



Needlestick and Sharps Injury Prevention

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Webinar Logistics

- All participants are muted
- 45 minute presentation
- 10 minutes Q&A session
 - Use the Questions box on your sidebar to submit questions
 - We'll respond to as many questions as we can in the Q&A session so we can end on time!
- Web/Phone Conference Issues or Concerns
 - If you are having difficulty seeing/hearing the presentation, please submit a question using the Questions box or
 - Call / text 925.408.0944
- A short evaluation survey will be sent after the session –please help us with your feedback!
- All attendees will receive a link to the recorded webinar and presentation slides within a day or two of the webinar

Today's Speaker



Elise Condie, B. Physiotherapy, M.S., CPE. Principal Consultant, BSI EHS Services and Solutions

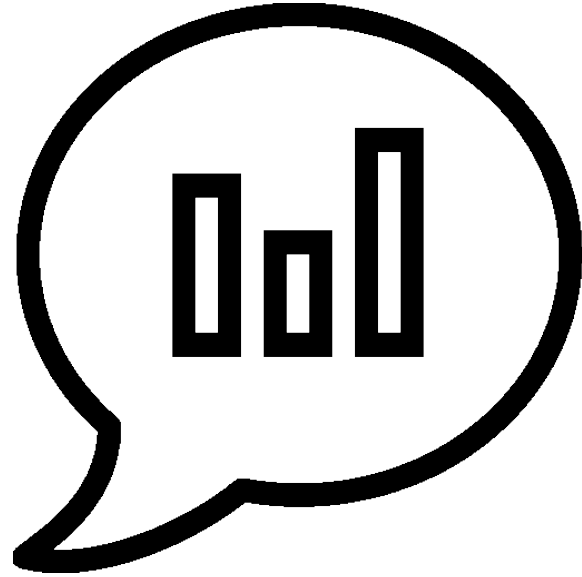
- Over 10 years of EHS experience in healthcare, technology, biotech and other industries, delivering performance improvement in complex high risk environments
- Clinical experience, extensive training and knowledge of the human anatomy, physiology, and biomechanics, along with training in ergonomics
- As Interim Director, EHS, for a 12,000+ employee healthcare network, achieved a recordable injury frequency rate reduction of 17% within the financial year

Overview

- The costs and impacts of needlestick injuries
- Legal requirements relating to needlestick injury prevention
- Common obstacles to needlestick injury reduction
- Best practices for needlestick injury prevention, and case studies
- Assessing your program for gaps and next steps



Interactive Poll - What role do you have in your organization



The Cost of Needlestick Injuries

- Estimated treatment costs range from \$500-\$3,000 per needlestick injury (NSI) **even when no infection occurs**
 - Includes screening, patient testing, medical visits
 - Does not include cost of prophylaxis or long-term treatment in the event of seroconversion
 - Does not include costs of injury investigation, cost of labor for occupational health staff, legal liability payments, or increases in workers' compensation premiums
 - Does not include cost of replacement staff in the event of a seroconversion, or lost productivity while staff attend screening/follow-up
- CDC estimates the annual economic burden in the US to be between \$118 million and \$591 million, based on an incidence of 236,000 cases a year

In the Event Seroconversion Occurs...

- One case of seroconversion costs in excess of \$1,000,000
 - Testing
 - Follow-up
 - Lost time
 - Disability payments
- A liver transplant (if the infection is Hepatitis C) costs hundreds of thousands of dollars

http://www.who.int/occupational_health/activities/2needguid.pdf

Preventable Tragedies

- More impactful than the cost of the injury is the seriousness of a potential infection from a needlestick exposure
 - Waiting to find out whether you contracted a life-changing disease
 - Side effects of prophylactic medication
 - Undergoing treatment in the event of an infection
 - Impacts on duration and quality of life
 - Effects on the morale of colleagues
 - Overall emotional impact – often includes anger at organization and staff

Regulations

- Fed-OSHA Bloodborne Pathogens Exposure Standard (29 CFR 1910.1030)
 - Exposure control plans
 - Universal precautions
 - Engineering and work practice controls
 - Personal protective equipment
 - Housekeeping standards
 - Laboratories
 - Hepatitis B vaccination
 - Post-exposure follow-up
 - Hazard communication and training
 - Recordkeeping
 - https://www.osha.gov/SLTC/bloodbornepathogens/bloodborne_quickref.html

State Regulations

- State-specific programs exist in 25 states and 2 territories (Maine is now on this list)

Alaska	Kentucky	New York*	Vermont
Arizona	Maryland	North Carolina	Virgin Islands
California	Michigan	Oregon	Virginia
Connecticut*	Minnesota	Puerto Rico	Washington
Hawaii	Nevada	South Carolina	Wyoming
Indiana	New Jersey*	Tennessee	
Iowa	New Mexico	Utah	

*The Connecticut, New Jersey, and New York plans cover public sector (state & local government) employment only.

<https://www.cdc.gov/niosh/topics/bbp/ndl-law-1.html>

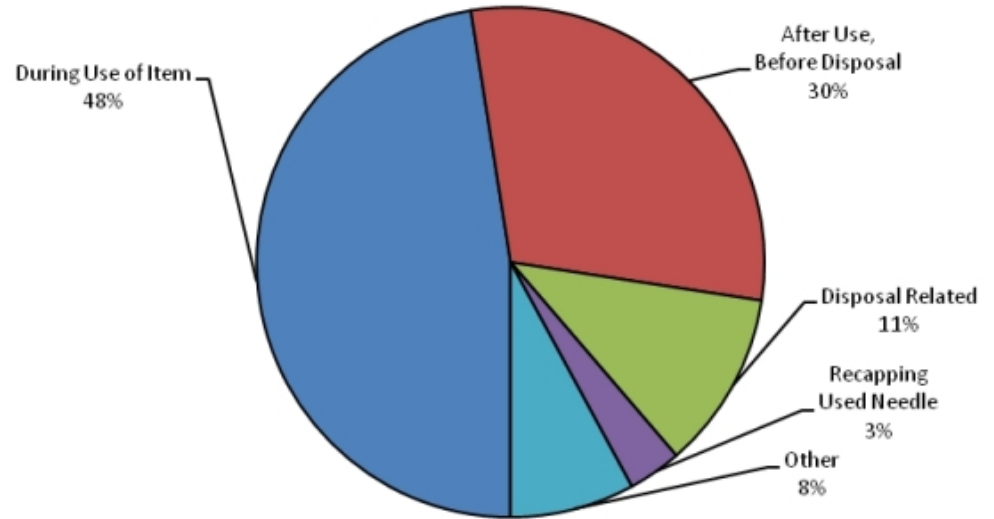
State Regulations

- Various specific requirements regarding training and recordkeeping (e.g., to whom to submit a sharps injury log)
- Majority of state-specific regulations mandate, in some form, provision of safe sharps/engineered devices



What Factors Contribute to Needlestick Injuries?

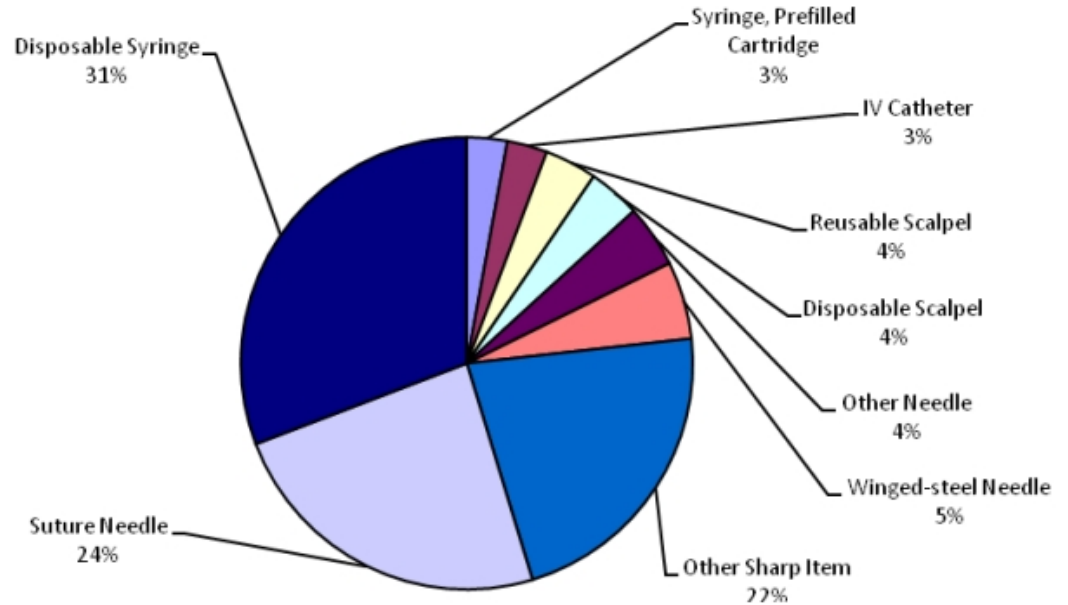
- Task-related:
 - Manipulating needle in patient
 - Disposal of sharp
 - Handling/passing
 - Cleanup
 - Improper disposal



<https://internationalsafetycenter.org/use-epinet/>

Devices

- Blood-filled, hollow-bore needles
 - Hypodermic needles
 - Winged-steel needles
 - Suture needle
 - Glass needle



Hierarchy of Control—Avoiding Needlestick Injuries

- Substitution
 - Replace sharps with devices less likely to result in BBF exposure
 - Needleless IV systems
 - Alternate routes for medication and vaccine delivery where feasible (e.g., P.O.)
 - Phlebotomy devices that minimize number of punctures required (e.g., Vacutainer system)



Hierarchy of Control—Avoiding Needlestick Injuries

- Engineering controls
 - Adequate number of sharps disposal containers
 - Sharps with engineered safety features
 - » Be an integral part of the device
 - » Be reliable, simple and obvious in operation
 - » Allows the hands to remain behind the needle
 - » Ensure that the safety feature is in effect before disassembly and after disposal
 - » Ensure the user technique is similar to that of conventional devices
 - » Minimize the risk of infection to patients
 - » Have minimal increase in volume, relative to disposal
 - » Be cost-effective



Other engineering controls

- Using alternative cutting methods such as blunt electrocautery and laser devices when appropriate
- Substituting endoscopic surgery for open surgery when possible
- Using round-tipped scalpel blades instead of pointed sharp-tipped blades

Hierarchy of Control—Avoiding Needlestick Injuries

- Work practice controls
 - Using instruments, rather than fingers, to grasp needles, retract tissue, and load/unload needles and scalpels
 - Giving verbal announcements when passing sharps
 - Avoiding hand-to-hand passage of sharp instruments by using a basin or neutral zone
 - Double gloving



Safety Culture and Needlestick Injury Prevention

- Safety culture in this context relates to management's visible support to implement the controls just described
- Willingness to address issues and barriers to optimal sharps safety
 - Speak up when something is not right
 - Uphold accountability
 - Managers are not “born knowing” how to exhibit these behaviors

Applying Systems Analysis Strategies

- Defining "sentinel events" and performing a "root cause analysis" to determine their underlying cause
 - Incidents which necessitate immediate attention and further investigation. Part of that investigation might include a root cause analysis, in which the core issue is addressed, rather than just the symptoms of the problem.
- Applying "failure mode analysis" to a problem pre-event to systematically identify how to prevent it from occurring
 - Failure mode analysis involves identifying the steps to complete a task and the points at which an error or system breakdown might occur, in order to learn where prevention measures should be instituted.

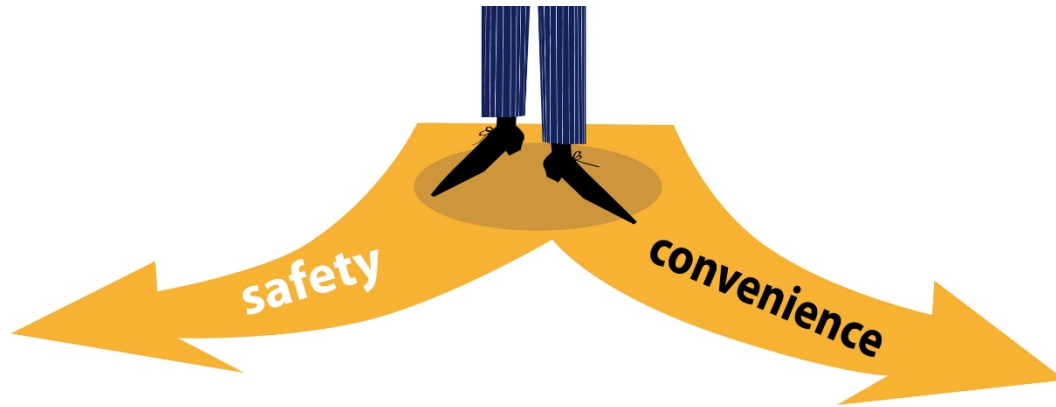
Using Consultation to Drive Change

- “Voice of the consumer” is important
- Think about who is on your sharps injury prevention committee:
 - Senior management
 - Infection control
 - EH&S
 - Quality/risk management
 - Staff development/HR
 - EVS
 - CSSD/SPD
 - Materials management/supply chain
 - Front-line clinical and lab staff



Behavior Change

- Personnel most readily change their behavior when they think that:
 - They are at risk
 - The risk is significant
 - Behavior change will make a difference
 - The change is worth the effort



Case Study

- Large academic medical center
- Rising rates of needlestick injuries
 - No. 1 contributor to hospital injury rate
 - Injury rate (injuries per 100 FTE) was the only metric reported to leadership
 - Organization sought to be best in class on all measures, including employee safety
- Competing priorities
 - Focus on increasing patient throughput
 - Introduction of Lean was seen as generating efficiencies and saving time, not solving problems
 - Perception that addressing employee safety issues would be too resource-intensive

Case Study

- Culture

- Perception that you got a needlestick if you were an incompetent practitioner
 - » 30% of needlesticks were caused by someone other than the injured worker
- Significant power distance between the physician/surgeon and other members of the care team
 - » Leaders setting tone and expectation for behavior
- In 2015, 57% of staff interviewed post-exposure stated they did not think any more could have been done to prevent their needlestick injury
 - » Part of the job, low awareness regarding available controls for needlestick injury prevention

Case Study

- Beliefs regarding needlestick injury reporting

Only necessary on a known high-risk patient



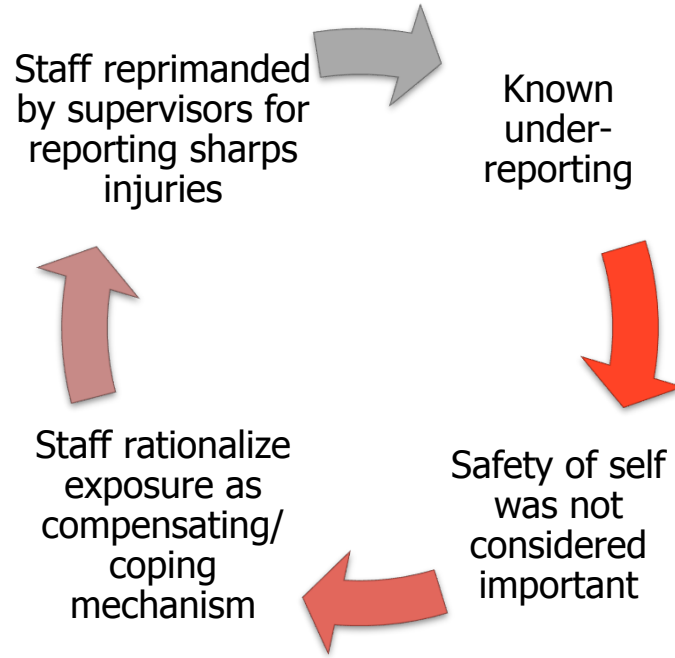
Expensive and negatively affects the organization

Complicated and long process

Residents believed it would adversely affect their career

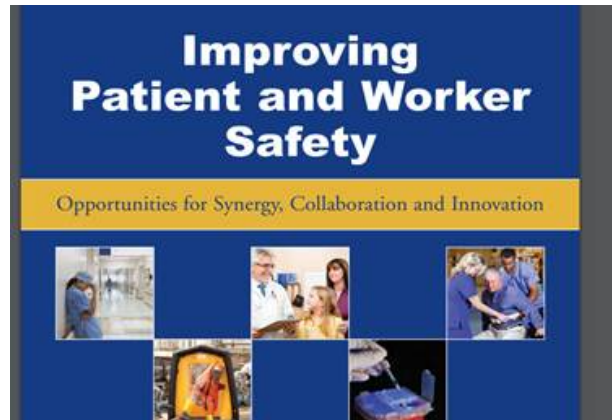
Case Study

- Culture and associated behaviors created a vicious cycle:



Case Study

- Focus on “do no harm” (to the patient)
- Staff were not cognizant of the impact these injuries had on other staff members
 - Would never let this happen to a patient
- TJC have issued guidance on the symbiosis between employee safety and patient safety



Case Study: Story Untold

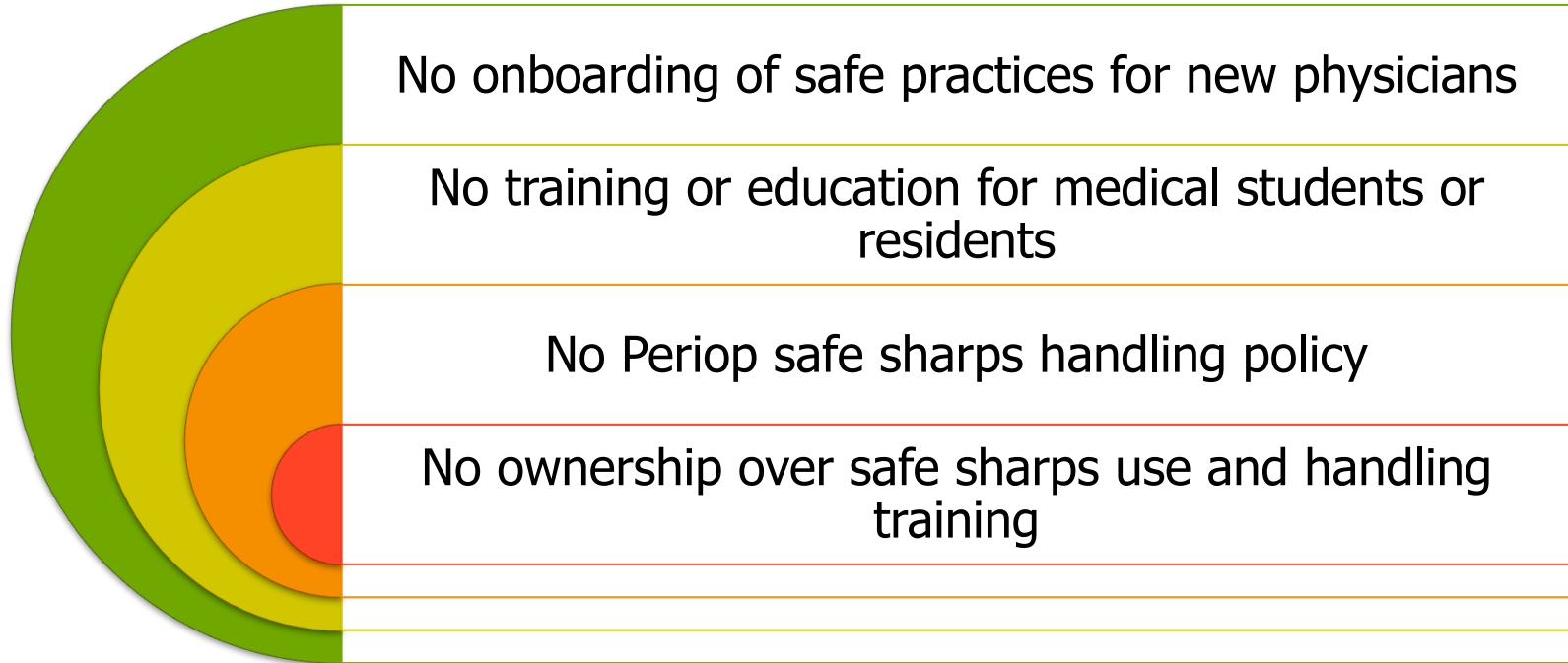
No access to, or transparency into, needlestick injury data

Fantastic data available because the organization tracked all BBF injuries in EpiNET—not visible so leadership did not see the problem

End users not part of the Sharps Committee

Case Study: Education and Standard Work

- Safe sharps handling & suturing standards did not exist



Lack of Incident Investigations

No root cause analysis process:

- An initial incident report was filed at the time of injury
- Multidisciplinary investigations did not occur



Lack of Teamwork

Chain of control and hierarchy within the surgical suite

RNs and surgical technologists:

- Felt physicians knowingly jeopardized their safety
- Not empowered to speak up when their safety was compromised

Physicians did not believe a change in clinical practice would benefit the patient

Change Is Hard

- Faculty sees change as:
 - Loss of control
 - Implication of clinical practice incompetence
- Change is uncomfortable for everyone



A large teal arc graphic that starts from the left edge of the slide and curves downwards towards the bottom right corner.

What did we do about it?

Use data and evidence to frame the problem...

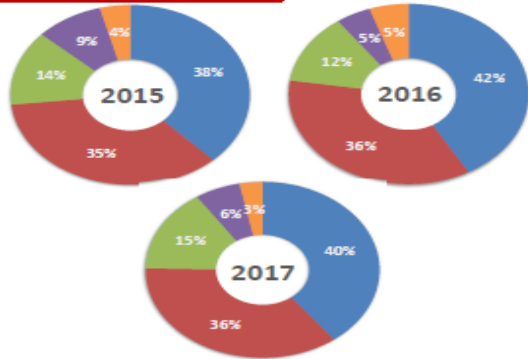
Gap: Need for Comprehensive, Easily Interpretable and Visually Interesting Data

- Solutions:

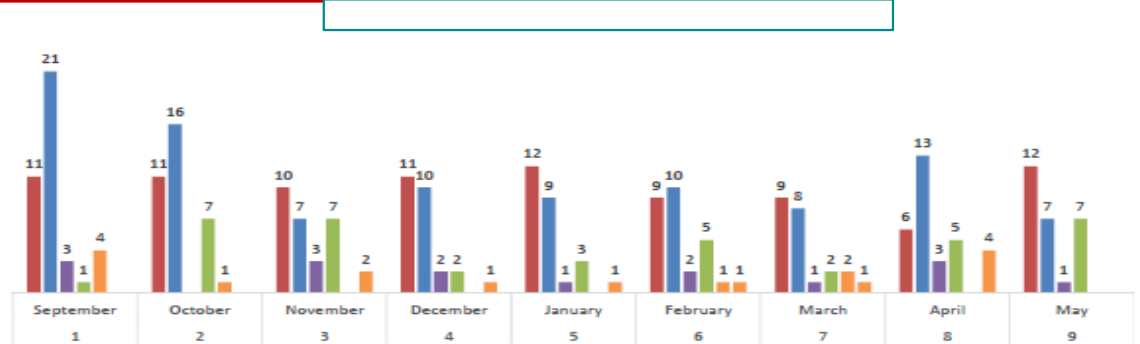


Comprehensive Employee Safety Report

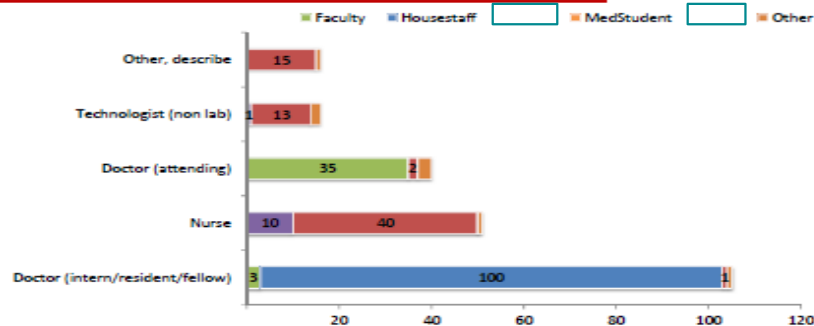
FY 2015 - FY 2017 Comparison



FY 2017 Monthly Trend



Comparison by TOP 5 Job Class (FY 2017)



Fiscal Year Comparison (FY 2014 - FY 2017)

Description	2014	2015	2016	2017
	122	139	136	91
	36	36	18	16
HouseStaff	126	149	159	101
Faculty	51	53	48	39
MedStudent	14	16	20	8
TOTALS:	349	393	381	255

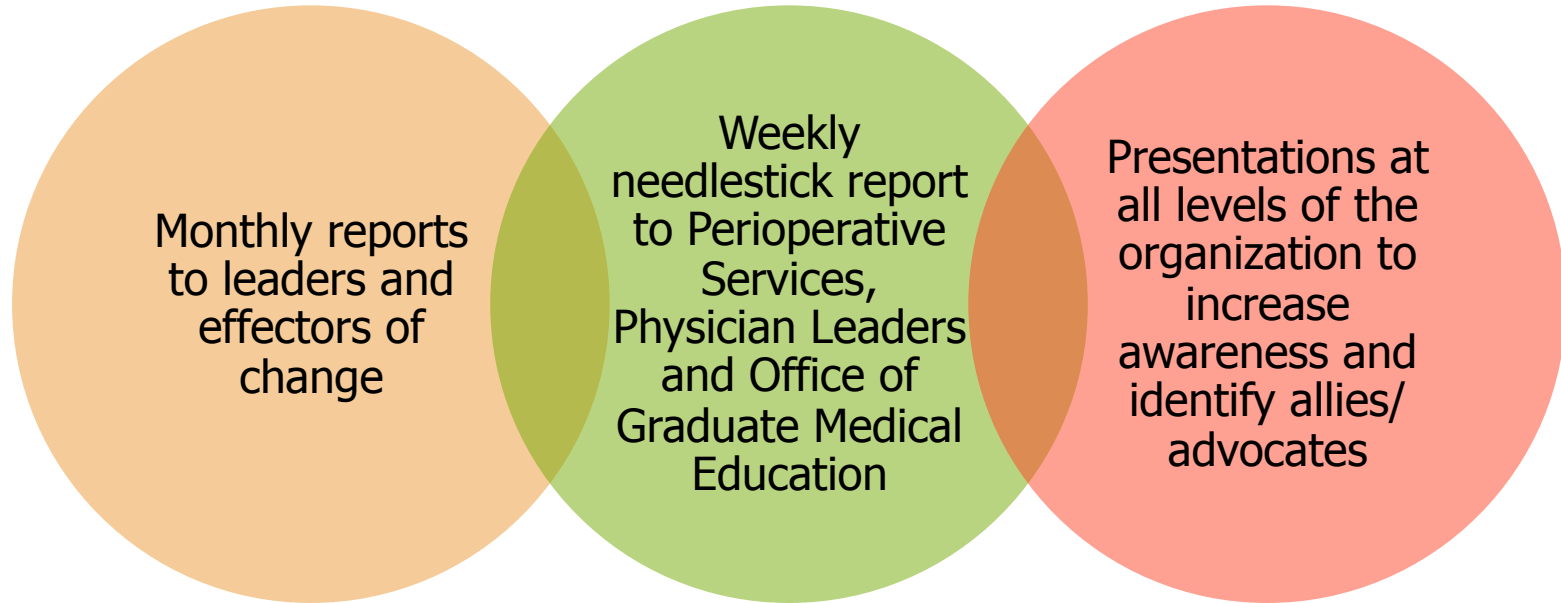
% of Contaminated Devices (FY 2016)

Description	Yes	No	Unknown
# of Contaminated Devices	90%	4%	7%
# of Devices w/ Visible Blood	72%	20%	9%
% of Preventable Perception	39%	51%	10%

Detailed Incident Reports: Personal Storytelling

Nurse	Procedure room	Index finger, right palm	Needle 1. Disposable syringe Injection, intramuscular/subcuta	Unknown	0	0
<i>Description: assisted MD with IV insertion and MD handed the syringe and needle that he used to numb pt's skin, EE recapped the needle and needle slipped and punctured rt index</i>						
Technologist (non lab)	Operating room/Recovery	Right portion palm, right	Surgical 31. Suture needle Suturing	Ethicon	0	0
<i>Description: "I was passing a suture that I had to quickly remove from multi-layer packaging and remove the memory. While passing this suture on a non-locking needle hold to the resident across from me with the needle under my palm instead of over my palm and wrist. It was received and then jabbed into my palm."</i>						
Nurse	Patient room/ward	Index finger, right palm	Surgical 31. Suture needle Suturing	Unknown	0	0
<i>Description: Holding the PICC line in place while resident attempts to re-suture. Resident initially poked a 0.5 cm above where my right index finger was. Unable to see the exit site of suture needle and puncture my distal part of right index finger. No blood was visible on the needle. No visible puncture site on my right index finger</i>						
Other, describe	Other, describe	Middle finger, left palm	Surgical 45. Scalpel, disposab Unknown/not applicable	Unknown	0	0
<i>Description: sorting the dirty instruments before placing in the sink, disposable scalpel in the kit</i>						

Using Evidence to Tell the Story



Engaging Leadership to Effect Change

- CEO tasked Leadership Team with issue after reviewing organization's injury data
- Identify:
 - » Roles & responsibilities - Chair vs. Chief vs. Service Line Director
 - » Chain of command & accountability
- Invited leadership advocates to the Sharps Committee to help identify barriers, chain of command, and daily life
- Nursing Shared Leadership Council leaders took an active role by selecting needlestick reduction as a goal

Standardizing Policy and Procedure

Implementing standards for sharps safety

Solutions

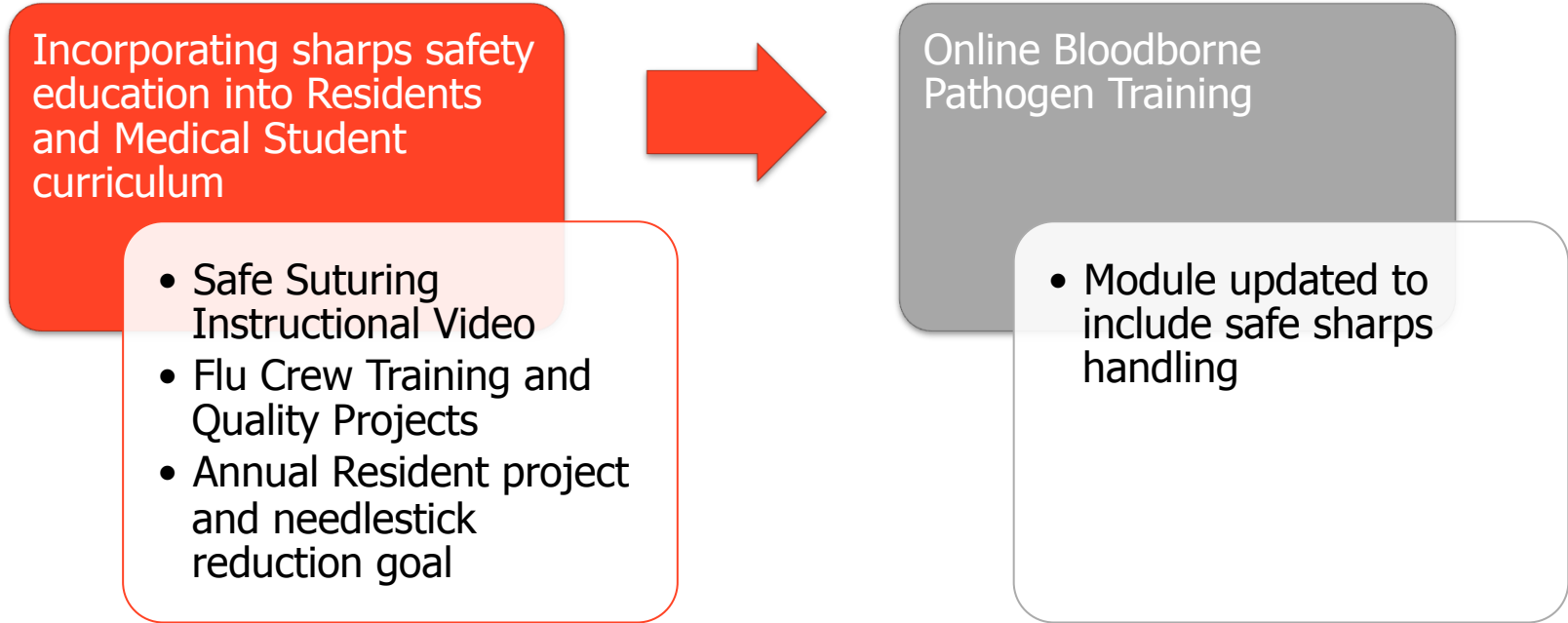
- Rounding on sharps use in Periop and inpatient units
- Benchmarking
 - Faculty defense mechanism
- Input from Physicians and Nursing
- Technical research
- Feedback from key stakeholders
- **Final products:**
 - **Perioperative Services Sharps Safety for Procedural Settings Policy**
 - **Sharps Safety added to all surgical tray Timeout sheets**
 - ***Future: Sharps Safety added to Timeout posters in each OR***

Innovative Education

- Used peers to develop online training in novel formats
 - “Doodle”
 - Videos
 - Peer-led education
 - Enhanced education targeting residents




Recognize the Gaps



Making the Campaign More Visual

Speak up and **verbalize** when a sharp is being handled



Needle Sticks are NOT part of the job



DON'T TURN A BLIND EYE ON SHARPS SAFETY


Always protect suture needles



NEEDLE STICKS ARE BAD MEDICINE

STOP STICKS WWW.CDC.GOV/NIOSH

REAL BAD MEDICINE



Engineered Safety Sharps

- Partnered with Periop for an inaugural Sharps Safety Fair:
 - Help empower staff to feel educated to speak about this issue
 - » Data
 - Faculty and staff trialed and voted on their desired sharps safety devices



Engineered Safety Sharps

Hospital audited for non-safety sharps

- Replace all non-safety sharps
- Modify kits to eliminate recapping

Working with supply chain to implement organizational controls on sharps orders

Understanding the Root Cause of BBF Exposures

- Began thoroughly investigating all BBF exposures
- Complex reporting structure in operating rooms
 - RCAs completed, corrective actions identified, assigned owners, and tracked to completion

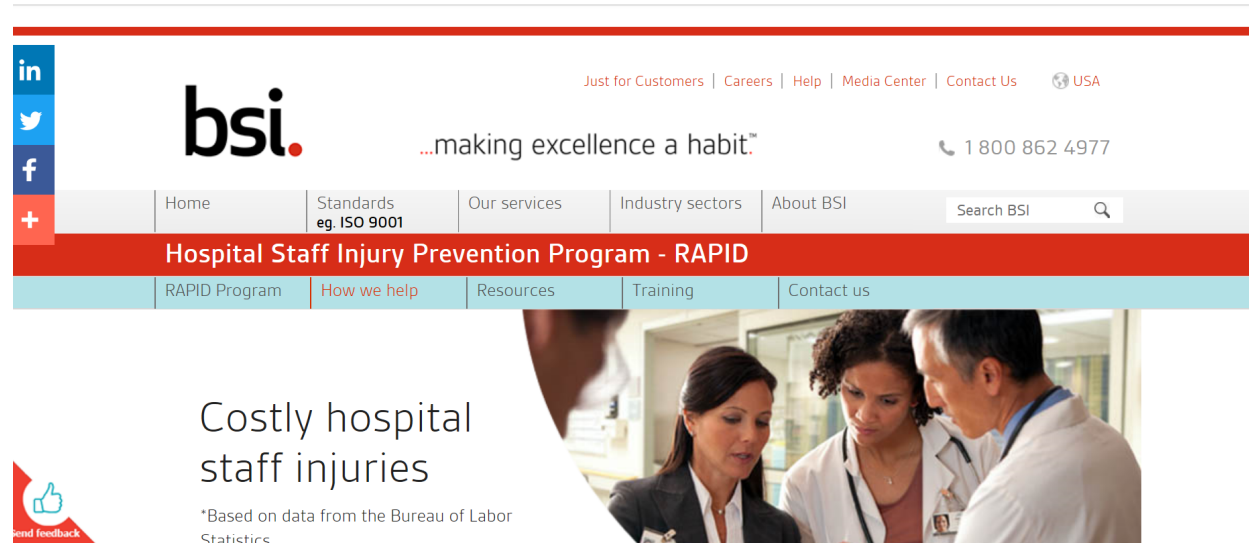
Results

- Available data leads to informed discussions
- Leadership provide visible support to sharps safety initiatives
- Engineered safety sharps are the norm, rather than the exception
- Physicians and residents are engaged
- New work practices result in fewer exposures
- FY2016: needlestick rate decreased, not much change in the ORs
- FY2017:
 - 16% decline in Resident needlestick rate
 - 11% decline in Staff needlestick rate
- FY2018 (YTD): continued decline in needlestick rate

Program Assessment



Resources – Visit the RAPID website



The screenshot shows the BSI website header with navigation links: Home, Standards (eg. ISO 9001), Our services, Industry sectors, and About BSI. A search bar is also present. The main content area features a red banner for the "Hospital Staff Injury Prevention Program - RAPID" with sub-navigation for "RAPID Program", "How we help", "Resources", "Training", and "Contact us". Below this is a photograph of three healthcare professionals in a clinical setting. The text "Costly hospital staff injuries" is displayed, with a note: "*Based on data from the Bureau of Labor Statistics". A "Send feedback" icon is visible in the bottom left corner of the screenshot.

www.bsigroup.com/rapid-us

The Takeaway

- Preventing needlestick injuries is a team sport
- Use a combination of math and visuals to tell your story
- Work to develop an understanding of the root causes behind your situation
 - Collect information
 - Examine your hierarchy of controls
 - Culture analysis
- Determine how to tell the story to your leadership so they are motivated to act
 - They may need help developing a course of action that inspires others to act
- Understand that you are playing the long game
 - 12-18 months before you see a change in lagging indicators

Questions?

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