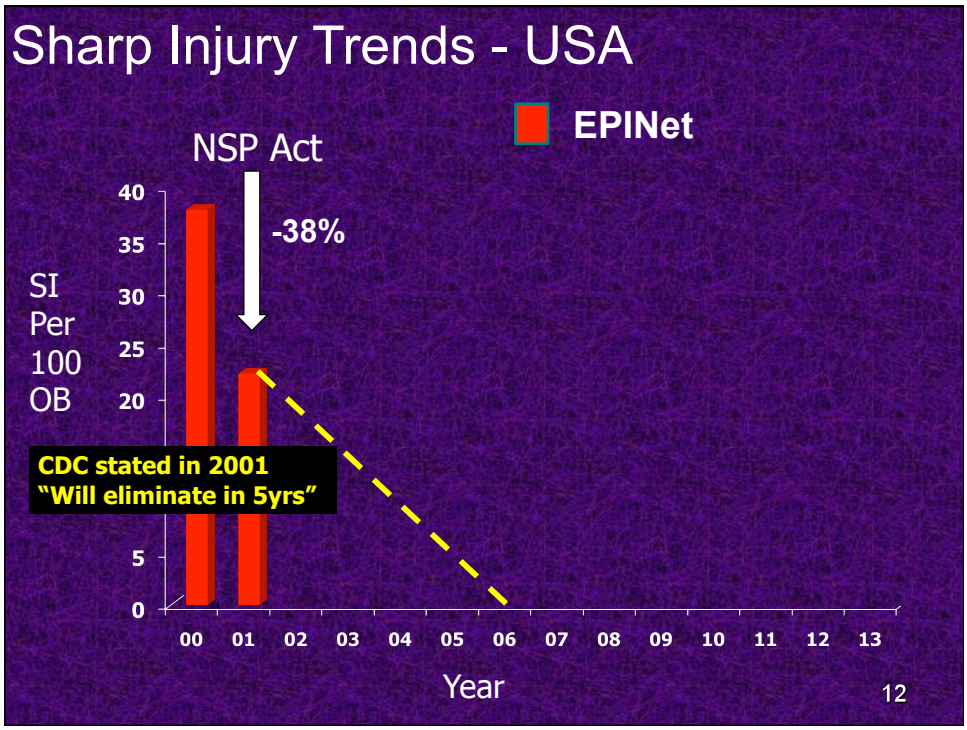
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EPINet
NSP Act
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SI Per 100 OB
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CDC stated in 2001
"Will eliminate in 5yrs"
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Year
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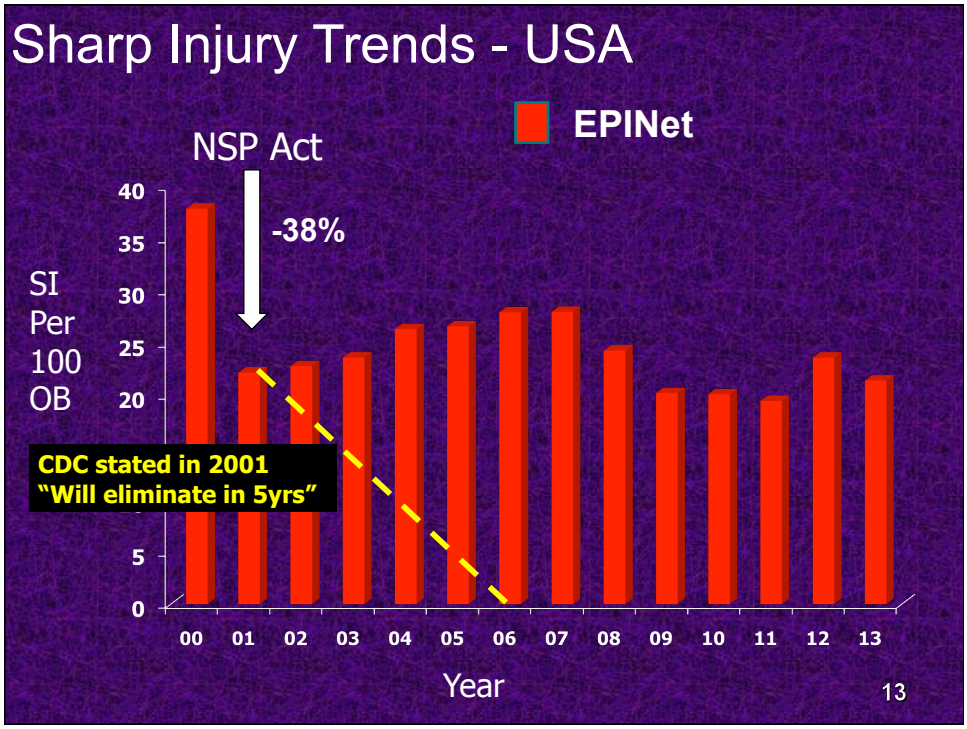
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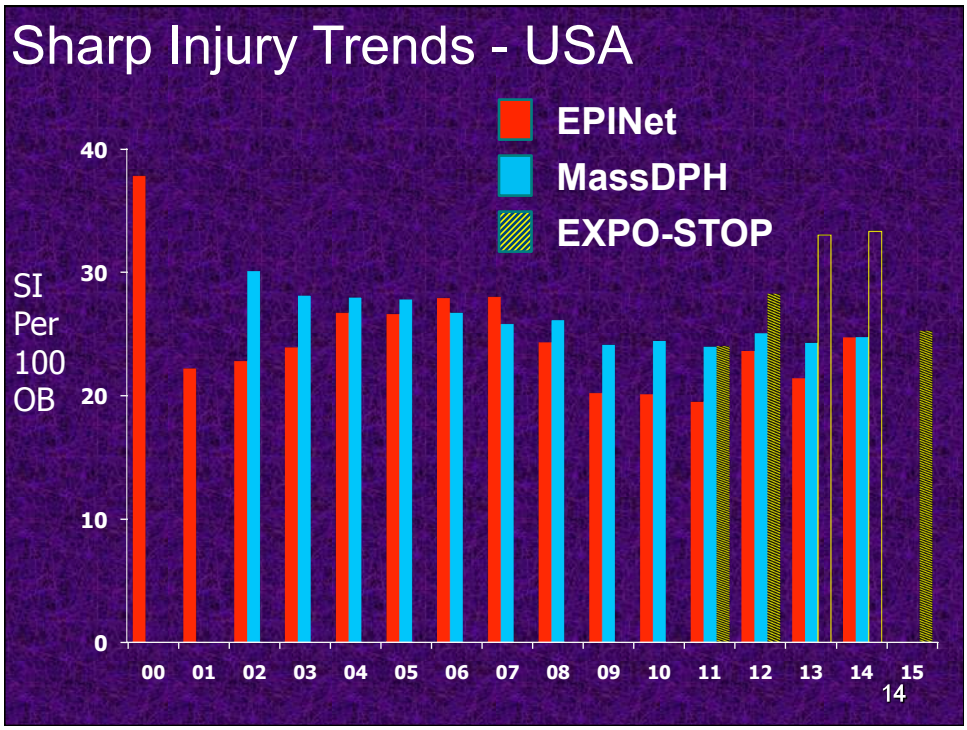
Sharp Injury Trends - USA
EPINet
MassDPH
EXPO-STOP
SI Per 100 OB
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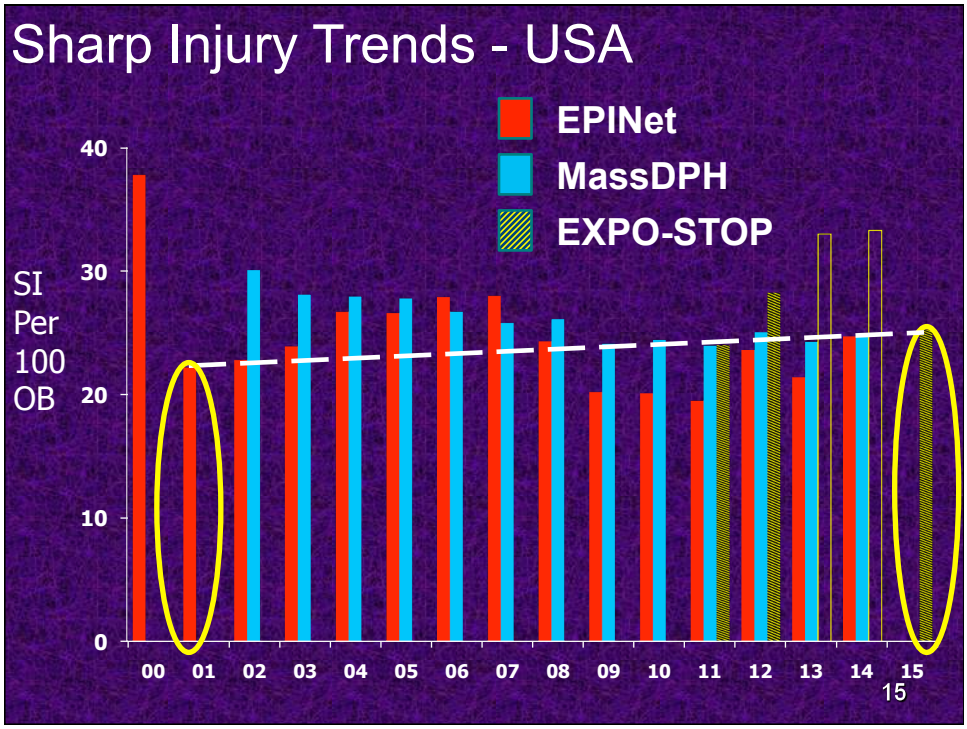
14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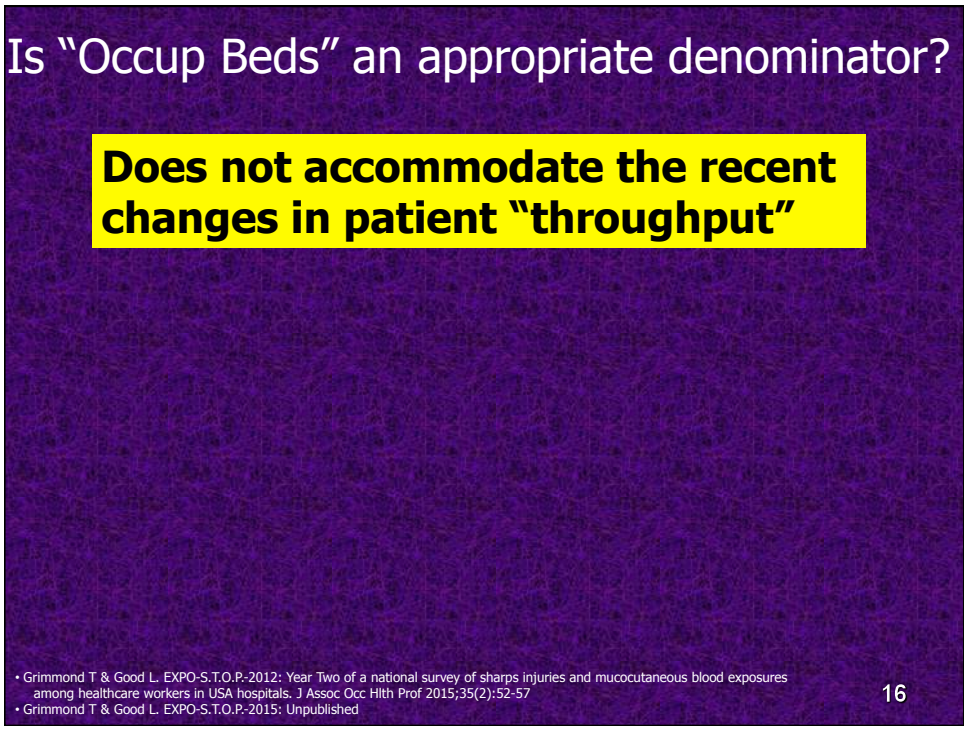
Is "Occup Beds" an appropriate denominator?
Does not accommodate the recent changes in patient "throughput"
• Grimmond T & Good L. EXPO-S.T.O.P.-2012: Year Two of a national survey of sharps injuries and mucocutaneous blood exposures among healthcare workers in USA hospitals. J Assoc Occ Hlth Prof 2015;35(2):52-57
• Grimmond T & Good L. EXPO-S.T.O.P.-2015: Unpublished
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Is "Occup Beds" an appropriate denominator?

Does not accommodate the recent changes in patient "throughput"

Sharps Injuries SI)	2012	2015
SI/100 FTE	2.2	2.1
SI/100 Nurse FTE	3.3	3.2
SI/1000 Adj patient days	0.43	0.36

- Grimmond T & Good L. EXPO-S.T.O.P.-2012: Year Two of a national survey of sharps injuries and mucocutaneous blood exposures among healthcare workers in USA hospitals. J Assoc Occ Hlth Prof 2015;35(2):52-57
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US Nurse - SI rate / 100 FTE

- Grimmond T & Good L. EXPO-S.T.O.P.-2012: Year Two of a national survey of sharps injuries and mucocutaneous blood exposures among healthcare workers in USA hospitals. J Assoc Occ Hlth Prof 2015;35(2):52-57
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When did Sharp Injury Occur?

During Use e.g. suturing, blood-draw	**48%**
After Use but before Disposal e.g. clean-up, recap, walk w sharp	**38%**
During Disposal e.g. Overfilled, protrude, puncture	**8%**
Improper Disposal e.g. bed, table, floor, trash bag	**5%**

Data averaged from combination of EPINet 2013 + Massachusetts DPH 2014 + Grimmond et al 2010

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Who gets Stuck?

Nurse/Nurse Asst	**46%**
Doctor	**37%**
Tech/Attend/Ther	**16%**
Envir Serv	**4%**

Average of combined EPINet 2013 + Massachusetts 2014 + EXPO-STOP 2015

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% SI in Surgical procedures

42%

Reasons why now high…

- More surgeons reporting their SI
- Less SED used in Surg
- Increasing SED use in wards

Average of combined EPINet 2013 + Massachusetts 2014 + EXPO-STOP 2015

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Why is incidence not decreasing?

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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!

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ACIPC 2014 SI Survey

Terry Grimmond, Nicole Vause & Jane Woodley

- 10 Q's
- College website and email responses
- 151 hospitals responded
- 47% private (Aust total private = 45%)

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ACIPC 2014 SI Survey **Results**

Comparison with US…

	US EXPO-STOP 2015
SI/100 Occ beds	25.2
SI/100 FTE	2.1
Nurse SI/100 FTE	3.2
Nurse as % of Total	46%
Dr as % of total	37%
Surg Proc as % of Total	42%

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ACIPC 2014 SI Survey **Results**
Comparison with US…

	US EXPO-STOP 2015	Aust ACIPC 2014
SI/100 Occ beds	25.2	14.1
SI/100 FTE	2.1	3.2
Nurse SI/100 FTE	3.2	3.2
Nurse as % of Total	46%	52%
Dr as % of total	37%	36%
Surg Proc as % of Total	42%	50%

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Ponder…
…how many HCW are using SED?
…are they activating SED correctly?

Research Q's

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

Q2. Of the SED used, what % are activated correctly?

? Method

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Comparison of Sharps Audits

	USA 2013*	Can (ON) 2016+	Aust 2013^
% that were SED	50%	86%	30%
% SED NOT activated	22%	9%	19%
% "sharp" at disposal	44%	18%	54%
% Needles capped	33%	23%	21%

*Grimmond T. Use and activation of safety engineered sharps devices in a sample of 5 Florida healthcare facilities. J Assoc Occ Hlth Prof 2014;34(1):13-15.
+Grimmond T. Use and activation of safety engineered sharps devices in 6 Ontario Hospitals. Unpublished data.
^Grimmond T. Frequency of use and activation of safety-engineered sharps devices: a sharps container audit in 5 Australian capital cities. Hlth Inf 2014;19(3):95-100.

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Why are SED not being activated?

- **Insufficient training**
- **Laziness**
- **Low safety culture**
- **"not necessary"**
- **No Time**
- **Too hard**
- **Too risky**

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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
3. **Administrative Controls (resources)**
   - e.g. Standard Precautions, Resources, Training
4. **Work Practice Controls (rules)**
   - e.g. No re-cap, No needle removal, sharps container siting
5. **Personal Protective Equipment**
   - e.g. gloves, faceshield

Joint ILO/WHO guidelines on health services and HIV/AIDS.
http://www.who.int/hiv/pub/prev_care/ilowhoguidelines.pdf?ua=1

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How do low-incidence Hospitals reduce SI?

- **High *Institutional* safety culture**
- **All staff**
  - **well informed**
  - **well trained**
  - **Well equipped (with SED)**

(But…neither Aust nor NZ have specific SED legislation…)

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"Safety Culture"

Increasing staff "Sharps Awareness"

- **Internal Feedback**
  - Regular Review on Safety C'tee
  - Regular Reports Out (not just up)
  - Monthly Newsletters
  - Publish "*NIL SI Units*" for month/Qtr
  - Cafeteria Exhibit
- **External PR**
  - Assoc newsletters
  - Conference papers
  - Journals & Lay Press

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Best Practices of Low-Exposure Hospitals

EDUCATION — New Hires

- One-to-One with every clinical new hire
- Sharp safety taught during orientation
- Practice & competency validation for all SED
- "Safety Responsibility" sheet

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Best Practices of Low-Exposure Hospitals

EDUCATION — 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"

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Best Practices of Low-Exposure Hospitals

MANAGEMENT INVOLVEMENT

- 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"*

Best Practices of Low-Exposure Hospitals

EMPLOYEE HEALTH ATTITUDE

- "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"*

STAFF REPRESENTATION

- Safety Advocate Breakfasts
  (Users, OHS, Managers, CEO)

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SI Research

No data = "No problem"

"No problem" = no resources

We need SI incidence back on radar

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Research needs in Aust & NZ

1. National, ongoing, public databases
2. Studies on SI reported vs not reported
3. Case studies of hospital SI incidences
4. Successful case studies of SI reduction
5. Incidences of SI in non-hospital sector

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The importance of Zero

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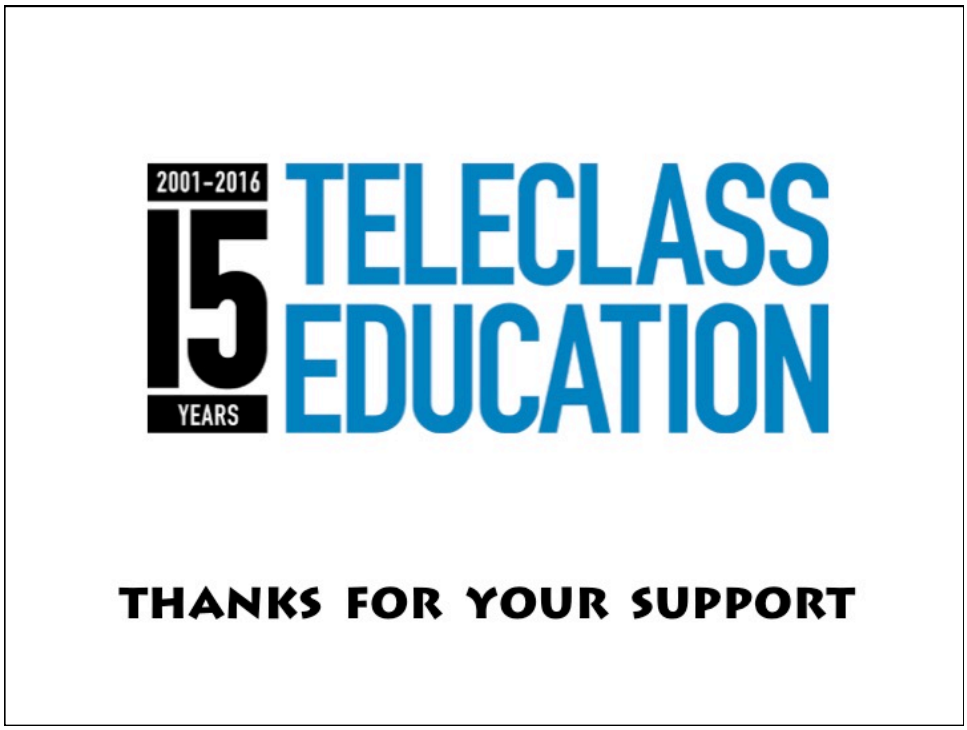
Sharps Injury Prevention: Challenges and Effective Strategies
Dr. Terry Grimmond, Grimmond & Associates Ltd, New Zealand
A Webber Training Teleclass



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