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# Part 1: Healthcare Worker Drug Diversion: Prevention and Response

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HAI Lunch and Learn webinar series  
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# Objectives

- Define healthcare personnel drug diversion and the risk it poses to patients
- Understand how diversion can involve unsafe injection practices and disease transmission
- Explain how healthcare facilities and public health agencies can prevent and respond to drug diversion
- Promote opportunities to demonstrate commitment to safe injection practices and drug diversion prevention

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

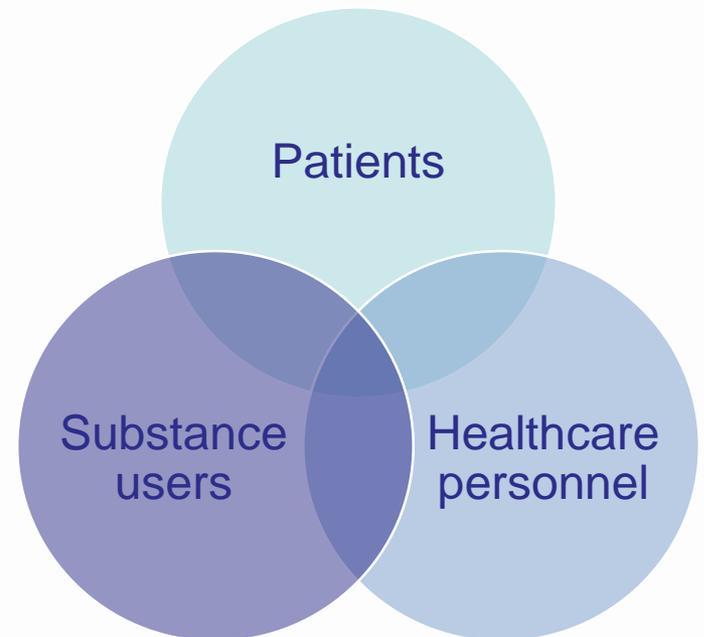


# What is drug diversion?

- Removal or use of medications intended for patients
  - “Any criminal act or deviation that removes a prescription drug from its intended path from the manufacturer to the patient. This can include the outright theft of the drugs or it can take the form of a variety of deceptions such as doctor shopping, forged prescriptions, counterfeit drugs and international smuggling.”
- Commonly diverted medications include habit-forming medications or those sought for psychoactive effects
  - Anti-anxiety medications and sedatives (e.g., Xanax)
  - Prescription pain medications (e.g., Fentanyl)
  - Stimulants (e.g., Adderall)
  - Sleep aids (e.g., Ambien)
  - Anesthetics (e.g., Propofol)

# Drug diversion: Who and why

- Increasing use of and addiction to prescription opioids
  - Prescription medication abuse is a growing problem
  - On average, 103,000 doctors, nurses, medical technicians, and healthcare aides abuse or depend on illicit drugs each year
- Substance use: An occupational, mental, and behavioral health issue
  - Affects healthcare personnel (HCP) and the general public
- Unlike the general public, HCP have access and opportunity to divert medications



# Mechanisms of drug diversion

- False documentation
  - E.g., medication not administered to the patient or “wasted” and instead used by the HCP
- Scavenging of wasted medication
  - E.g., removal of residual medication from trash or used syringes
- Theft by tampering
  - E.g., removal of medication from a container or syringe and substituted with a similar-appearing solution that may be administered to patients

# Mechanisms of drug diversion

- Removal of controlled substances or other medications when not needed
- Withdrawal of medication for discharged or deceased patient
- Removal of medication without an order or under a false verbal order
- Swapping medications prior to wasting
- Removal of medications when documented as null transaction or cancelations
- Removal of wasted medication, unspent syringes, or medication waste (e.g., used Fentanyl patches)
- Failure to administer an entire dose of medication to the patient
- Swapping medications from pump cartridges or syringes with saline/water prior to patient administration
- Removal of more or larger doses than necessary from automated dispensing cabinet
- Removal of medications using a colleague's name or account
- Pilfering patient medications brought from home
- Failure to waste medication or wasting entire dose

# Consequences of drug diversion for patients



Reduced quality of care given by impaired HCP

Failure to receive essential medications

Falsification of patient records

Exposure to infectious disease

# Consequences of drug diversion for patients



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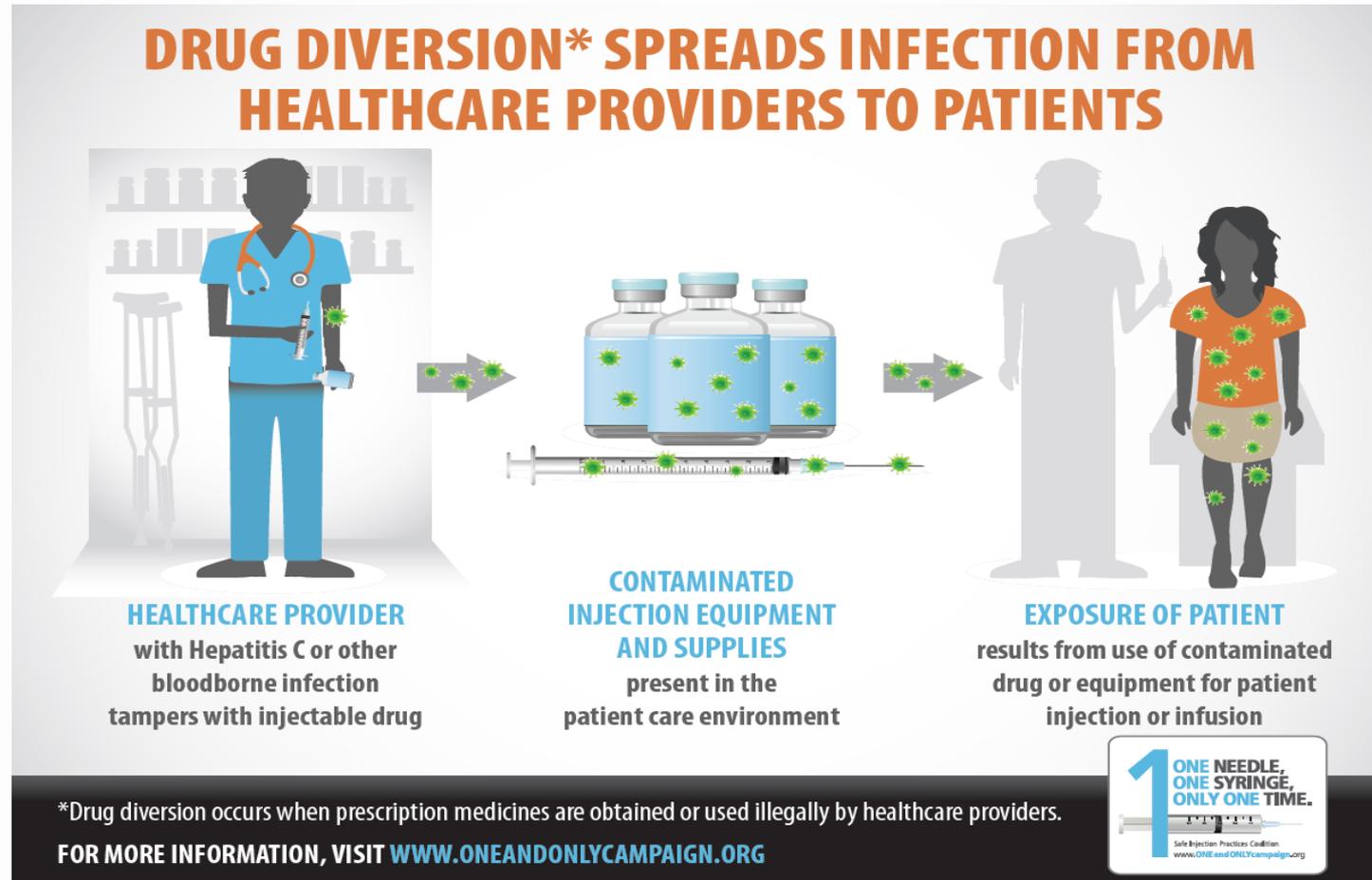
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Exposure to infectious disease

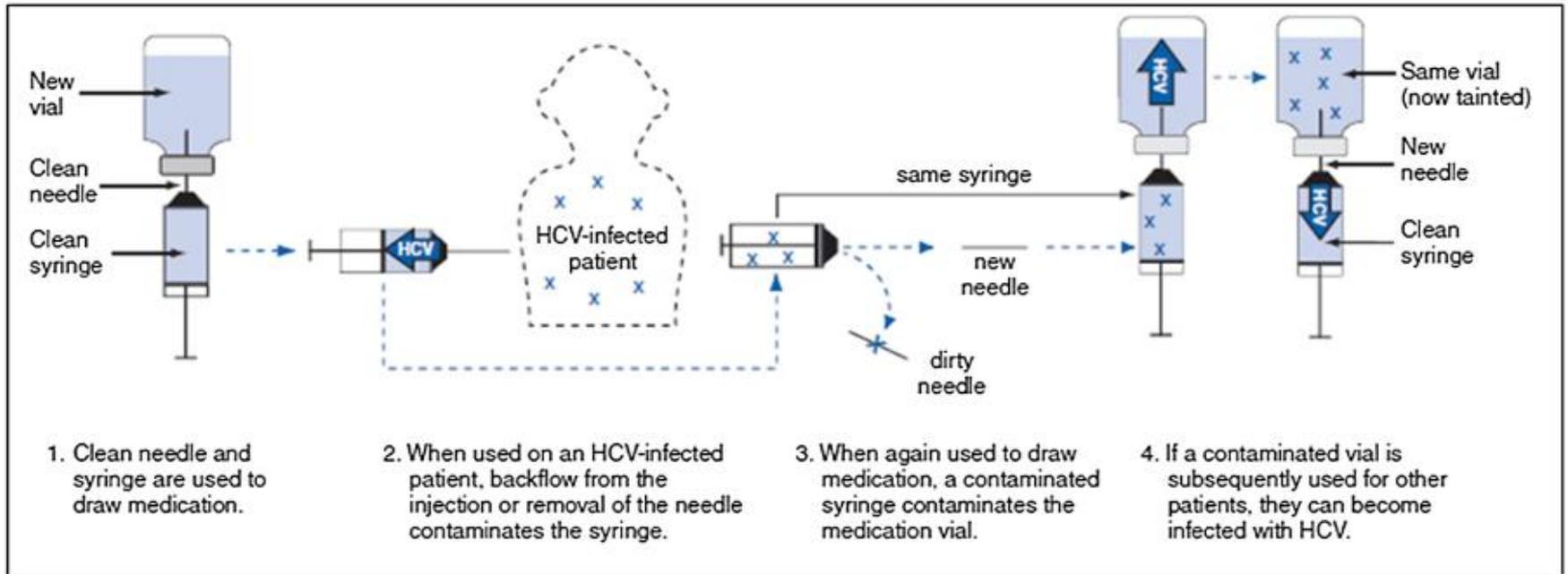
# How does drug diversion cause HAIs?

- Any prescription medication can be diverted
  - Injectable medications may be preferred for diversion
  - Use of injectable medications create opportunities for diversion
- Diverting injectable medication may lead to unsafe injection practices and pose risk to patients
  - Risk of infection associated with invasive procedures involving needles and other sharps
  - Failure to adhere to aseptic technique and safe injection practices may constitute breaches of infection control
  - Drug diversion can expose patients to a variety of infections

# How does drug diversion cause HAIs?



# How does drug diversion cause HAIs?



**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 is a safe injection?

## 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.



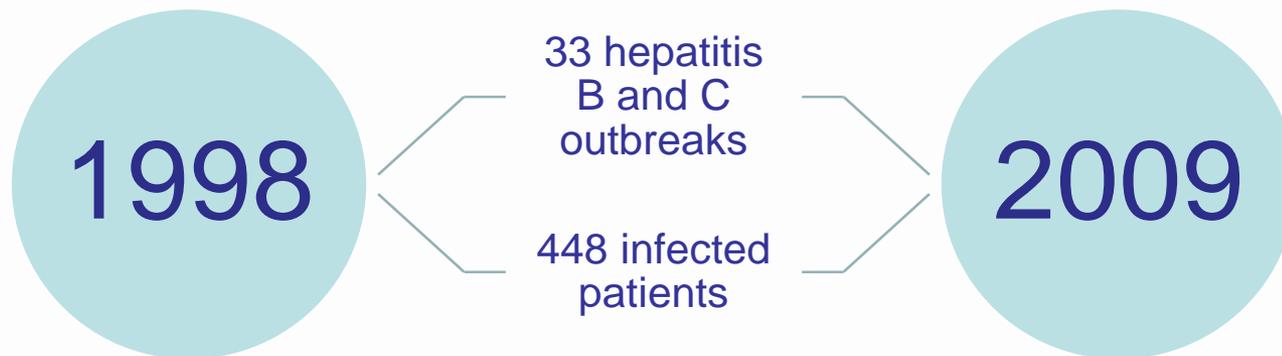
Limit the use of multi-dose vials and dedicate them to a single patient whenever possible.



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

# Why worry about safe injection practices?

- In a survey of U.S. clinicians, 12% of physicians and 3% of nurses report observing syringe reuse in their workplace



# Why worry about safe 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

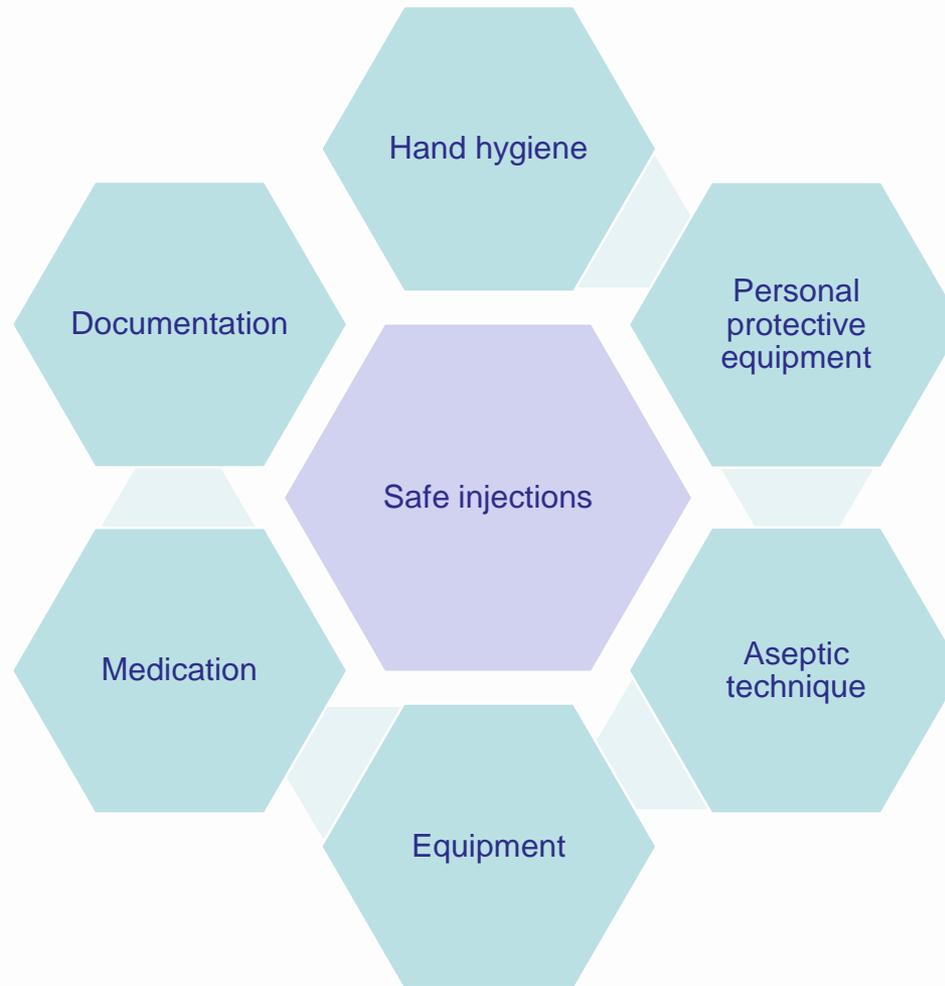
In just one clinic, syringe reuse to access medication vials for multiple patients resulted in an outbreak and one of the largest public health alerts in U.S. history.



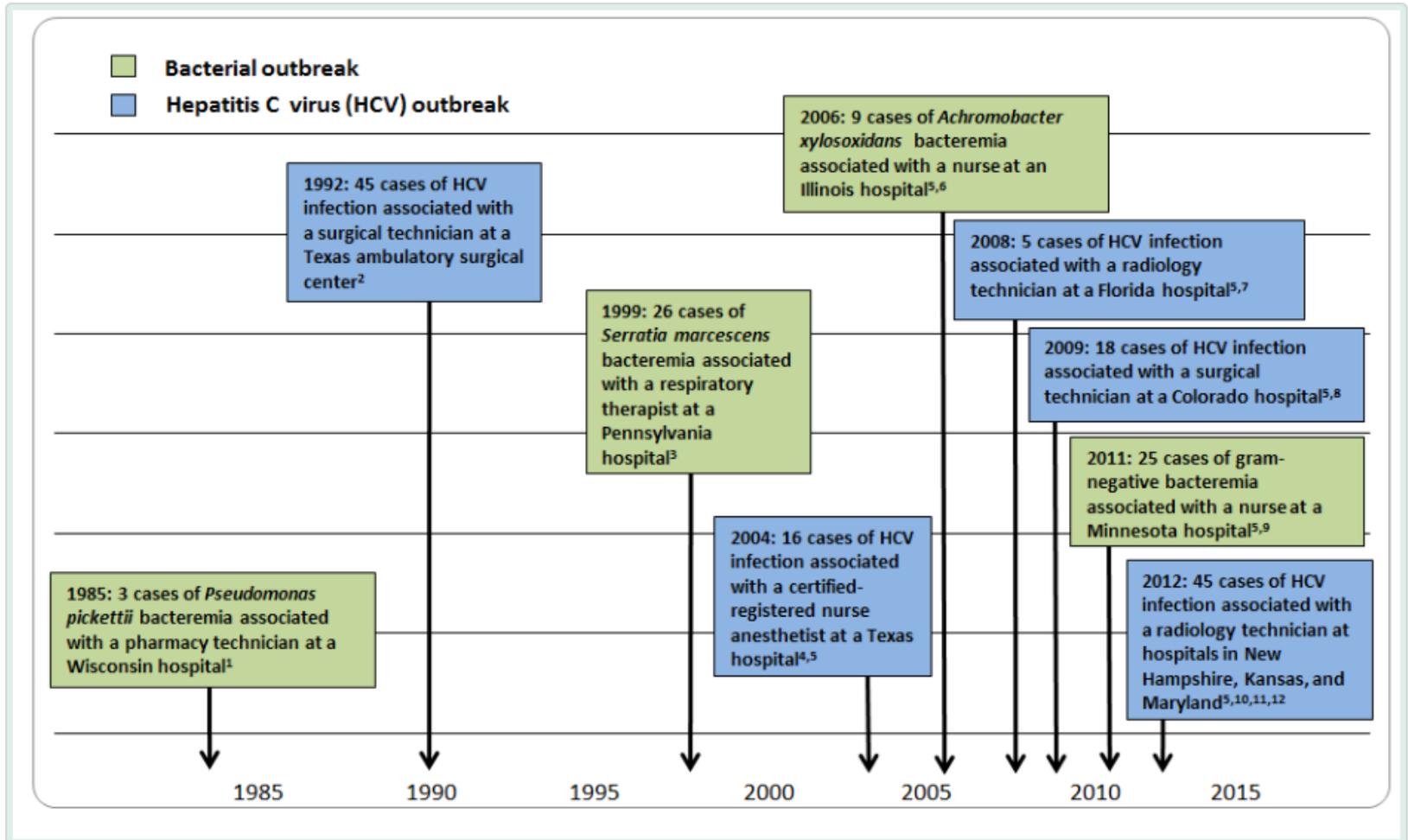
**50,000 PEOPLE EXPOSED TO INFECTION**



# Injections are complex and mistakes are easy!



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



# Case study

- On May 15, 2012 the New Hampshire (NH) Division of Public Health Services (DPHS) was notified that four persons who had received care at Hospital X between January and March 2012 had recently been diagnosed with new HCV infection
- The diagnosing healthcare providers believed the number of new diagnoses was unusual for the practice and the cases were reported to DPHS as a suspected outbreak under outbreak reporting requirements
- The initial epidemiologic investigation revealed a common link to Hospital X's cardiac catheterization laboratory (CCL) and its adjacent recovery room

# Case study

- Three patients had undergone CCL procedures and one was a traveling CCL technician who had worked in multiple states
- Testing confirmed that these cases were genetically similar enough to indicate a common source
- Investigation revealed that the CCL technician
  - Was infected with hepatitis C
  - Used prepared syringes of medications on themselves
  - Refilled syringes with saline later injected into patients
- Resulted in 45 cases of hepatitis C in three states

# Case study

- Investigations in previous sites of employment suggested prior diversion activities by infected technician
- Technician was reported as a new diagnosis of HCV to DPHS, an HCV diagnosis for this individual was identified as early as 2010
- The technician admitted to diverting drugs and pled guilty in federal court to tampering and fraud
- The infected technician admitted specifically to taking syringes filled with narcotics, self-injecting, and refilling the same syringes with saline before placing them back into the procedure area
- Technician sentenced to 39 years in prison

# 2015 CSTE drug diversion assessment

- Investigation and prevention of drug diversion in healthcare settings by state and territorial public health agencies (“jurisdictions”)
  - 16 jurisdictions required reporting of drug diversion incidents, 22 jurisdictions did not, 13 unsure, 1 jurisdiction missing
  - 57% investigated a drug diversion event
  - 53% prepared to respond to events involving injectable drugs regardless of known disease transmission
  - >70% notified patients and would review licensure and disciplinary action following a drug diversion investigation
  - 33% coordinate and/or participate in any drug diversion prevention activities

# OHA practice requirements

- OAR-333-018-000
  - Requires all healthcare providers to report any known or suspected disease outbreak, including any outbreak associated with health care, regardless of whether the disease, infection, microorganism, or condition is specified in this rule as well as any uncommon illness of potential public health significance
  - <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=53709>
- OAR 333-019-0061
  - Requires all licensed healthcare providers to adhere to standard precautions defined in 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>
  - <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=239050>

# Drug diversion prevention & response

Proactively develop and implement written plans, programs, and policies

## Prevention

- Engage partners
- Build capacity to identify and monitor for drug diversion
- Develop written plans and establish programs to guide
  - Drug diversion prevention and response
  - Support for affected staff
- Develop facility- or system-level policies
- Implement best practices for medication handling

## Response

- Verify and assess the event, including risk to patients
- Protect patients by eliminating ongoing risk
- Communicate with partners and report
  - Public health
  - Patients
  - Others
- Incorporate lessons learned into prevention practices

# Partner and stakeholder engagement

- Facility and public health
  - Leadership
  - Legal representation
  - Press/public information officer
  - State and local public health agencies
    - HAI
    - Viral hepatitis
    - HIV/AIDS
    - STDs
  - Healthcare facilities and health systems
    - Employee health
    - Human resources, including external staffing agencies
  - National public health agencies (e.g., NACCHO, CDC, CORHA)

# Partner and stakeholder engagement

- Law enforcement
  - State and local agencies
  - U.S. Department of Justice, Drug Enforcement Administration
  - U.S. Food and Drug Administration
- HCP professional licensing boards (e.g., EMT, pharmacy, medicine, dental, nursing)
- Healthcare facility licensing, certification, and accreditation agencies
  - CMS
  - State licensing and survey agencies (e.g., HCRQI, SOQ)
  - Accrediting organizations (e.g., Joint Commission, DNV)

# Partner and stakeholder engagement

- Infection prevention and professional organizations
  - APIC
  - SHEA
  - Regional or state occupational health organizations
- Substance use and prevention organizations
  - State or local bureau of drug, alcohol, or mental health services
  - Provider recovery organizations or programs
  - National organizations (e.g., SAMHSA, NIDA)

# Partner and stakeholder engagement



# Partner and stakeholder engagement



# Build capacity to identify and monitor for drug diversion

- Data systems
  - Develop and establish sources, processes, criteria, responsibility, timeline, and recurrence for review/audit of data and reporting of concerning results
- Culture
  - Provide education to HCP on recognition and reporting of diversion at time of hire and at least annually
  - Establish expectation of reporting and communicate that good faith concern, rather than certainty, is the threshold for reporting
  - Establish a confidential reporting system and ensure HCP know that concerns will be taken seriously and treated sensitively

# Facility drug diversion programs

- Multidisciplinary (nursing, administration, pharmacy, risk management, quality improvement, patient safety, human resources, infection control, employee health)
- Meet regularly, focus solely on strategies to prevent, detect, and respond
- Diversion specialist
  - Collect data, perform active surveillance (including dispensing cabinet records)
- Diversion response team
  - Take action in diversion situations
- Diversion committee
  - Identify and implement improvement measures
- Diversion risk rounds team
  - Perform regular unannounced rounds identifying potential risks for diversion

# Best practices for medication handling

- Storage and security
- Procurement
- Prescribing
- Preparation and dispensing
- Administration
- Handling of waste

# Support for affected staff

- Goals
  - Patient safety
  - Retention of essential, highly-trained staff
- Ability to prevent and intervene at an early stage by providing support and programs for staff affected by substance issues
  - HCP are not insulated from substance use, including opioids
    - Job stress, injury, access at work and through insurance
  - Substance use is an occupational, mental, and behavioral health issue, and is highly stigmatized among HCP
    - Stigma and fear of loss of livelihood may prevent HCP from coming forward; programs that open lines of communication should ultimately reduce patient risk
  - Programs should be non-punitive, and offer compassionate, person-centered, accessible services

# Hiring practices

- Pre-employment screening of HCP working in high-risk areas
  - Such screening is considered by the Drug Enforcement Administration (DEA) to be a business necessity, and essential to overall controlled substance security
  - Screening should be performed
    - By the hiring facility or the contracted staffing company
    - At a contractually agreed upon frequency
    - Proof should be provided to the facility before commencement of employment.
- Screenings should include
  - Criminal background checks
  - Primary source verification of licenses
  - Drug screening
  - Written, signed response to the question: "Have you ever been disciplined, terminated, allowed to resign or denied employment because of mishandling of a controlled substance or a drug diversion issue?"

# Activity

- Three drug diversion exercise scenarios
  - Developed by New Jersey Department of Health
  - Utilized by other state HAI Programs (New Hampshire, Washington)
  - Include diverse scenarios in various facility settings (ASC, hospital, endoscopy center)
- Allow facilities and public health partners to
  - Explore the process of responding to a drug diversion incident by applying existing policies and protocols
  - Identify strengths and opportunities to improve existing policies and protocols
  - Identify ways to train/communicate with staff

# Activity discussion questions

- How do the scenarios highlight strengths and identify gaps of existing policies and processes?
- How do the scenarios help identify ways to communicate and educate others regarding drug diversion?
- Name three actions you might take after participating in this activity

# Resources & references – drug diversion

- Minnesota Controlled Substance Diversion Prevention Coalition, Toolkit and Final Report
  - <http://www.mnhospitals.org/Portals/0/Documents/ptsafety/diversion/drug-diversion-final-report-March2012.pdf>
  - <http://www.mnhospitals.org/quality-patient-safety/collaboratives/drug-diversion-prevention>
- New Hampshire Department of Health and Human Services Hepatitis C Outbreak Investigation Report
  - <http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf>
- Maryland Department of Health and Mental Hygiene, Public Health Vulnerability Review: Drug Diversion, Infection Risk, and David Kwiatkowski's Employment as a Healthcare Worker in Maryland
  - <https://health.maryland.gov/pdf/Public%20Health%20Vulnerability%20Review.pdf>
- CDC, Risks of Healthcare-Associated Infections from Drug Diversion
  - <https://www.cdc.gov/injectionsafety/drugdiversion/>
  - <http://www.oneandonlycampaign.org/content/risks-healthcare-associated-infections-drug-diversion>
- Missouri Bureau of Narcotics & Dangerous Drugs. (2016). Drug Diversion in Hospitals: A Guide to Preventing and Investigating Diversion Issues
  - <http://health.mo.gov/safety/bnodd/doc/drugdiversion.doc>
- Colorado Department of Health and Environment video depicting how drug diversion can cause patient harm
  - <https://www.youtube.com/watch?v=IT03XIJnB0Q>
- Council of State and Territorial Epidemiologists
  - <https://www.cste.org/page/Drug-Diversion-Toolkit>

# Resources & references – drug diversion

- New Jersey [DOH](#) Drug Diversion Table Top Exercises
  - [http://www.oneandonlycampaign.org/sites/default/files/upload/image/Drug%20Diversion%20Exercise%20Slides\\_FINAL.pdf](http://www.oneandonlycampaign.org/sites/default/files/upload/image/Drug%20Diversion%20Exercise%20Slides_FINAL.pdf)
- CDC Patient Notification toolkit
  - <https://www.cdc.gov/injectionsafety/pntoolkit/>
- American Association of Nurse Anesthetists (AANA) resources
  - <https://www.aana.com/practice/health-and-wellness-peer-assistance/about-health-wellness/wellness-in-the-workplace>
  - <https://www.aana.com/practice/health-and-wellness-peer-assistance/About-AANA-Peer-Assistance/getting-peer-assistance-help-for-yourself-and-others>
- Utah Health Status Update: Hepatitis C and Drug Diversion
  - [https://ibis.health.utah.gov/pdf/opha/publication/hsu/2017/1704\\_HepCDrugDiv.pdf](https://ibis.health.utah.gov/pdf/opha/publication/hsu/2017/1704_HepCDrugDiv.pdf)
- Berge KH, Dillon KR, Sikkink KM, Taylor TK, Lanier WL. Diversion of Drugs Within Health Care Facilities, a Multiple-Victim Crime: Patterns of Diversion, Scope, Consequences, Detection, and Prevention. *Mayo Clinic Proceedings*. 2012;87(7):674-682. doi:10.1016/j.mayocp.2012.03.013.
- ONDCP. *Prescription Opioid Misuse, Heroin, and Fentanyl*. Accessed May 30, 2017. <https://www.whitehouse.gov/ondcp/key-issues/prescription-opioid-misuse>
- Schaefer MK, Perz JF. Outbreaks of Infections Associated With Drug Diversion by US Health Care Personnel. *Mayo Clinic Proceedings*. 2014;89(7):878-887. doi:10.1016/j.mayocp.2014.04.007.
- Schuppener LM, Pop-Vicas AE, Brooks EG, et al. *Serratia marcescens* Bacteremia: Nosocomial Cluster Following Narcotic Diversion. *Infection Control & Hospital Epidemiology*. 2017;38(09):1027-1031. doi:10.1017/ice.2017.137

# Resources & references – safe injections

- 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>
  - Overview of Safe Injection Practices PowerPoint deck:  
[https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Documents/Lunch%20and%20Learn/Overview\\_of\\_Safe\\_Injection\\_Practices.pdf](https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Documents/Lunch%20and%20Learn/Overview_of_Safe_Injection_Practices.pdf)
- 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 – safe injections

- 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>
- 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

Register today for Part 2 of this webinar on Wednesday, August 21<sup>st</sup>  
from 12pm-1pm:

<https://attendee.gotowebinar.com/register/2828593017997214978>

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