

# Behind the Mask:

*Your Best Shot for Understanding the IPs Role in a Safe Injection Program*

Terry Micheels MSN, RN, FAPIC

Alisha Sheffield BSN, RN, CIC

Lauren Musil BSN, RN





## **Terry Micheels MSN, RN, CIC, FAPIC**

Terry is a Masters-prepared registered nurse with 29 years' experience as an Infection Preventionist in acute care settings. Fourteen of her 29 years involved managing IPC programs for community- and academic multi-hospital systems, including outpatient and ambulatory services. She has been certified in Infection Control since 2009 and is a Fellow in APIC. She is currently an IPC Consultant. She has multiple publications and has presented at National Annual APIC Conferences, national IPC webinars and multiple regional conferences.



## **Alisha Sheffield BSN, RN, CIC**


Alisha is an Infection Preventionist and Registered Nurse with 21 years of experience in a variety of healthcare settings including ambulatory, acute care, and surgical areas. Over the past 13 years, she has worked as an Infection Preventionist in outpatient surgery as well as at a large academic medical center. Her recent work has focused on utilizing her IPC expertise to develop infection control tools and resources to assist Infection Preventionists in under-resourced settings.



## **Lauren Musil BSN, RN**

Lauren is an Infection Preventionist with a background as Registered Nurse. She has a wide variety of healthcare experience having worked in neurology, neurosurgery, ambulatory surgery, home health and with the Nebraska Biocontainment unit. As an IP, her primary focus was in critical care, oncology, VAE prevention and as the IP to the Nebraska Biocontainment Unit. Her recent work has been spent in a grant funded role to develop innovative tools to aid IPs in rural and remote settings.

Visit us at: <https://innovateipc.org>



University of Nebraska Medical Center & Nebraska Medicine

# LEADING IPC INNOVATION

Our Work



- You must attend the full session to receive.
- Reminder you've received instructions for claiming your CEs via email
- If you have not registered, please enter the following information into the chat
  - Name
  - Phone Number
  - Email
  - Discipline/Role
    - E.g., RN, BSN



- We have no financial disclosures or conflicts related to this presentation.
- This work has been grant funded through the Center for Disease Control and Prevention in support of Project Firstline.
- The views and opinions expressed during this webinar are those of the presenters and do not necessarily reflect those of the University of Nebraska Medical Center, The Nebraska Medical Center or the Centers for Disease Control and Prevention.

# Overall Series Objectives



Analyze the fundamental components of a robust infection prevention and control program



Interpret guidelines, regulatory requirements, and best practice literature for a successful application to the infection prevention program



Utilize identified strategies to incorporate best practice into Infection Prevention programs



Integrate Infection Prevention program data to target prevention and improvement strategies



Combine acquired knowledge to enhance collaboration and teamwork within the healthcare system

# Injection Safety Program Objectives



Define Injection Safety and its relevance to an IPC program



Define the necessary elements of an Injection Safety program



Explore various regulatory and reporting requirements related to injection safety



Utilize the information presented to identify common gaps and opportunities for Injection Safety

## Injection Safety Fundamentals

### Programmatic

Documents and Processes that support the program

### Implementation of Injection Safety

Boots on the ground

Tasks that support the program



# What is Injection Safety?

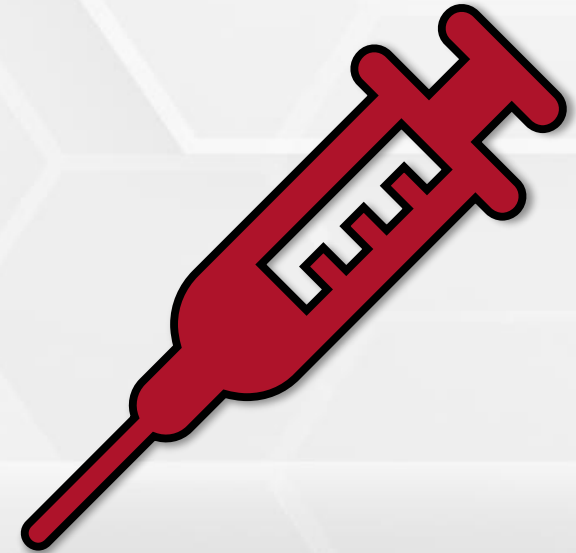


PROJECT  
FIRST LINE



UNMC  
Nebraska  
Medicine

- Set of measures taken to perform injections is the safest manner possible to protect patients, healthcare workers and others
- Part of Standard Precautions



# Who Regulates Safe Injection?



## **Occupational Safety and Health Administration (OSHA):**

- sets and enforces workplace safety regulations to protect healthcare workers
  - guidelines for safe handling and disposal of sharps (needles, syringes, etc.)

## **Food and Drug Administration (FDA):**

- regulate the safety of medical devices (needles, syringes etc.)

## **Center for Medicare & Medicaid services**

- Enforce compliance with sharps safety regulations

## **Centers for Disease Control and Prevention (CDC):**

- develop guidelines and recommendations

## **World Health Organization (WHO):**

- Global guidance

## **Professional Organizations**

- APIC, American Society of Anesthesiologists (ASA)

# Policies & Procedures



## Medication Safety

- Education and training
- Competency based
- Audit and feedback

## Medication Preparation

- Aseptic technique
- Clean area
- One needle, One syringe, One time

## Single use vials

- Use
- Storage
- One patient

## Multi-dose vials

- Use
- Storage
- Expiration dating

## Single Use devices

- Use
- Storage

## Sharps handling

- Point of use
- Sharps containers

## Blood glucose monitoring

- Insulin pens
- Lancets
- Glucometer use/cleaning

## Drug Diversion

- IPC involvement

## Injury Prevention program

- Device evaluation
- Review annually and as needed

# Policy



- High-level, broad, general, concise
- Outlines organizations intent on a topic
- Provides a framework that can adapt to changes
- Guides decision making
- Ensures coordinated compliance with applicable laws and regulations

# Procedure



- Specific, Detailed
- Specify how a task or process is carried out- step by step
- Step by step instructions to follow when completing a task
- Less flexible
- Standardize processes for consistency

## Unsafe injection practices can lead to:

- Patient Illness and Death
- Disciplinary actions and legal consequences
- Mistrust in the healthcare system



**Hepatitis B**  
**Hepatitis C** <sup>28</sup>  
**HIV**<sup>2</sup>



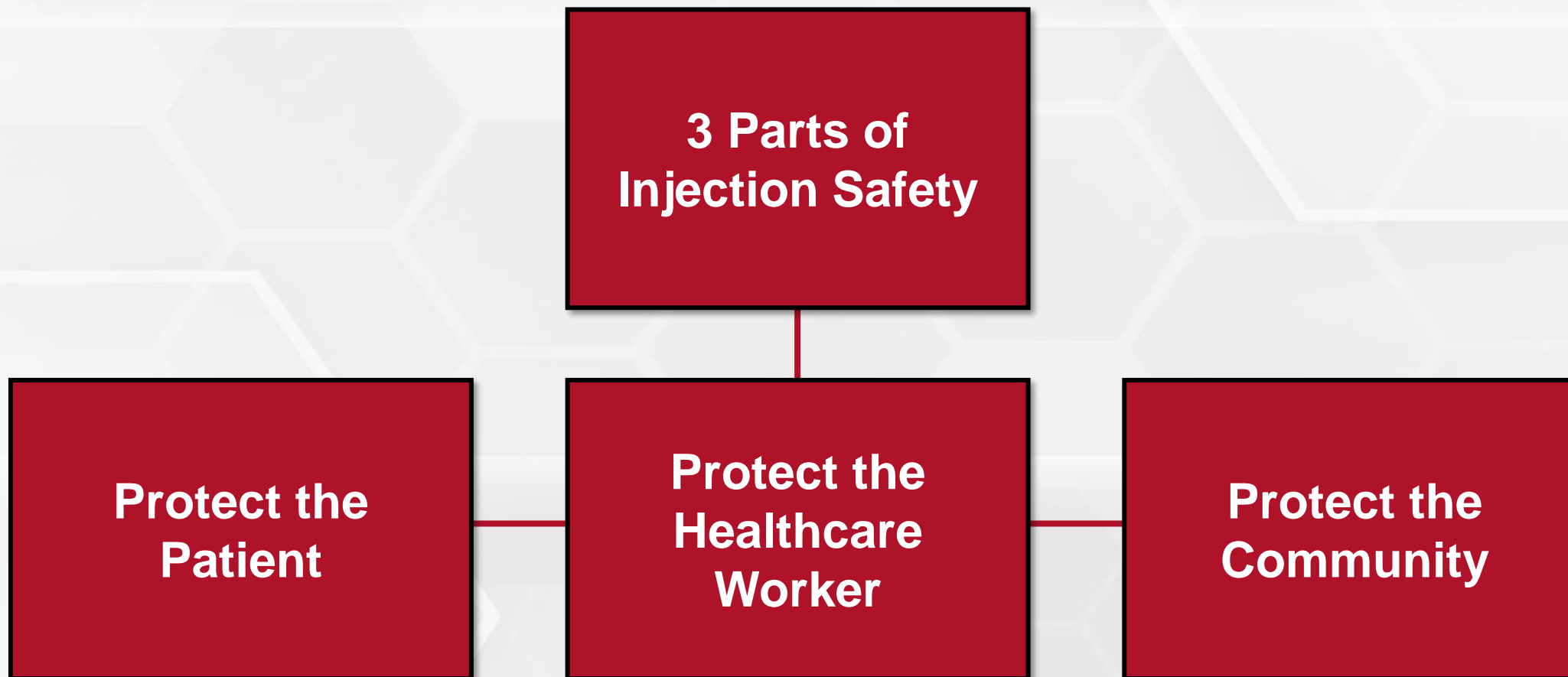
- Lack of Time
- Save Money
- New employees
- Lack of Education
- Fast-paced environment

## Med spas and Hydration Clinics <sup>30</sup>

- Lack of training and oversight
- No reporting requirements



# What is Injection Safety

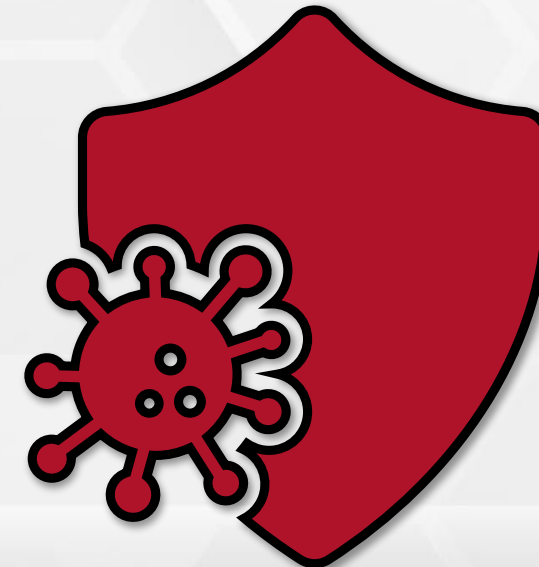


# Protect the Patients

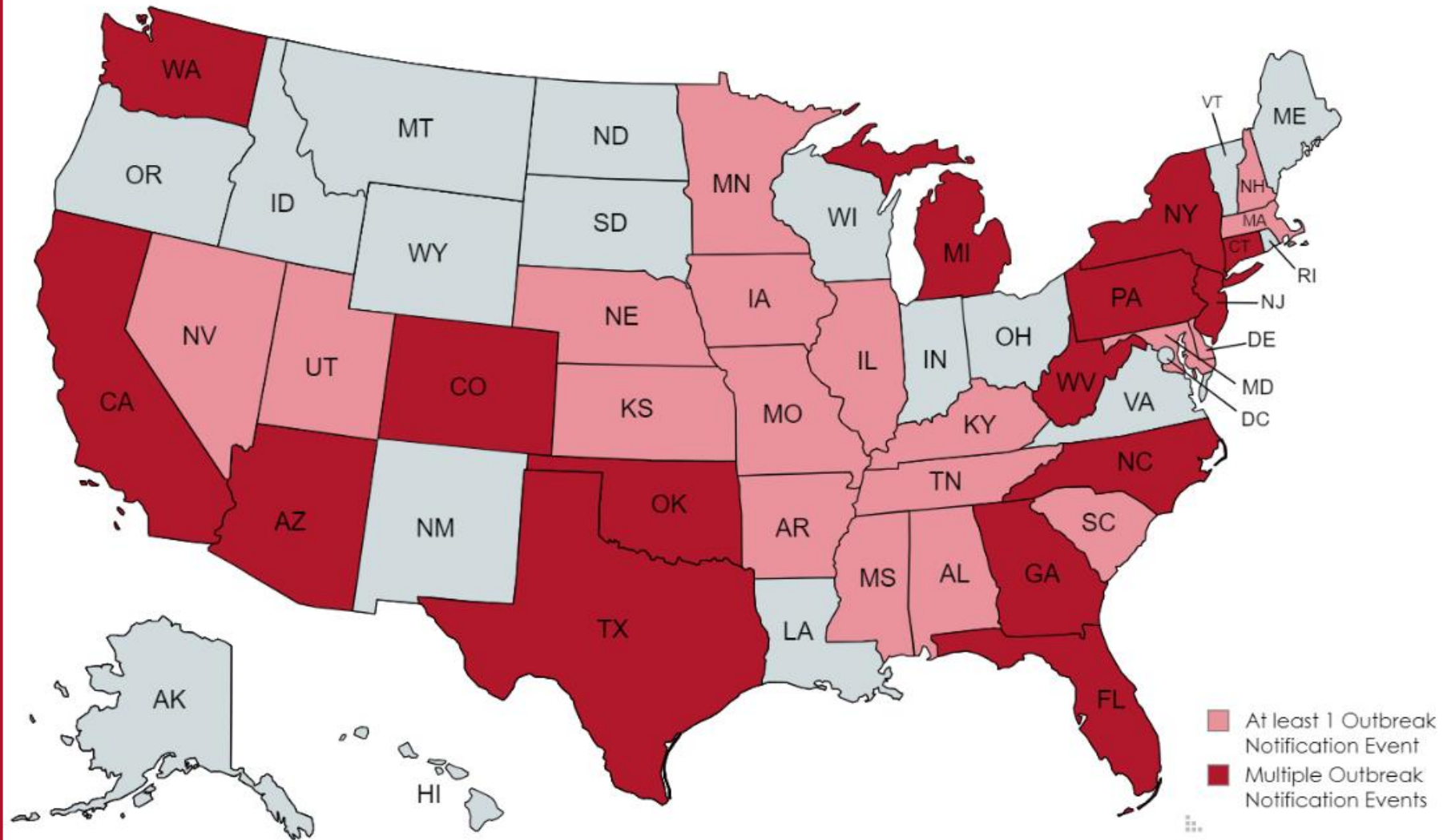


## 66 reported healthcare-associated viral hepatitis outbreaks between 2008-2019

- 62 occurred in non-hospital settings:
  - Long-term care \*\*
  - Dialysis (22)
  - Drug Diversion (4)
  - Pain Clinic
  - Outpatient cardiology clinic (1)
  - Dental clinic (1)
  - Outpatient oncology clinic (1)
  - Hospital surgery center (1)
  - Other outpatient



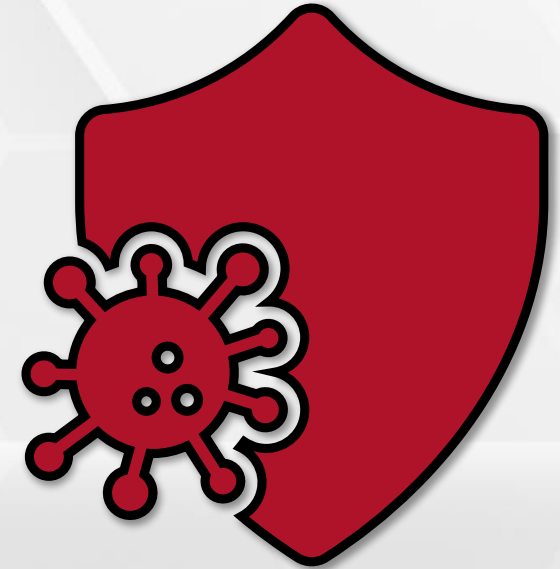
Additional cases of likely patient-to-patient transmission, but not an outbreak



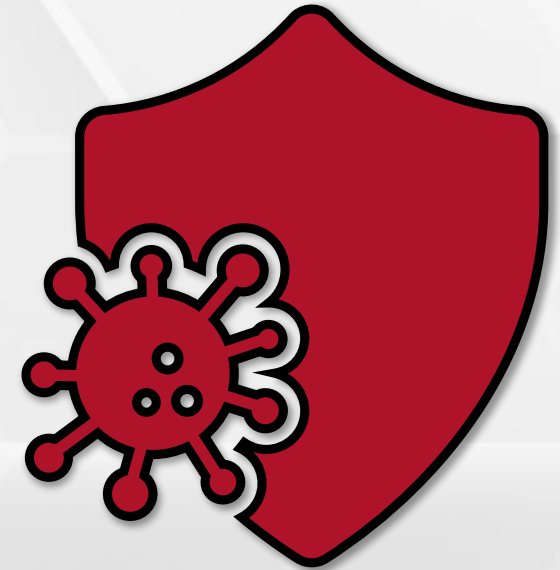


## September 2002

- Largest healthcare-transmitted outbreak of Hepatitis C
- Oncology clinic at a small healthcare facility in rural Nebraska
- 857 patients exposed to Hepatitis C
- 99 Contracted the virus
- Associated with shared saline bags



- Re-use
  - Direct- use on the same patient
    - 1% to 3% reused the same needle and/or syringe on multiple patients (CDC)
  - Indirect- into a multidose vial or solution container
- Use of single-dose vials for multiple patients
- Contamination of multi-use vials
- Errors in aseptic technique
  - Hand hygiene
  - Contaminated workspace
- Lumbar Punctures



- Re-use
  - Direct- use on the same patient
    - 1% to 3% reused the same needle and/or syringe on multiple patients (CDC)
  - Indirect- into a multidose vial or solution container
- Use of single-dose vials for multiple patients
- Contamination of multi-use vials
- Errors in aseptic technique
  - Hand hygiene
  - Contaminated workspace
- Lumbar Punctures

- Lack of Time
- Save Money
- New employees
- Lack of Education
- Fast-paced environment

# Impact of Injection Safety Breaches



PROJECT  
FIRST LINE



UNMC  
Nebraska  
Medicine







- Prepare and administer aseptically
- Use Syringe ONE time
- Use Needle ONE time
- No common source solutions (flush)
- Single-dose meds for single-patient use
- Multi-dose vials dedicated to ONE patient when possible
- Proper disposal and containers
- Mask for epidurals



## Handling, preparing, and storing of medications and injection supplies to prevent microbial contamination.

### Process to prevent contamination

- Designated Area
- Clean area
- Hand Hygiene
- Sterile equipment and supplies
  - one syringe one needle one time
- Environmental controls
  - Expiration Dates
  - Sinks
  - Non-medical supplies



- Contamination risk
- Infection Transmission
- Lack of Accountability



## Single Dose Vials

- Dedicated to one patient
- Not stored for future use



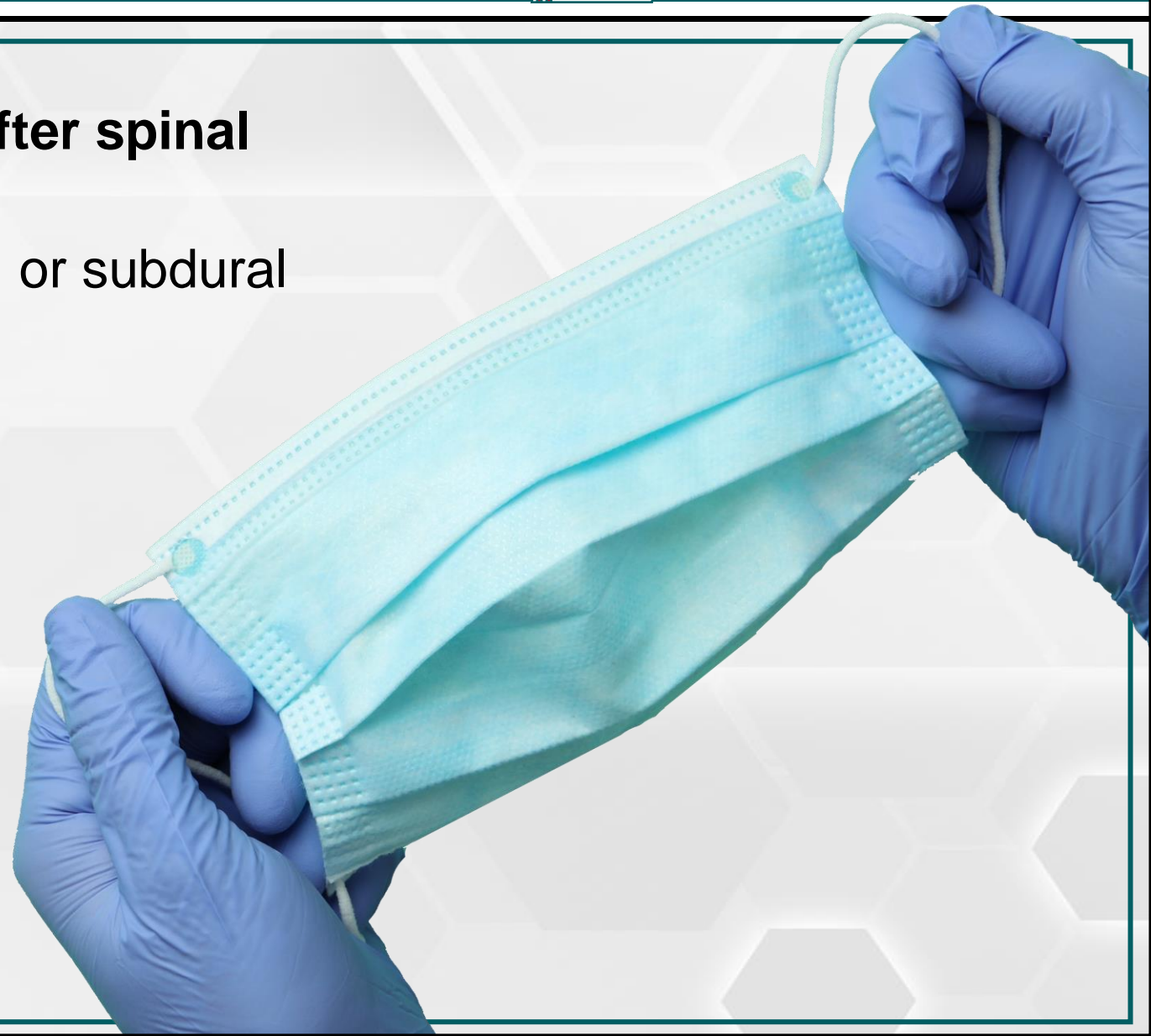
## Multi-Dose Vials

- Dedicated to one patient when possible
- Stored and prepared in a non-patient care area
  - If in a patient care area, they are dedicated to that patient
- NEW needle and NEW syringe with each access
- 28-day expiration

- Dispose immediately after use
- Sharps containers
  - Accessible
  - Puncture resistant sharps containers, leakproof bottoms and sides
  - Labeled/color-coded (red)
  - Lid
  - Maintained upright
  - Mounted
  - Basin for support

## Outbreaks of bacterial meningitis after spinal injections

- insertion of a catheter into epidural or subdural spaces



## 1990- First documented outbreak related to re-use of finger stick devices <sup>26</sup>

- CDC and FDA recommended reusable finger stick devices be dedicated to single patients

## Outbreaks continued

- 1995- Three patients with acute HBV infection were identified who had been hospitalized on the same medical ward during a 19-day period several months earlier. Findings pointed to infection prevention practices for blood glucose monitoring <sup>10</sup>
- 1996- Ohio and NYC <sup>4</sup>
- 2009-2011 Virginia outbreak <sup>5</sup>
- 2010- North Carolina





- Fingertick devices for ONE patient
  - Auto-disabling devices
  - Dispose of lancets in approved sharps container
- When possible, do not share blood glucose meters
  - If must be shared, clean and disinfect after each use
  - Healthcare use monitors only
  - Only if the Manufacturer has instructions for re-use
  - HIV, Hep C, and Hep B kill claims
- One needle, One syringe, One time
- Aseptic preparation, clean storage



# Common Gaps in Medication Administration Areas and Medication Disposals



- Single dose vials used as multi-dose
- Multi-dose vials in patient care areas
- Multi-dose vials not dated
- Clean/dirty not separated
- Splash zone
- Storage of supplies

# Common Gaps in Medication Administration Areas and Medication Disposals

- Single dose vials used as multi-dose
- Multi-dose vials in patient care areas
- Multi-dose vials not dated
- Clean/dirty not separated
- Splash zone
- Storage of supplies

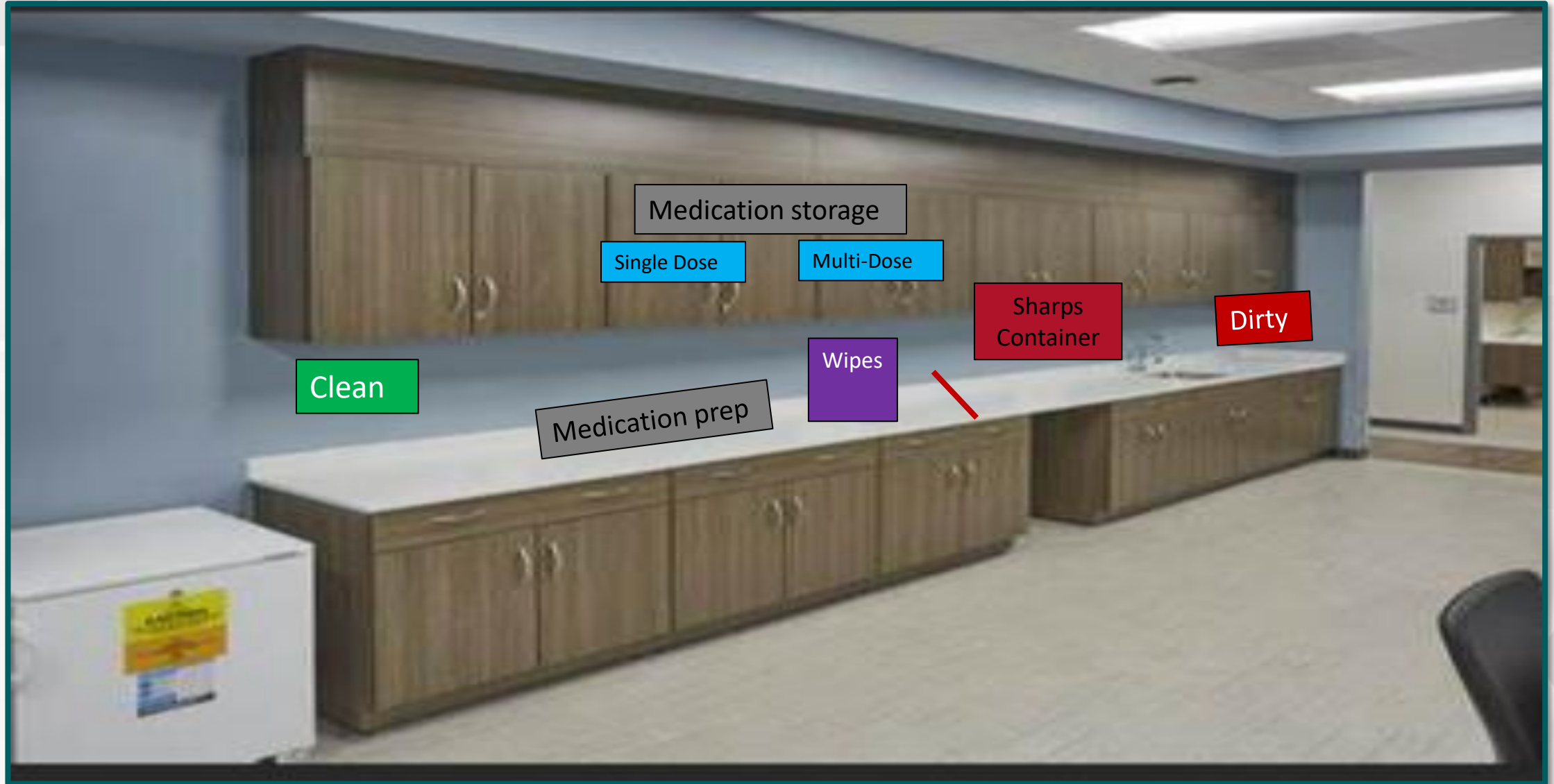
**MULTI-DOSE VIAL**  
Expires \_\_\_\_\_  
Initials \_\_\_\_\_

### Multi-Dose Vial 28-Day Expiration Calculator

DATE OPENED 2015 / 2016 **STOP** EXPIRATION DATE

December 1	December 29	January 1	January 29
December 2	December 30	January 2	January 30
December 3	December 31	January 3	January 31
December 4	January 1	January 4	February 1
December 5	January 2	January 5	February 2
December 6	January 3	January 6	February 3
December 7	January 4	January 7	February 4
December 8	January 5	January 8	February 5
December 9	January 6	January 9	February 6
December 10	January 7	January 10	February 7
December 11	January 8	January 11	February 8
December 12	January 9	January 12	February 9
December 13	January 10	January 13	February 10
December 14	January 11	January 14	February 11
December 15	January 12	January 15	February 12
December 16	January 13	January 16	February 13
December 17	January 14	January 17	February 14
December 18	January 15	January 18	February 15
December 19	January 16	January 19	February 16
December 20	January 17	January 20	February 17
December 21	January 18	January 21	February 18
December 22	January 19	January 22	February 19
December 23	January 20	January 23	February 20
December 24	January 21	January 24	February 21
December 25	January 22	January 25	February 22
December 26	January 23	January 26	February 23
December 27	January 24	January 27	February 24
December 28	January 25	January 28	February 25
December 29	January 26	January 29	February 26
December 30	January 27	January 30	February 27
December 31	January 28	January 31	February 28

Website: GoHCL.com • Email: hcl@GoHCL.com • Call Free: 1.800.848.1633 • Fax Free: 1.800.447.2923







## Storage

- Meds secured
- Sharps secured
- Syringes secured
- Clean area
- No outdates
- Multi-dose vial storage

## Preparation

- Aseptic technique
- Clean area
- Safety devices
- Single dose for one patient
- New needle new syringe

## Disposal

- Puncture resistant
- Less than  $\frac{3}{4}$  full
- Easily accessible
- Stable

## Point of Care Testing

- Glucometer for hospital use
- Wiped between patients
- Single-use lancets

# Injection Safety Checklist

<https://www.cdc.gov/injectionsafety/PDF/Safe-Injection-Checklist-P.pdf><sup>18</sup>

## INJECTION SAFETY CHECKLIST

The following Injection Safety checklist items are a subset of items that can be found in the *CDC Infection Prevention Checklist for Outpatient Settings: Minimum Expectations for Safe Care*.

The checklist, which is appropriate for both inpatient and outpatient settings, should be used to systematically assess adherence of healthcare providers to safe injection practices. Assessment of adherence should be conducted by direct observation of healthcare personnel during the performance of their duties.

Injection Safety	Practice Performed?	If answer is No, document plan for remediation
Proper hand hygiene, using alcohol-based hand rub or soap and water, is performed prior to preparing and administering medications.	Yes No	
Injections are prepared using aseptic technique in a clean area free from contamination or contact with blood, body fluids, or contaminated equipment.	Yes No	
Needles and syringes are used for only one patient (this includes manufactured prefilled syringes and cartridge devices such as insulin pens).	Yes No	
The rubber septum on a medication vial is disinfected with alcohol prior to piercing.	Yes No	
Medication vials are entered with a new needle and a new syringe, even when obtaining additional doses for the same patient.	Yes No	
Single-dose or single-use medication vials, ampules, and bags or bottles of intravenous solution are used for only one patient.	Yes No	
Medication administration tubing and connectors are used for only one patient.	Yes No	
Multi-dose vials are dated by healthcare when they are first opened and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial. <i>Note: This is different from the expiration date printed on the vial.</i>	Yes No	
Multi-dose vials are dedicated to individual patients whenever possible.	Yes No	
Multi-dose vials to be used for more than one patient are kept in a centralized medication area and do not enter the immediate patient treatment area (e.g., operating room, patient room/cubicle). <i>Note: If multi-dose vials enter the immediate patient treatment area, they should be dedicated for single-patient use and discarded immediately after use.</i>	Yes No	

The *One & Only Campaign* is a public health effort to eliminate unsafe medical injections. To learn more about safe injection practices, please visit [www.cdc.gov/injectionsafety/1anonly.html](http://www.cdc.gov/injectionsafety/1anonly.html).





- Reduced quality of care given by impaired HCP
- Failure to receive essential medications
- Falsification of patient records which could lead to additional/wrong medication administered to the patient
- Exposure to infectious agents



Prevent



Supervise



Investigate



Evaluate\*\*\*

## Infection of the patient OR Infection of the employee

### Determine Risk

- BBP status of healthcare provider
- Risk of disease transmission
- Risk of contaminated syringe
  - Bloodstream infections
  - Atypical HAIs

### Contact Tracing

- Determine criteria for exposure
  - Contact with patient
  - Contact with meds/supplies
  - Contact time frame

## Patient Notification and follow-up

[Introduction to the Patient Notification Toolkit | Injection Safety | CDC](#)

# Safe Injection Recommendations <sup>7</sup>



Recommendation	Category
Use aseptic technique to avoid contamination of sterile injection equipment	1A
Do not administer medications from a syringe to multiple patients, even if the needle or cannula on the syringe is changed. Needles, cannula and syringes are sterile, single-use items; they should not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient	1A
Use fluid infusion and administration sets (i.e., intravenous bags, tubing and connectors) for one patient only and dispose appropriately after use. Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set	1B
Use single-dose vials for parenteral medications whenever possible	1A
Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use	1A
Do not keep multidose vials in the immediate patient treatment area and store in accordance with the manufacturer's recommendations; discard if sterility is compromised or questionable	1A
Do not use bags or bottles of intravenous solution as a common source of supply for multiple patients	1B
Infection control practices for special lumbar puncture procedures Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space (i.e., during myelograms, lumbar puncture and spinal or epidural anesthesia)	1B

<https://www.cdc.gov/infection-control/guidelines/isolation/index.html/Isolation2007.pdf>

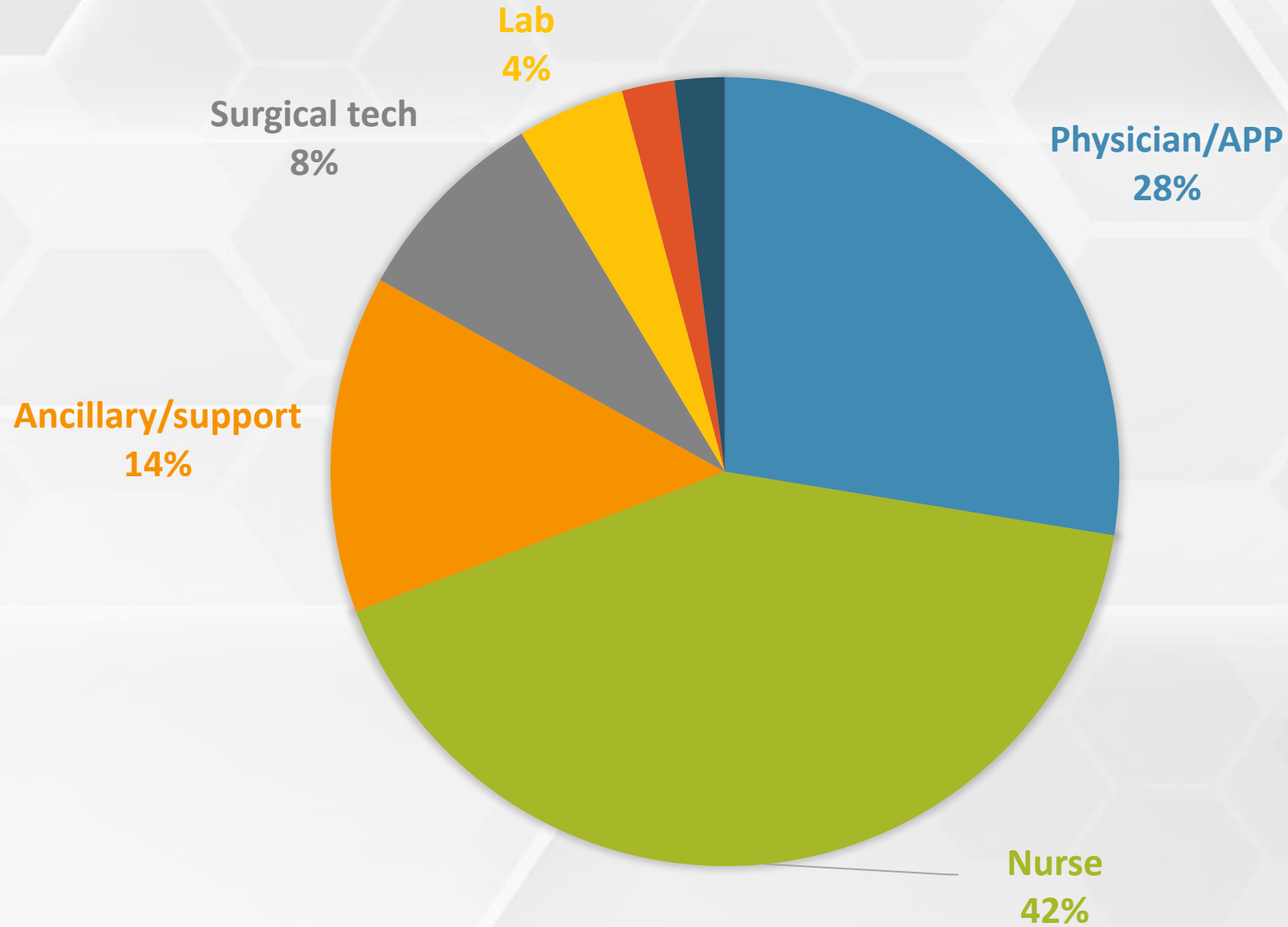
# Protect the Healthcare Worker



- Penetration from a sharp device that may result in exposure to blood or other potentially infectious material
- Loss of work and personnel time
- Cost of testing and post-exposure treatment
- Stress for workers



# 2022 Sharps Injury Data <sup>23</sup>





## Overall Injuries have declined since the 1990s

- Increased focus on the use of sharps injury prevention devices.
- Replacement of disposable syringes and butterflies with safer devices

## No decrease in other injuries

- Sutures and scalpel blades
- Linen workers, EVS, Waste haulers
  - 25% of all sharps injuries

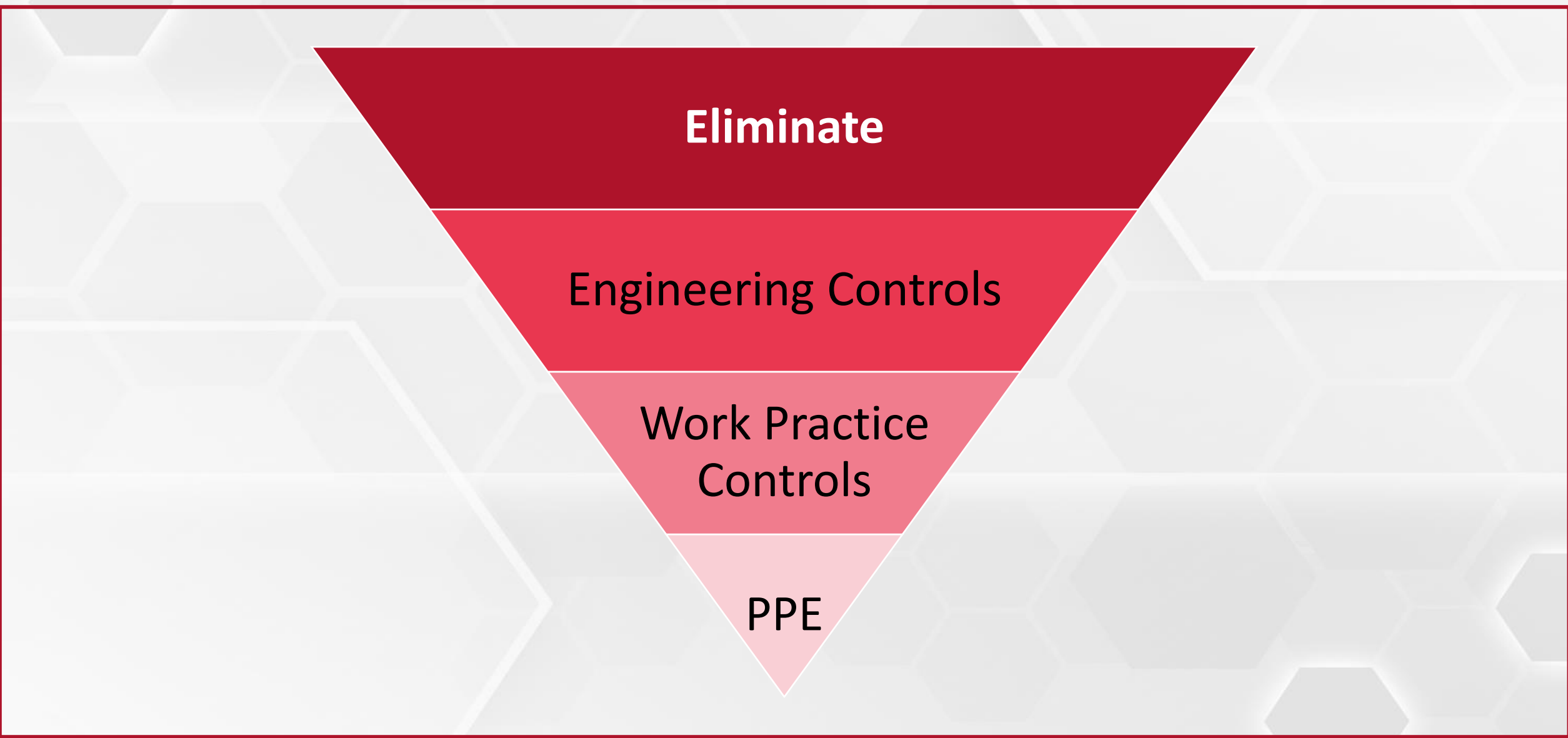
**Half go unreported**

Table 1. Infections Transmitted via Sharps Injuries during Patient Care (PC) and/or Laboratory/Autopsy (L/A)

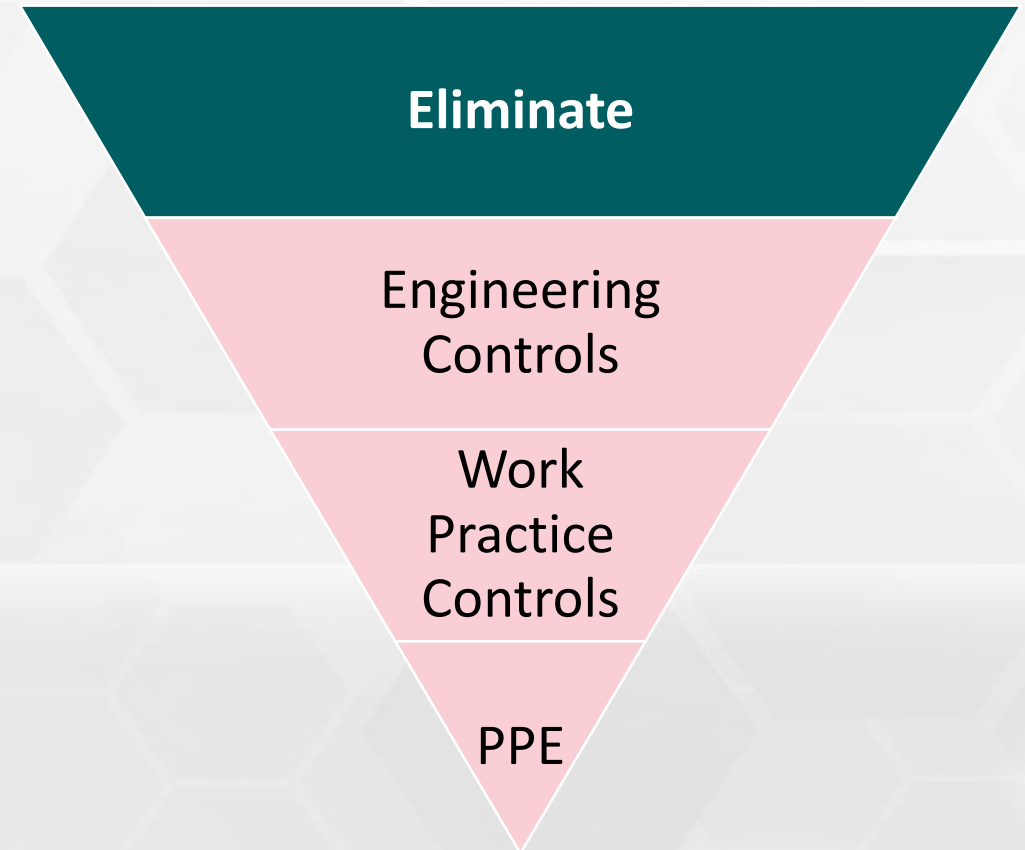
Infection	PC	L/A	Infection	PC	L/A
Blastomycosis		✓	Leptospirosis		✓
Cryptococcosis		✓	Malaria	✓	
Diphtheria		✓	M. tuberculosis	✓	✓
Ebola		✓	Rocky Mountain		✓
Gonorrhea		✓	Spotted Fever		
Hepatitis B	✓	✓	Scrub typhus		✓
Hepatitis C	✓	✓	Strep Pyogenes		✓
HIV	✓	✓	Syphilis		✓
Herpes	✓				

References 2-5, 14-16

- Must have an exposure control plan
- Document annual consideration and implementation of appropriate and available safer medical devices
- Frontline non-managerial employees are included in:
  - Device identification
  - Evaluation
  - Selection

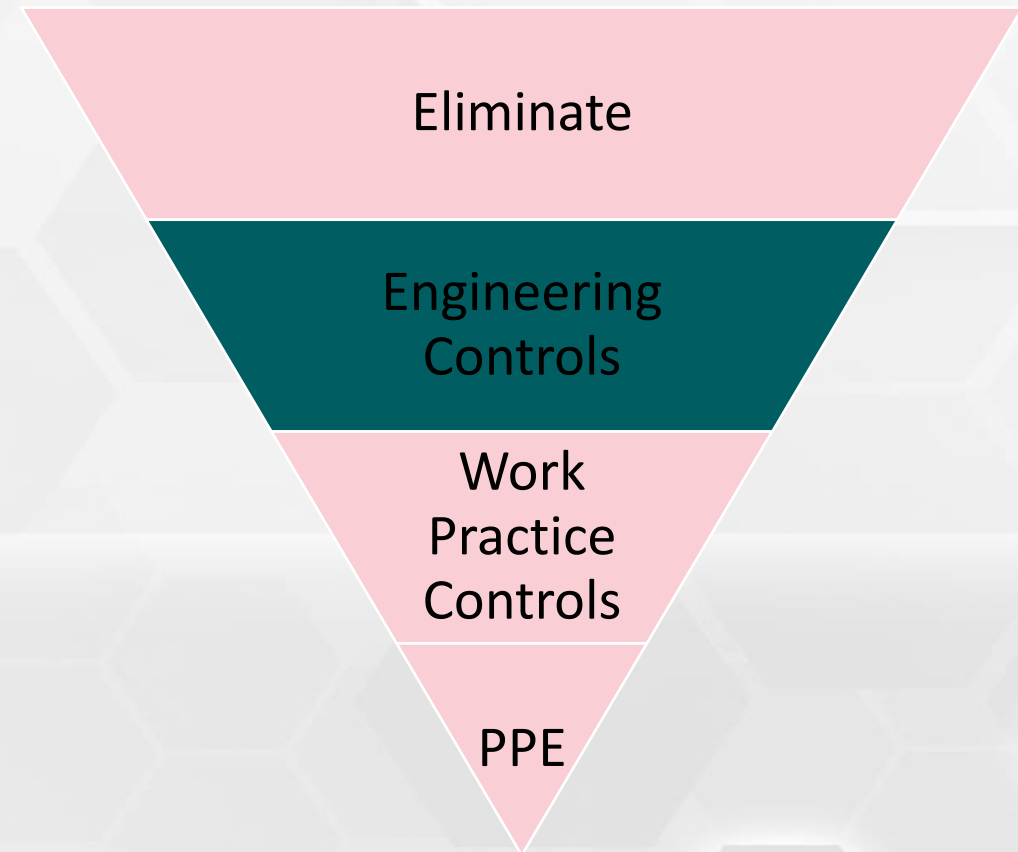


- Needless IV systems
- Alternative medication delivery
- Specimen collection



## If sharps must be used, use safety features:

- Be a part of the device
- Simple operation
- Reliable and automatic
- Cost
- Don't compromise patient care













# Work Practice Controls <sup>1</sup>

- Neutral Zone
- Hand- off
- Scoop technique
- Use of instruments

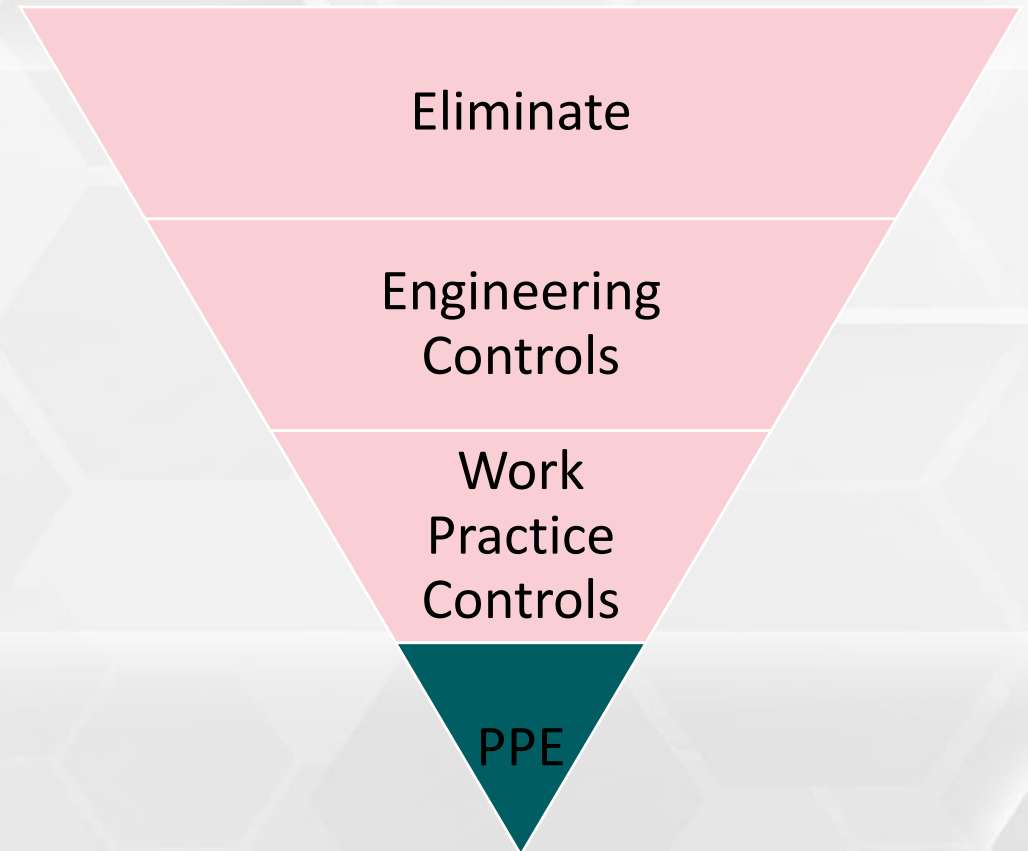


## Double Gloving

- Reduce the risk of contamination

## Eye Protection

- Personal glasses can be used if they have solid side shields
- Must be worn correctly



## Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program



A workbook designed for:



Infection Control & Occupational Health Personnel •  
Healthcare Administrators •  
Sharps Injury Prevention Committees •

- Multidisciplinary team
- Prioritize devices
- Gather information
- Set criteria for product
- Research available options with a multidisciplinary team
- **Get samples to trial \***
- **Device Evaluation form \***
- **Evaluation plan \***
- **Analyze results \***
- Implement chosen product
- Post-implementation monitoring



# Protect the Community



This Photo by Unknown Author is licensed under [CC BY-SA-NC](https://creativecommons.org/licenses/by-sa/4.0/)



## Waste management

### Linen

- Up to 25% of exposures from EVS, linen and waste management <sup>21</sup>

### Issues with exposure from linen and waste

- Unknown source
- Related to inadequate disposal methods

## What to do:

- Regular meetings with linen/waste teams
- Track incidents to identify trends
  - Inaccessible sharps containers
  - work practice controls
- Educate staff

## 3 Parts of Injection Safety

Protect the  
Patient

Protect the  
Healthcare  
Worker

Protect the  
Community

# Program Assessment Tool





PROJECT  
**FIRST LINE**



UNMC  
Nebraska  
Medicine

**Join us next month for our  
webinar on CAUTI  
prevention programs  
*April 18, 2024***





PROJECT  
**FIRST LINE**



UNMC  
Nebraska  
Medicine

# Questions

1	American college of Surgeons. (2016) Revised statement on sharps safety <a href="https://www.facs.org/about-ac/s/statements/international-safety-center-releases-consensus-sharps-safety/">https://www.facs.org/about-ac/s/statements/international-safety-center-releases-consensus-sharps-safety/</a>
2	Bell, DM. Occupational risk of human immunodeficiency virus infection in healthcare workers: an overview. Am J Med 1997;102(suppl 5B):9-15. ),
3	Berguer R, Heller P. Preventing sharps injuries in the operating room. Journal of the American College of Surgeons. September 2004;199(3):462-467.
4	1. Centers for Disease Control and Prevention (CDC. (1997). Nosocomial hepatitis B virus infection associated with reusable fingerstick blood sampling devices--Ohio and New York City, 1996. MMWR. Morbidity and mortality weekly report, 46(10), 217-221.
5	Centers for Disease Control and Prevention (CDC. (2012). Multiple outbreaks of hepatitis B virus infection related to assisted monitoring of blood glucose among residents of assisted living facilities--Virginia, 2009-2011. MMWR. Morbidity and mortality weekly report, 61(19), 339-343
6	Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. (2019). Sharps Injuries: Prevention in Healthcare Settings. <a href="https://www.cdc.gov/nora/councils/hcsa/stopsticks/sharpsinjuries.html">https://www.cdc.gov/nora/councils/hcsa/stopsticks/sharpsinjuries.html</a>
7	Centers for Disease Control and Prevention. (2007). Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. <a href="https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html/Isolation2007.pdf">https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html/Isolation2007.pdf</a>
8	Centers for Disease Control and Prevention. (2008). Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program. <a href="https://www.cdc.gov/sharpsafety/pdf/sharpsworkbook_2008.pdf">https://www.cdc.gov/sharpsafety/pdf/sharpsworkbook_2008.pdf</a>
9	Centers for Disease Control and Prevention. (2011). Injection Safety: Blood Glucose Monitoring and Insulin Administration. <a href="https://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html">https://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html</a>
10	Centers for Disease Control and Prevention. (2011). Spinal Injections: Meningitis Outbreaks. <a href="https://www.cdc.gov/injectionsafety/spinalinjection-meningitis.html">https://www.cdc.gov/injectionsafety/spinalinjection-meningitis.html</a>



<b>11</b>	Centers for Disease Control and Prevention. (2011). Standard Precautions. <a href="https://www.cdc.gov/injectionsafety/ip07_standardprecaution.html">https://www.cdc.gov/injectionsafety/ip07_standardprecaution.html</a>
<b>12</b>	Centers for Disease Control and Prevention. (2012). Infection Prevention during Blood Glucose Monitoring and Insulin Administration. Retrieved March 9, 2012, from <a href="http://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html">http://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html</a>
<b>13</b>	Centers for Disease Control and Prevention. (2015). Sharps Safety. <a href="https://www.cdc.gov/sharpssafety/">https://www.cdc.gov/sharpssafety/</a>
<b>14</b>	Centers for Disease Control and Prevention. (2019). One & Only Campaign: Safe Injection Practices. <a href="https://www.cdc.gov/injectionsafety/one-and-only.html">https://www.cdc.gov/injectionsafety/one-and-only.html</a>
<b>15</b>	Centers for Disease Control and Prevention. (2020). Healthcare-Associated Outbreaks. <a href="https://www.cdc.gov/hepatitis/outbreaks/Healthcare-associatedOutbreaks.htm">https://www.cdc.gov/hepatitis/outbreaks/Healthcare-associatedOutbreaks.htm</a>
<b>16</b>	Centers for Disease Control and Prevention. (2023). Healthcare-Associated Hepatitis Outbreaks. Centers for Disease Control and Prevention. <a href="https://www.cdc.gov/hepatitis/outbreaks/healthcarehepoutbreaktable.htm#:~:text=Hepatitis%20C%20%2843%20total%20outbreaks%20including%20two%20of,and%203%2C134%20persons%20notified%20for%20screening%20More%20it%20ems">https://www.cdc.gov/hepatitis/outbreaks/healthcarehepoutbreaktable.htm#:~:text=Hepatitis%20C%20%2843%20total%20outbreaks%20including%20two%20of,and%203%2C134%20persons%20notified%20for%20screening%20More%20it%20ems</a>
<b>17</b>	Centers for Disease Control and Prevention. (n.d.). Injection Safety Provider Training Toolkit: PowerPoint Presentation. <a href="https://www.cdc.gov/injectionsafety/PDF/ProviderToolkitPowerPoint_508.pdf">https://www.cdc.gov/injectionsafety/PDF/ProviderToolkitPowerPoint_508.pdf</a>
<b>18</b>	Centers for Disease Control and Prevention. (n.d.). Safe Injection Practices to Prevent Healthcare-Associated Infections. <a href="https://www.cdc.gov/injectionsafety/PDF/Safe-Injection-Checklist-P.pdf">https://www.cdc.gov/injectionsafety/PDF/Safe-Injection-Checklist-P.pdf</a>
<b>19</b>	Council of State and Territorial Epidemiologists. (2019). Drug Diversion Toolkit. <a href="https://cdn.ymaws.com/www.cste.org/resource/resmgr/pdfs/pdfs2/Drug_Diversion_Toolkit_LiveL.pdf">https://cdn.ymaws.com/www.cste.org/resource/resmgr/pdfs/pdfs2/Drug_Diversion_Toolkit_LiveL.pdf</a>
<b>20</b>	Dean Health System. (2011). Important Patient Safety Notification. Retrieved March 9, 2012, from <a href="http://www.deancare.com/about-dean/news/2011/important-patient-safety-notification/">http://www.deancare.com/about-dean/news/2011/important-patient-safety-notification/</a>

<b>21</b>	Infection Control Today. (2011). Double Gloving: Myth Versus Fact. <a href="https://www.infectioncontrolday.com/view/double-gloving-myth-versus-fact">https://www.infectioncontrolday.com/view/double-gloving-myth-versus-fact</a>
<b>22</b>	International Safety Center. (2020). EPINet 2020 Blood Occupational Exposure Data for Needlesticks, Sharps Injuries, and Blood and Body Fluid Exposures. <a href="https://internationalsafetycenter.org/exposure-reports/">https://internationalsafetycenter.org/exposure-reports/</a>
<b>23</b>	International Safety Center. (2023). EPINet 2022 Needlesticks, Sharps Injuries Summary Data. <a href="https://internationalsafetycenter.org/wp-content/uploads/2023/06/2022-EPINet-Needlesticks-Sharps-Injuries-Summary-Data.pdf">https://internationalsafetycenter.org/wp-content/uploads/2023/06/2022-EPINet-Needlesticks-Sharps-Injuries-Summary-Data.pdf</a>
<b>24</b>	Macedo de Oliveira, A., White, K. L., Leschinsky, D. P., Beecham, B. D., Vogt, T. M., Moolenaar, R. L., Perz, J. F., & Safranek, T. J. (2005). An outbreak of hepatitis C virus infections among outpatients at a hematology/oncology clinic. <i>Annals of internal medicine</i> , 142(11), 898–902. <a href="https://doi.org/10.7326/0003-4819-142-11-200506070-00007">https://doi.org/10.7326/0003-4819-142-11-200506070-00007</a>
<b>25</b>	Missouri Department of Health and Senior Services (2016). Drug diversion in hospitals: A guide to preventing and investigating diversion issues. Missouri Bureau of Narcotics & Dangerous Drugs. <a href="https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fhealth.mo.gov%2Fsafety%2Fbndd%2Fdoc%2Fdrugdiversion.doc&amp;wdOrigin=BROWSELINK">https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fhealth.mo.gov%2Fsafety%2Fbndd%2Fdoc%2Fdrugdiversion.doc&amp;wdOrigin=BROWSELINK</a>
<b>26</b>	National Center for Biotechnology Information. (2013). Community-Acquired Hepatitis C Virus Infections in Human Immunodeficiency Virus-Negative Patients. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3530571/#pone.0050012-Polish1">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3530571/#pone.0050012-Polish1</a>
<b>27</b>	Occupational Safety and Health Administration. (n.d.). Bloodborne Pathogens - 1910.1030. <a href="https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030">https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030</a>
<b>28</b>	Puro V, Petrosillo N, Ippolito G, Italian Study Group on Occupational Risk of HIV and Other Bloodborne Infections. Risk of hepatitis C seroconversion after occupational exposure in health care workers. <i>Am J Infect Control</i> 1995;23:273-7.),
<b>29</b>	Quale, J. M., Landman, D., Wallace, B., Atwood, E., Ditore, V., Fruchter, G. (1998). Deja vu: Nosocomial hepatitis B virus transmission and fingerstick monitoring. <i>The American Journal of Medicine</i> , 105(4), 296-301. <a href="https://doi.org/10.1016/S0002-9343(98)00256-3">https://doi.org/10.1016/S0002-9343(98)00256-3</a>
<b>30</b>	Schaefer, M. K., Perkins, K. M., & Perz, J. F. (2020). Patient Notification Events Due to Syringe Reuse and Mishandling of Injectable Medications by Health Care Personnel-United States, 2012-2018: Summary and Recommended Actions for Prevention and Response. <i>Mayo Clinic proceedings</i> , 95(2), 243–254. <a href="https://doi.org/10.1016/j.mayocp.2019.08.024">https://doi.org/10.1016/j.mayocp.2019.08.024</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7864048/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7864048/</a>

<b>31</b>	Textile Rental Services Association of America. (2015). Managing Sharps Injuries and Bloodborne Pathogen Exposures. <a href="https://www.trsa.org/wp-content/uploads/2015/10/sharps-injuries-bloodborne.pdf">https://www.trsa.org/wp-content/uploads/2015/10/sharps-injuries-bloodborne.pdf</a>
<b>32</b>	Textile Rental Services Association of America. (2015). Managing Sharps Injuries and Bloodborne Pathogen Exposures. <a href="https://www.trsa.org/wp-content/uploads/2015/10/sharps-injuries-bloodborne.pdf">https://www.trsa.org/wp-content/uploads/2015/10/sharps-injuries-bloodborne.pdf</a>
<b>33</b>	The Joint Commission. (2021, May 5). JC Online May 5, 2021. <a href="https://www.jointcommission.org/-/media/tjc/newsletters/jc-online-may-5-2021.pdf">https://www.jointcommission.org/-/media/tjc/newsletters/jc-online-may-5-2021.pdf</a>
<b>34</b>	Tokars JM, Bell DM, Culver DH, et al. Percutaneous injuries during surgical procedures. Journal of the American Medical Association. 1992;267:2899-2904.)
<b>35</b>	Twomey C. L. (2003). Double gloving: a risk reduction strategy. Joint Commission journal on quality and safety, 29(7), 369–378. <a href="https://doi.org/10.1016/s1549-3741(03)29045-6">https://doi.org/10.1016/s1549-3741(03)29045-6</a>