No Risky Sticks: Making Every Injection Safe

Kate Ellingson, PhD

HAI Lunch & Learn Webinar

April 6, 2016

Oregon Health Authority

Webinar Overview

- Injection Safety in the US
- Risk in Oregon
  - Prevalence of Hepatitis B & C
  - Current practices
- Deeper Dive
  - Non-hospital settings
  - Drug diversion
- Resources

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Recent News: 3/27/16

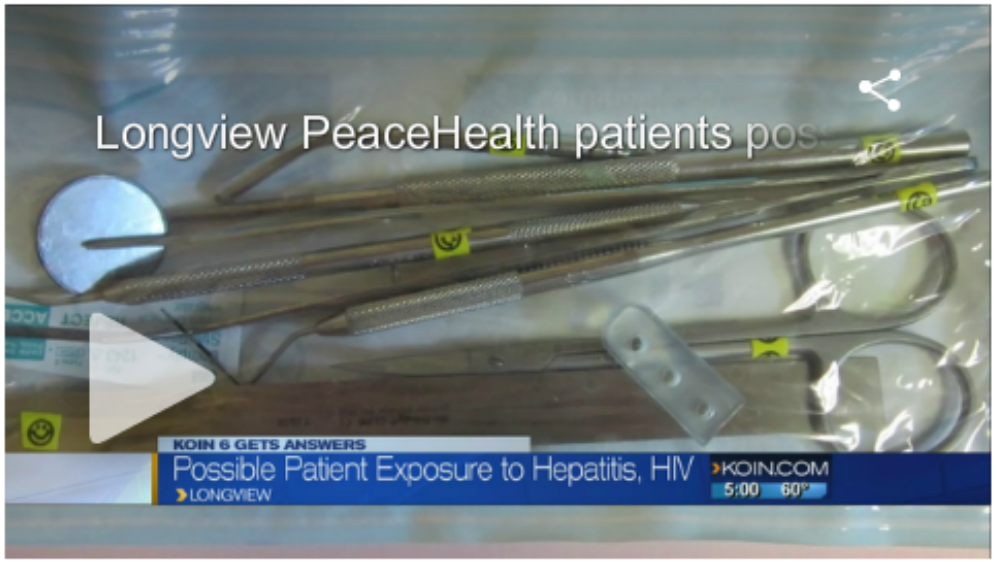
- WV health dept: cluster of Hepatitis infections
- Common exposure: same clinic
- Patient notification dating back to 2012
- Investigation underway

Yesterday: 4/5/2016

Longview PeaceHealth patients possibly exposed to HIV

260 former patients may have also been exposed to hepatitis B and C

Amy Frazier and KOIN 6 News Staff
Published: April 5, 2016, 12:05 pm | Updated: April 5, 2016, 5:08 pm



LONGVIEW, Wash. (KOIN) — PeaceHealth St. John Medical Center, in Longview, announced Tuesday more than 200 former patients may have been exposed to hepatitis B, hepatitis C and HIV.

- Procedural review reveals inadequate sterilization processes
- Patients from dental clinic notified of potential HBV, HCV & HIV exposure
- Reminder of need for infection prevention basics in **all** settings

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Syringe Reuse: Unthinkable? Think again

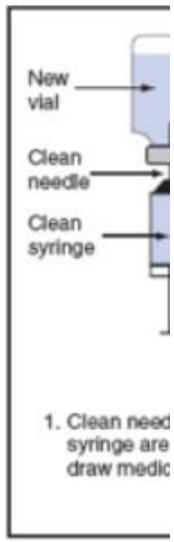

FIGURE 2. Uns
Nevada, 2007

1. Clean need
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draw medic

Infection Control Assessment of Ambulatory Surgical Centers

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Context More than 5000 ambulatory surgical centers (ASCs) in the United States participate in the Medicare program. Little is known about infection control practices in ASCs. The Centers for Medicare & Medicaid Services (CMS) piloted an infection control audit tool in a sample of ASC inspections to assess facility adherence to recommended practices.

Objective To describe infection control practices in a sample of ASCs.

Design, Setting, and Participants All State Survey Agencies were invited to participate. Seven states volunteered; 3 were selected based on geographic dispersion, number of ASCs each state committed to inspect, and relative cost per inspection. A stratified random sample of ASCs was selected from each state. Sample size was based on the number of inspections each state estimated it could complete between June and October 2008. Sixty-eight ASCs were assessed; 32 in Maryland, 16 in North Carolina, and 20 in Oklahoma. Surveyors from CMS, trained in use of the audit tool, assessed compliance with specific infection control practices. Assessments focused on 5 areas of infection control: hand hygiene, injection safety and medication handling, equipment reprocessing, environmental cleaning, and handling of blood glucose monitoring equipment.

Main Outcome Measures Proportion of facilities with lapses in each infection control category.

Results Overall, 46 of 68 ASCs (67.6%; 95% confidence interval [CI], 55.9%-77.9%) had at least 1 lapse in infection control; 12 of 68 ASCs (17.6%; 95% CI, 9.9%-28.1%) had lapses identified in 3 or more of the 5 infection control categories. Common lapses included using single-dose medication vials for more than 1 patient (18/64; 28.1%; 95% CI, 18.2%-40.0%), failing to adhere to recommended practices regarding reprocessing of equipment (19/67; 28.4%; 95% CI, 18.6%-40.0%), and lapses in handling of blood glucose monitoring equipment (25/54; 46.3%; 95% CI, 33.4%-59.6%).

Conclusion Among a sample of US ASCs in 3 states, lapses in infection control were common.

JAMA. 2010;303(22):2273-2279 www.jama.com

OVER THE LAST SEVERAL DECADES, health care delivery in the United States has shifted toward the outpatient setting; ambulatory surgery in particular has been an area of immense growth. Ambulatory surgical centers (ASCs) are defined by the Centers for Medicare & Medicaid Services (CMS) as facilities that operate exclusively to provide surgical services to patients who do not require hospitalization or stays in a surgical facility longer than 24 hours.[1]

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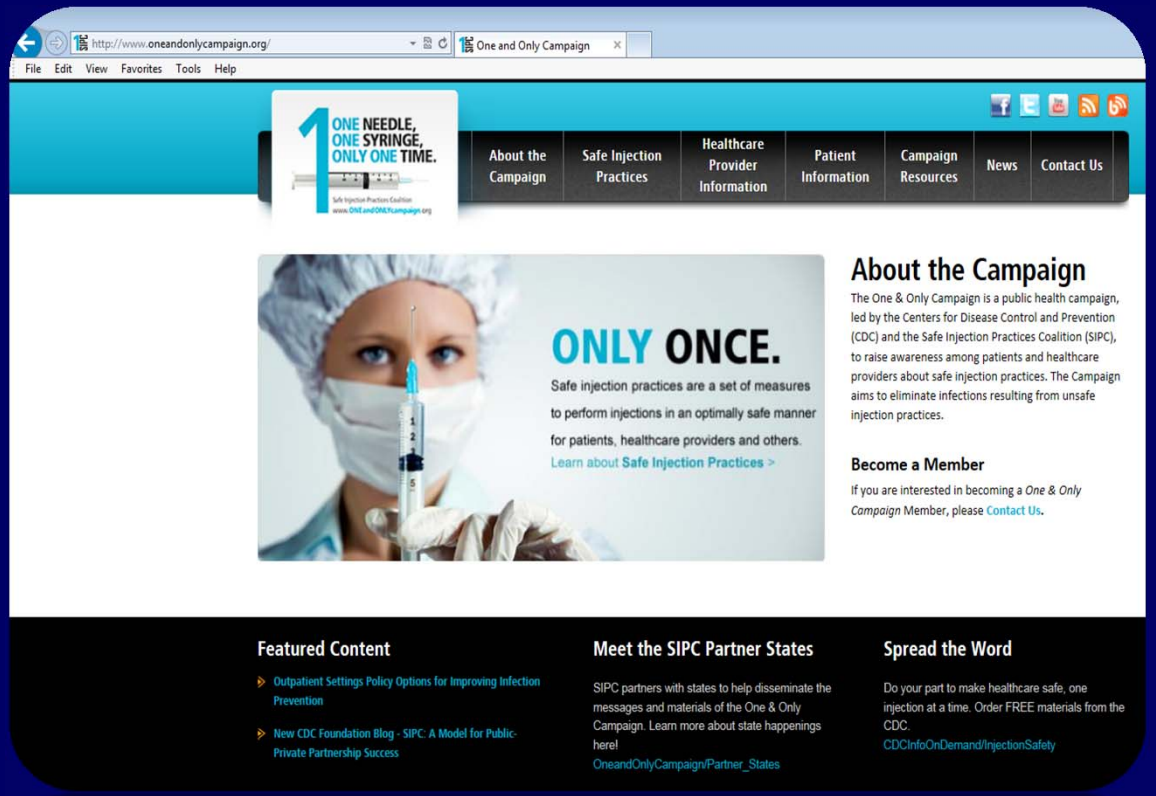
Unsafe Injections: A National Issue

- >50 outbreaks in US from 1998-2014 due to unsafe injections
- >700 patients infected
- >150,000 patients notified of potential exposure
- Syringe reuse
- Improper use of single/multi dose vials
- Improper use of glucose monitoring equipment



http://www.oneandonlycampaign.org/

Current Knowledge: Tip of Iceberg

- Under-estimate infections
  - Infections (especially HCV) may go undetected for years
  - Difficult to link infections to specific healthcare exposure
- Under-recognition of unsafe practices
  - Lack of education across the spectrum of healthcare worker and facility types
  - Lack of regular training and competency documentation
  - "Culture of silence" among with regard to diversion

Difficult to Modify

Modifiable

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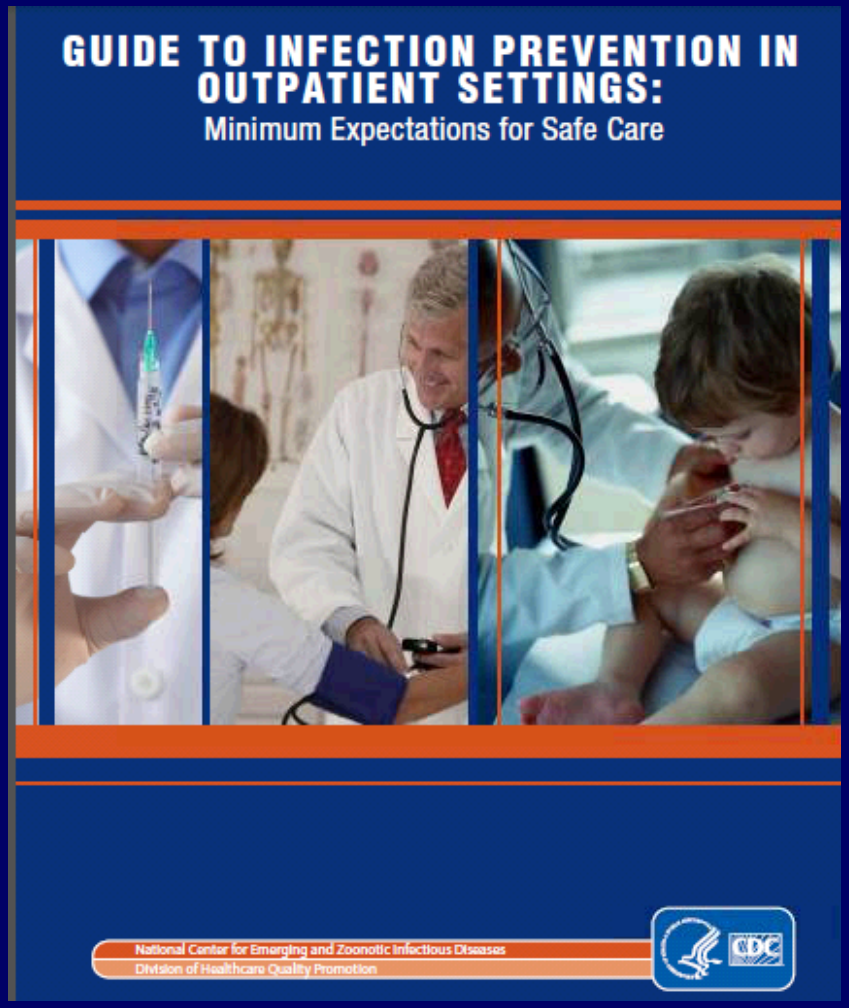
Core Principles of Injection Safety



- Foundational principles that guide prevention efforts across settings
- Underpin the CDC's One and Only Campaign
- Incorporated into Infection Control Assessment and Response (ICAR) tools

http://www.cdc.gov/HAI/settings/outpatient/outpatient-care-guidelines.html

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Key Elements of Injection Safety

1. Use aseptic technique when preparing medications
2. Cleanse the access diaphragms of medication vials with 70% alcohol before inserting a device into the vial
3. Never administer medications from the same syringe to multiple patients, even if the needle is changed or injection administered through intravenous tubing
4. Do not reuse a syringe to enter a medication vial or solution

http://www.cdc.gov/HAI/settings/outpatient/outpatient-care-guidelines.html

Key Elements: Injection Safety

5. Do not administer medications from single-use vials, ampoules, or bags or bottles of intravenous solution to more than one patient
6. Do not use fluid infusion or administration sets (e.g., intravenous tubing) for more than one patient
7. Dedicate multidose vials to a single patient whenever possible
   - If multidose vials will be used for more than one patient, they should be restricted to a centralized medication area
   - Should not enter the immediate patient treatment area

http://www.cdc.gov/HAI/settings/outpatient/outpatient-care-guidelines.html

Key Elements: Injection Safety

8. Dispose of used syringes and needles at the point of use in a sharps container that is closable, puncture-resistant, and

9. Adhere to federal and state requirements for protection of HCP from exposure to bloodborne pathogens.

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Occupational Safety and Health Administration

http://www.cdc.gov/HAI/settings/outpatient/outpatient-care-guidelines.html

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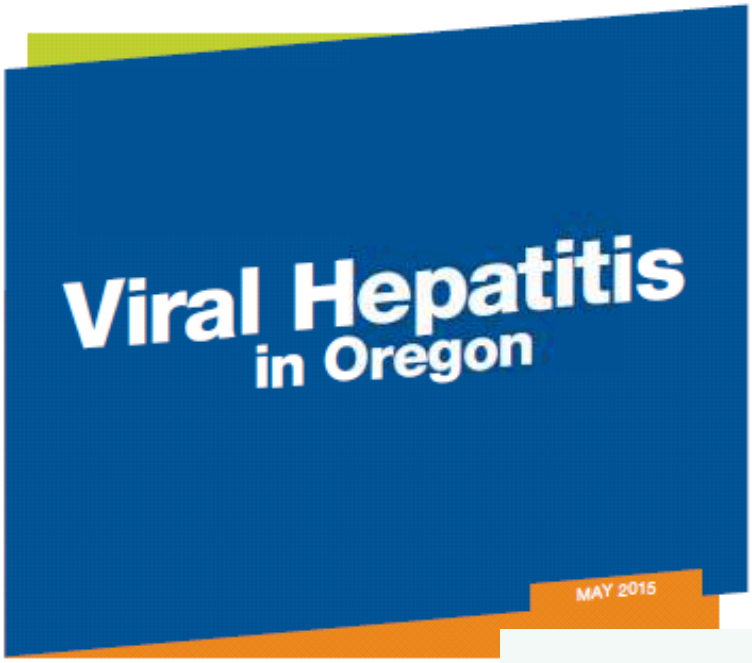
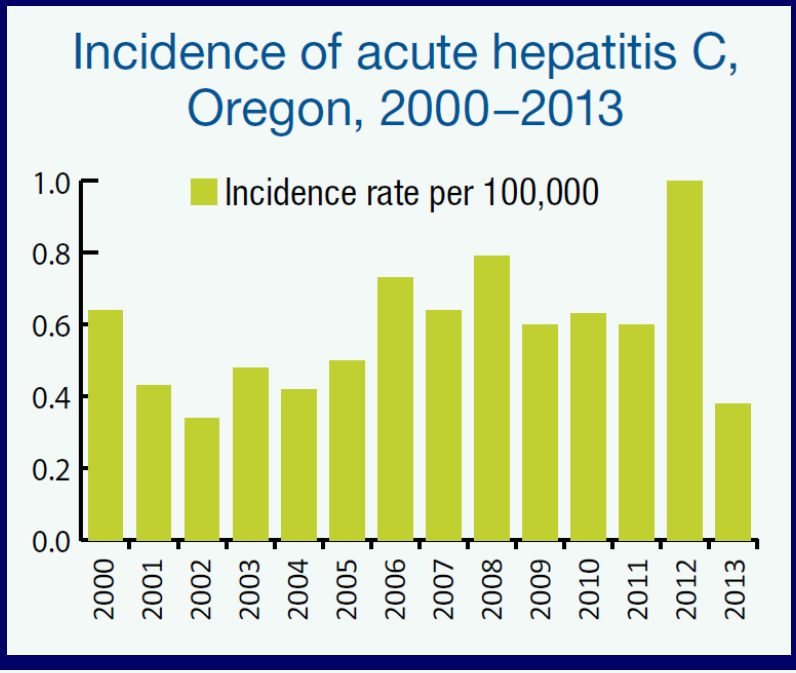
LOCAL PERSPECTIVE

Prevalence of Hepatitis in OR





- Rates of acute HCV cases in Oregon were 50% higher than the national rate during 2007–2011.

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PUBLIC HEALTH DIVISION
Acute and Communicable Disease Program

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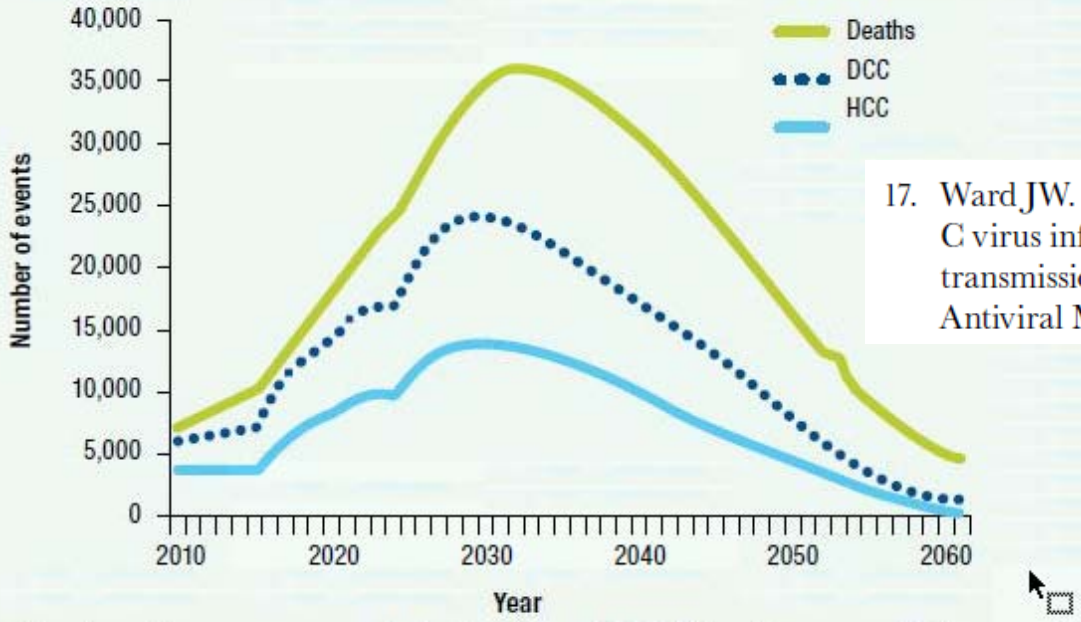
High Prevalence = High Risk & Burden

Facts at a glance

- 81% of U.S. residents infected with HCV were born between 1945 and 1965.
- At least 50% of persons infected with HCV are unaware of their infection.

Figure A. Future burden of HCV-related morbidity and mortality in the United States



DCC is defined as decompensated cirrhosis and HCC as hepatocellular carcinoma.
Adapted from Ward JW.[17]

17. Ward JW. The hidden epidemic of hepatitis C virus infection in the United States: occult transmission and burden of disease. Topics in Antiviral Medicine 2013;21:15-9.

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HCV Morbidity & Mortality in Oregon

Cases of liver cancer by year, with and without chronic viral hepatitis, Oregon, 1996–2012 (n=3,395)

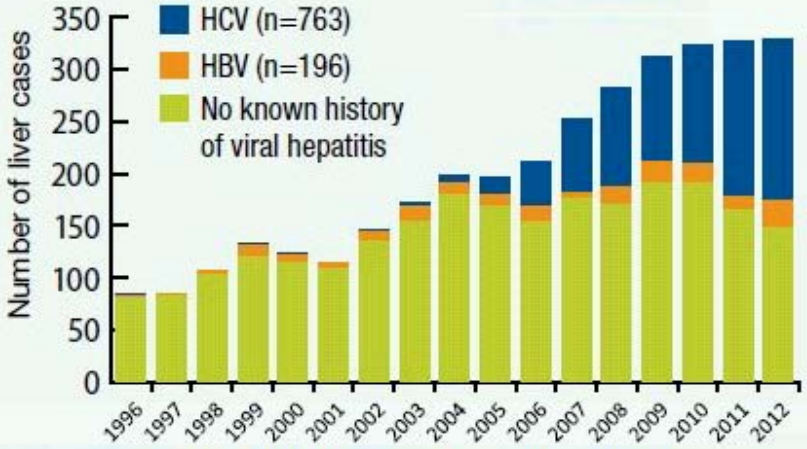
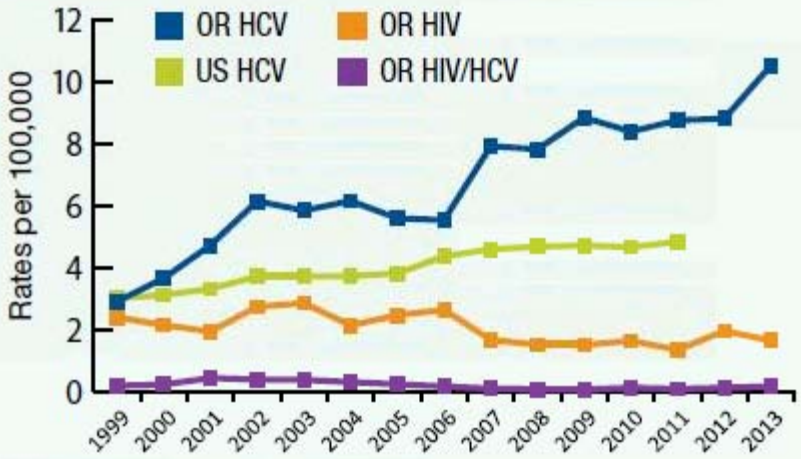


Figure 6 (See Table 49 in the Appendix section for details.)

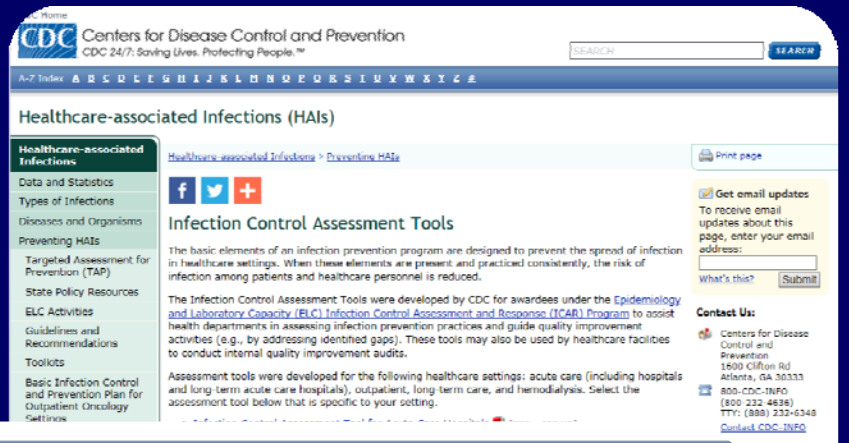
Age-adjusted mortality rates for HIV and HCV, Oregon and U.S., 1999–2013



- The mortality rate in Oregon from HCV was nearly twice the national average in 2011.

Injection Safety Practices in Oregon

- What do we know? Not much
- Current efforts:
  - Sporadic reports of breaches & investigations
  - CDC-funded Infection Control Assessments
  - Small grant to study & promote injection safety



II. Infection Control Training, Competency, and Implementation of Policies and Procedures

Elements to be assessed	Assessment	N
F. Injection Safety (This element does not include assessment of pharmacy practices)		
1. Hospital has a competency-based training program for preparation and administration of parenteral medications (e.g., SQ, IM, IV) outside of the pharmacy.	○ Yes ○ No	
Verify the following:		
a. Training is provided to all personnel who prepare and/or administer injections and parenteral infusions.	a. ○ Yes ○ No	
b. Training is provided upon hire, prior to being allowed to prepare and/or administer injections and parenteral infusions.	b. ○ Yes ○ No	
c. Training is provided at least annually.	c. ○ Yes ○ No	
d. Training is provided when new equipment or protocols are introduced.	d. ○ Yes ○ No	

http://www.cdc.gov/hai/prevent/infection-control-assessment-tools.html

Targeted Infection Prevention Assessments (Injection Safety Findings to Date)

- CDC is funding on-site infection prevention assessments for facilities across the continuum of care
  - Oregon Public Health Division
  - Oregon Patient Safety Commission
- Oregon uses regional approach in facility selection with a goal to build regional partnerships between facilities
- 25 facilities in Y1 of grant; 35 facilities/year subsequently
- 19 facility consultations to date (hospitals, ASC, LTCF, dialysis & outpatient clinics)

Hospitals: Injection Safety Domain

- No hospital met all elements of the domain due to competency and audit requirements
- No hospital has drug diversion prevention program including consultation with IP program when drug tampering suspected
- No hospital could describe how they would assess risk to patient if tampering is suspected or identified
- Observational findings:
  - Most hospitals have eliminated use of multidose vials *with the exception of the anesthesia carts*
  - Compliance with USP 797 Immediate use guidelines, labeling guidelines were frequently observed

Long Term Care Facilities: Injection Safety

- No LTCF met all elements of the domain due to competency and audit requirements
- All facilities have supplies necessary for safe injection practices
- All LTCFs had drug diversion prevention policies in place
- Observational findings:
  - One facility was using a glucometer not approved for multi-resident use
  - Multi-dose vials not shared
  - Insulin pens were not shared between residents

Dialysis: Injection Safety

- None have competency based Hand Hygiene, PPE selection, blood glucose monitoring, or injection safety training programs or audits
- Use of shared multi-dose vials in immediate clinical areas observed
- Respiratory Hygiene/Cough Etiquette programs in place
- Dialysis station disinfection training and audits have not been implemented; no facility complies with CDC recommendations
- CDC catheter exit site care recommendations not being followed

Oregon Surveillance & Prevention Efforts

- Small CDC grant to augment prevention
- Member state: One and Only Campaign
- Raise awareness
  - Public health professionals
  - Provider communities
- Focus on rural area
  - Survey of practices
  - Targeted interventions

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SETTING-SPECIFIC RISKS

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Long-Term Care: Insulin Pen Reuse Incidents

Reuse of insulin pens for multiple patients, reportedly after changing needles

- 2008: 185 patients notified, NY hospital
- 2009: 2114 patients notified, TX hospital
- 2011: 2401 patients notified, WI OP + hospital
- 2013: multiple incidents, NY and NC, including 2 VA Medical Centers and a private hospital

Fingerstick or Lancing Devices

- Used to prick skin and obtain blood drop
- **Reusable Devices:** devices resemble a pen and have the means to remove and replace lancet after each use
  - Ne
  - If u tor

A simple rule for safe care:
Fingerstick devices should never be used for more than one person.

- **Single-use auto-disabling fingerstick devices**
  - Devices that are disposable and prevent reuse through an auto-disabling feature
  - Should be used in settings where assisted monitoring of blood glucose is performed

Blood Glucose Monitors

- Blood glucose meters measure glucose levels
- Whenever possible, blood glucose meters should be assigned to an individual person and not be shared
- If meter
  be clea
  per manufacturer's instructions
- If the manufacturer does not specify how the device should be cleaned and disinfected then it should not be shared.

A simple rule for safe care:
If shared, blood glucose meters should be cleaned and disinfected after every use.

Insulin Administration

- **Insulin Pens:** Intended for use by a single person
  - Pens have an insulin reservoir, or an insulin cartridge for an individual to self-administer several doses
  - Needle must be changed before each injection

- **I**
  (

A simple rule for safe care:

Injection equipment (e.g., insulin pens, needles and syringes) should never be used for more than one person

  - If the vial must be used for more than one person it should be stored and prepared in a dedicated medication preparation area outside of the patient care environment
  - **Always enter vial with new needle and syringe and dispose immediately after use in approved sharps container**.

60 second check

- 1 insulin pen =
  1 resident
- Label, check name
- Not damaged
- Expiration
- Recheck name
- Storage

http://www.oneandonlycampaign.org/partner/colorado

COLORADO
Department of Public Health & Environment

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.oneandonlycampaign.org/partner/Colorado

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BE AWARE
DON'T SHARE

ONE INSULIN PEN, ONLY ONE PERSON

2015 Assisted Living Resources

Insulin Pen Safety
60 Second Check

Check the following 6 steps:

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.

Free Posters!

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.

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

DON'T DO IT

Sharing Insulin Pens and Other Injection Equipment Harms Patients

In 2009, in response to reports of improper use of insulin pens in hospitals, the Food and Drug Administration issued an alert reminding healthcare providers that insulin pens are meant for use on a single person only and are not to be shared. Unfortunately, there have been continuing reports of patients placed at risk of bloodborne and bacterial pathogen transmission through sharing of insulin pens.

A SIMPLE RULE

Injection equipment (e.g., insulin pens, needles and syringes) should **never** be used for more than one person.

ONE NEEDLE, ONE SYRINGE, ONLY ONE TIME.
Safe Injection Practices Coalition
www.OneandOnlyCampaign.org

About the Safe Injection Practices Coalition

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, for 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 a partnership between the CDC Foundation and Lilly USA.

BE AWARE DON'T SHARE

ONE INSULIN PEN, ONLY ONE PERSON

What Every Healthcare Provider Needs To Know

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 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

You Can Order 3 Ways

SCAN
Scan with your smartphone to access the ordering page

CALL
1-800-CDC-INFO

CLICK
wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx

Select Injection Safety–One & Only Campaign to order materials

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

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

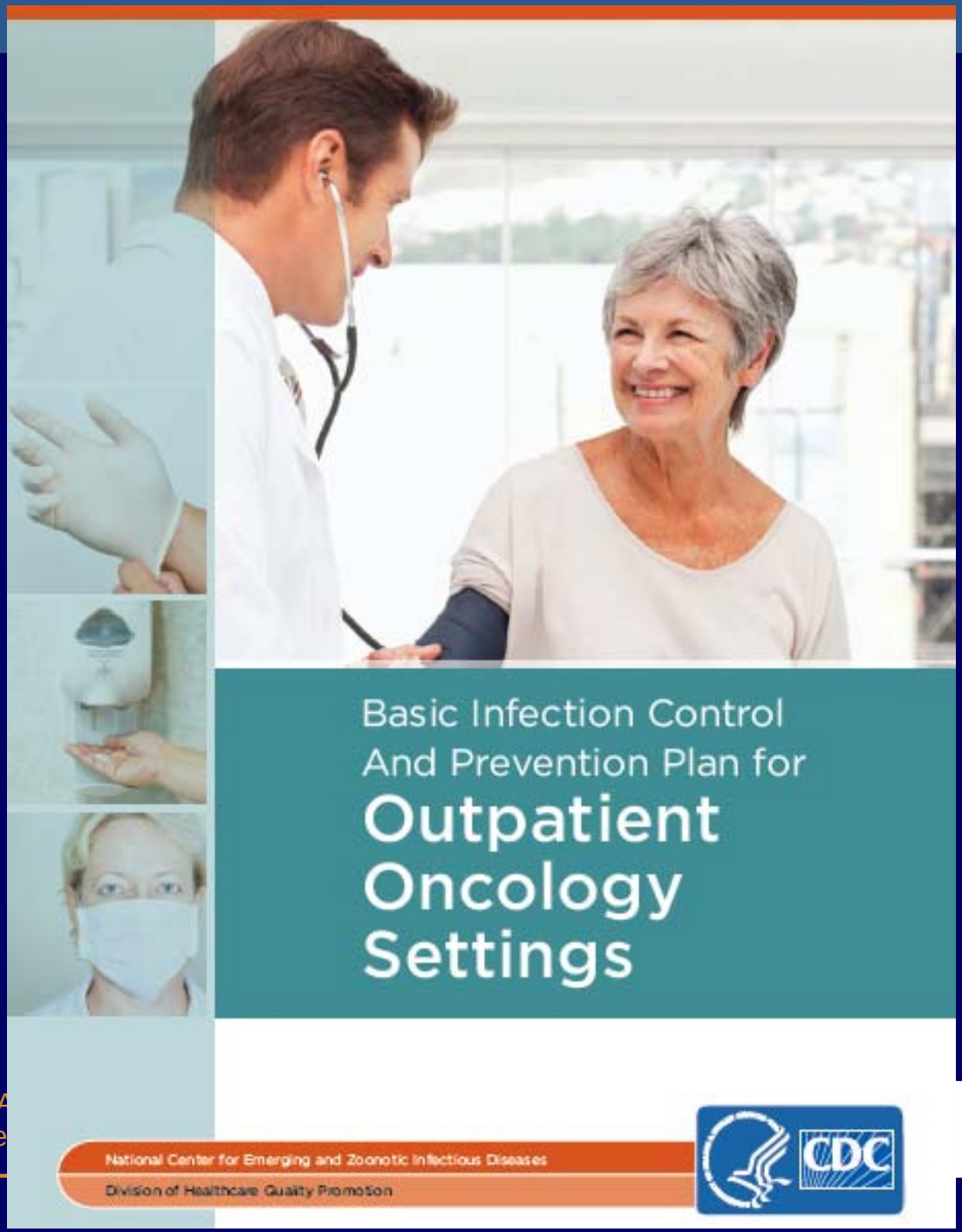
Injection Safety Dangerous Misperceptions Flyer
Item 22-1178

Injection Safety Healthcare Provider Checklist
Item 22-1176

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

Injection Safety Fact Sheet
Item 22-1502

Injection Safety Healthcare Provider Toolkit
Item 22-1177



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Outbreak of *P. aeruginosa* and *K. pneumoniae* BSI, outpatient chemotherapy center

- 14 (17%) identified among 84 active clinic patients
- Unqualified/unlicensed provided infusion services
- Cost-containment measures recently instituted
- Switched to common-source saline and heparin flush
- Bags were used over several days for multiple patients
- A single syringe was dedicated to each patient that could be reused multiple times to access common saline bag
- Syringes for heparin flush shared among multiple patients (discarded only if visible blood)

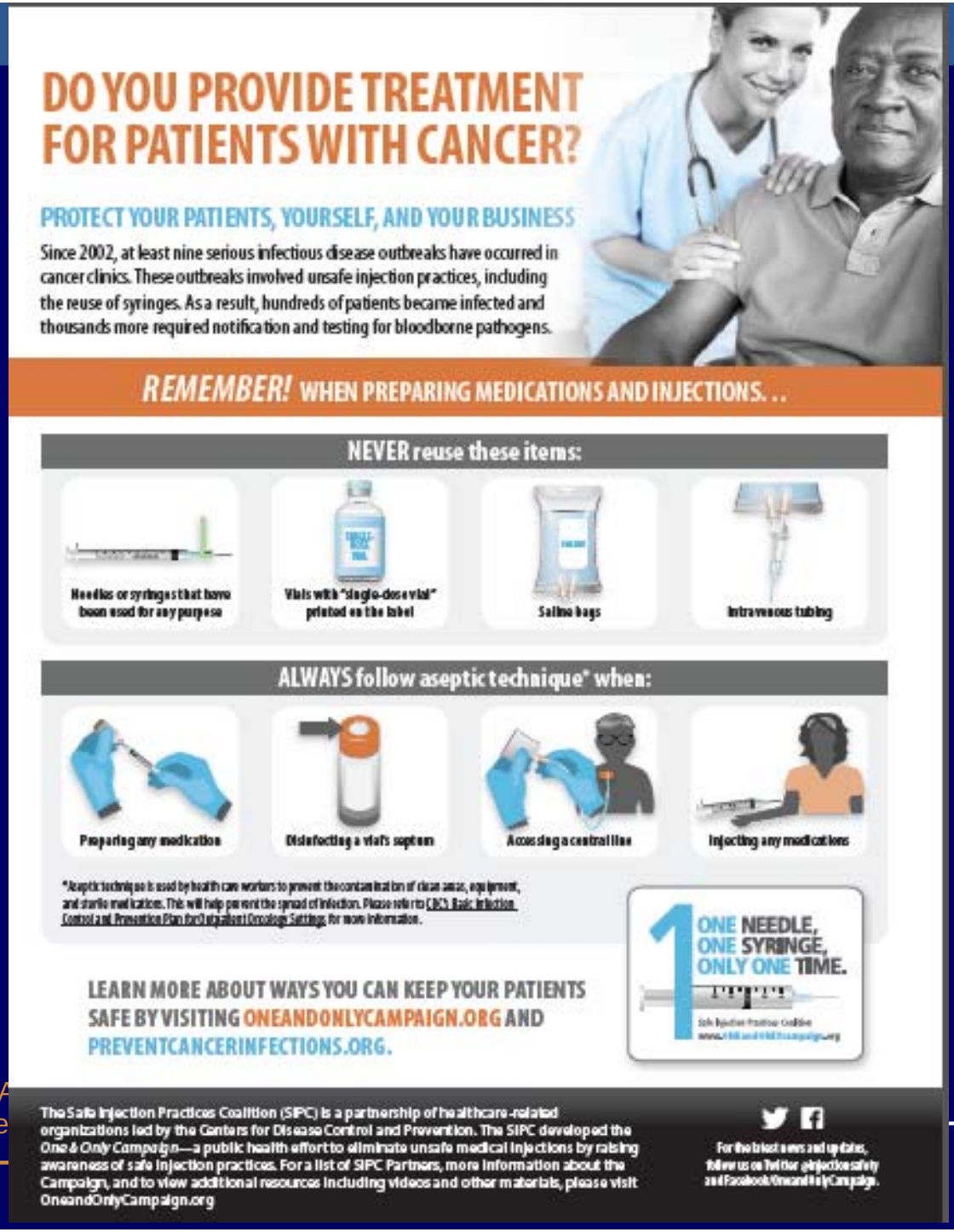
Dobbs et al, AJIC (2014) 731-4

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY MARCH 2014, VOL. 35, NO. 3

ORIGINAL ARTICLE

Outbreak of *Tsukamurella* Species Bloodstream Infection among Patients at an Oncology Clinic, West Virginia, 2011–2012

- **Independent clinic located inside a hospital complex**
- **The chemotherapy hood was adjacent to a window that was opened intermittently**
- **Single-dose medication vials (outside of the chemotherapy hood) were stored and reused over multiple days**
- **Nonchemotherapy medications were prepared next to a sink, which could contaminate medications with tap water**
- **Clinical impacts**
  - **14/15 patients hospitalized**
  - **10 patients had to have their central lines removed**



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A Cluster of Methicillin-Susceptible *Staphylococcus aureus* Infections at a Rheumatology Practice, New York City, 2011

Kate Drezner, MPH;[1,a] Mike Antwi, MPH;[1]
Paula Del Rosso, RN, BSN;[1]
Marie Dorsinville, RN, MPH;[1] Pamela Kellner, RN, MPH;[1]
Joel Ackelsberg, MD, MPH[1]

A cluster of 5 methicillin-susceptible *Staphylococcus aureus* infections occurred after administration of methylprednisolone acetate injections in a rheumatology practice. A site visit was conducted to inspect examination rooms, observe techniques, and review charts. The investigation revealed a pervasive lack of aseptic technique that led to multiple opportunities for medication contamination.

Infect Control Hosp Epidemiol 2014;35(2):187-189

MSSA Cluster – Rheumatology Practice

- **Dec 2011: hospital IP notified health department**
  - 4 patients admitted (LOS 1-8 days) for surgical debridement of lab-confirmed MSSA infections
  - HD identified 5th patient treated at different hospital ED
- **Cases all received joint injections at an independent outpatient rheumatology clinic on same afternoon**
  - 3 exam rooms; poor records management
- **Steroid from a compounding pharmacy labeled as "MDV" containing preservatives**
- **Opened MDVs and SDVs kept on top of towel dispenser**

Drezner et al. *Infect Control Hosp Epidemiol* 2014;35(2):187-189

"Will the Real Multi-Dose Vial Please Stand Up"

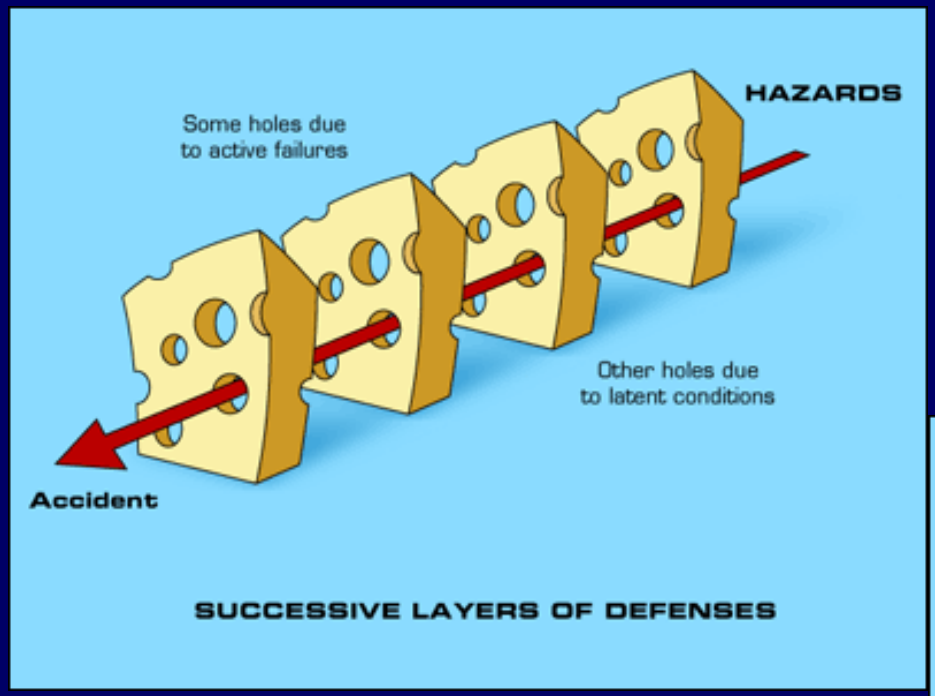
Drezner et al. *Infect Control Hosp Epidemiol* 2014;35(2):187-189

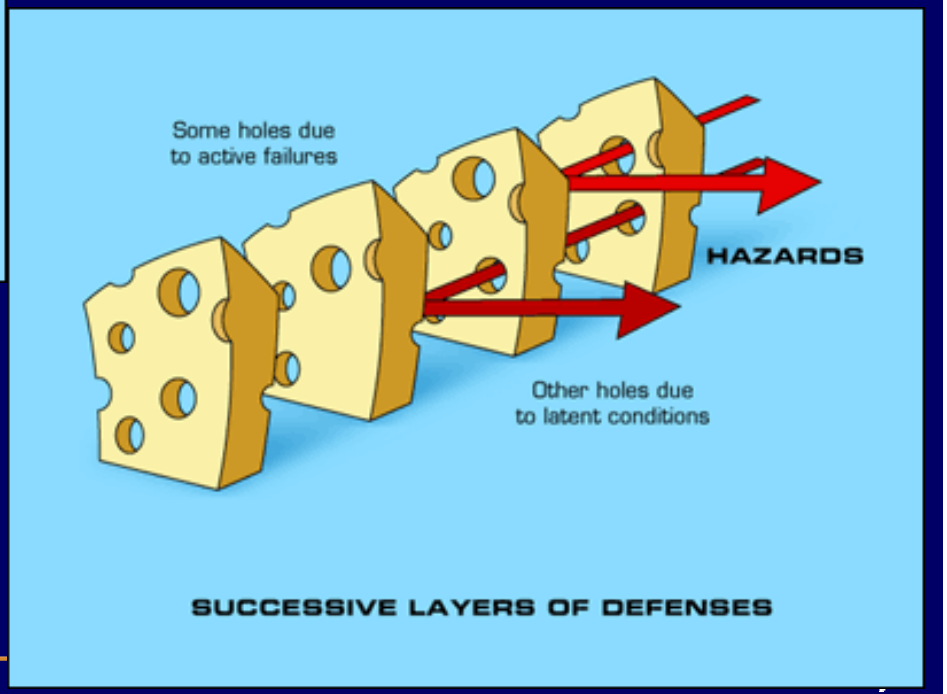
MSSA Cluster – Rheumatology Practice

- Evidence pointed to extrinsic contamination
- Single dose vials used for multiple patients
- Reuse of multidose vials (including the pharmacy product which was not a true MDV) stored in a contamination prone area
- Failure to cleanse/disinfect vial septum with alcohol
- Hand hygiene deficiencies
- Refrigerators had no thermometers, were disorganized, overfilled, and poorly maintained

Drezner et al. *Infect Control Hosp Epidemiol* 2014;35(2):187-189

Each Injection Safety Lapse Erodes Patient Protection





Risks in Dialysis Settings

HEALTH ALERT NETWORK

CDC Urging Dialysis Providers and Facilities to Assess and Improve Infection Control Practices to Stop Hepatitis C Virus Transmission in Patients Undergoing Hemodialysis

The Centers for Disease Control and Prevention (CDC) has received an increased number of reports of newly acquired hepatitis C virus (HCV) infection among patients undergoing hemodialysis. Infection control lapses in dialysis care could expose patients to HCV. Any case of new HCV infection in a patient undergoing hemodialysis should prompt immediate action. CDC is urging dialysis providers and facilities to:

1) Assess current infection control practices and environmental cleaning and disinfection practices within the facility to ensure adherence to infection control standards;
2) Address any gaps identified by the assessments;
3) Screen patients for HCV, following CDC guidelines, to detect infections, determine treatment potential, and halt secondary transmission; and
4) Promptly report all acute HCV infections to the state or local health department.

Suggested Use of Dialysis Audit Tools:

The audit tools provided are meant to be part of a planned series of observations and measurements conducted within hemodialysis facilities. Consider implementing the tools to assess how well your staff is adhering to CDC-recommended practices. Audit tool results can be reported to NHSN and should be regularly reviewed with your staff to help promote desired practices and inform quality improvement projects.

View all of the dialysis audit tools here [Portfolio PDF - 2.33 MB] (Tools may take a few seconds to open on your computer or download the Audit Tools individually).

Hand Hygiene Audit Tool [PDF - 184 KB]

AV Fistula & Graft Cannulation and Decannulation Audit Tool [PDF - 384 KB]

Catheter Connection and Disconnection Audit Tool [PDF - 188 KB]

Dialysis Station Routine Disinfection Audit Tool [PDF - 241 KB]

Catheter Exit Site Care Audit Tool [PDF - 254 KB]

Injection Safety: Medication Preparation & Administration Audit Tool [PDF - 368 KB]

http://www.cdc.gov/dialysis/prevention-tools/index.html

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Drug Diversion: In the News

Hepatitis C concerns prompt response from McKay-Dee Hospital

4,800 patients have been notified about possible exposure to the virus

By Aldo Vazquez | avazquez@good4utah.com
Published 11/01 2015 05:46PM Updated 11/01 2015 06:05PM

- HCV+ (2b) healthcare worker fired Nov, 2014 for diverting medication
- Former ER patient recently diagnosed with Type 2b HCV infection
- HCV strain match plus lack of other risk factors led authorities to link cases
- UT department of health notifies 4800 patients
- Potentially exposed patients offered testing and counselling

http://www.good4utah.com/news/local-news/hepatitis-c-concerns-prompt-response-from-mckay-dee-hospital

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Hepatitis C outbreak, Colorado 2009

- CO Health Dept. received 2 acute HCV+ reports
  - Patients had undergone surgery at same hospital
- HCV-infected surgical tech stole fentanyl syringes that had been pre-drawn by anesthesia staff and left unlocked in the OR
  - Tech refilled contaminated syringes with saline to swap with additional fentanyl syringes
- At least 18 patients infected
- >8,000 patients notified
  - Notification included ASC that employed tech after she was fired from CO hospital and NY hospital of previous employment
- Tech sentenced to 30-year prison term

LIVING IN FEAR

Patients in hepatitis C case brace for fateful results

http://www.denverpost.com/news/ci_12790134

- Six outbreaks over 10-yrs beginning in 2004
- Implicated HCW: 3 technicians and 3 nurses
- Two outbreaks: tampering with opioids administered via patient controlled pumps: bacterial infections in 34 patients
- Four outbreaks: tampering with Fentanyl syringes or vials
  - Hepatitis C virus infection was transmitted from infected providers to 84 patients.
  - Nearly 30,000 patients were potentially exposed and contacted regarding bloodborne pathogen testing

http://www.mayoclinicproceedings.org/article/S0025-6196(14)00342-5/fulltext

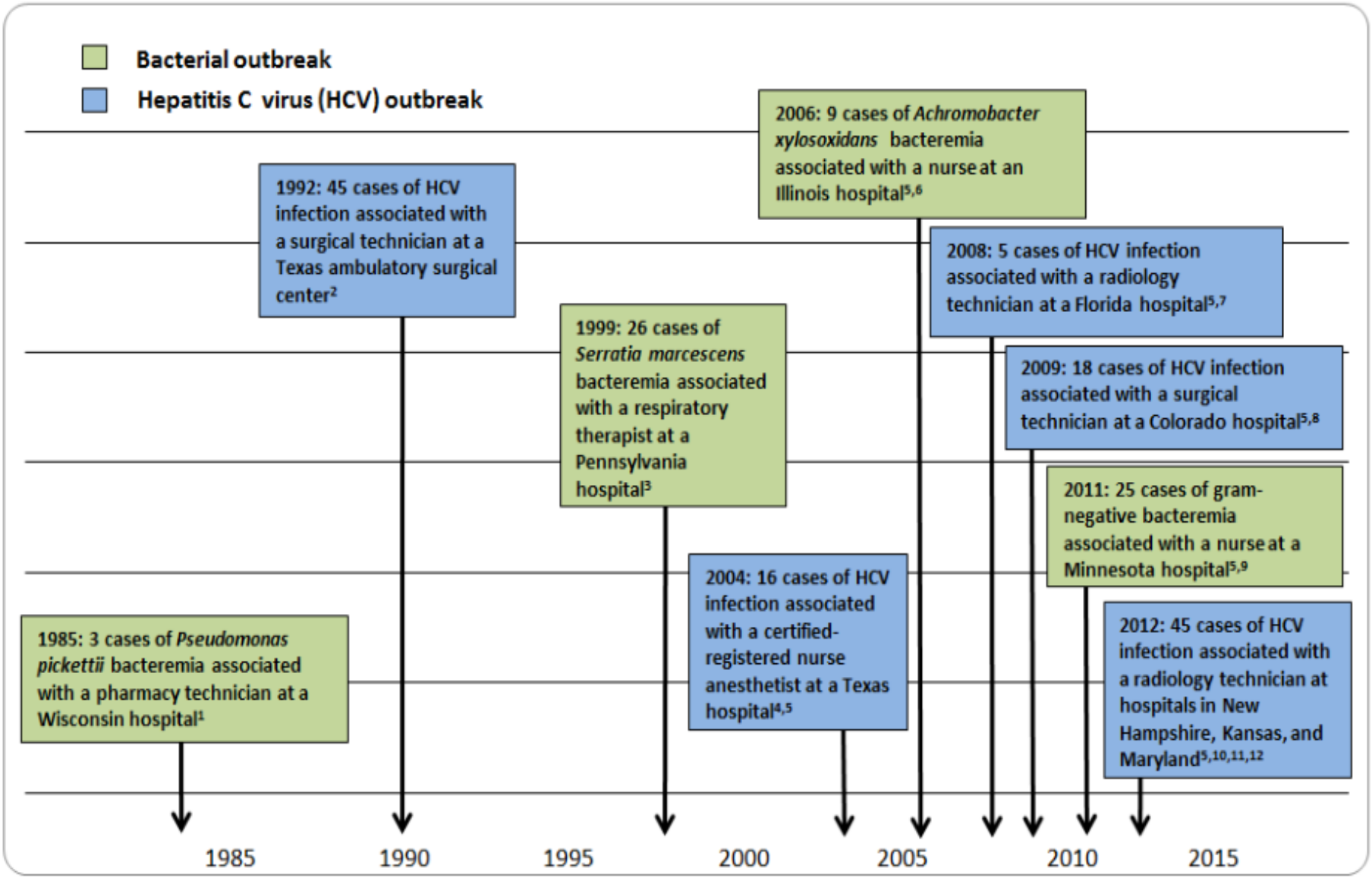
Multi-State HCV Outbreak: 2012

- 45 cases of HCV in NH, KS & MD associated with radiology technician
- David Kwiatkowski diverts opiates in MI, KS AZ, MD, NY, PA, NH
- Investigation reveals holes in licensure, certification, placement, hospital detection programs, and peer/supervisor reporting
- Perpetrator sentenced to 39 years in prison

Oregon Health Authority

www.newsweek.com/2015/06/26/traveler-one-junkies-harrowing-journey-across-america-344125.html

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



http://www.cdc.gov/injectionsafety/drugdiversion/

MAYO CLINIC

ORIGINAL ARTICLE

Outbreaks of Infections Associated With Drug Diversion by US Health Care Personnel

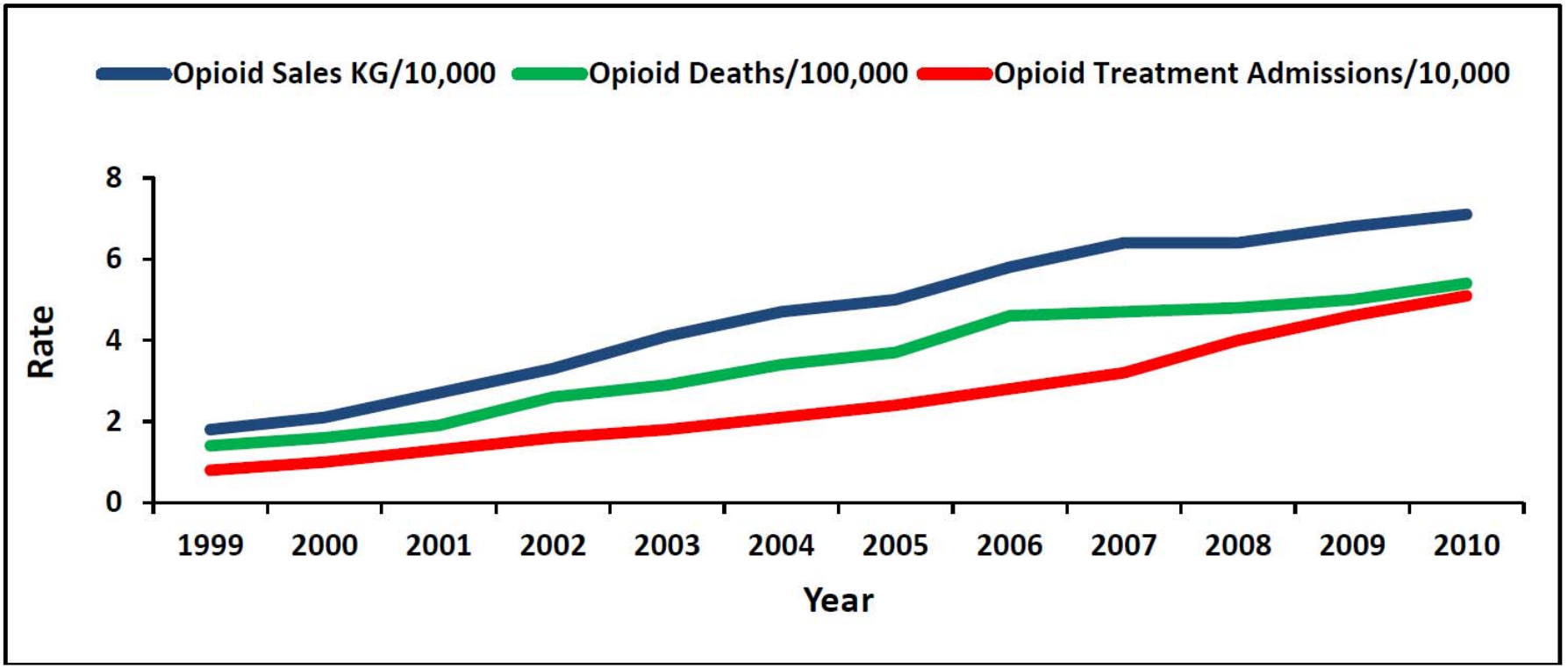
Melissa K. Schaefer, MD, and Joseph F. Perz, DrPH

TABLE 2. Steps for Health Care Facilities to Address Patient Safety When Drug Diversion Is Identified

1. Prevent further risk to patients at the facility
   a. Remove the implicated health care professional from the clinical environment and revoke any previously authorized access to controlled substances (eg, suspend computerized access to automated medication dispensing machines) pending further investigation
   b. Evaluate security of controlled substances to address gaps in adherence to recommended and required practices
2. Prevent risk to patients at other health care facilities
   a. Engage law enforcement
      i. Local law enforcement
      ii. Drug Enforcement Administration (DEA)
         a. DEA registrants are required to notify the DEA of the theft or significant loss of any controlled substance within 1 business day of discovery of such loss or theft
      iii. Food and Drug Administration Office of Criminal Investigation, particularly if product tampering, including substitution, is suspected
   b. File report with applicable licensure agencies (eg, physician or nursing board, state board of pharmacy)
3. Assess retrospective risk to patients
   a. Attempt to ascertain the mechanism(s) of diversion used by the implicated health care professional
      i. Were injectable medications diverted?
      ii. Was any type of tampering with injectable medication performed? If yes, assess potential for patients to be exposed to the health care professional's blood (eg, through swapping with syringes previously used by the health care professional)
   b. If tampering with injectable medication is suspected, pursue blood-borne pathogen testing of the implicated health care professional
   c. Use information from steps 3 a-b to determine need for patient notification and testing. This should be performed in consultation with the local or state health department

Context: Increasing Presence of Opioids

Figure 2. Rates of opioid overdose deaths, opioid sales, and opioid substance abuse treatment admissions, United States, 1999-2010



http://www.cdc.gov/drugoverdose/pdf/hhs_prescription_drug_abuse_report_09.2013.pdf

Context: Substance Abuse Among HCW Tracks with Population at Large

- 10-12% of physicians will develop substance use disorder during careers[1,2]
- 5-year BMJ study found that of physicians with substance use disorders
  - 87% male
  - **36% abused opioids**
  - 50% abused alcohol
  - **14% history of IDU**
- Less data on non-physician HCW substance abuse, but diversion documented in these pops

1. Hughes, JAMA, 1992
2. McLellan, BMJ, 2008

Mechanisms of Diversion

- False documentation (e.g., medication dose not actually administered to the patient or “wasted” but instead saved for use by the provider)
- Scavenging of wasted medication (e.g., removal of residual medication from used syringes)
- Theft by tampering (e.g., removal of medication from a container or syringe and replacement with saline or other similarly appearing solution that may be administered to patients)

Risks to Patients: Drug Diversion

- Patient safety compromised whenever diversion by healthcare workers occurs
- Harms can include
  - Failure to receive prescribed medication (including pain management)
  - Exposure to substandard care from an impaired provider
  - Exposure to life-threatening infections

Berge KH et al. Mayo Clin Proc. 2012;87(7):
Schaefer MK, Perz JF. Mayo Clinic Proc.2014; 89 (6)

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DRUG DIVERSION* SPREADS INFECTION FROM HEALTHCARE PROVIDERS TO PATIENTS

HEALTHCARE PROVIDER
with Hepatitis C or other bloodborne infection tampers with injectable drug

CONTAMINATED INJECTION EQUIPMENT AND SUPPLIES
present in the patient care environment

EXPOSURE OF PATIENT
results from use of contaminated drug or equipment for patient injection or infusion

1 ONE NEEDLE, ONE SYRINGE, ONLY ONE TIME.

*Drug diversion occurs when prescription medicines are obtained or used illegally by healthcare providers.

FOR MORE INFORMATION, VISIT CDC.GOV/INJECTIONSAFETY/DRUGDIVERSION

Resource: CDC Page

CDC Home

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

SEARCH

A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Injection Safety

- Injection Safety
- CDC's Role
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- Preventing Unsafe Injection Practices
- ▶Drug Diversion
  - U.S. Outbreaks Associated with Drug Diversion by Healthcare Providers, 1983-2013
- Infection Prevention during Blood Glucose Monitoring and Insulin Administration
- Recent Publications
- Recent Meetings
- The One & Only Campaign
- Patient Notification Toolkit

Related Links

- CDC's HAI site
- 2007 Guideline for Isolation Precautions
- HHS Action Plan to Prevent HAIs
- HICPAC

Injection Safety

Recommend Tweet Share

Risks of Healthcare-associated Infections from Drug Diversion

When prescription medicines are obtained or used illegally, it is called drug diversion. Addiction to prescription narcotics called opioids has reached epidemic proportions and is a major driver of drug diversion. This webpage focuses on diversion involving healthcare providers who steal controlled substances such as opioids for their own use. This can result in several types of patient harm including:

- Substandard care delivered by an impaired healthcare provider,
- Denial of essential pain medication or therapy, or
- Risks of infection (e.g., with hepatitis C virus or bacterial pathogens) if a provider tampers with injectable drugs.

Outbreaks

CDC and state and local health departments have assisted in the investigation of infection outbreaks stemming from drug diversion activities that involved healthcare providers who tampered with injectable drugs. A summary of recent outbreaks is illustrated in the following timeline.

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

Bacterial outbreak

Email page link
Print page
Subscribe to RSS

Get email updates
To receive email updates about this page, enter your email address:
What's this? Submit

Contact Us:

Centers for Disease Control and Prevention
1600 Clifton Rd
Atlanta, GA 30333

800-CDC-INFO
(800-232-4636)
TTY: (888) 232-6348
Contact CDC-INFO

Join the conversation

DEA Page on Diversion

http://www.deadiversion.usdoj.gov/pubs/brochures/drug_hc.htm

RESOURCES TO TRAIN STAFF

Injection Safety Training Videos

Check Your Steps! Make Every Injection Safe

Managing Patient Safety, One Injection at a Time

Safe Injection Practices Video – How to Do It Right

Safe Injection Practices: A Video for Healthcare Providers

1. A Patient's Story

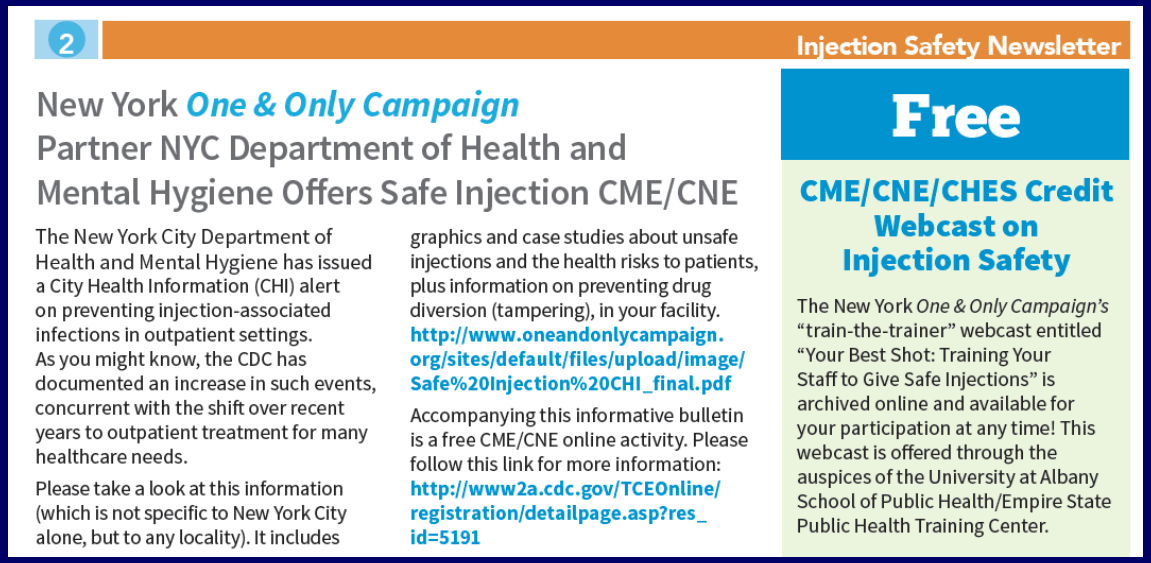
2. Inside the Pain Management Clinic

3. Inside the OR

4. Dispelling Injection Safety Myths

http://www.oneandonlycampaign.org/content/audio-video

Free CME/CNE on Injection Safety



2 Injection Safety Newsletter

New York *One & Only Campaign* Partner NYC Department of Health and Mental Hygiene Offers Safe Injection CME/CNE

The New York City Department of Health and Mental Hygiene has issued a City Health Information (CHI) alert on preventing injection-associated infections in outpatient settings. As you might know, the CDC has documented an increase in such events, concurrent with the shift over recent years to outpatient treatment for many healthcare needs.

Please take a look at this information (which is not specific to New York City alone, but to any locality). It includes graphics and case studies about unsafe injections and the health risks to patients, plus information on preventing drug diversion (tampering), in your facility. http://www.oneandonlycampaign.org/sites/default/files/upload/image/Safe%20Injection%20CHI_final.pdf

Accompanying this informative bulletin is a free CME/CNE online activity. Please follow this link for more information: http://www2a.cdc.gov/TCEOnline/registration/detailpage.asp?res_id=5191

Free

CME/CNE/CHES Credit Webcast on Injection Safety

The New York *One & Only Campaign's* "train-the-trainer" webcast entitled "Your Best Shot: Training Your Staff to Give Safe Injections" is archived online and available for your participation at any time! This webcast is offered through the auspices of the University at Albany School of Public Health/Empire State Public Health Training Center.

http://www2a.cdc.gov/TCEOnline/registration/detailpage.asp?res_id=5191

Course Link

TARGET AUDIENCE: Clinicians working in outpatient settings

PREREQUISITES: None

DEVELOPED BY: New York City Department of Health and Mental Hygiene

CE Expiration Date: 9/9/2017

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Course & Webinars

- Infection Control Fundamentals Course
  - November, 1–3, 2016
  - FREE, open to all
  - http://oregonpatientsafety.org/news-events/past-events/knowledge-share-webinar-series/696/

    (includes other webinars)

- HAI Webinars: Lunch & Learn
  - 3rd Wednesday of the month, lunchtime
  - Open to all providers, LHDs, labs, etc.
  - https://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/HAI/Prevention/Pages/Lunch-and-Learn.aspx

Thank you for your collaboration to improve care for Oregonians!

Acute & Communicable Disease Prevention Team
HAI Team
(971) 673-1111 (24/7)
Ohd.acdp@state.or.us

Extra Slides

Concrete Recommendations for
Strengthening Drug Diversion

Recs to Strengthen Detection: Limit Access to Controlled Substances

- Integrate automated access to CS with healthcare worker schedules
  - HCWs found to be diverting drugs often found coming in when not scheduled or offering to help when not scheduled
- Document presence of HCW at procedures in patient's medical record
- If possible use biometrics to allow access to CS

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

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Recs to Strengthen Detection: Improve Processes for Med Prep & Use

- Controlled substances should not be prepared ahead of use when possible
- If CS prepared in advance of use, keep in a locked drawer and maintain in locked drawer
  - Leaving a syringe on top of a Pyxis machine may enhance procedure flow but allows CS to be out of nurse's sight
- CS should not follow patients when transferred
  - Waste at end of procedure
  - New vial in recovery room

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

Recs to Strengthen Detection: Ensure Accountability for CS

- "Time Out" for CS at end of procedure, as happens to count surgical instruments
  - Document amount dispensed, administered, not used
- If discrepancy identified, lockdown to locate substance before staff leave room
  - If not found, mandatory drug test for all staff
- Process for wasting clearly communicated
  - Investigate <u>any</u> wasting of full vial; comprehensive review if repeated
  - CS in non-procedure setting: meaningful observer (1 HCW to observe dispensing, administration, and wasting)

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

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Recs to Strengthen Detection: Enhance CS Oversight

- Pyxis should be in visible location
  - If possible, visible from nurses station or control room
- Perform manual audits of Pyxis at random times
- To the extent possible: integrate information
  - Auto-checks to see if amount dispensed = amount given + wasted + returned
  - Programmed alert to see if patient getting significantly higher dose than usual/average

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

Recs to Strengthen Detection: Minimize Mobile Med Boxes

- All mobile medication boxes should be locked
- Boxes should stay in pharmacy under second lock until signed out to nurse
- Nurse/pharmacist unseal, check contents together and sign off, then lock
- Box only unlocked only when needed
- Wasting to occur in the location where medication administered

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

Recs to Strengthen Detection: Comprehensive Approach to Diversion

- Dedicated staff to coordinate diversion
  - Could be task force or single person
- Review DD with each unit supervisor, assess gaps, return to review remediation
- Regular education on signs/symptoms of being under the influence (DEA pamphlet)
- Formal process of reporting DD concerns in place and accessible
  - System for anonymous reporting (make it easy)

From NH Dept. of Health Report, available: http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

Recs to Strengthen Detection: Comprehensive Approach to Diversion

- Clear policy that each staff has to sign prior to employment regarding mandatory drug testing for suspected mishandling, including suspect behavior
- Clear policy that all staff, regardless of suspicion or history, be tested if an empty syringe is found

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf

Recs to Strengthen Detection: Clear Action Plan if DD Suspected

- Put implicated HCW on leave
- Report to law enforcement (relationships help!)
- Law enforcement should have specific person identified to receive these calls
- Report as an adverse event; report to licensing board and to Data Bank
- Notify health department: can help with investigation and notification, if needed
- Test implicated HCW for BBP

From NH Dept. of Health Report, available:
http://www.dhhs.nh.gov/dphs/cdcs/hepatitisc/documents/hepc-outbreak-rpt.pdf