A3: Safe Transfer of Surgical Sharps

Problem Statement

Boston Children's Hospital employees sustain approximately 90 sharps-related injuries per year, or 1.7 per week, and > 50% occur in the operating room. Of these, **37.5% occur during the transfer of sharps between surgeon and scrub nurse**. These represent a large personal and institutional burden, and the target rate is zero.

Boston Children's Hospital
Until every child is well

Background

- Perioperative Sharps Safety Committee has met twice/month for 3 years, but no improvements in injury rates have been sustained
- Sharps injuries are the most common employee injury reported to Occupational Health
- All sharps injuries are reported to the Department of Public Health and OSHA
- Cost of sharps injuries:
  - $2,000 per injury
  - $200K/year enterprise-wide
  - $100K/year in the perioperative area & $38K/year due to transfer-related injuries
- Risk of infectious disease transmission with sharps injuries:
  - HIV 0.3%
  - Hepatitis C 1.8%
  - Hepatitis B 6 – 30%

Current Design

1. Scrub Nurse to Surgeon

- Scalpel blades
- Suture needles
- Hypodermic needles
- Trocars
- Sharp retractors

2. Surgeon to Scrub Nurse

3. Scrub Nurse to Counter Box*

***Go and See*: 25 sharps transferred 50 times**

Root Causes:

Operating room staff:

- Unaware of the number of sharps injuries in the OR (***Violation of Activity and Intent***)
- Unaware of how their sharps performance compares to benchmarks (***Optimal Challenge missing***)
- Underestimate the risk of infectious disease transmission (***Violation of Activity and Intent***)
- Preoccupied with the surgical case & unaware of their technique (***Violation of Activity and Intent***)
- Not consistently using safety needles (***Structured Problem Solving not Employed***)
- Surgeons do not always communicate well (***Human Chain not Connected***)

Target Design

- Awareness:
  - Sharps injuries are common and represent a significant risk to OR staff
  - Safe best practices related to sharps transfers
- Utilize: safety needles and equipment if available
- Challenge: OR staff to reduce unsafe transfers and sharps transfer-related injuries
- Feedback: immediate feedback regarding sharps-related performance

Improvement Goals: **50% reduction in unsafe transfers & 50% reduction in transfer-related sharps injuries**

Leadership Guidelines

No additional work for any team member
No additional operative time
No capital expenditure
Senior leadership endorsement and support

Execution Plan:

- A: "Sharps Facts" signs distributed to surgeons and posted in OR; "Sharps Awareness & Expectations" added to surgical time-out at beginning of case
- U: Techniques – clear & consistent communication with each transfer; Equipment – use only safety needles
- C: "Sharps Challenge" competition; GU surgeons track unsafe transfers & sharps injuries; results announced per A3 schedule
- F: All team members to provide immediate feedback if safe practice violated &/or injury occurs

Track Results: Unsafe transfers (UT, %) & Injuries (I)

	Target		Results	
Date	UT	I	UT	I
10/24-10/28	70%	0	79%*	1
10/31-11/4	50%	0	67%*	0
11/7-11/11	30%	0	9%‡	0
11/14-11/18	20%	0	2%‡	0

*Control; ‡Intervention

✓ **Overall 67% UT reduction; p < 0.0001**

What did We Learn & What's Next?

- Nurses harbor long-standing concerns re: sharps that have not been verbalized
- Behavior is easier to change with competition!
- Clear communication re: commitment to safety and when performing transfers is effective in making transfer of sharps between nurse and surgeon safer.
- NEXT: **Stock** - safety needles exclusively ; **Policy** - no free needles in field unless critical; **Include & Sustain** - all surgical services & ORs - presentation at BCH Surgical Executive Committee 12/14/16; **Expand** – A3's for post-case sharp handling & anesthesia IV placements next!