

Arizona Healthcare-Associated Infections (HAI) Program
Injection Safety Toolkit



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Introduction

The Injection Safety Toolkit was developed by the Arizona Healthcare-Associated Infections (HAI) Advisory Committee's Long-Term Care Subcommittee in 2015. Facilities and healthcare workers are encouraged to incorporate this toolkit, with other professional resources, to assist current injection safety campaigns and efforts. We hope you find this toolkit useful!

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 - * Utilize these resources in order to initiate or expand your current injection safety campaign and policies

Acknowledgements

The objective of Arizona's Long-Term Care (LTC) Subcommittee is to identify ongoing opportunities to assist in infection prevention in LTC settings. The HAI Advisory Committee deems that the Injection Safety Toolkit reflects the best available resources to increase awareness and education within Arizona healthcare facilities.

The LTC Subcommittee would like to acknowledge the following partners who assisted in the development of this toolkit:

- HAI Advisory Committee
- HAI Strategies for Training, Education, and Prevention (STEP) Subcommittee
- Arizona Department of Health Services
- Arizona Center for Rural Health
- Arizona Grand Senior Living Community
- Arizona Health Care Association
- Arizona Hospital and Healthcare Association (AzHHA)
- Chandler Regional Medical Center
- Copper Sands, Inc.
- Covenant Health Network
- Diagnostic Laboratories and Radiology
- Five Star Senior Living
- Foothills Rehab Center
- Glencroft
- Health Services Advisory Group
- La Rosa Healthcare
- LeadingAge Arizona
- Maricopa County Department of Public Health
- Oasis Pavilion
- Palm Valley Rehabilitation and Care Center
- Pfizer, Inc.
- Plaza Del Rio Care Center
- Residents First
- Safe Injection Practices Coalition
- Scottsdale Lincoln Health Network
- The Arizona Partnership for Immunization
- The Terraces
- The University of Arizona





Office of the Director

150 N. 18th Avenue, Suite 500
Phoenix, Arizona 85007-3247
(602) 542-1025
(602) 542-1062 FAX
www.azdhs.gov

DOUGLAS A. DUCEY, GOVERNOR
WILL HUMBLE, DIRECTOR

February 3, 2015

Recommendation: Promote Injection Safety To All Healthcare Workers Across Arizona

Since the inception of Standard Precautions in 1996 by the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the published [Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings](#), healthcare workers (HCWs) have worked to break the cycle of infection between HCWs, patients, residents, inmates, and the environment. Unfortunately, unsafe injection practices continue to contribute to patient morbidity and mortality in this state.

Why is injection safety a concern?

Lapses in basic infection controls and breaches in standard precautions continue to be reported in all healthcare settings, particularly in unsafe injection practices. Commonly reported issues include:

- Using the same syringe to administer medication to more than one patient
- Accessing a medication vial or bag that was previously used to administer medication to a patient and reusing the contents for another patient
- Administering single-use medication for multiple patients
- Preparing and administering injections without aseptic technique
- Administering medication from vials containing foreign bodies and particulates
- Improper cleaning and disinfection of blood glucose meters

These lapses in infection control can lead to the transmission of bacterial, viral and fungal pathogens and serious infections and injury. Year after year, unsafe injection practices are reported to the Arizona Department of Health Services (ADHS) from all types of healthcare settings. These lapses are not an acceptable component of practice within our state.

ADHS strongly recommends that all healthcare facilities and HCWs review the resources and guidelines within this toolkit in order to promote and practice injection safety. Together we can make Arizona a safer state for all.

Please contact the Healthcare-Associated Infections Program (602-364-3676) for questions or resource assistance.

A handwritten signature in black ink, appearing to read "Lisa Villarroel".

Lisa Villarroel, M.D., M.P.H.
Medical Director
Bureau of Epidemiology and Disease Control Services

A handwritten signature in black ink, appearing to read "Eugene K. Livar III".

Eugene K. Livar III, MD
Healthcare-Associated Infections Program Manager
Bureau of Epidemiology & Disease Control Services

Section 1: Education



FAQs

FREQUENTLY ASKED QUESTIONS (FAQs) REGARDING SAFE PRACTICES FOR MEDICAL INJECTIONS

The FAQs are organized in the following sections:

- General
- Medication Preparation
- Medication Administration
- Single-dose/Single-use vials
- Multi-dose vials
- References

A Note about Pharmacy Settings

While the use of aseptic technique when preparing and administering injectable medications is applicable to all healthcare settings, including pharmacy areas, these FAQs are not intended to reflect the standards and recommended practices for handling medication vials and related products in pharmacy settings—these should be determined in accordance with the state boards of pharmacy, the United States Pharmacopeia (USP), the Drug Enforcement Agency (DEA), and the Food and Drug Administration (FDA). Please visit http://www.cdc.gov/injectionsafety/providers/provider_faqs.html for updates or additional information. Published March 1, 2011.

Background

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

The Standard Precautions section of the 2007 Guideline for Isolation Precautions provides evidence-based recommendations for safe injection practices and reflects the minimum standards that healthcare personnel should follow to prevent transmission of infections in healthcare settings.

Despite these recommendations, outbreaks and patient notifications resulting from healthcare personnel failing to adhere to Standard Precautions and basic infection control practices continue to be reported. Unsafe injection practices that have resulted in disease transmission have most commonly included:

- 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^{1,2};
- Accessing a medication vial or bag with a syringe that has already been used to administer medication to a patient, then reusing contents from that vial or bag for another patient³⁻⁶;
- Using medications packaged as single-dose or single-use for more than one patient⁷⁻⁹;
- Failing to use aseptic technique when preparing and administering injections¹⁰⁻¹²

For these reasons, CDC reminds healthcare personnel of the following practices that are critical for patient safety:

- 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.

The following FAQs summarize inquiries received by CDC from healthcare personnel regarding safe use of needles, syringes, and injectable medications in patient care settings. Wherever possible we have attempted to provide examples of outbreaks or patient notification incidents that support the guidance offered in these FAQs. An extensive reference list is included at the end of this document.

These FAQs are not intended as a comprehensive resource for all safe injection practices and additional considerations may be necessary for certain clinical scenarios or settings. Healthcare personnel are encouraged to consult the Standard Precautions section of the 2007 Guideline for Isolation Precautions to ensure that their practices adhere to the basic principles of infection control and aseptic technique. Additional information applicable to specific clinical settings or procedures may be available from professional organizations.



GENERAL QUESTIONS

1. What is injection safety?

Injection safety, or safe injection practices, is a set of measures taken to perform injections in an optimally safe manner for patients, healthcare personnel, and others. 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 (e.g., through inappropriate disposal of injection equipment)¹³. Injection safety includes practices intended to prevent transmission of infectious diseases between one patient and another, or between a patient and healthcare provider, and also to prevent harms such as needlestick injuries.

2. What is aseptic technique?

In this context, aseptic technique refers to the manner of handling, preparing, and storing of medications and injection equipment/supplies (e.g., syringes, needles and IV tubing) to prevent microbial contamination. See additional FAQs below for details on aseptic technique.

3. What are some of the unsafe injection practices that have resulted in transmission of pathogens?

The most common practices that have resulted in transmission of hepatitis C virus (HCV), hepatitis B virus (HBV) and/or other pathogens include:

- 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^{1,2};
- Accessing a medication vial or bag with a syringe that has already been used to administer medication to a patient, then reusing contents from that vial or bag for another patient³⁻⁶;
- Using medications packaged as single-dose or single-use for more than one patient⁷⁻⁹;
- Failing to use aseptic technique when preparing and administering injections¹⁰⁻¹².

4. What are some procedures that have been associated with unsafe injection practices?

Unsafe injection practices that put patients at risk for HBV, HCV and other infections have been identified during various types of procedures. Examples include:

- Administration of sedatives and anesthetics for surgical, diagnostic, and pain management procedures;
- Administration of IV medications for chemotherapy, cosmetic procedures, and alternative medicine therapies;
- Use of saline solutions to flush IV lines and catheters;
- Administration of intramuscular (IM) vaccines.

The medications used in these procedures were in single-dose or single-use vials, multi-dose vials, and bags. What they had in common was the vials or bags were used for more than one patient and were entered with a syringe that had already been used for a patient; or the syringe itself was used for more than one patient.

5. Can some of these unsafe injection practices also result in transmission of bacterial infections?

Yes. These unsafe injection practices put patients at risk for bacterial, fungal, viral, and parasitic infections.

6. Is it acceptable to visually inspect syringes to determine whether they are contaminated or can be used again?

No. Just because blood or other material is not visible in a used syringe or IV tubing does not mean the item is free from potentially infectious agents. Pathogens including HBV, HCV, and human immunodeficiency

virus (HIV) can be present in sufficient quantities to produce infection in the absence of visible blood. Similarly, bacteria and other microbes can be present without clouding or other visible evidence of contamination. All used injection supplies and materials are potentially contaminated and should be discarded.

7. How can healthcare personnel ensure that injections are performed correctly?

To help ensure that all healthcare personnel understand and adhere to safe injection practices, we recommend the following:

1. Designate someone to provide ongoing oversight for infection control issues;
2. Develop written infection control policies;
3. Provide training;
4. Conduct quality assurance assessments



MEDICATION PREPARATION QUESTIONS

1. How should I draw up medications?

Parenteral medications should be accessed in an aseptic manner. This includes using a new sterile syringe and sterile needle to draw up medications while preventing contact between the injection materials and the non-sterile environment. Proper hand hygiene should be performed before handling medications and the rubber septum should be disinfected with alcohol prior to piercing it.

2. Where should I draw up medications?

Medications should be drawn up in a designated clean medication area that is not adjacent to areas where potentially contaminated items are placed. Examples of contaminated items that should not be placed in or near the medication preparation area include: used equipment such as syringes, needles, IV tubing, blood collection tubes, needle holders (e.g., Vacutainer® holder), or other soiled equipment or materials that have been used in a procedure. In general, any item that could have come in contact with blood or body fluids should not be in the medication preparation area.

3. Is it acceptable to leave a needle inserted in the septum of a medication vial for multiple medication draws?

No. A needle should never be left inserted into a medication vial septum for multiple uses. This provides a direct route for microorganisms to enter the vial and contaminate the fluid.

4. Is it acceptable to leave a needle inserted in the septum of a medication vial for multiple medication draws?

The safest practice is to always enter a medication vial with a sterile needle and sterile syringe. There has been at least one outbreak attributed to healthcare personnel using a common needle and syringe to access multiple multi-dose vials for the purpose of combining their contents into a single syringe¹⁴. If one vial becomes contaminated, this practice can spread contamination to the others, prolonging presence of the pathogen and increasing the potential for disease transmission. Syringe reuse in this fashion may also have been a factor in additional outbreaks⁹.

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



MEDICATION ADMINISTRATION QUESTIONS

1. Is it acceptable to use the same syringe to give an injection to more than one patient if I change the needle between patients?

No. Once they are used, the syringe and needle are both contaminated and must be discarded. Use a new sterile syringe and needle for each patient.

2. Is it acceptable to use the same syringe to give an injection to more than one patient if I change the needle between patients and I don't draw back before injecting?

No. A small amount of blood can flow into the needle and syringe even when only positive pressure is applied outward. The syringe and needle are both contaminated and must be discarded.

3. If I used a syringe only to inject medications into an IV tubing port that is several feet away from the patient's IV catheter site, is it acceptable to use the same syringe for another patient?

No. Everything from the medication bag to the patient's catheter is a single interconnected unit. All of the components are directly or indirectly exposed to the patient's blood and cannot be used for another patient. A syringe that intersects through ports in the IV tubing or bags also becomes contaminated and cannot be used for another patient. Separation from the patient's IV by distance, gravity and/or positive infusion pressure does not ensure that small amounts of blood are not present in these items.

4. Is it acceptable to reuse a syringe and/or needle to enter a medication vial for the same patient if the medication vial and the syringe will be discarded at the end of the procedure and not used for subsequent patients?

The safest practice is to always enter a medication vial with a sterile needle and sterile syringe, even when obtaining additional doses of medication for the same patient. This adds an extra layer of safety in case, for some reason, the medication vial is not discarded at the end of the procedure as it should be and is inadvertently used on a subsequent patient.

There have been multiple outbreaks resulting from healthcare personnel reusing syringes to access medications for a single patient and then using contents from that vial or bag for subsequent patients³⁻⁴. In some of these outbreaks, healthcare personnel believed that they were being careful and their intention was to discard the vial or bag at the end of the procedure; however, this did not always occur and contents from the vial or bag were inadvertently used for subsequent patients⁵.

5. Is it acceptable to use the same syringe and/or needle to administer multiple injections to the same patient (e.g., in the case of numbing a large area of skin or to provide incremental doses of intravenous medication)?

The safest practice is for a syringe and needle to be used only once to administer a medication to a single patient, after which the syringe and needle should be discarded. This practice prevents inadvertent reuse of the syringe and protects healthcare personnel from harms such as needlestick injuries.

However, when this is not feasible (e.g., when administration of incremental doses to a single patient from the same syringe is an integral part of the procedure), reuse of the same syringe and needle for the same patient should occur as part of a single procedure with strict adherence to aseptic technique. In such situations it is essential that the syringe never be left unattended and that it be discarded immediately at the end of the procedure.

There have been situations of disease transmission and recent patient notification events in the setting of unintentional syringe reuse after a syringe was not immediately discarded following use on a patient^{2,15}. Please visit http://www.cdc.gov/injectionsafety/providers/provider_faqs.html for updates or additional information. Published March 1, 2011.

QUESTIONS ABOUT SINGLE-DOSE/SINGLE-USE VIALS

1. What is a single-dose or single-use vial?

A single-dose or single-use vial is a vial of liquid medication intended for parenteral administration (injection or infusion) that is meant for use in a single patient for a single case/procedure/injection. Single-dose or single-use vials are labeled as such by the manufacturer and typically lack an antimicrobial preservative.

2. Can single-dose or single-use vials be used for more than one patient?

No. Vials that are labeled as single-dose or single-use should be used for a single patient and single case/procedure/injection. There have been multiple outbreaks resulting from healthcare personnel using single-dose or single-use vials for multiple patients^{3,6-9}.

Even if a single-dose or single-use vial appears to contain multiple doses or contains more medication than is needed for a single patient, that vial should not be used for more than one patient nor stored for future use on the same patient.

To prevent unnecessary waste or the temptation to use contents from single-dose or single-use vials for more than one patient, healthcare personnel should select the smallest vial necessary for their needs when making purchasing decisions.

3. How many times may individual single-dose or single-use vials be entered for a single patient?

The safest practice is to enter a single-dose or single-use vial only once so as to prevent inadvertent contamination of the vial and infection transmission. Single-dose or single-use vials should be used for a single patient and a single case/procedure/injection. Therefore, they should require only a single entry into the vial.

However, in certain situations, healthcare personnel may believe that drawing the entire contents of the vial into a single syringe will not allow for safe and accurate titration of dosage (e.g., pediatric dosing during a surgical procedure). In these circumstances, healthcare personnel must consider the risk of repeated entry into a single-dose or single-use vial for that single patient/procedure.

If the single-dose or single-use vial will be entered more than once for a single patient as part of a single procedure, it should be with a new needle and new syringe, and the vial must be discarded at the end of the procedure and not stored for future use.

4. Is it acceptable to combine (pool) leftover medication from single-dose or single-use vials?

No. Do not combine (pool) leftover contents of single-dose or single-use vials or store single-dose or single-use vials for later use. Single-dose or single-use vials are intended for use on a single patient for a single case/procedure. There have been outbreaks resulting from pooling of contents of single-dose or single-use vials and/or storage of contents for future use⁸.

5. When should single-dose or single-use vials be discarded?

Medication vials should always be discarded whenever sterility is compromised or questionable.

In addition, the following recommendations are made for handling of single-dose or single-use vials:

- If a single-dose or single-use vial has been opened or accessed (e.g., needle-punctured) the vial should be discarded according to the time the manufacturer specifies for the opened vial or at the end of the case/procedure for which it is being used, whichever comes first. It should not be stored for future use.
- If a single-dose or single-use vial has not been opened or accessed (e.g., needle-punctured), it should be discarded according to the manufacturer's expiration date. Please visit http://www.cdc.gov/injectionsafety/providers/provider_faqs.html for updates or additional information. Published March 1, 2011.





QUESTIONS ABOUT MULTI-DOSE VIALS

1. What is a multi-dose vial?

A multi-dose vial is a vial of liquid medication intended for parenteral administration (injection or infusion) that contains more than one dose of medication. Multi-dose vials are labeled as such by the manufacturer and typically contain an antimicrobial preservative to help prevent the growth of bacteria. The preservative has no effect on viruses and does not protect against contamination when healthcare personnel fail to follow safe injection practices.

2. Can multi-dose vials be used for more than one patient? How?

Multi-dose vials should be dedicated to a single patient whenever possible.

If multi-dose vials must be used for more than one patient, they should not be kept or accessed in the immediate patient treatment area. This is to prevent inadvertent contamination of the vial through direct or indirect contact with potentially contaminated surfaces or equipment that could then lead to infections in subsequent patients. If a multi-dose vial enters the immediate patient treatment area, it should be dedicated to that patient only and discarded after use.

3. What are examples of the “immediate patient treatment area”?

Examples of the immediate patient treatment area include patient rooms or bays, and operating rooms.

4. When should multi-dose vials be discarded?

Medication vials should always be discarded whenever sterility is compromised or questionable.

In addition, the United States Pharmacopeia (USP) General Chapter 79716 recommends the following for multi-dose vials of sterile pharmaceuticals:

- If a multi-dose has been opened or accessed (e.g., needle-punctured) the vial should be dated and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial.
- If a multi-dose vial has not been opened or accessed (e.g., needle-punctured), it should be discarded according to the manufacturer’s expiration date.

The manufacturer’s expiration date refers to the date after which an unopened multi-dose vial should not be used. The beyond-use-date refers to the date after which an opened multi-dose vial should not be used. The beyond-use-date should never exceed the manufacturer’s original expiration date.

For information on storage and handling of vaccines please refer to the CDC Vaccine Storage and Handling Toolkit: <http://www2a.cdc.gov/vaccines/ed/shtoolkit/> or the manufacturer’s recommendations for specific vaccines.

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The Safe Injection Practices Coalition (SIPC) is a partnership of healthcare-related organizations led by the Centers for Disease Control and Prevention. The SIPC developed the *One & Only Campaign*—a public health effort to eliminate unsafe medical injections by raising awareness of safe injection practices. For a list of SIPC Partners, more information about the Campaign, and to view additional resources including videos and other materials, please visit:

OneandOnlyCampaign.org



For the latest news and updates, follow us on
Twitter @injectionsafety and Facebook/OneandOnlyCampaign.

This material was developed by CDC. The *One & Only Campaign* is made possible by partnership between the CDC Foundation and Lilly USA, LLC.

END

of FAQs

For injection safety guidelines, checklists, frequently asked questions, and other resources visit OneAndOnlyCampaign.org. For the latest news and updates follow us on Twitter [@injectionsafety](https://twitter.com/injectionsafety) and Facebook/[OneandOnlyCampaign](https://www.facebook.com/OneandOnlyCampaign)



FAST FACTS: UNSAFE INJECTION PRACTICES

The Impact of Unsafe Injection Practices

Although safe injection practices are basic infection control measures, they are not always followed.

- More than 150,000 patients have been impacted by unsafe injection practices since 2001. Breakdowns in proper infection control often involve providers reusing needles, syringes or single-dose medication vials, all of which are meant for one patient and one procedure. These breaches can cause irreparable damage exposing patients to bloodborne illnesses, such as hepatitis and HIV, and to life-threatening bacterial infections. Although safe injection practices represent very basic infection control measures, CDC routinely investigates outbreaks associated with deficient practices.
- As highlighted in a recent report from the U.S. Government Accountability Office (GAO) these data show that from 2001 through 2011, there were at least 18 outbreaks of viral hepatitis associated with unsafe injection practices in ambulatory settings, such as physician offices or ambulatory surgical centers (ASC). This does not include outbreaks of bacterial infections.
- A table from the Centers for Disease Control and Prevention includes examples of recent outbreaks and patient notification events occurring in a variety of outpatient settings, including primary care clinics, pediatric offices, ambulatory surgical centers, pain remediation clinics, imaging facilities, oncology clinics, and even health fairs: www.OneAndOnlyCampaign.org/outbreaks-table
- The documented number of patients affected by unsafe injections likely represents only the tip of the iceberg. Some diseases and infections spread through unsafe infection practices can take years to show up. By the time symptoms arise, the disease or infection can cause irreparable damage.
- Consequences of unsafe injection practices 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.

Lapses in Basic Infection Control

Many documented lapses in basic infection control practices involved healthcare providers reusing syringes when giving patients medication, or when drawing up medication from vials meant for only one use.

- Known outbreaks indicate that several procedures put patients most at risk:
 - The administration of sedatives and anesthetics for surgical, diagnostic, and pain management procedures
 - The administration of IV medications for chemotherapy, imaging studies, cosmetic procedures, and alternative medicine therapies (e.g., contrast medium)
 - The use of saline from an IV administration bag to flush IV lines and catheters



- 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 ^{1,2}
 - Accessing medication with a syringe that has already been used to administer medication to a patient, then reusing the contaminated medication for another patient ^{3,4,5,6}
 - Using medications packaged as single-dose or single-use for more than one patient ^{7,8,9}
 - Failing to use aseptic technique when preparing and administering injections ^{10,11,12}
- A single-dose vial should only be used for one patient and any remaining contents should be discarded. There are options for working with high-quality pharmacies or pharmaceutical compounding companies when customized doses are needed. In such cases, it is critical that the pharmacy or company strictly adheres to USP 797 standards.

Cases and Consequences of Unsafe Injection Practices

- **ARIZONA:** In April 2012, an outbreak of methicillin-resistant *Staphylococcus aureus* (MRSA) occurred at an outpatient pain management clinic in Arizona, where patients had been injected with a diluted contrast medium for radiologic imaging. Due partly to the difficulty in obtaining a reliable supply of a low-concentration contrast medium, the clinic staff prepared two batches of contrast medium, taken from a single-dose vial, and diluted with saline solution. One batch was used for all of the morning's patients and a second was used in the afternoon. All of the patients who contracted MRSA received an injection on the same day from the same batch of medication. Three patients were treated for severe infections, requiring hospitalization ranging from 9 – 41 days.¹⁴ A fourth patient died from multiple drug overdose but invasive MRSA infection could not be ruled out.



- **DELAWARE:** In March of 2012, seven patients who had received joint injections at an outpatient orthopedic clinic in Delaware contracted a methicillin-susceptible *Staphylococcus aureus*. The only breach of safe practice that had taken place at the clinic was the reuse of single-dose vials (SDVs) of the anesthetic bupivacaine for multiple patients. Clinic staff had until recently been using 10 mL SDVs for single-patient use. However, a national drug shortage disrupted this supply and prompted the use of 30 mL SDVs for multiple patients, with staff drawing from the same vial until it was empty and occasionally storing it overnight for use the following day. The infected patients required an average hospital stay of six days to combat the infection. ¹³



- **NEVADA:** A 2008 outbreak of hepatitis C at an endoscopy clinic in Nevada occurred because syringes used to access medication vials were reused for multiple patients. The resulting public health notification of approximately 50,000 people was the largest of its kind in United States healthcare. The Southern Nevada Health District estimated total public health costs including investigation, testing, and medical counseling at \$16-\$21 million. The doctor and two nurses involved in the outbreak face a loss of livelihood and reputation, as well as criminal charges that their malpractice insurance does not cover.



- **NEW JERSEY:** A 2009 outbreak of Hepatitis B at an oncology practice occurred as a result of a variety of unsafe injection practices. These practices included reuse of single-dose vials for multiple patients and use of a common source saline bag for multiple patients. The resulting public health notification affected 4,600 patients, and 29 cancer patients were infected with hepatitis B as a result of this outbreak. The State of New Jersey revoked the medical license of the physician who operated the oncology practice in 2011.



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2. Jain SK et al. Nosocomial Malaria and Saline Flush. *EID* 2005;11:1097-1099.
3. Macedo de Oliveira A et al. An Outbreak of Hepatitis C Virus Infections among Outpatients at a Hematology/Oncology Clinic. *AIM* 2005;142:898-903.
4. Moore ZS et al. Hepatitis C Virus Infections associated with Myocardial Infusion Studies, North Carolina, 2008. Poster presented at: Annual Scientific Meeting of the Society for Healthcare Epidemiology; March 21, 2009; San Diego, CA.
5. Gutelius B et al. Multiple Clusters of Hepatitis Virus Infections Associated with Anesthesia for Outpatient Endoscopy Procedures. *Gastroenterology* 2010;139:163-170.
6. Fischer GE et al. Hepatitis C Virus Infections from Unsafe Injection Practices at an Endoscopy Clinic in Las Vegas, Nevada, 2007-2008. *CID* 2010;51:267-273.
7. Bennett SN et al. Post-operative Infections Traced to Contamination of an Intravenous Anesthetic, Propofol. *NEJM* 1995;333:147-154.
8. Groshkopf LA et al. *Serratia liquefaciens* Bloodstream Infections from Contamination of Epoetin alfa at a Hemodialysis Center. *NEJM* 2001;344:1491-1497.
9. Cohen AL et al. Outbreak of *Serratia marcescens* Bloodstream and Central Nervous System Infections after Interventional Pain Management Procedures. *Clin J Pain* 2008;24:374-380.
10. Samandari T et al. A Large Outbreak of Hepatitis B Virus Infections Associated with Frequent Injections at a Physician's Office. *ICHE* 2005;26:745-750.
11. Archer WR et al. Methicillin-susceptible *Staphylococcus aureus* Infections after Intra-Articular Injections. Poster presented at: 47th Annual Meeting of Infectious Diseases Society of America; October 29-November 1, 2009; Philadelphia, PA.
12. Thompson ND et al. Nonhospital Health Care-Associated Hepatitis B and C Virus Transmission: United States, 1998-2008. *Ann Intern Med* 2009;150:33-39.
13. Centers for Disease Control and Prevention. Invasive *Staphylococcus aureus* Infections Associated with Pain Injections and Reuse of Single-Dose Vials — Arizona and Delaware, 2012. *Morbidity and Mortality Weekly Report*, July 13 2012. Accessed on 8.9.12 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6127a1.htm>.
14. Ibid.

END

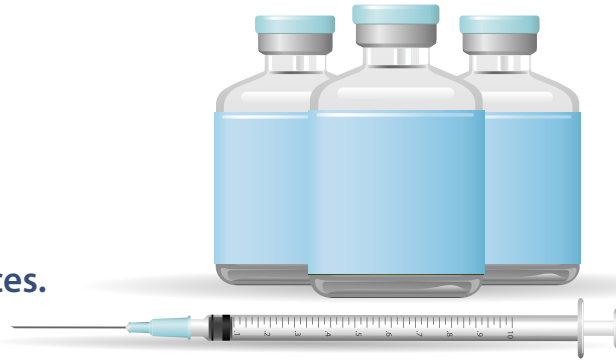
of Fast Facts

For injection safety guidelines, checklists, frequently asked questions, and other resources visit **OneAndOnlyCampaign.org**. For the latest news and updates follow us on Twitter **@injectionsafety** and **Facebook/OneandOnlyCampaign**



DANGEROUS MISPERCEPTIONS

Here are some examples of dangerous misperceptions about safe injection practices.



Myth	Truth
Changing the needle makes a syringe safe for reuse.	Once they are used, both the needle and syringe are contaminated and must be discarded. A new sterile needle and a new sterile syringe should be used for each injection and each entry into a medication vial.
Syringes can be reused as long as an injection is administered through IV tubing.	Syringes and needles should never be reused. The IV tubing, syringe, and other components represent a single, interconnected unit. Distance from the patient, gravity, or infusion pressure do not ensure that small amounts of blood won't contaminate the syringe once it has been connected to the unit.
If you don't see blood in the IV tubing or syringe, it means that those supplies are safe for reuse.	Germs such as hepatitis C virus and staph or MRSA are invisible to the naked eye, but can easily infect patients even when present in microscopic quantities. Do not reuse syringes, needles, or IV tubing.
It's okay to use leftover medicine from use single-dose or single-use vials for more than one patient.	Single-dose or single-use vials should not be used for more than one patient regardless of how much medicine is remaining.

Injection Safety is Every Provider's Responsibility!

The *One & Only Campaign* is a public health effort to eliminate unsafe medical injections. To learn more about safe injection practices, please visit OneandOnlyCampaign.org.

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THE IMPACT OF UNSAFE MEDICAL INJECTIONS IN THE U.S.

Unsafe Injection Practices Have Devastating Consequences¹

Syringe reuse and misuse of medication vials have resulted in dozens of outbreaks and

THE NEED TO ALERT MORE THAN 150,000 PATIENTS...

...to seek testing for bloodborne pathogens such as

HEPATITIS B, HEPATITIS C AND HIV,² and have led to...



Patient illness and death



Legal charges/ malpractice suits

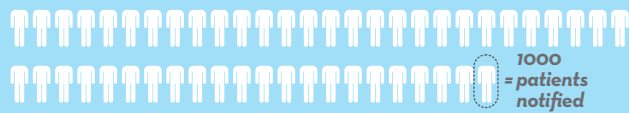


Loss of clinician licenses



Criminal charges

In just one clinic, syringe reuse to access medication vials for multiple patients resulted in an outbreak and one of the largest public health alerts in U.S. history.



50,000 PEOPLE EXPOSED TO INFECTION



Outbreaks Occur in a Variety of Settings



Hospitals

Primary care clinics

Pediatric offices

Outpatient surgical centers



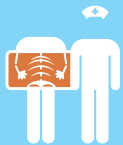
Pain clinics

Imaging facilities

Oncology clinics

Dental clinics

Health fairs



Injection Safety is Every Provider's Responsibility

Steps Every Healthcare Provider Should Take



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.



The Safe Injection Practices Coalition (SIPC) is a partnership of healthcare-related organizations led by the Centers for Disease Control and Prevention. The SIPC developed the *One & Only Campaign*—a public health effort to eliminate unsafe medical injections by raising awareness of safe injection practices. For a list of SIPC Partners, more information about the Campaign, and to view additional resources including videos and other materials, please visit OneandOnlyCampaign.org



For the latest news and updates, follow us on Twitter @injectionsafety and Facebook/OneandOnlyCampaign.

FOOTNOTES

- 1 Centers for Disease Control and Prevention. (August 24, 2012). Injection Safety Information for Providers. In CDC.gov. Retrieved October 10 2012, from <http://www.cdc.gov/injectionsafety/providers.html>.
- 2 Guh, Alice Y. MD, MPH; Thompson, Nicola D. PhD; Schaefer, Melissa K. MD; Patel, Priti R. MD, MPH; Perz, Joseph F. DrPH. Patient Notification for Bloodborne Pathogen Testing due to Unsafe Injection Practices in the US Health Care Settings, 2001-2011. Medical Care Journal, May 2012.

END

of Impact of Unsafe Medical Injections in the US



Section 2: Posters and Checklists

1 ONE NEEDLE,
ONE SYRINGE,
ONLY ONE TIME.



Safe Injection Practices Coalition

www.ONEandONLYcampaign.org

Injection Safety Guidelines

from the
Centers for Disease
Control and Prevention

This material was developed by CDC. The *One & Only Campaign* is made possible by a partnership between the CDC Foundation and Lilly USA, LLC.

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.

Adapted from: Guideline for isolation precautions: preventing transmission of infectious agents in health care settings 2007. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. Available at: <http://www.cdc.gov/hicpac/pdf/isolation/isolation2007.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 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	

The *One & Only Campaign* is a public health effort to eliminate unsafe medical injections. To learn more about safe injection practices, please visit OneandOnlyCampaign.org.

 For the latest news and updates, follow us on Twitter [@injectionsafety](https://twitter.com/injectionsafety) and Facebook/OneandOnlyCampaign.



BE AWARE DON'T SHARE



Insulin pens that contain more than one dose of insulin are only meant for one person.

Insulin pens should never be used for more than one person.

They are only approved for use on individual patients, even when the needle is changed or when there is leftover medicine. No exceptions.

**ONE INSULIN PEN,
ONLY ONE PERSON**

The *One & Only Campaign* is a public health effort to eliminate unsafe medical injections. To learn more about safe injection practices, please visit OneandOnlyCampaign.org.



For the latest news and updates, follow us on Twitter @injectionsafety and Facebook/OneandOnlyCampaign.



Insulin Pen Safety

60 Second Check

Check the following 6 steps:

A simple **60 second safety check** can prevent unintended errors which place residents at risk of acquiring bloodborne pathogen infections such as hepatitis B, hepatitis C, and HIV.

Please take time to check your steps.

For additional information please visit:

www.preventHAaz.gov

Eugene Livar
HAI Program Manager

(602)364-3522
Eugene.Livar@azdhs.gov

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.



Section 3: Training Materials

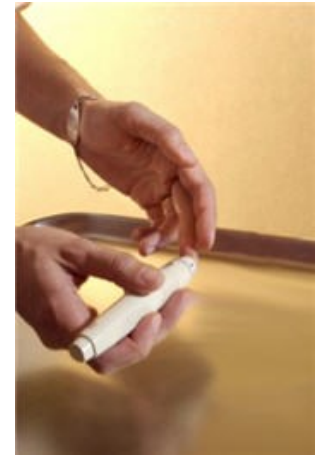


Three Simple Rules for Assisted Blood Glucose Monitoring and Insulin Administration

1

FINGERSTICK DEVICES SHOULD NEVER BE USED FOR MORE THAN ONE PERSON

- Restrict use of fingerstick devices to a single person. They should never be used for more than one person.
- Select single-use lancets that permanently retract upon puncture. This adds an extra layer of safety for the patient and the provider.
- Dispose of used lancets at the point of use in an approved sharps container. Never reuse lancets.



2

BLOOD GLUCOSE METERS SHOULD BE ASSIGNED TO ONLY ONE PERSON AND NOT BE SHARED

- Whenever possible, assign blood glucose meters to a single person.
- If blood glucose meters must be shared, they should be cleaned and disinfected after every use, per manufacturer's instructions, to prevent carry-over of blood and infectious agents.
- If the manufacturer does not specify how the device should be cleaned and disinfected then it should not be shared.



3

INJECTION EQUIPMENT SHOULD NEVER BE USED FOR MORE THAN ONE PERSON

- Insulin pens should be assigned to only one person and labeled appropriately. They should never be used for more than one person.
- Multiple-dose vials of insulin should be dedicated to a single person whenever possible.
- Medication vials should always be entered with a new needle and new syringe. Never reuse needles or syringes.
- For information and materials about safe insulin pen use, visit www.ONEandONLYcampaign.org.



Always practice proper hand hygiene and change gloves between each person.

One and Only Campaign Educational Slide Set

Available for download at:

http://oneandonlycampaign.org/sites/default/files/upload/pdf/ProviderToolkitPowerPoint_508.pdf



The slide has a white background with a black header and footer. In the top left corner, there is a small version of the campaign logo. The word 'Outline' is centered in a large, blue font. Below it, a bulleted list contains six items: 'Safe Injection Practices', 'The ONE and ONLY Campaign', 'Outbreak History', 'Mistaken Beliefs', 'A Call to Action', and 'Resources and Information'.

Outline

- Safe Injection Practices
- The ONE and ONLY Campaign
- Outbreak History
- Mistaken Beliefs
- A Call to Action
- Resources and Information

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

Three Things Every Provider Needs to Know About Injection Safety

- 1.** Needles and syringes are single use devices. They should not be used for more than one patient or reused to draw up additional medication.
- 2.** Do not administer medications from a single-dose vial or IV bag to multiple patients.
- 3.** Limit the use of multi-dose vials and dedicate them to a single patient whenever possible.

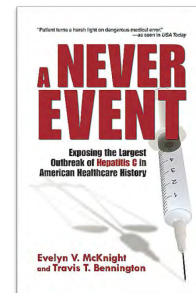


Evelyn McKnight's Story

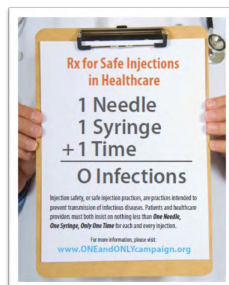
Dr. Evelyn McKnight, mother of three, was battling breast cancer and was infected with hepatitis C during treatment because of syringe reuse to access saline flush solution.

Along with Evelyn, 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 HONORreform, a foundation dedicated to improving America's injection safety practices, and was the catalyst of the formation of the Safe Injection Practices Coalition.



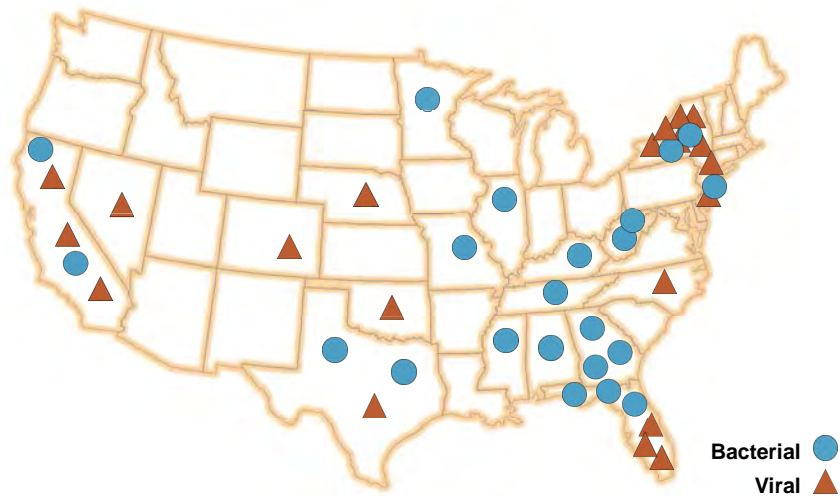
The ONE and ONLY Campaign



- Launched in response to outbreaks resulting from unsafe injection practices
- Led by the Centers for Disease Control and Prevention (CDC) and the Safe Injection Practices Coalition
- Goals
 - Increase understanding and implementation of safe injection practices among healthcare providers
 - Ensure patients are protected each and every time they receive a medical injection



U.S. Outbreaks Associated with Unsafe Injection Practices, 2001-2011



Over 125,000 patients were notified as a result of incidents and outbreaks involving unsafe injections practices



City alerts 450 patients of Hylan Boulevard clinic to hepatitis C
Concern
June 17, 2011

MailOnline

Parents' horror as they are told to test their infants for HIV after flu vaccine mix-up
April 13, 2011



Nurse accused of stealing pain meds gets probation
September 20, 2011



NJ doctor loses license after hepatitis B outbreak
September 15, 2011



Injection Practices Among Clinicians in United States Health Care Settings

- Survey of 5,500 U.S. healthcare professionals
- 1 percent “sometimes or always” reuse a syringe on a second patient
- 1 percent “sometimes or always” reuse a multidose vial for additional patients after accessing it with a used syringe
- 6 percent use single-dose/single use vials for more than one patient

Pugliese G., Gosnell C., Bartley J., & Robinson S. (December 2010). Injection practices among clinicians in United States health care settings. *American Journal of Infection Control*, 38 (10), 789-798. Retrieved from <http://www.ajicjournal.org/article/PIIS0196655310008539/abstract>.



When Safe Practices are Used...

Each Patient is an Island



SOURCE
Infectious person,
e.g. chronic, acute



HOST
Susceptible,
non-immune person

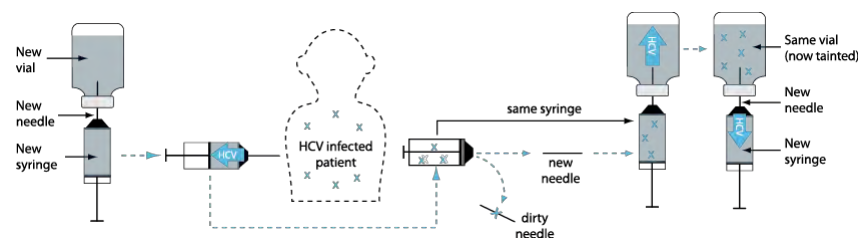


Las Vegas, Nevada Outbreak, 2008

- 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)



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). Retrieved March 9, 2012 from <http://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html>
Important Patient Safety Notification (2011). Retrieved March 9, 2012 from <http://www.dean care.com/about-dean/news/2011/important-patient-safety-notification/>



True or False?

“I’m preventing contamination and infection transmission as long as I’m...”

- “...changing the needle between patients.”  **FALSE**
- “...injecting through intervening lengths of intravenous tubing.”  **FALSE**
- “...maintaining pressure on the plunger to prevent backflow of body fluids.”  **FALSE**
- “...not able to observe contamination or blood.”  **FALSE**



Unsafe Injection Practices Result In...

- Patients placed at risk for life-threatening infections
- Referral of providers to licensing boards for disciplinary action
- Legal actions such as malpractice suits filed by patients
- CMS and The Joint Commission have begun assessing injection practices as part of facility inspections



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 reviewed frequently among colleagues





Injection Safety Checklist

INJECTION SAFETY CHECKLIST

The following Injection Safety Checklist items are a subset of items that can be found in the CDC Injection-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 informally assess adherence of health care personnel to safe injection practices. Assessment of adherence should be conducted by direct observation of healthcare personnel during the performance of their duties.

Injection Site:	Inpatient/Outpatient	Emergency Room/Outpatient
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 transfused/purified syringes and cartridge devices such as insulin pens)	Yes/No	
The injection equipment or medication vial is able to be used without prior to cleaning	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 vials are used only once with a needle and syringe or barrier of intravenous infusion and used for only one patient	Yes/No	
Medication administration tubing and connectors are used for only one patient	Yes/No	
Multi-dose vials are opened by HCW when they are first opened and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial	Yes/No	
Multi-dose vials are discarded in individual patients whenever possible	Yes/No	
Multi-dose vials to be used for more than one patient are kept in a controlled environment area and do not enter the immediate patient treatment area (i.e., waiting rooms, patient rooms/beds)	Yes/No	
Needle sticks are used only when the immediate patient treatment area has been reserved for single patient use and discarded immediately after use	Yes/No	

References:
 Checklist URL: <http://www.cdc.gov/od/oc/ohrt/pdfs/guidelines/injection-safety-checklist-4-1-2013.pdf>
 Guide to Inpatient Prevention of Outpatient Settings: Minimum Expectations for Safe Care, <http://www.cdc.gov/od/oc/ohrt/pdfs/guidelines/injection-safety-checklist-4-1-2013.pdf>

www.oneandonlycampaign.org

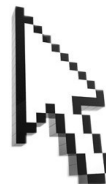
www.cdc.gov/injectionsafety



Resources and Information

www.cdc.gov/injectionsafety

ONEandONLYcampaign.org





Materials Available for Order

One & Only Campaign Materials For Order Via CDC-INFO

 Safe Injection Practices DVD Item 22-0087	 Rx for Safe Injections Poster Item 22-0696	 It's Elementary Poster Item 22-0697	 Provider Brochure Item 22-0702	 Patient Brochure Item 22-0701
 Injection Safety Pocket Card Item 22-0713	 Logo Poster for Providers Item 22-0700	 Logo Poster for General Public Item 22-0699	How to Order  SCAN Scan with your Smartphone to access the ordering page CALL 1-800-CDC-INFO CLICK http://www.cdc.gov/pubs/dhqp.aspx	
 Injection Safety Dangerous Misperceptions Flyer Item 22-0706	 Injection Safety Healthcare Provider Checklist Item 22-0704	 Injection Safety Healthcare Provider Toolkit Item 22-0707		

1-800-CDC-INFO

End of slide set.

References and Resources

Centers for Disease Control and Prevention (CDC):

CDC Injection Safety

<http://www.cdc.gov/injectionsafety/>

CDC Information for Providers

<http://www.cdc.gov/injectionsafety/providers.html>

CDC Infection Prevention during Blood Glucose Monitoring and Insulin Administration

<http://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html>

The One & Only Campaign

<http://www.cdc.gov/injectionsafety/1anOnly.html>

One & Only Campaign:

About the Campaign

<http://oneandonlycampaign.org/>

Audio & Video

<http://oneandonlycampaign.org/content/audio-video>

- Check Your Steps! Make Every Injection Safe
https://www.youtube.com/watch?feature=player_embedded&v=uiBoFZZVcLI
- Managing Patient Safety, One Injection at a Time
https://www.youtube.com/watch?v=iLgwA53Bt40&feature=player_embedded
- Safe Injection Practices Video – How to Do It Right
https://www.youtube.com/watch?v=6D0stMoz80k&feature=player_embedded
- Safe Injection Practices: A Video for Healthcare Providers
https://www.youtube.com/watch?feature=player_embedded&v=mscJA9WFMCM

Print Materials

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

Toolkits

<http://oneandonlycampaign.org/content/one-only-campaign-toolkits>

Social Media

<http://oneandonlycampaign.org/resources/social>

Buttons & Images

<http://www.oneandonlycampaign.org/content/buttons-images>

Patient Information

http://www.oneandonlycampaign.org/patient_information