Putting sharps injury prevention back on the radar

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IPAC Eastern Ontario Education Day
Outline

• Burden and risk associated with needlestick injuries
• Safety engineered needles (what was the evidence that spurred change?)
• Ontario’s regulation and supports for implementation
• Sharps injury trends (how did we do?)
• Lessons learned from implementation of these devices
• Why are needlestick injuries continuing to occur?
• Four reduction strategies
Common Goal

Evidence based innovations → Scale-up

Regulation
How was the burden of needlestick injuries presented pre-2007?

- “33,000 needlestick injuries annually in Ontario” (1)
- “Ontario is spending more than $66-million a year testing and treating workers who are injured” (1)
- More than 20 pathogens have been transmitted – including HIV, HBV, HCV
- Psychological impacts post-exposure

What factors influence injury risk?

- Procedures
- Patient actions
- Emergency situations
- Crowding
- Fatigue
- Understaffing

Safety Engineered Needles

- Manual
- Semi-automatic (push of a button)
- Automatic (needle automatically retracts)
- Needleless Devices

Tosini et al., Needlestick injury rates according to different types of safety-engineered devices: Results of a French multicenter study. Infection Control and Hospital Epidemiology. 2010;31(4):402-7.

Image credit: https://www.fishersci.ca/shop/products/bd-eclipse-hypodermic-needles-7/p-2770520
Safety Engineered Needles: The Evidence

• Toronto East General Hospital reports an 80% reduction in one year following the transition manual safety engineered needles for blood collection and injections. (1)

• Rigorous systematic reviews have identified considerable variation in outcomes (2)

Ontario’s regulation on needle safety

• When a worker is to do work requiring the use of a hollow-bore needle on a person for a therapeutic, preventative, palliative, diagnostic, or cosmetic purpose, in any workplace. (O. Reg. 439/09)

• ...the employer shall provide the worker with a safety-engineered needle that is appropriate for the work. O. Reg. 474/07, s. 3 (1).

• “safety-engineered needle” means,
  
  • a hollow-bore needle that is designed to eliminate or minimize the risk of a skin puncture injury to the worker
  
  • a needleless device that replaces a hollow-bore needle
Ontario’s regulation (continued)

2008:
• Hospitals
• Psychiatric facilities

2009:
• Laboratories, and specimen collection centres
• Long-term care homes

2010:
• Doctors’ and dentists’ offices
• Community health centres
• Family health teams
• Home care services
• Public health programs
• Health support services to students in schools
Supports for implementation

- Tools
- Training
- Technical assistance
- Data/monitoring
- Inspections and enforcement

U.S. Trends Sharps Injuries


U.S. Trends Sharps Injuries


U.S. Trends Sharps Injuries (full-time equivalents)

Ontario Needlestick Injury Trends

WSIB Data is limited for reporting on burden of NSIs

Hospital Case Studies

• Too often we report the impact of system level interventions with an absence of information to explain unexpected or less than optimal results which provides no direction for next steps…

• Objectives:
  • To examine how acute care hospitals managed the integration of SENs
  • To identify remaining issues associated with the use of these devices.

## Results: Three Case Reports

<table>
<thead>
<tr>
<th></th>
<th>Hospital A</th>
<th>Hospital B</th>
<th>Hospital C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characteristics</strong></td>
<td>Large teaching hospital</td>
<td>Multi-site community hospital</td>
<td>Large teaching hospital</td>
</tr>
<tr>
<td><strong>Transition to Safety Needles</strong></td>
<td>2007, in response to safer needle regulation</td>
<td>2006, in response to a workplace inspection order</td>
<td>2003, voluntary transition</td>
</tr>
<tr>
<td><strong>Types of SENs</strong></td>
<td>Mix of semi-automatic &amp; manual</td>
<td>Mix of semi-automatic &amp; manual</td>
<td>Mix of semi-automatic, manual, &amp; passive</td>
</tr>
<tr>
<td><strong>Implementation Supports Used</strong></td>
<td>Training</td>
<td>Tools, Training, Technical Assistance</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Rate of NSIs per 100 beds:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1*</td>
<td>11.9</td>
<td>15.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Time 2**</td>
<td>8.6</td>
<td>6.2</td>
<td>1.6</td>
</tr>
<tr>
<td>% Change</td>
<td>↓28%</td>
<td>↓60%</td>
<td>↓81%</td>
</tr>
</tbody>
</table>

*1yr prior to the transition; **3 years post-implementation
Highlights of the Results

• Implementation Issues (learning curve, product hoarding, safety device misuse)

• Implementation Planning - the importance of adequate time to meaningfully engage staff

• Sustainability – no strategies sustained, no future plans to consider passive devices or safety sharps
Why have injuries not decreased as expected?

• Safety device use
• Effectiveness of safety engineered needles (“we completed our transition phase”)
• Risk perception
• Limited provincial data (“no data, no problem, no action”)
Reduction strategies (Good and Grimmond 2017)

- Education and training
- Communication
- Investigation
- Engagement

Good L & Grimmond T. Proven Strategies to Prevent Bloodborne Pathogen Exposure in EXPO-S.T.O.P. Hospitals. J Assoc Occ Hlth Prof 2017:36(1);1-5.
Our work is not yet done...

Thank you!

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At Work Article
http://www.iwh.on.ca/at-work (Winter 2014)

Final report:
http://www.iwh.on.ca/other-reports

IWH Plenary Slides on the Safer Needle Study:
http://www.iwh.on.ca/plenaries/2013-nov-19
Questions for you

• Would you say that needlestick injury prevention is “on the radar” in your facility?

• Can you share any prevention strategies your facility has used that were successful (exposure prevention, incident reporting)?

• What types of challenges have you experienced keeping this (and other topics) on the radar?