Injection Safety

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Objectives

• Demonstrate the importance of safe injection practices

• Define what constitutes a safe injection

• Single-Dose vs. Multi-Dose Vials

• Insulin pens and point of care testing

• Identify the health education One & Only Campaign and access resources and information on injection safety
The One & Only Campaign

About the Campaign
The One & Only Campaign is a public health campaign led by the Centers for Disease Control and Prevention (CDC) and the Safe Injection Practices Coalition (SIPC) to raise awareness among patients and healthcare providers about safe injection practices. The campaign aims to eradicate outbreaks resulting from unsafe injection practices.

Enhancing the Campaign
To better protect patients from unsafe injection practices, the CDC Foundation partnered with Eli Lilly and Company to support and expand CDC’s Safe Injection Practices Coalition for the next three years. Read more about this exciting expansion on the CDC Foundation Blog.
Why Unsafe Injection Practices are Unacceptable

• Injection safety is part of Standard Precautions

• Healthcare practices should not provide a pathway for transmission of life-threatening infections

• Patient protections regarding injection safety should be on par with healthcare worker safety
Fast Facts: Unsafe Injection Practices

• Between 2001-2011, more than 150,000 patients in the United States have been advised to get tested for bloodborne pathogens (BBP).

• The documented number of patients affected by unsafe injections likely represents only the tip of the iceberg.

• Consequences include: infection transmission to patients, notification of thousands of patients of possible exposure to bloodborne pathogens, referral of providers to licensing boards for disciplinary action, and malpractice suits filed by patients.
U.S. Outbreaks Associated with Unsafe Injection Practices, 2001-2012
Fast Facts: Unsafe Injection Practices

• The following practices are dangerous and have resulted in disease transmission:

• Using the same syringe to administer medication to more than one patient, even if the needle was changed or the injection was administered through an intervening length of intravenous (IV) tubing.

• Accessing medication with a syringe that has already been used to administer medication to a patient, then reusing the contaminated medication for another patient.

• Using medications packaged as single-dose for more than one patient.

• Failing to use aseptic technique when preparing and administering injections.
Examples of Unsafe Injection Practices in Colorado

11 hepatitis-C cases now linked to Denver's Rose Medical Center

By The Denver Post

Colorado Dentist Reused Needles, Putting Thousands at Risk

Patients of the oral surgeon are urged to get tested for HIV, hepatitis infection.

Children told to be tested for HIV after flu vaccines reused
Evelyn McKnight’s Story

Dr. Evelyn McKnight, was battling breast cancer and was infected with hepatitis C during treatment because of syringe reuse to access saline flush solution.

A total of 99 cancer patients were infected in what was one of the largest outbreaks of hepatitis C in American healthcare history.

Evelyn co-founded HONOReform, a foundation dedicated to improving America’s injection safety practices, and was the catalyst of the formation of the Safe Injection Practices Coalition.
One needle, one syringe, only one time? A survey of physician and nurse knowledge, attitudes, and practices around injection safety

- A panel of physicians (n=370) and nurses (n=320)

- 12.4% of physicians and 3% of nurses indicated reuse of syringes for >1 patient occurs in their workplace

- 5% of physicians indicated this practice usually or always occurs

- Higher proportion of oncologists reported unsafe practices occurring in their workplace

One needle, one syringe, only one time? A survey of physician and nurse knowledge, attitudes, and practices around injection safety
Kossover-Smith, Rachel A. et al. 2017
American Journal of Infection Control, Volume 45, Issue 9, 1018 - 1023
Medication Preparation
“One Needle, One Syringe, Only One Time”

- Always use a new sterile syringe and needle to draw up medications

- Proper hand hygiene should be performed before handling medications

- Parenteral medications and injection equipment should be accessed in an aseptic manner
Single-Dose Vials

• A single-dose vial (SDV) is approved for used on a SINGLE person for a SINGLE procedure or injection

• SDV’s typically lack an antimicrobial preservative. Do not save left over medication from these vials. Harmful bacteria can grow and infect a patient.

• Discard after every use!
Multiple-Dose Vials

• A multiple-dose vial (MDV) is recognized by it’s FDA-approved label.

• Although MDV’s can be used for more than one patient, ideally even MDV’s are used for only one patient.

• MDV’s typically contain an antimicrobial preservative to help limit the growth of bacteria. Preservatives have no affect on bloodborne viruses

• Discard MDV’s when the beyond-use date has been reached, when doses are drawn in a patient treatment area, or any time the sterility of the vial is in question!
Las Vegas, Nevada Outbreak, 2008

- Cluster of three acute HCV infections identified in Las Vegas

- All three patients underwent procedures at the same endoscopy clinic during the incubation period

- Two breaches contributed to transmission:
  - Re-entering vials with used syringes
  - Using contents from these single-dose vials on more than one patient
Las Vegas, Nevada Outbreak, 2008

Adapted from MMWR (May 16, 2008 / 57(19):513-517)
Medications Prepared in a Clean Dedicated Area

- Medications should be drawn up in a designated “clean” medication preparation area
- In general, any item that could have come in contact with blood or body fluids should be kept separate
- Use single-use vials whenever possible
- Use a new sterile needle and syringe for each injection, even if for the same patient
- A needle, or needless device should never be inserted into a vial septum for multiple uses
- *When in doubt throw it out!*
Dangerous Misperceptions

Examples of dangerous misperceptions about safe injection practices

Myth

Single-dose vials with large volumes that appear to contain multiple doses can be used for more than one patient.

Truth

Single-dose vials should not be used for more than one patient regardless of the vial size.

Size doesn’t matter!!
Insulin Pen Safety

- Designed to be used multiple times for a single patient using a new needle with each injection.

- Should never be used for more than one patient.

- Regurgitation of blood into the insulin cartridge can occur after injection, creating a risk of pathogen transmission if the pen is used for more than one person, bioburden was present 58% of the time.
Insulin Pen Reuse Incidents

- Reuse of insulin pens for multiple patients, reportedly after changing needles has resulted in large notifications
  - NY hospital, 2008: 185 patients notified
  - TX hospital, 2009: 2,114 patients notified
  - WI hospital and outpatient clinic, 2011: 2,401 patients notified

Infection Prevention during Blood Glucose Monitoring and Insulin Administration (2012)
Insulin Pen Safety: 60 Second Check

1. The pen is used for only one resident, even if the needle is changed between use. *Insulin pens should never be used for more than one person.*

2. Resident's full name is on the barrel of the insulin pen, not just the cap.

3. Pens with missing, detached, excessively soiled or damaged labels are immediately destroyed or returned to the pharmacy for disposal.

4. Medication is not expired.

5. Verify that you are delivering the right pen, to the right resident, at the right time.

6. Medications should not be stored with disinfectants, insecticides, bleaches, household cleaning solutions, poisons, body fluids or food.

   *Medications should be stored in separate compartmentalized packages, containers or shelves to prevent intermingling of medications.*
Assisted Blood Glucose Monitoring

• Outbreaks of HBV associated with glucose monitoring have been identified

• Particularly in long-term care settings, such as nursing homes and assisted living facilities where residents often require assistance with monitoring.

• Last 10 years, there have been at least 15 outbreaks of HBV associated ABGM.
**Assisted Monitoring of Blood Glucose (AMBG)**

AMBG is performed for a patient with diabetes by a healthcare provider or other caregiver.

In many instances, the equipment and processes that are appropriate for an individual performing SMBG are not appropriate in an AMBG setting.

Most blood glucose monitoring equipment has been designed for self-use, focused on: device design, comfort, convenience, and portability not the ability to properly decontaminate.
**Blood Glucose Meters**

Whenever possible, blood glucose meters should be assigned to an individual person and not be shared.

If shared, the device should be cleaned and disinfected after every use.

Follow manufacturer’s instructions for use, if the manufacturer does not specify how to clean and disinfect the device, then it should not be shared.
Blood Glucose Meter Safety

60 Second Check

1. If possible, designate blood glucose meters to an individual person.

2. If shared, the device should be cleaned and disinfected after every use per manufacturer’s instructions.

3. If the manufacturer does not specify how the device should be cleaned and disinfected between patients, then it should not be shared.

4. Gloves should never be shared between patients; always wear a new pair of clean gloves to perform a blood glucose test. Dispose of used gloves and clean your hands prior to moving to another task.

5. Blood glucose meters should be stored in a clean area, away from used supplies and equipment.
**Fingerstick Lancing Device Safety**

Auto-disabling single-use fingerstick devices are intended for one-time use.

Re-usable lancing devices are NOT intended to be used on more than one person, even if disinfected and the lancet is changed.

Treat fingerstick devices as personal items.
Examples of Unsafe Injection Practices
What can we do?
A Call to Action

- Injection practices should not provide a pathway for transmission of life-threatening infections
- Injection safety is every provider’s responsibility
- Safe injection practices should be discussed and review frequently among colleagues
How do we impact a positive change?

Positive Change For Resident Safety

- Educate HCW’s and QMAP’s and ensure in long term training efforts
- Develop Tools and other resources to support sustained change
- Develop Partnerships with a variety of organizations
- Develop Focused Efforts with achievable goals
- Promote Evidenced Based Prevention such as vaccination for diabetics
Additional Resources

http://www.oneandonlycampaign.org/

http://www.oneandonlycampaign.org/content/risks-healthcare-associated-infections-drug-diversion
References

Blood Glucose Monitoring

http://www.cdc.gov/injectionsafety/blood-glucosemonitoring.html

Bloodborne Pathogen Standards


Infection Prevention in Outpatient Settings


Mayo Proceedings

Questions???