

Safe Injection Practices Train-the-Trainer Toolkit



Healthcare-Associated Infections Program

Center for Healthcare Quality

California Department of Public Health

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Introduction

Despite the fact that acute hepatitis is often the result of traditional risk factors such as illegal drug use and risky sexual behavior, there are many new cases that occur each year from healthcare. From 2008-2017 there were [61 outbreaks](#)¹ of acute hepatitis in the United States reported to the Centers for Disease Control and Prevention (CDC). Of these 61 hepatitis outbreaks, nine occurred in California. These California outbreaks resulted in 44 confirmed cases of hepatitis B or C and almost 4,300 people were advised to get tested for bloodborne pathogens.

Healthcare-associated hepatitis in California has been reported in a variety of settings including in skilled nursing facilities, assisted living facilities, pain management clinics, outpatient dialysis clinics and outpatient alternative medicine practices. Some of the common ways of exposure include unsafe injection practices, podiatry in long-term care facilities, drug diversion and transfusions.

In 2014, the Healthcare-Associated Infections (HAI) Program at the California Department of Public Health (CDPH) received funding from CDC to form a state partnership with the *One & Only Campaign*. The goal of the CDC's *One & Only Campaign* is to eliminate infections from unsafe injection practices. Although most healthcare workers have been trained on safe injection practices at some point, there continue to be new cases of healthcare-associated hepatitis due to staff being poorly trained, not having frequent trainings, or staff having misconceptions about definitions of safe injection practices.

This Train-the-Trainer toolkit can be used to train or re-train healthcare workers on safe injection practices and to promote patient safety. In addition to the presentation and educational script that is provided, this packet also includes suggestions on how to teach a class, educational activities, and links to additional information on injection safety and healthcare-associated hepatitis..

¹ Centers for Disease Control and Prevention. (2018). Healthcare-associated hepatitis B and C outbreaks (≥ 2 cases) reported to the Centers for Disease Control and Prevention in 2008-2017. Retrieved from: <http://www.cdc.gov/hepatitis/Outbreaks/PDFs/HealthcareInvestigationTable.pdf>

Table of Contents

Class Preparation	4
Pre-Class Assessment	6
Slide Set / Presentation	7
Educational Script	17
Post-Class Assessment and Evaluation	25
Pre/Post-Class Assessment Answers	27
Resources	28

Class Preparation

Materials

<input type="checkbox"/> Projector
<input type="checkbox"/> PowerPoint
<input type="checkbox"/> Injection Safety Checklist
<input type="checkbox"/> Sign-in sheet
<input type="checkbox"/> Evaluation forms

CDC has a collection of free posters, brochures and infographics you can print or order online in bulk to distribute at your class. Order your materials well in advance as shipping can take up to four weeks.

<https://wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx?ProgramID=29>

Engaging Your Audience

Adult learners have different life experiences from children and have preferred learning style. Healthcare workers in your class are more likely to retain information when:

- They are more involved in the learning process
- The lesson is relevant to their life experiences
- The expectations from the lesson are easily attainable

Presenting Skills

- Review the presentation several times before presenting in front of your target audience
- Speak slower than you think you need to
- Consider co-teaching your first presentation with a colleague
- Memorize some of the details of your slides beforehand so you are not reading directly from the screen

Dealing with Difficult Questions

Dealing with difficult questions can help you improve future presentations.

- Don't say "I don't know"
- Thank the person for asking the question

- Make sure that you understand the question
- Refer the person to resources
- Ask the person for their contact information. Follow-up with them after the class after seeking guidance from resources
- Consider adding what you learned from the questions asked to your next presentation

Reference the CDC’s Frequently Asked Questions regarding Safe Practices for Medical Injections:

https://www.cdc.gov/injectionsafety/providers/provider_fags.html

Suggested Agenda

Use the suggested agenda to plan your class. If you are short on time you can remove the assessments and activities, but be sure to cover all of the Safe Injection Practices material.

Time	Topic
00:00-00:05	Introduction and Sign-In
0:05-00:10	Pre-class assessment
00:10-00:50	Presentation/Slide set
00:50-01:00	Questions
01:00-01:20	Activities
01:20-01:30	Post-class assessment and Evaluation

Injection Safety Pre-Class Assessment

Knowledge Assessment

1. What is a safe injection?

- When the medication given to patients through an injection is not contaminated
- When an injection is administered and the healthcare worker or patient does not get a sharps injury
- When patients are not exposed to bloodborne pathogens from injections
- When healthcare workers are not exposed to bloodborne pathogens from giving injections to patients
- All of the above

2. Single-use medication vials are:

- Fine to use on multiple patients if it comes in a large enough vial
- Only to be used on one patient
- Made to be used on one patient; however, if there is leftover content one can pool the medication with other vials

3. Between injections, you must make sure:

- That you sterilize the needle with alcohol if you are going to be reusing it on another patient
- That you use a new needle and a new syringe each time you give an injection to a patient
- That the needle is switched on the syringe in between each patient

4. When you use a multi-dose vial, you must make sure that in between each patient you:

- Sterilize the needle with alcohol before going back into the vial
- Change the needle on your syringe before going back into the vial
- Use a new needle and a new syringe before going back into the vial

5. A syringe is ok to reuse as long as there is no visible blood inside.

- True
- False

Safe Injection Practices

Healthcare Associated Infections Program
Center for Health Care Quality
California Department of Public Health



Objectives

- Discuss risks due to unsafe injection practices
- List safe injection practices
- Describe how to create a safety culture
- Describe how an Injection Safety Checklist can be used when giving vaccines
- Locate resources for a Safe Injection Practices program



What are Safe Injection Practices?

A set of steps to perform injections in an optimally safe manner for patients, healthcare workers, and others



Hepatitis B and C Outbreaks Due to Unsafe Injection Practices

- 61 hepatitis outbreaks reported to CDC, 2008-2017
 - 58 (95%) occurred in non-hospital settings
- Of these, 9 were in California
 - Facility types included:
 - Skilled nursing facilities and assisted living facilities
 - Pain management and infusion clinics
 - Dialysis clinics
 - 4,298 Californians were sent notices and tested
 - 44 new cases of hepatitis B or C identified

Centers for Disease Control and Prevention. (2017). Healthcare-associated hepatitis B and C outbreaks (≥2 cases) reported to the Centers for Disease Control and Prevention in 2008-2017. Retrieved from:

<https://www.cdc.gov/hepatitis/outbreaks/pdfs/HealthcareInvestigationTable.pdf>



Causes of California Hepatitis Outbreaks

- Unsafe injection safety practices
 - Reuse of syringes on more than one patient
 - Contaminated medication vials used for more than one patient
 - Use of single-dose vials for more than one patient
- Unsafe medical care practices
 - Unsafe blood glucose monitoring practices
 - Poor environmental cleaning
 - Mix of clean equipment with dirty equipment



Other Causes of Hepatitis Outbreaks Investigated by CDC

- Not properly disinfecting equipment between patients
- Using the same finger stick device on more than one patient
- Using a single saline bag for more than one patient



Unsafe Injection Practices at an Employee Influenza Vaccination Clinic, 2015

- Employees were put at risk when a contracted nurse reused syringes at an influenza vaccination event
 - Pre-filled syringes were sent to the nurse
 - In spite of this, the nurse used multiple-dose vials and two syringes she had stored for a different event
 - During the event, she changed the needle between each person, but used the same two syringes on all 67 employees

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6449a3.htm?s_cid=mm6449a3_e



Common Reasons For Unsafe Injection Practices

- Lack of safe injection policies at healthcare facility
- Staff are poorly trained or unaware of safe injection practices
- Healthcare worker is rushed or takes a shortcut
- Healthcare worker learned safe injection practices at one time but has forgotten



Safe Injection Practices

- Steps to perform injections in an optimally safe manner
- Prevent transmission of infection from
 - Patient to healthcare worker
 - Healthcare worker to patient
 - Patient to patient



Safe Injection Practices Are Part of Standard Precautions

Standard precautions also include:

- Hand hygiene
- Personal protective equipment (examples: gloves, gowns, masks)
- Safe handling of soiled equipment or surfaces
- Respiratory hygiene and cough etiquette



Safe Injection = No Infection

Injection safety includes:

1. Safe production
 - Sterile medications from manufacturer
2. Safe preparation
 - Prepare in a clean area
3. Safe administration
 - Follow standard precautions
4. Safe disposal
 - Minimize risks to the patient and healthcare worker



The Injection Safety Checklist

- Used to assess your facility's injection safety practices
- Down and share the Injection Safety Checklist:

www.cdc.gov/injectionsafety/PDF/SIPC_Checklist.pdf

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 personnel 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
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 (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 NCP when they are first opened and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial. Note: This is different from the expiration date printed on the vial.	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 rooms/cubicles). Note: If multi-dose vials enter the immediate patient treatment area they should be dedicated for single-patient use and discarded immediately after use.	Yes No	

RESOURCES

Checklist <http://www.cdc.gov/ohrt/pdfs/injectionsafety/ohrt-sipc-checklist-07-2011.pdf>
 Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care
<http://www.cdc.gov/ohrt/pdfs/standards/standards-of-ambulatory-care-7-2011.pdf>

www.oneandonlycampaign.org



Aseptic Technique for Preparing Injected Medications

- Perform hand hygiene
- Draw up medications in a clean medication area
 - The designated medication area should not be near areas where contaminated items are placed



Needles and Syringes: One Time Use Only

- Use needles for only one patient
- Use syringes only one time
- Use manufactured prefilled syringes for only one patient



www.oneandonlycampaign.org



Always Clean the Tops of Medication Vials Before Entry

- Cleanse the septum, the rubber top of a medication vial, using friction with 70% alcohol
- Allow the alcohol to dry before inserting a needle or device into the vial

Note: Clean the tops of vials with alcohol even if they have lids or caps

- Manufacturers guarantee that medications and solutions are sterile
- They do not guarantee that the outside of the container or medication vial is sterile



Single-dose Vials: One Patient & Only Once

- Use single-dose medications for only one patient
- Read the label on medication vials carefully! Determine if single use
- Never enter a medication vial with a used syringe or needle
- If the vial says single-dose, throw it away after it has been accessed
- Do not store single-dose medications for future use
- Discard unused single-dose medications when expired



When in doubt throw it out!



Limit the Use of Multi-dose Vials

- Limit the use of multi-dose vials
 - When possible, dedicate them to a single patient
- A multi-dose vial is recognized by its FDA-approved label
- Discard multi-dose vials when the beyond-use date has been reached
- Any time the sterility of the vial is in question, throw it out!



When Multi-dose Vials ARE Used...

For multi-dose vials used for more than one patient:

- Keep in a medication area
- Never take into a patient treatment area (including patient rooms or cubicles, operating rooms)
- Date the multi-dose vial when first opened
- Discard within 28 days (unless the manufacturer recommends a different expiration period)



Vaccination Safety Tips

- Use manufactured single-dose, pre-filled syringes if possible (preferred)
- If multi-dose vials of vaccine must be used, ensure:
 - All safety precautions are taken to avoid contamination of multi-dose vials
 - Correct dose is administered
- Prepare vaccine in a clean, designated space (away from contaminated or dirty areas)
- Do not pre-draw vaccines before patients arrive at clinic

<http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf>



Special Considerations for Diabetic Patients

- Diabetic patients use needles frequently in the care and management of their disease
- Never allow reuse of insulin pens on more than one patient
 - **It is not safe to change the needle on insulin pens for use on more than one patient**
- Lancets used for blood glucose testing are designed for one patient only
 - Using lancets or lancet holders on multiple patients leads to infections

Schaefer et al. Diabetes Care. 2013 Nov;36(11):e188-9

www.newsday.com/news/health/south-nassau-hospital-alerting-4-247-patients-of-possible-blood-contamination-1.7359969



Sharps Safety



- Contaminated sharps devices can puncture or cut skin
- Approximately 385,000 needle sticks and other sharps injuries occur in hospital-based healthcare workers each year



Why Sharps Injuries Occur in Healthcare

Injuries occur most frequently due to inappropriate sharps disposal practices by healthcare workers

- Insufficient maintenance of sharps containers in every area
- Improper design of sharps disposal container
- Inappropriate placement of sharps disposal container
- Overfilling sharps disposal container



Sharps Disposal

- Use of sharps disposal containers requires minimal training
- Sharps containers must be
 - Puncture-resistant
 - Durable during installation and transport
 - An appropriate size and shape for the task
 - Clearly visible
 - Easy to access
 - Placed in an upright position
 - Easy to operate
 - Easy to store and assemble



www.cdc.gov/sharpsafety/pdf/sharpsworkbook_2008.pdf



Action Steps for Needle Stick or Other Exposure to Blood or Body Fluid

- Immediately wash the site with soap and water until clean
- For splashes to the nose, mouth, or skin, flush with water
- Irrigate eyes with clean water, saline, or sterile irrigant
- Immediately report the incident to your supervisor
- Immediately seek medical evaluation per your facility policy



EXERCISE: IDENTIFY THE UNSAFE PRACTICE ACTIVITY

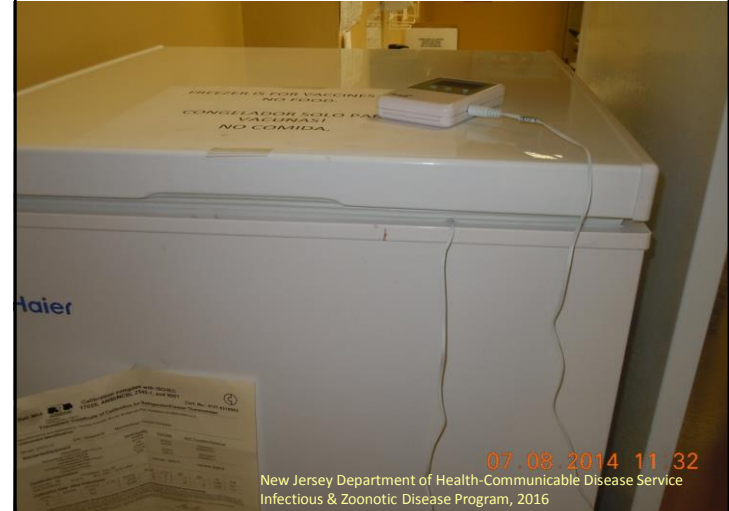


New Jersey Department of Health-Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



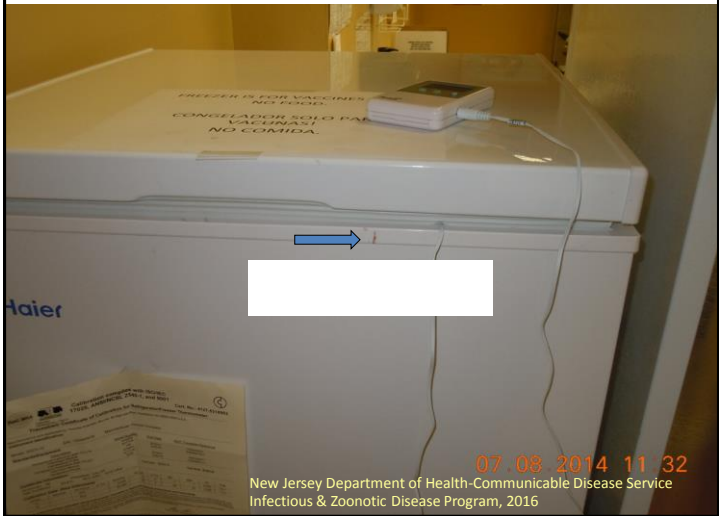
Prefilled syringes in patient exam room

New Jersey Department of Health-Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



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New Jersey Department of Health-Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



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New Jersey Department of Health-Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



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New Jersey Department of Health Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



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New Jersey Department of Health Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



07 08 2014 09 37
New Jersey Department of Health-Communicable Disease Service
Infectious & Zoonotic Disease Program, 2016



Summary

- Safe injection practices reduce the risk of infections
 - They protect both patients and healthcare workers
- Evaluate your facility's injection safety practices
 - Use the injection safety checklist
- Always follow Standard Precautions
 - Every time
 - With every patient



Where Can I Learn More?

1 ONE NEEDLE, ONE SYRINGE, ONLY ONE TIME.

Safe Injection Practices Coalition
www.ONEandONLYcampaign.org

About the Campaign
Safe Injection Practices
Healthcare Provider Information
Patient Information
Campaign Resources
News
Contact Us

Facebook Twitter YouTube RSS

HELP ENSURE PATIENT SAFETY. MAKE EVERY INJECTION A SAFE ONE.

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 eliminate infections resulting from unsafe injection practices.

Become a Member

If you are interested in becoming a One & Only Campaign Member, please [Contact Us](#).

www.ONEandONLYcampaign.org

HEALTHCARE-ASSOCIATED INFECTIONS PROGRAM 36

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

www.cdc.gov/injectionsafety
www.cdc.gov/injectionsafety/1anOnly.html

Injection Safety

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Injected medicines are commonly used in healthcare settings for the prevention, diagnosis, and treatment of various illnesses. Unsafe injection practices put patients and healthcare providers at risk of infectious and non-infectious adverse events and have been associated with a wide variety of procedures and settings. This harm is preventable. Safe injection practices are part of Standard Precautions and are aimed at maintaining basic levels of patient safety and provider protections. As defined by the World Health Organization, a safe injection does not harm the recipient, does not expose the provider to any avoidable risks and does not result in waste that is dangerous for the community. [Visit the page on CDC's role in safe injection practices.](#)

INFORMATION FOR PROVIDERS
Slide presentations, FAQs...

PREVENTING UNSAFE INJECTION PRACTICES
Guidelines, Recommendations...

PUBLICATIONS
Injection Safety Related Publications...

MEETINGS
Ambulatory Surgical Centers (ASC)...

INFORMATION FOR PATIENTS
Resources for Patients and family, FAQs, Syringe Reuse...

ASSISTED MONITORING OF BLOOD GLUCOSE
CDC Clinical Reminders: Insulin Pens, Fingertick Devices, FAQs...

RISKS OF HEALTHCARE-ASSOCIATED INFECTIONS FROM DRUG DIVERSION
Outbreaks, Resources, Reports, News...

1 ONE NEEDLE, ONE SYRINGE, ONLY ONE TIME.

Safe Injection Practices Coalition
www.ONEandONLYcampaign.org

FREE Resources
Order injection safety educational materials today!

[Patient Notification Toolkit](#)

[Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care](#)

Cal/OSHA

- Protects workers from health and safety hazards on the job
- Laws for almost every workplace in California, including healthcare



www.dir.ca.gov/dosh/Safe%20Patient%20Handling%20FAQ.pdf



One and Only Campaign Resources

- Injection Safety Checklist
- Videos
- PowerPoints
- Brochures
- Articles
- Posters
- + More!



<http://www.oneandonlycampaign.org/content/print-materials>



Questions?



Educational Script

Slide 1. To the instructor only: Let class participants know that this presentation will teach them how to prevent infections while giving injections.

Script: Although injection safety is one of the basics of infection control, unsafe injection practices still result in many new cases of hepatitis B and C each year. Injection safety involves more than just using a new needle for each patient. There are many steps involved in administering a safe injection. Today we will go over what these steps are in order to help you prevent infections from injections.

Slide 2. To the instructor only: List objectives with every course. Objectives are important because they inform the audience what they will know by the end of your presentation.

Script: By the end of this presentation, you will be able to: discuss risks due to unsafe injection practices, list safe injection practices, describe how to create a safety culture, describe how an injection safety checklist can be used when giving vaccines, and locate resources for a safe injection practices program.

Slides 3 & 4. To the instructor only: Begin your presentation by highlighting the impact of unsafe injection practices. Inform the audience that skipping even one step can lead to consequences like those listed on the slide.

Script: From 2008-2017, 61 outbreaks of hepatitis B and C from non-hospital settings were reported to the Centers for Disease Control and Prevention (CDC); of these, nine outbreaks were in California. The California outbreaks resulted in 4,298 people being notified to be screened for bloodborne pathogens. Of those tested, 44 were infected with hepatitis B or C. The California outbreaks occurred in a variety of settings including: skilled nursing facilities, assisted living facilities, pain management and infusion clinics, and outpatient dialysis clinics. Keep in mind that these are just the outbreaks that were reported to CDC. There are also hepatitis B and C cases that are likely to have been caused by healthcare but are never reported, or if reported, the source cannot be determined.

Slide 5. To the instructor only: Explain the causes of the California outbreaks that were related to injection safety.

Script: Some of the California outbreaks were caused by unsafe injection practices. These included reuse of syringes on more than one patient, contaminated medication vials being used on more than one patient, and single-dose vials being used on more than one patient.

In addition to unsafe injection practices, there were other causes for the hepatitis outbreaks reported to CDC during this time period. These included unsafe practices due to blood glucose monitoring, such as not cleaning the device in between patients; lack of environmental cleaning; and no separation between clean and contaminated podiatry equipment.

Slide 6. To the instructor only: Explain other causes of hepatitis outbreaks that were reported to CDC in the U.S.

Script: Other healthcare-associated hepatitis outbreaks were caused by failing to disinfect equipment in between patients, using the same fingerstick device on more than one patient, reusing a syringe on more than one patient, using single-dose vials for more than one patient, and using a single saline bag for more than one patient.

Slide 7. To the instructor only: Tell the audience about an event that happened at an influenza vaccination clinic.

Script: It is especially important to remember injection safety when giving injections to people at vaccination clinics. In 2015, employees were put at risk when a contracted nurse used only two syringes to give vaccines to 67 employees. The contracting company had sent the nurse pre-filled syringes, but instead of using those, the nurse chose to use her own supplies, which consisted of multi-dose vials and two syringes. Although she used a new needle for each person, she used the same two syringes for all 67 people. Fortunately, there were no confirmed cases of hepatitis from this incident, but bloodborne pathogens could have easily spread to many people if one of the employees had been infected.

Slide 8. To the instructor only: Let the audience know that healthcare workers do not make these mistakes on purpose. Explain what the other reasons could be.

Script: When a healthcare worker puts a patient at risk for bloodborne pathogen transmission, it is usually due to carelessness or lack of awareness that they are performing an unsafe practice. This could be because there are no injection safety policies at the healthcare facility, staff could be untrained or poorly trained and unaware of safe injection practices, the healthcare worker could be rushed and taking a shortcut, or it could be that the healthcare worker learned safe injection practices at one time but has since forgotten.

Sometimes healthcare workers are aware that they are performing unsafe injection practices, but they think that if they are careful, they can pool medication contents together from single-dose vials or reuse syringes to cut down on costs at their practice.

Slide 9. To the instructor only: Explain how the different types of transmission could happen.

Script: Safe injection practices are a set of steps used to perform injections in a safe manner for patients, healthcare workers, and others. Safe injections prevent transmission of infections from patients to healthcare workers from needle stick injuries, from healthcare workers to patients from drug diversion, and from patient to patient from unsafe handling of needles, syringes, or medication vials.

Slide 10. To the instructor only: Mention that safe injection practices are part of CDC's Basic Infection Control Standard Precautions.

Script: Safe injection practices are part of CDC's Basic Infection Control Standard Precautions including hand hygiene, personal protective equipment, cleaning and disinfection of environmental services, and respiratory hygiene and cough etiquette.

Slide 11. To the instructor only: Explain the process of giving an injection using four main steps.

Script: Safe injections can be broken down into four main steps. The first step is safe production, which starts with the manufacturer producing sterile medication. Step 2 is safe preparation. Step 3 is safe administration. A safe injection is not complete until Step 4 - the needle and syringe have been safely disposed of.

Slide 12. To the instructor only: Have the audience pull out a copy of the CDC Injection Safety Checklist. Let them know that these steps will be explained in the following slides. If you don't already have copies of this on hand, you can download this checklist at the link listed on this slide or request printed copies.

Script: Pull out your copy of the Injection Safety Checklist. This is a tool that you can use after this presentation to remember the injection safety steps. You can also use this as an audit tool with other employees to check how well they are following the CDC's recommendations. The following slides will go over this in detail.

Slide 13. To the instructor only: This slide corresponds to the Injection Safety Checklist Step 1: Proper hand hygiene, using alcohol-based hand rub or soap and water, is performed prior to preparing and administering medications. This also covers Step 2: Injections are

prepared using aseptic technique in a clean area, free from contamination or contact with blood, body fluids, or contaminated equipment. Describe what a clean medication area is.

Script: The first two items on the Injection Safety Checklist involve aseptic technique, meaning that hand hygiene must be performed before coming into contact with the injection supplies. When you're preparing medications, make sure that you are doing so in a dedicated medication area. This area must be free of any contaminated items and must only be used for medication preparation. This area must not be next to a sink where people wash their hands as the dirty water can splash onto the medication preparation area and contaminate the vials.

Slide 14. To the instructor only: This slide corresponds with the Injection Safety Checklist Step 3: Needles and syringes are used for only one patient (this includes manufactured prefilled syringes and cartridge devices such as insulin pens). This also corresponds to Step 5: Medication vials are entered with a new needle and a new syringe each time, even when obtaining additional doses for the same patient.

Script: Step 3 on the Injection Safety Checklist is using needles and syringes for only one patient. Even if you do not see any blood inside of the syringe, you must not reuse it. There will always be a small amount of backflow, and even a small amount of blood contaminates an entire syringe. This slide also goes over Step 5 on the Checklist. If you are accessing a medication vial multiple times for the same patient, you must use a new needle and a new syringe each time. This adds an extra layer of safety in case the medication vial gets out of your hands, and somebody uses it on another patient.

While it is not recommended to use the same needle and syringe to enter more than one medication vial, there are circumstances where more than one vial may need to be entered with the same syringe and needle (example: when reconstituting medications or vaccines). In these circumstances, aseptic technique must be followed, and reconstitution must be performed in a designated, clean medication area that is not next to areas where potentially contaminated items are placed.

Slide 15. To the instructor only: This slide corresponds with the Injection Safety Checklist Step 4: The septum, the rubber top on a medication vial is disinfected with alcohol prior to piercing. Explain why it is important to clean the tops of medication vials before piercing.

Script: This slide corresponds with Step 4 of the Injection Safety Checklist. The septum, the rubber top on all medication vials, must be disinfected with alcohol prior to piercing. Although the manufacturer guarantees the sterility of the contents inside of the vial, they do not guarantee the sterility of the outside. When disinfecting the septum, use friction and a solution with 70% alcohol. You must wait for the alcohol to dry before piercing the septum.

Slide 16. To the instructor only: This slide corresponds with the Injection Safety Checklist Step 6: Single-dose medication vials, ampules, and bags or bottles of the intravenous solution are used for only one patient. It is important to distinguish the difference between single-dose vials and multi-dose vials to your audience. The trainer must mention that there are different guidelines for both.

Script: Step 6 on the Checklist goes over single-dose vials. Before you access a medication vial, you must read the label to distinguish whether it is single- or multi-dose and check the expiration date. Do not assume that just because the size of the vial is large that it is multi-dose. Some single-dose vials are large. Single-dose vials lack an antimicrobial preservative so they must be handled differently than multi-dose vials. Single-dose vials are meant to be used one time on one patient and should not be stored for future use. If a single-dose vial looks like it has already been used, throw it away.

Slide 17. To the instructor only: This slide corresponds to the Injection Safety Checklist Step 8: Multi-dose vials are dated by the healthcare worker when they are first opened and must be discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial. This also corresponds with Step 9: Multi-dose vials are dedicated to individual patients whenever possible.

Script: The last three items on the Checklist involve multi-dose vials. Before you access multi-dose vials, you must first check the expiration date and then write the current date on the vial. This is different from the expiration date that already comes on the vial. Multi-dose vials must be discarded after 28 days or at the expiration date, whichever comes first. Try to limit the use of multi-dose vials and dedicate them to a single patient whenever possible. This is an extra safety layer that CDC recommends to prevent unsafe handling of vials. For example, when a person is using a multi-dose vial on more than one patient, they are not aware if the person before re-accessed the vial with a new needle and syringe. Limit multi-dose vials to one patient, even if the same healthcare worker is giving the injection, this adds an extra layer of safety in case the vial gets out of the healthcare worker's hands.

Slide 18. To the instructor only: This step corresponds to the Injection Safety Checklist step 10: Multi-dose vials to be used for more than one patient are kept in a centralized medication area and not in the immediate patient treatment area (examples: operating room, patient room/cubicle). Describe the steps to take when multi-dose vials must be used on multiple patients.

Script: If you must use a multi-dose vial on multiple patients, the vial has to be kept in a centralized medication area and never brought into the immediate patient treatment area. Although multi-dose vials contain antimicrobial preservatives, they do not kill bloodborne pathogens.

Slide 19. To the instructor only: Help the audience connect their immunization knowledge and the injection safety lesson. List the vaccination safety tips.

Script: You can apply the injection safety lesson to what you know about giving vaccines. Vaccines must be prepared in a clean, designated medication area. Do not pre-draw vaccines before patients arrive at a clinic. It is best to use manufactured, single-use syringes that are already filled. If you must use a multi-dose vial, the correct dose must be given so that the vaccine is effective. You must follow all safety precautions to avoid contamination of multi-dose vials.

Slide 20. To the instructor only: Although not related to vaccinations, the medical assistants in your class may check blood glucose levels on diabetic patients. It is important to bring up how injection safety is related.

Script: Although this slide is not related to vaccinations, it goes over an important topic related to injection safety, and you are likely to come across diabetic patients and need to check their blood glucose levels. There have been many outbreaks of hepatitis due to unsafe use of glucometers and lancets. Just like a needle and syringe, you must never reuse an insulin pen or lancet or lancet holder for more than one patient. Even if you change the needle on an insulin pen or change a lancet on a lancet holder, it cannot be used on more than one patient. If a glucometer must be used on more than one patient, clean it after every use following the manufacturer's recommendations. If no instructions are included on how to clean the device, do not use it on more than one patient.

Slide 21. To the instructor only: This section is not on the CDC Injection Safety Checklist, but it ties in with the four main steps that were mentioned at the beginning of this presentation. Remind the audience that safe disposal is the final step in the injection safety process.

Script: Needlestick injuries put healthcare workers at risk of infection as used needles could have been used on patients infected with hepatitis B or C or HIV. Each year, there are an estimated 385,000 sharps injuries in hospital settings. Often, healthcare workers fail to report these injuries to their supervisors. In the last slide, we discussed the safe disposal of needles and syringes.

Slide 22. To the instructor only: List out the reasons for why sharps injuries occur

Script: Most sharps injuries don't happen while giving medications or performing procedures but instead happen during sharps disposal because of insufficient maintenance of sharps containers such as having broken lids, improper design of sharps containers, inappropriate

placement of containers such as having them placed too high or too low, and overfilling of sharps containers.

Slide 23. To the instructor only: List the CDC guidelines for sharps disposal containers.

Script: CDC has guidelines for sharps disposal containers. The container must be puncture-resistant, durable, an appropriate size, clearly visible, easy to access, placed in an upright position, easy to operate, and easy to store and assemble. You must empty sharps disposal containers when they are 2/3 to 3/4 full to reduce the risk of injury.

Slide 24. To the instructor only: Go over the steps for handling accidental needle stick injuries.

Script: If you are accidentally stuck by a used needle or other sharp, or if you are exposed to blood or other bodily fluid, immediately wash the site with soap and water until clean and flush the nose, mouth, or skin with water. If you get something in your eye, irrigate your eyes with clean water, saline, or sterile irrigant. It is important to immediately report these injuries to your supervisor and to seek evaluation per your facility policy.

Slide 25. To the instructor only: Have the audience guess the unsafe practice in the pictures. The unsafe practice in some of the pictures is not obvious but will serve as a good learning opportunity when you go over the explanation of it.

Script: Our next activity will be to apply what you learned to identify the unsafe practice in the picture.

Slides 26 & 27. To the instructor only: Let the audience find the unsafe practice before revealing the answer.

Script: These syringes need to be dated and never stored in the patient exam room.

Slides 28 & 29. To the instructor only: Let the audience find the unsafe practice before revealing the answer.

Script: There is visible blood splatter on the front of the refrigerator.

Slides 30 & 31. To the instructor only: Let the audience find the unsafe practice before revealing the answer.

Script: In this picture, there are multiple unwrapped, prefilled syringes. Also, the syringes are next to the sink and phone instead of being in a dedicated medication preparation area.

Slides 32 & 33. To the instructor only: Let the audience find the answer before revealing the answer. Tell the audience that this is the top of a refrigerator door and then ask what is wrong with the picture.

Script: The syringe wrapper has been opened, and the syringe is filled and unlabeled.

Slide 34. To the instructor only: Remind the class participants what they learned over the course of this lesson.

Script: Now that you have seen this presentation, you know how safe injection practices reduce the risk of infections, know how to evaluate your facility's injection safety practices and know that Standard Precautions must be used every time, with every patient.

Slides 35-39. To the instructor only: Review additional resources and answer any questions that class participants have about the presentation.

Injection Safety Post-Class Assessment and Evaluation

Knowledge Assessment

1. What is a safe injection?

- When the medication given to patients through an injection is not contaminated
- When an injection is administered and the healthcare worker or patient does not get a sharps injury
- When patients are not exposed to bloodborne pathogens from injections
- When healthcare workers are not exposed to bloodborne pathogens from giving injections to patients
- All of the above

2. Single-use medication vials are:

- Fine to use on multiple patients if it comes in a large enough vial
- Only to be used on one patient
- Made to be used on one patient, however if there is leftover content one can pool the medication with other vials

3. Between injections, you must make sure:

- That you sterilize the needle with alcohol if you are going to be reusing it on another patient
- That you use a new needle and a new syringe each time you give an injection to a patient
- That the needle is switched on the syringe in between each patient

4. When you use a multi-dose vial, you must make sure that in between each patient you:

- Sterilize the needle with alcohol before going back into the vial
- Change the needle on your syringe before going back into the vial
- Use a new needle and a new syringe before going back into the vial

5. A syringe is ok to reuse as long as there is no visible blood inside.

- True
- False

Course Content Evaluation

6. After attending this class, I am confident I understand the risks due to unsafe injection practices.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

7. After attending this class, I am confident I can list out safe injection practices.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

8. After attending this class, I am confident I can describe how an Injection Safety Checklist can be used when giving vaccines.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

9. After attending this class, I am confident that I know where I can locate resources for a safe injection practices program.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

10. My knowledge of safe injection practices has improved from taking this class.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please include any comments or suggestions on how we may improve our future classes.

Injection Safety Pre/Post-Class Assessment Answers

Knowledge Assessment

1. What is a safe injection?

- When the medication given to patients through an injection is not contaminated
- When an injection is administered and the healthcare worker or patient does not get a sharps injury
- When patients are not exposed to bloodborne pathogens from injections
- When healthcare workers are not exposed to bloodborne pathogens from giving injections to patients
- All of the above

2. Single-use medication vials are:

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- Sterilize the needle with alcohol before going back into the vial
- Change the needle on your syringe before going back into the vial
- Use a new needle and a new syringe before going back into the vial

5. A syringe is ok to reuse as long as there is no visible blood in inside.

- True
- False

Injection Safety Resources

1. Injection Safety (CDC)
<https://www.cdc.gov/injectionsafety/>
2. Injection Safety Checklist (CDC)
https://www.cdc.gov/injectionsafety/pdf/sipc_checklist.pdf
3. Injection Safety Materials (CDC)
<http://www.cdc.gov/pubs/CDCInfoOnDemand.aspx?ProgramID=29>
4. California One & Only Campaign
<http://www.oneandonlycampaign.org/partner/california>
5. Vaccine Storage & Handling Toolkit (CDC)
<http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf>
6. National Adult and Influenza Immunization Summit
<http://www.izsummitpartners.org>
7. Vaccination Clinic Checklist (National Adult and Influenza Immunization Summit)
http://www.izsummitpartners.org/content/uploads/2016/08/NAIS-Vaccination-Clinic-Checklist_8-24-2016-FINAL.pdf