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# Overview of Safe Injection Practices

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HAI Lunch and Learn April 30, 2019



# Objectives

- Define unsafe injection practices and their relationship to disease transmission
- Explain how to safely handle medications
- Describe how to promote injection safety
- Become familiar with the Oregon Health Authority's One & Only Campaign

**Injection Safety is  
Every Provider's  
Responsibility**



# What are safe injection practices?

## Safe injections protect:

- The patient
- The provider
- The community

## Where injections may go wrong:

- Vials
- Needle
- Syringes
- Preparation



## 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.

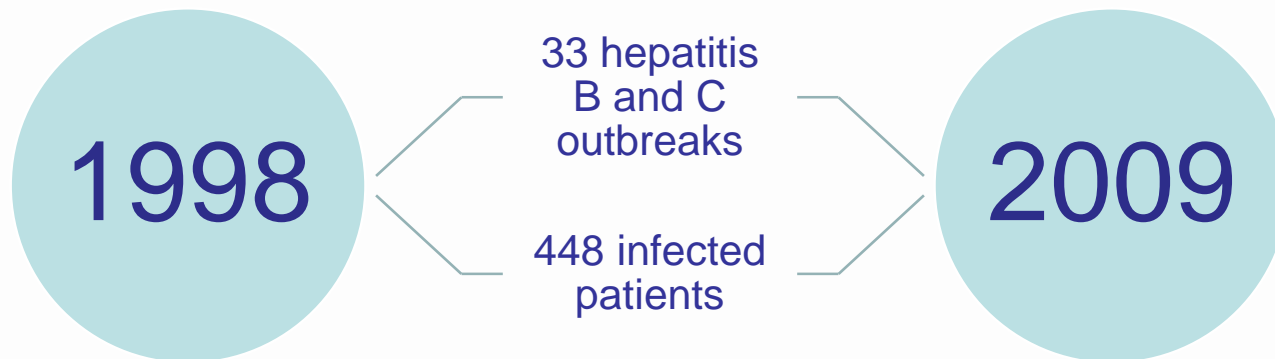


Always use facemasks when injecting material or inserting a catheter into the epidural or subdural space.

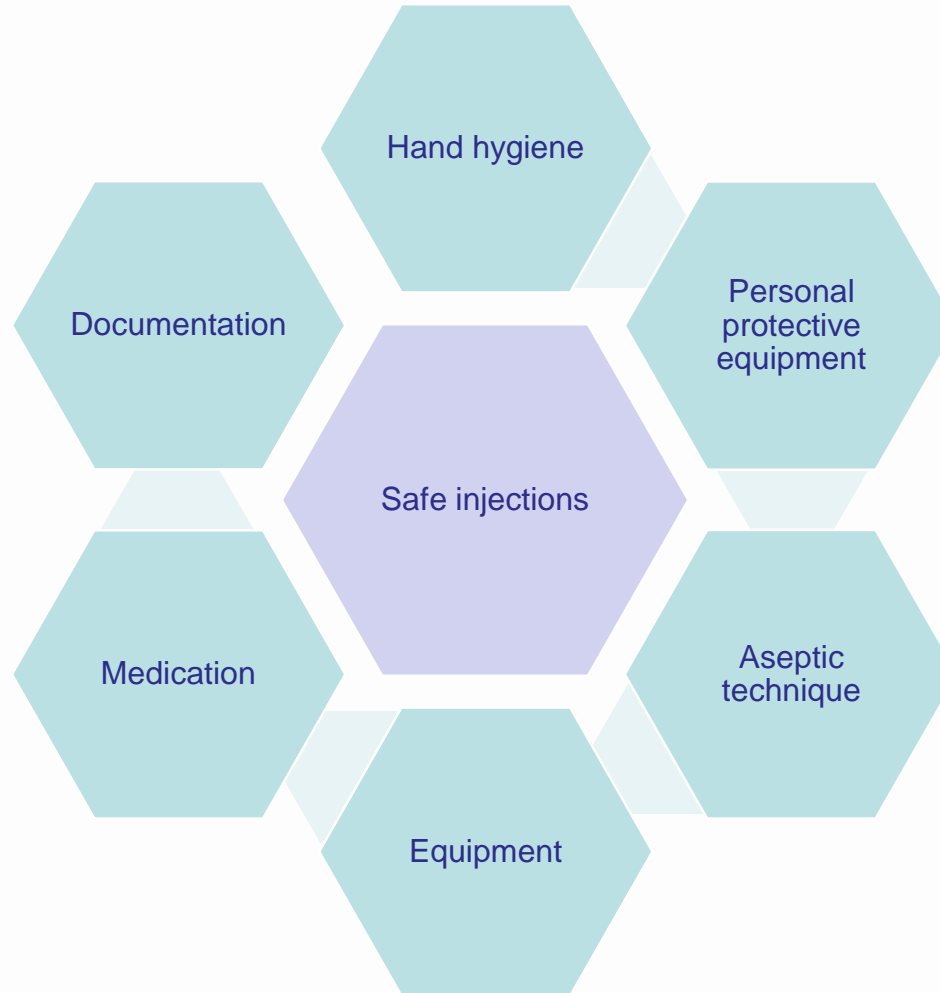


# Why worry about injection practices?

- Survey of US clinicians
  - 12% of physicians and 3% of nurses report that syringes reuse occurs in their workplace.



# Injections are complex and mistakes are easy!



# Why worry about injection practices?

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

### Unsafe Injection Practices Have Devastating Consequences<sup>1</sup>

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,<sup>2</sup>** 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**



# Patient impact

Bloodborne  
viral  
pathogens

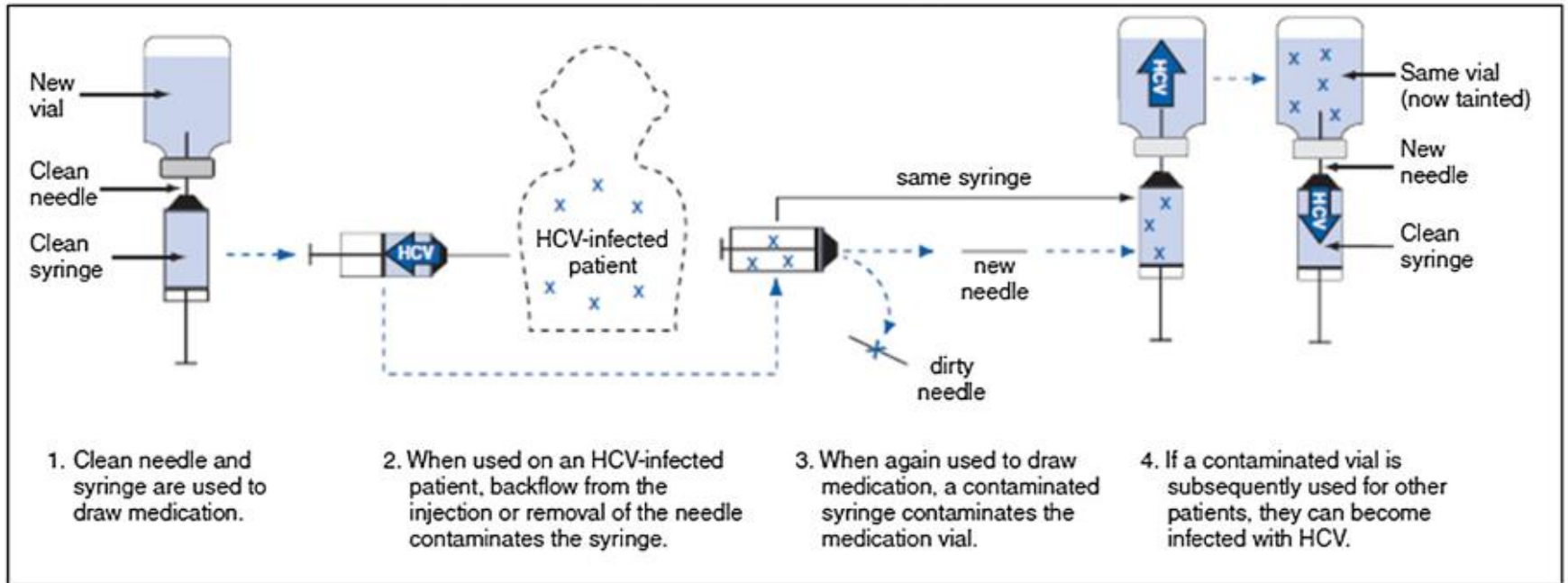
- Human immunodeficiency virus
- Hepatitis B virus
- Hepatitis C virus

Other  
pathogens

- Bacterial
- Fungal
- Parasitic
- Other viral pathogens

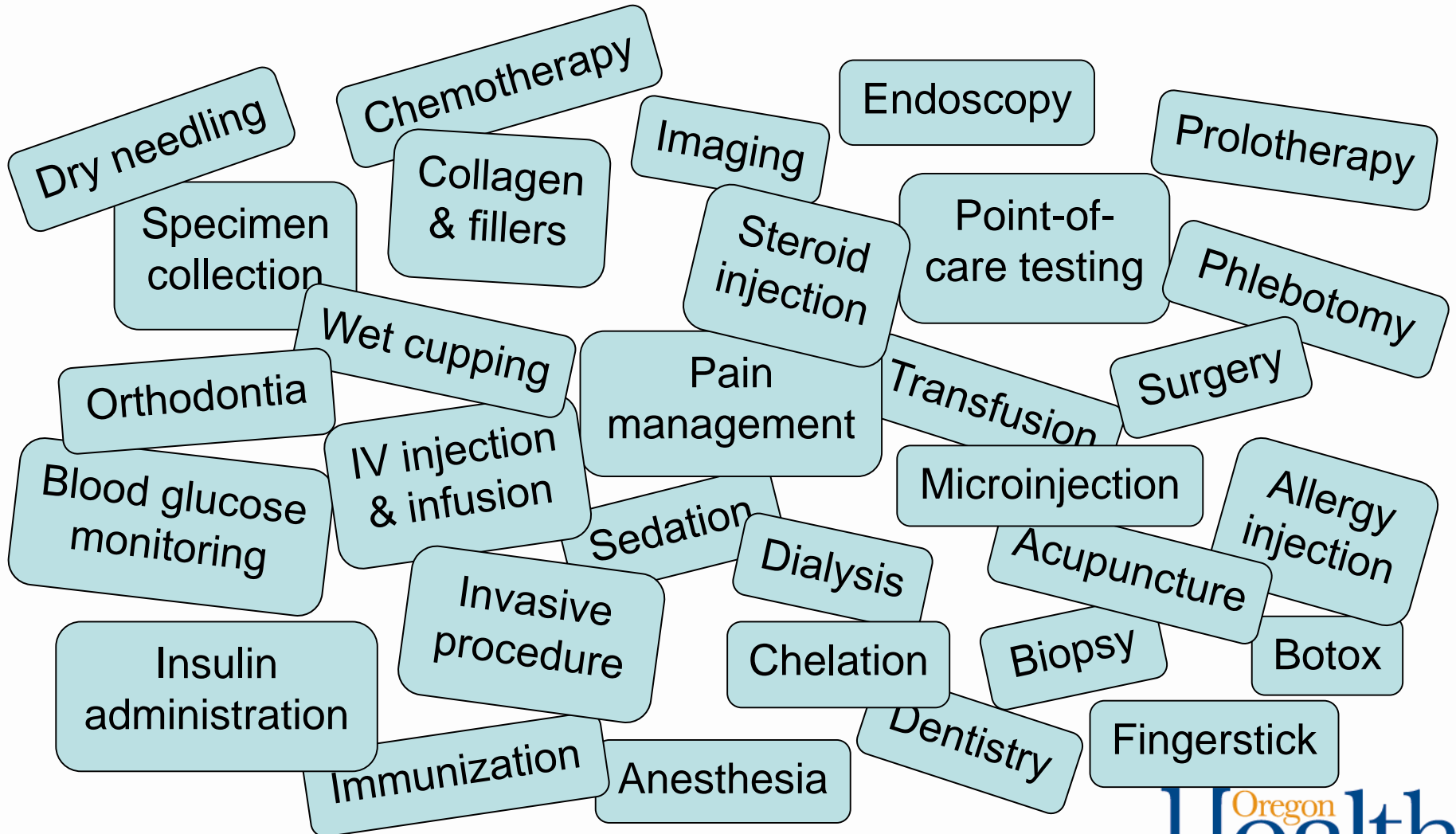


# Patient impact

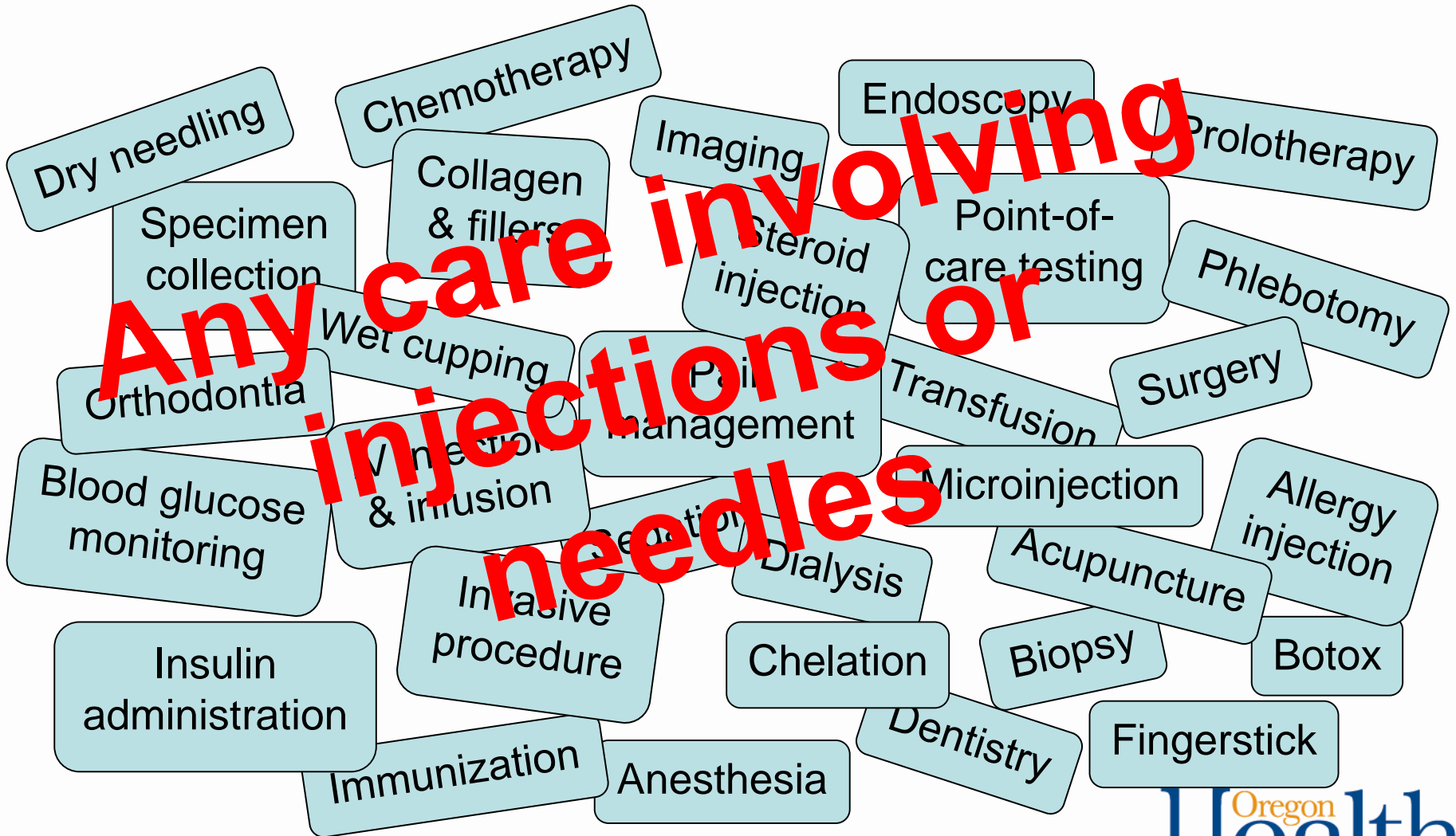


**Fig. 1.** Illustration of how indirect syringe reuse can lead to HCV contamination of a shared medication vial. (Data from Centers for Disease Control and Prevention (CDC). Acute hepatitis C virus infections attributed to unsafe injection practices at an endoscopy clinic—Nevada, 2007. *MMWR Morbid Mortal Weekly Rep* 2008;57:513–7.)

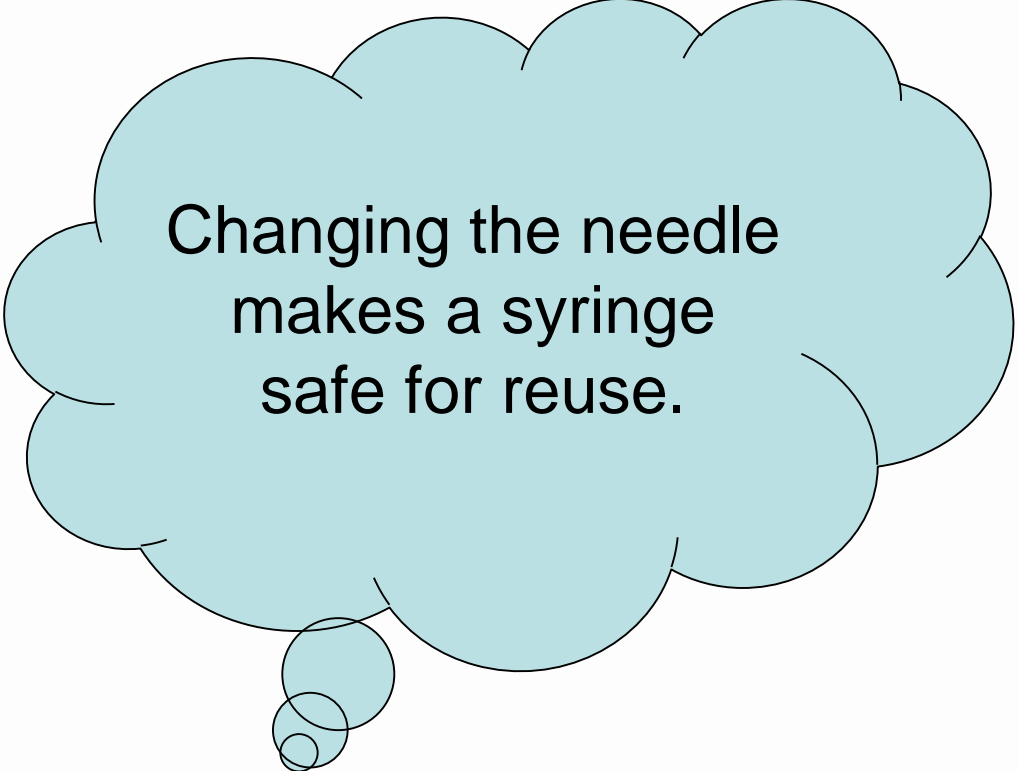
# What kind of care is implicated?



# What kind of care is implicated?



# Perceptions about injection practices

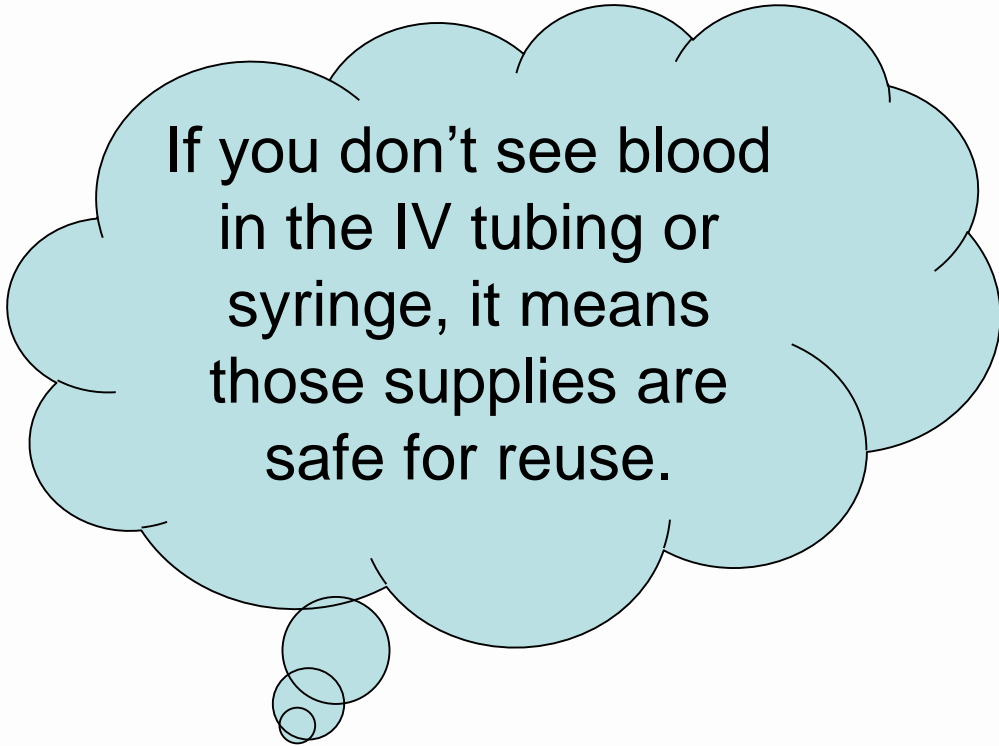


Changing the needle  
makes a syringe  
safe for reuse.

# Perceptions about injection practices

Once used, both needle and syringe are contaminated and must be discarded. A new sterile needle and new sterile syringe must be used for each injection and each entry into a medication vial.

# Perceptions about injection practices

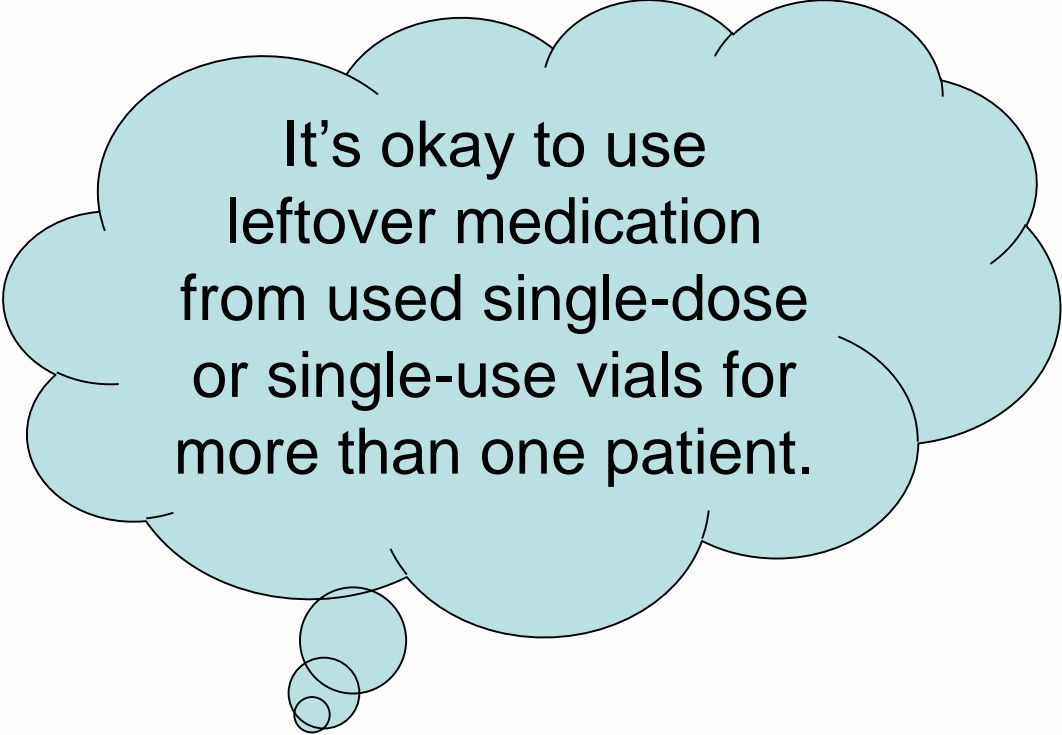


If you don't see blood  
in the IV tubing or  
syringe, it means  
those supplies are  
safe for reuse.

# Perceptions about injection practices

Pathogens 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.

# Perceptions about injection practices



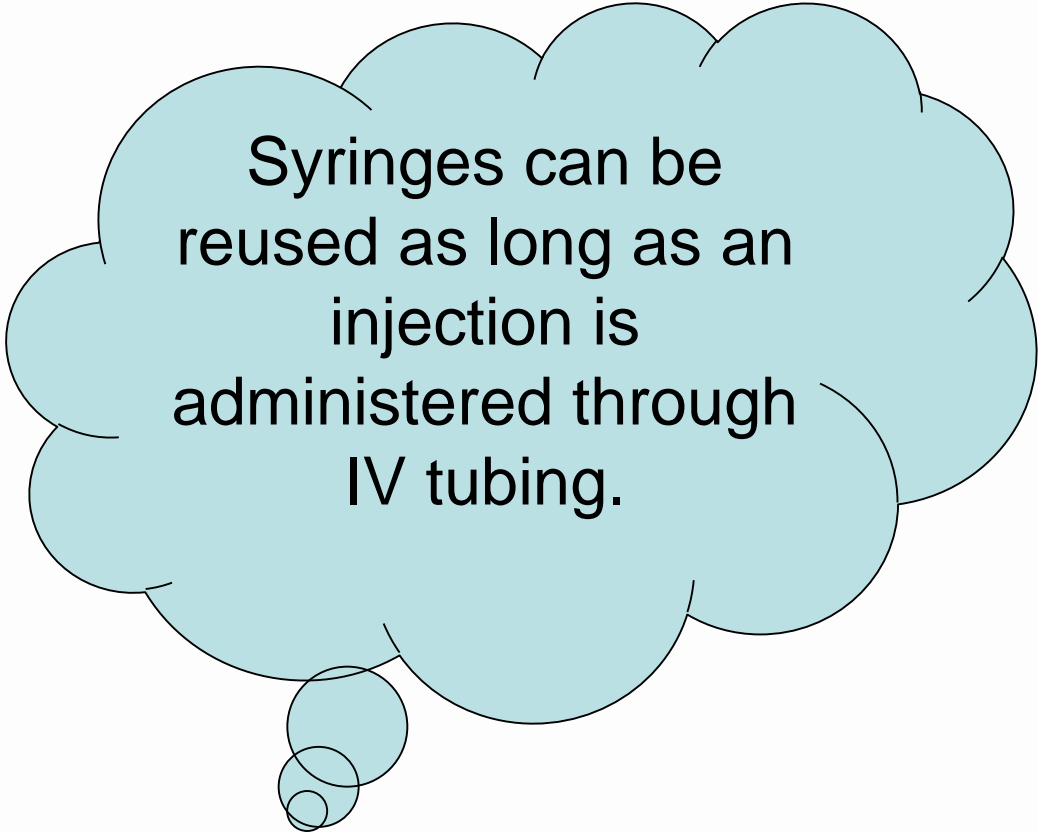
It's okay to use  
leftover medication  
from used single-dose  
or single-use vials for  
more than one patient.



# Perceptions about injection practices

Single-dose or single-use vials should not be used for more than one patient regardless of how much medicine is remaining.

# Perceptions about injection practices



Syringes can be reused as long as an injection is administered through IV tubing.

# Perceptions about Injection Practices

Syringes and needles should never be reused. IV tubing, syringes, and other components represent a single, interconnected unit. Distance from patient, gravity, and infusion pressure don't ensure that small amounts of blood won't contaminate the syringe once it has been connected to the unit.

# Practice requirements

- CDC's Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007) – III.A.1.b, IV.H (1-8)
  - <https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>
- OHA's OAR 333-019-0061
  - effective 1/1/18
  - requires all licensed healthcare providers to adhere to standard precautions defined in the CDC guideline
  - <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=239050>

# What practices might lead to infection?



Poor medication handling



Poor hand hygiene



Inappropriate disposal



Drug Diversion

# Medication handling



Clean hands



New, sterile equipment



Examine and disinfect vial



Draw up medication safely



Never place in pockets



Multi- vs single-dose vials

# Insulin administration



Dedicate vial and pen to a single patient



Always use new equipment



Store and prepare vial appropriately



Dispose of used needles appropriately

# Fingerstick devices and blood glucose meters



Dedicate to one person



Choose single use lancets



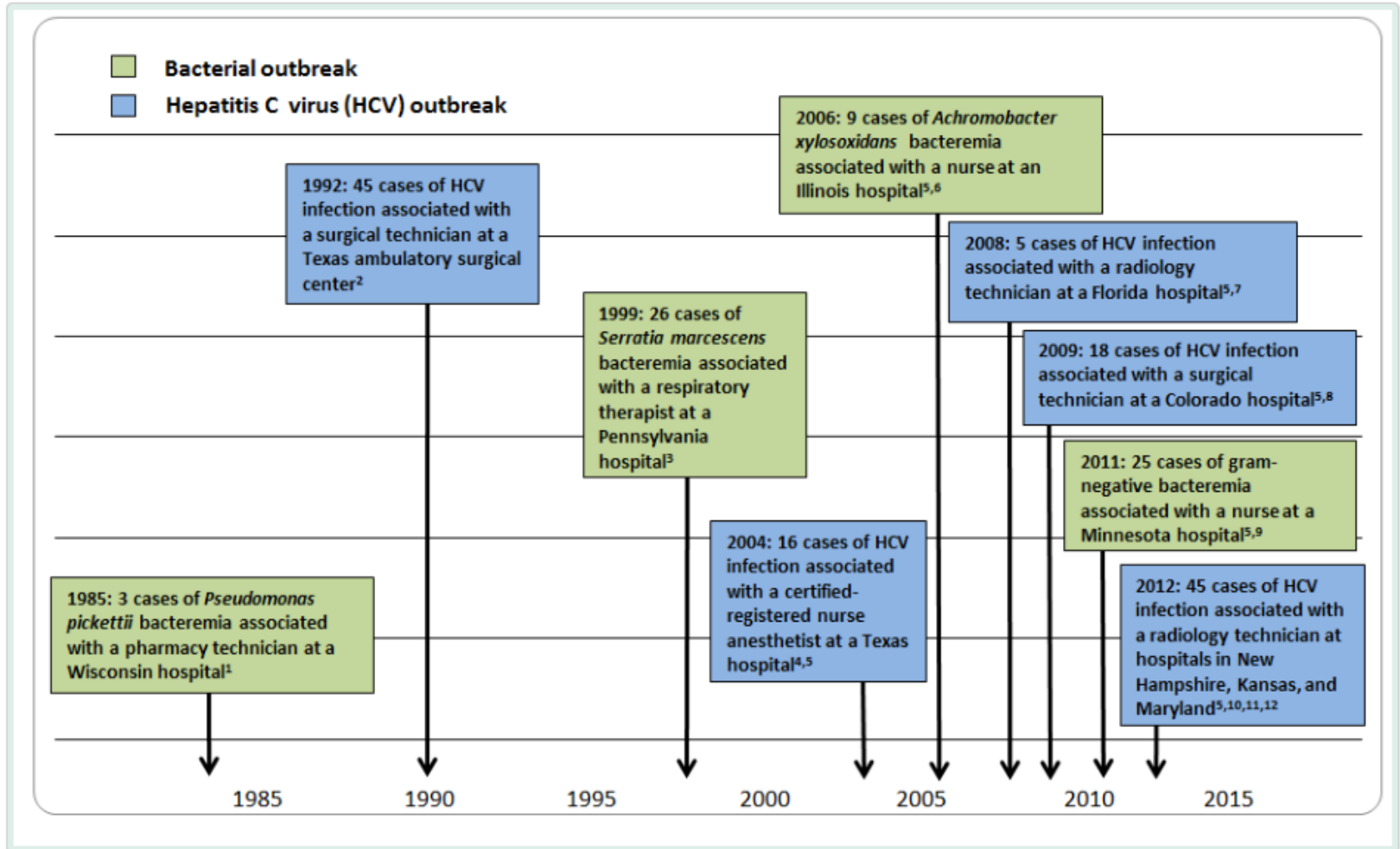
Dispose of used lancets appropriately



# Drug diversion

- Removal or use of medications intended for patients
- Mechanisms of diversion
  - False documentation
  - Scavenging of wasted medication
  - Theft by tampering
- Harms to patients
  - Failure to receive prescribed medications
  - Exposure to substandard care from an impaired HCW
  - Exposure to potentially life-threatening infections

# U.S. Outbreaks Associated with Drug Diversion by Healthcare Providers, 1983-2013



# Drug diversion prevention & response

## Make a plan

### Prevention

- Support for affected staff
- Limit access
- Improve processes
- Enhance accountability

### Response

- Protect patients
- Assess damage
- Communicate
  - Partners
  - Regulatory

# What can facilities do to promote injection safety?

- Designate staff member to oversee injection safety
- Develop written policies
- Provide competency-based training/education (at hire and ongoing)
- Conduct quality assurance assessments and quality improvement projects
- Think outside the box
- Communicate about possible issues early and often
- Constant vigilance!



# Free online and print resources via CDC-INFO

**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 Infographic**  
Item 22-1504

**Single-Dose & Multi-Dose Vial Infographic**  
Item 22-1599

**Injection Safety Pocket Card**  
Item 22-0713

**Logo Poster for General Public**  
Item 22-0699

**Injection Safety Dangerous Misperceptions Flyer**  
Item 22-1178

**Injection Safety Healthcare Provider Checklist**  
Item 22-1176

**Be Aware Don't Share Insulin Poster**  
Item 22-1503

**Be Aware Don't Share Insulin Brochure**  
Item 22-1501

**Injection Safety Fact Sheet**  
Item 22-1502

**Injection Safety Healthcare Provider Toolkit**  
Item 22-1177

**You Can Order 3 Ways**

**SCAN**  
Scan with your smartphone to access the ordering page

**CALL**  
1-800-CDC-INFO

**CLICK**  
[www.cdc.gov/pubs/CDCInfoOnDemand.aspx](http://www.cdc.gov/pubs/CDCInfoOnDemand.aspx)  
Select Injection Safety—One & Only Campaign to order materials

The One & Only Campaign is made possible by a CDC Foundation partnership with Eli Lilly and Company

# 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	

# Injection safety and needle use toolkit

<https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/one-and-only.aspx>



## Injection and Needle Safety Toolkit

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Although injections and needle use in professional settings are generally safe, unsafe practices do happen and may cause serious harm.

Unsafe practices, like reusing vials or syringes, have the potential to spread disease by cross-contaminating body fluids. Since 2001, more than 150,000 people in the U.S. have been notified of potential exposure to viral hepatitis and HIV due to lapses in injection and needle safety.

### Do your part. Three ways to help stop these infections:

1. Sign up to join the Oregon One and Only Campaign mailing list! Email [Roza.P.Tammer@state.or.us](mailto:Roza.P.Tammer@state.or.us) for more information.
2. Learn about best practices by using this toolkit.
3. Share what you learn from the toolkit with those in your workplace.

*Disclaimer:* The resources below contain overlapping information on best practices, but are by no means comprehensive, as new resources continually emerge. In addition, the links provided do not serve as an endorsement of the organizations.

# Toolkit Contents

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## For the Public

- [What to know about receiving healthcare involving needles](#)
- [At-home injections and needle use](#)

## For Health Professionals

- [Guidelines and Recommendations](#)
- [Aseptic Technique](#)
- [Needle Safety](#)
- [Medication and Treatment Management](#)
- [Diabetes Care](#)
- [Reports of Disease Transmission](#)
- [Specialty Specific Resources](#)
- [Additional Resources](#)
- [References](#)

## Feedback

- We want to hear from you! Let us know what you think about this toolkit by completing this [quick feedback form](#).

# Toolkit Evaluation

1. This toolkit is helpful.
  - Agree, neutral, disagree
2. What section or aspect of the toolkit did you find useful?
  - Checkbox list + comment box
3. What would improve this toolkit? Are we missing anything?
  - Open ended
4. Do you have other comments?

# For Health Professionals

## Guidelines and Recommendations

- [CDC's One & Only Campaign](#)  
**Toolkit:** A collection of injection and needle safety resources that includes free print materials, multimedia materials and additional resources.
- [WHO Injection Safety Campaign](#)  
**Toolkit:** A collection of best practice resources that provides guidelines, educational and evaluation tools and print materials.
- [Safe Injection Practices Overview \(pdf\)](#)  
**PowerPoint:** HAI Program presentation that describes the impact of unsafe needle and injection practices, CDC recommendations for best practice, and how health professionals can champion needle and injection safety in their facilities.
- [CDC and CMS: Nursing Home Infections Preventionist Training, Module 8 - Injection Safety](#) (relevant to a broad audience)  
**Online Training Module:** Provides an overview of injection safety, along with a review of recommended practices and consequences of failure to follow safe injection practices. This module is organized into five lessons and will take approximately 55 minutes to complete.
- [CDC Grand Rounds: Preventing Unsafe Injection Practices in the U.S. Health-Care System](#)  
**MMWR:** CDC overview of the impact of unsafe injection practices, state and federal government response, public health's role, and an illustrative case study.
- [CDC Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings \(2007\)](#)  
**Guidelines:** The CDC summary of recommendations for infection control in healthcare settings, guidelines that, as of 1/1/18, are required for licensed health professionals in Oregon (see above).



## Tools for Facility Assessment

- [One and Only Campaign: Insulin Pen Safety 60 Second Check \(pdf\)](#)  
**Checklist:** Colorado, a partner state of the One and Only Campaign, provides a 60-second checklist for assessing insulin pen safety practices.
- [One & Only Campaign Finger-stick Lancing Device Safety 60 Second Check \(pdf\)](#)  
**Checklist:** Colorado, a partner state of the One and Only Campaign, provides a 60-second checklist for assessing finger-stick lancing device safety practices.
- [One & Only Campaign Blood Glucose Meter Safety 60 Second Check \(pdf\)](#)  
**Checklist:** Colorado, a partner state of the One and Only Campaign, provides a 60-second checklist for assessing blood glucose meter safety practices.
- [One & Only Campaign Injection Safety Checklist \(pdf\)](#)  
**Checklist:** CDC-recommended minimum standards for care involving injections checklist for inpatient and outpatient settings.
- [CDC's Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care - Fillable Checklist](#)  
This guide has been created to help you evaluate Infection Prevention at your facility. This interactive PDF document is best viewed with Adobe Acrobat Reader.
- [APIC Preventing Infection in Ambulatory Care - Winter 2011/2012 \(part I p. 4-8\)](#)  
[APIC Preventing Infection in Ambulatory Care - Spring 2012 \(part II p. 9-14\)](#)  
[APIC Preventing Infection in Ambulatory Care - Summer 2012 \(part III p. 10-15\)](#)  
**Checklists:** Infection Prevention and Control Clinic Survey Tool (parts I, II and III) assesses compliance with needle and injection safety standards in ambulatory care settings.
- [Centers for Medicare and Medicaid Services: Ambulatory Surgical Center \(ASC\) Infection Control Surveyor Worksheet \(pdf\)](#)  
**Checklist:** Survey to assess infection control compliance for the Code of Federal Regulations sect;416.51 Conditions for Coverage - Infection Control for ambulatory surgical centers.
- [Centers for Medicare and Medicaid Services: Hospital Infection Control Worksheet \(pdf\)](#)  
**Checklist:** Survey to assess infection control compliance in the hospital setting.
- [National Nursing Home Quality Improvement Equipment Cleaning Assessment Tool \(pdf\)](#)  
**Checklist:** Assessment for the appropriate cleaning and disinfection of equipment and environment.
- [The Minnesota Hospital Association Road Map to Controlled Substance Diversion Prevention 2.0 \(pdf\)](#)  
**Checklist:** An assessment tool for evaluating drug diversion prevention measures in place at a healthcare facility.

## Aseptic Technique

### Skin Preparation

- [CDC: Safe Practices for Medical Injections \(FAQs\)](#)  
**FAQs:** A question and answer forum for medication preparation, medication administration, single-dose/single-use vials, multi-dose vials, and general information including aseptic technique practices.
- [WHO: Best Practices for Injections and Related Procedures Toolkit \(pdf\)](#)  
**Toolkit Section:** General guidelines for aseptic preparation and administration of injections, hand hygiene, vial management, and guideline tables.

### Rubber Septum

- [CDC Safe Practices for Medical Injections \(FAQs\): Medication Preparation](#)  
**FAQs:** A brief question and answer forum for safe injection preparation.

### Accessing Central Lines

- [CDC Central Line-associated Bloodstream Infections: Resources for Patients and Healthcare Providers](#)  
**Informational Webpage:** CDC addresses the definition of a central line-associated bloodstream infection and basic guidelines for aseptic technique surrounding central line management.
- [CDC and CMS: Nursing Home Infection Preventionist Training, Module 10b - Central Venous Catheters](#) (relevant to a broad audience)  
**Online Training Module:** Discuss central venous catheters and recommended practices for their use. Module 10B is organized into two lessons; it will take you approximately 30 minutes to complete.

# Join the Oregon One & Only Campaign

## Who can be a member? Anyone!

- Professional and nonprofit organizations
- Healthcare systems and facilities
- Provider groups
- Private companies
- Individuals interested in promoting injection safety

## What do members do?

- Raise awareness
- Share materials
- Receive updates

To join, email [roza.p.tammer@state.or.us](mailto:roza.p.tammer@state.or.us)

February 19, 2019

# OREGON ONE AND ONLY CAMPAIGN

Issue 1

## In this issue:

- Happy birthday to Oregon Administrative Rule 333-019-0061
- Free injection safety resource highlight
- HAI Lunch and Learn Series
- Updates to our Safe Injections and Needle Use Toolkit
- Membership update
- Contact us

Greetings,

Thank you for partnering with us to help end infections from unsafe injection practices and needle use! We hope these quarterly newsletters will support you in the work.

Email Roza to join the list!

Thank you for your commitment to safety!

Respectfully,  
The Oregon Health Authority  
Associated Infections Program

Happy birthday to Oregon Administrative Rule 333-0190-0061!

On January 1, 2018, we authored a rule requiring all licensed healthcare providers to adhere to standard precautions. Find the rule [here](#).

**Free injection safety resource highlight**

This Injection Safety Checklist is a great resource from the CDC's One and Only Campaign to help assess facility practices. Consider printing a few copies for your facility or sharing with your infection prevention colleagues. Access the checklist [here](#)!

The table is titled 'INJECTION SAFETY CHECKLIST' and contains several rows of criteria with checkboxes for compliance. The criteria include items like 'Hand hygiene performed before and after injection', 'Use of aseptic technique', and 'Proper disposal of sharps'.



Join our webinar series on the basics of infection control and injection practices in various settings, policy, and oncology. Browse our [webinars here](#).

actions and

## Membership update

We now have 86 members including you! Please share this resource with your colleagues.

## Contact us

Roza Tammer,  
HAI Reporting  
Epidemiologist.

## Find us online

[Injection safety website](#),  
[One and Only Campaign page](#) or  
[Facebook](#)





# More opportunities

- Read the injection safety CD Summary
  - [www.healthoregon.org/cdsummary](http://www.healthoregon.org/cdsummary)
- Follow us on Facebook
  - <https://www.facebook.com/Oregon.aware>



TAKING A SHOT AT INJECTION SAFETY



# Resources & references

- World Health Organization: <http://www.who.int/infection-prevention/campaigns/injections/en/>
- Centers for Disease Control and Prevention
  - One and Only Campaign: <http://www.oneandonlycampaign.org>
  - Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007) – III.A.1.b, IV.H (1-8): <https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>
  - Info on Demand: <https://www.cdc.gov/pubs/cdcinfoondemand.aspx>
  - Injection safety website: <https://www.cdc.gov/injectionsafety/index.html>
- Oregon Health Authority
  - Oregon's One and Only Campaign partner state web page: <http://www.oneandonlycampaign.org/partner/oregon>
  - CD Summary:  
<http://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/CDSUMMARYNEWSLETTER/Documents/2017/ohd6607.pdf>
  - Injection safety website:  
<http://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/one-and-only.aspx>
- Oregon Patient Safety Commission
  - Infection Prevention & Control Toolkit (Safe Injection Practices 5.00-5.02): <https://oregonpatientsafety.org/resource-center/opsc-resources/oregon-ambulatory-surgery-center-infection-prevention-control-toolkit/436>
  - Video: Preventing Infection During Blood Glucose Monitoring and Insulin Administration:  
[https://www.youtube.com/watch?v=dddSV0Tu\\_AE](https://www.youtube.com/watch?v=dddSV0Tu_AE)
- United States Pharmacopeia General Chapter 797:  
<https://www.sefh.es/fichadjuntos/USP797GC.pdf>

# Resources & references

- Severe bloodstream infections: A population-based assessment
  - <https://www.ncbi.nlm.nih.gov/pubmed/15071391>
- Overall burden of bloodstream infection and nosocomial bloodstream infection in North America and Europe
  - <https://www.sciencedirect.com/science/article/pii/S1198743X1461507X#bib1>
- Outbreaks of Infections Associated with Drug Diversion by US Health Care Personnel
  - [http://www.mayoclinicproceedings.org/article/S0025-6196\(14\)00342-5/fulltext](http://www.mayoclinicproceedings.org/article/S0025-6196(14)00342-5/fulltext)
- One needle, one syringe, only one time? A survey of physician and nurse knowledge, attitudes, and practices around injection safety
  - [http://www.ajicjournal.org/article/S0196-6553\(17\)30680-6/pdf](http://www.ajicjournal.org/article/S0196-6553(17)30680-6/pdf)
- US Outbreak Investigations Highlight the Need for Safe Injection Practices and Basic Infection Control
  - [http://www.liver.theclinics.com/article/S1089-3261\(09\)00085-3/pdf](http://www.liver.theclinics.com/article/S1089-3261(09)00085-3/pdf)
- Nonhospital Health Care-Associated Hepatitis B and C Virus Transmission: United States, 1998-2008
  - <http://annals.org/aim/article-abstract/744175/nonhospital-health-care-associated-hepatitis-b-c-virus-transmission-united?volume=150&issue=1&page=33>

# Questions & discussion

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