

SAFE INJECTION PRACTICES

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**BEST PRACTICES
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**PROJECT
FIRSTLINE**

CDC'S National Training Collaborative
for Healthcare Infection Prevention & Control



Kentucky Public Health
Prevent. Promote. Protect.

PROJECT FIRSTLINE



Project Firstline is a national collaborative led by the U.S. Centers for Disease Control and Prevention (CDC) to provide infection control training and education to frontline healthcare workers and public health personnel. The Kentucky Infection Prevention Training Center is proud to partner with the Kentucky Department of Public Health and Project Firstline. Funding for the Kentucky Infection Prevention Training Center (KyIP) is provided through the Centers for Disease Control and Prevention (CDC) Epidemiology and Laboratory Capacity (ELC) Enhancing Detection grant supplement award to the Kentucky Department for Public Health (KDPH). CDC is an agency within the Department of Health and Human Services (HHS). The contents of this simulation skill packets do not necessarily represent the policies of CDC or HHS and should not be considered an endorsement by the Federal Government

OBJECTIVES

At the end of the skill stations, participants will:

- 1. Review the basics of safe injection practices and their application to healthcare.
- 2. Review elements of aseptic technique relevant to injection practices.
- 3. Identify key differences between multi-dose and single-dose vials.
- 4. Apply knowledge in practice to minimize risks and behaviors associated with unsafe injection practices.

PRE-BRIEF

What are Safe Injection Practices and Why is it Important?

Injection safety, or safe injection practices, are a set of measures taken to perform injections in an optimally safe manner for patients, healthcare personnel, and others.

Safe injection practices do 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.

Injection safety includes practices intended to prevent transmission of infectious diseases between one patient and another, a patient and healthcare provider, and prevents harm such as needle stick injuries.

- Every year, unsafe injection practices by US healthcare providers—like syringe reuse and misuse of medications vials— cause outbreaks.
- Since 2001, discovery of unsafe injection practices, have prompted nearly 200,000 patients to seek testing for blood borne pathogens

PRE-BRIEF

Injection Safety Guidelines From CDC

- Follow proper infection control practices and maintain aseptic technique during the preparation and administration of injected medications (e.g., perform hand hygiene).
- Never administer medications from the same syringe to more than one patient, even if the needle is changed.
- Never enter a vial with a used syringe or needle.
- Do not use medications packaged as single-dose or single-use for more than one patient.
- Do not use bags of intravenous solution as a common source of supply for more than one patient.
- Limit the use of multi-dose vials and dedicate them to a single patient whenever possible.
- Always use facemasks when injecting material or inserting a catheter into the epidural or subdural space.

WHERE DO GERMS LIVE?

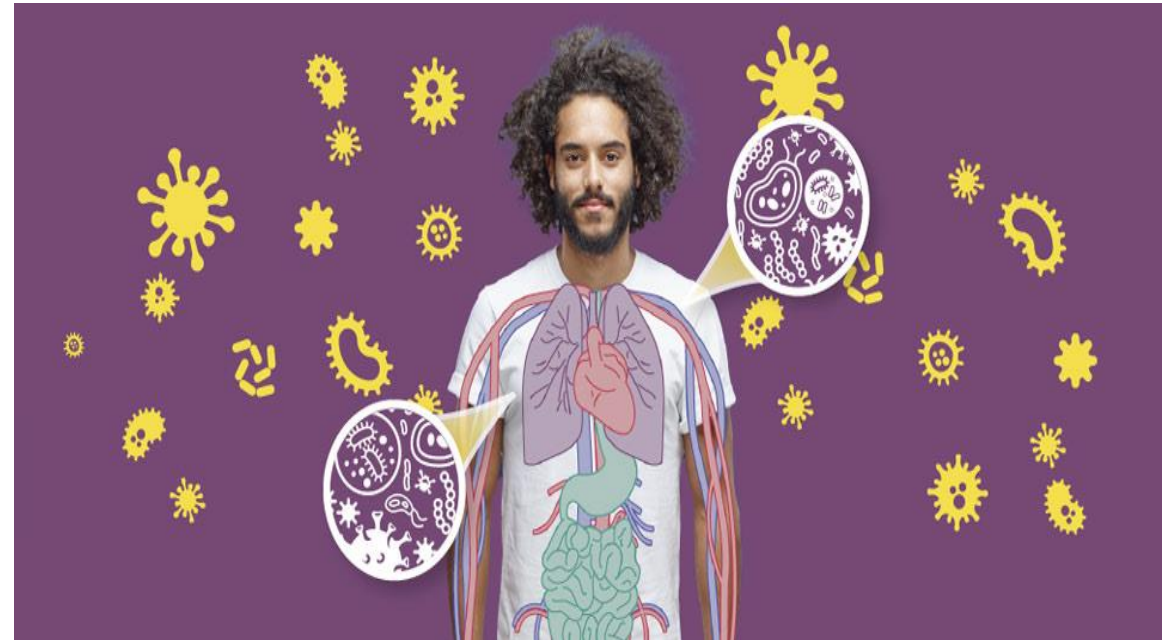
What are reservoirs?

- Reservoirs are places where germs can live.

What are pathways?

- Pathways are *how* germs can spread.

Why is this important?



SIMULATION I

This video demonstrates unsafe and improper injection practices. Can you spot the errors?



DE- BRIEF

Disinfect work surface



DE- BRIEF



Developed by the Kentucky Infection Prevention Training Center (KylP, 2022). Use with permission.

DE- BRIEF



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SINGLE-DOSE OR MULTIPLE-DOSE VIAL?



Centers for Disease Control and Prevention (CDC). (2022).

SAFE USE OF MULTI- DOSE VACCINE VIALS

Project Firstline

Episode 8 Part One:

How Do I Safely Use a Multi- Dose
Vaccine Vial

INSIDE INFECTION CONTROL

HOW DO I SAFELY USE A MULTI-DOSE VACCINE VIAL?

EPISODE 8 **PART 1**



SAFE USE OF MULTI- DOSE VACCINE VIALS

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Episode 8 Part One:
How Do I Safely Use a Multi-
Dose Vaccine Vial

INSIDE INFECTION CONTROL

**HOW DO I SAFELY USE
A MULTI-DOSE
VACCINE VIAL?**

EPISODE 8 **PART 2**



WHAT ARE KEY DIFFERENCES BETWEEN A SINGLE-DOSE AND A MULTIPLE DOSE VIALS?

SINGLE-DOSE OR MULTI-DOSE?



A MULTIPLE-DOSE VIAL (MDV) is recognized by its FDA-approved label.

Although MDVs can be used for more than one patient when aseptic technique is followed, *ideally even MDVs are used for only one patient.*



MDVs typically contain an **antimicrobial preservative** to help limit the growth of bacteria. Preservatives have no effect on bloodborne viruses (i.e. hepatitis B, hepatitis C, HIV).



Discard MDVs 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!



A SINGLE-DOSE VIAL (SDV) is approved for use on a **SINGLE** patient for a **SINGLE** procedure or injection.



SDVs typically lack an antimicrobial preservative. Do not save leftover medication from these vials. Harmful bacteria can grow and infect a patient.

DISCARD after every use!



SIMULATION II

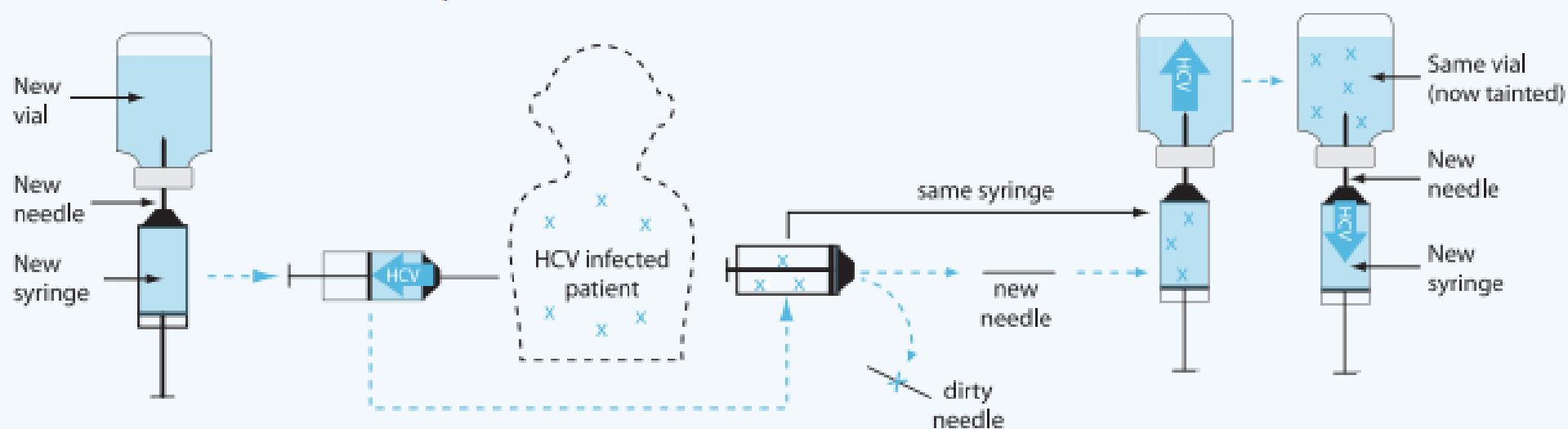
- Demonstrates the contamination of a single dose vial through multiple access and reuse of a contaminated syringe



2008 OUTBREAK IN AN ENDOSCOPY CENTER IN NEVADA

Unsafe Injection Practices and Disease Transmission

Improper use of syringes, needles, and medication containers can transmit infectious diseases such as hepatitis C virus or MRSA.



1. New needle and syringe are used to draw medication.

2. When used on an HCV-infected patient, backflow from the injection contaminates the syringe. Changing the needle does not prevent contamination of the syringe.

3. When reused to obtain medication, the contaminated syringe contaminates the medication vial.

4. If the contaminated vial is used for other patients, they can become infected with HCV.

Adapted from MMWR (May 16, 2008 / 57(19):513-517)

TAKE HOME POINTS

- Always begin with a clean, disinfected work surface away from patient care spaces
- Always perform hand hygiene before touching vials, needles, syringes
- Always read the vial label to determine if it is a single or multiple-dose vial
- Make sure vaccine is not expired or “beyond use”.
- Follow vaccine maker’s instructions for storage
- Always use a brand-new, sterile needle and syringe for every vaccine dose

TAKE HOME POINTS

- Never touch sterile connection areas when connecting a needle to a syringe
- Always disinfect the rubber diaphragm even when removing the plastic cap with an alcohol prep pad- every time.
- Let alcohol dry prior to needle insertion
- When first inserting a needle, record date and time on the label
- If diluent is required for vaccine preparation, ensure that you use the correct type (preservative or preservative free)
- Label all prepared doses.
- Never “pool” doses (combine partial doses from different vials)

INJECTION SAFETY CHECKLIST

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. 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 room/cubicle). 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	

Centers for Disease Control and Prevention (CDC). (2022). *CDC's core infection prevention and control practices for safe healthcare delivery in all settings*. Centers for Disease Control and Prevention.

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.



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