North Carolina SPICE Statewide Program for Infection Control & Epidemiology

Module D

OUTBREAKS AND SAFE INJECTION PRACTICES IN DENTAL SETTINGS

Statewide Program for Infection Control and Epidemiology (SPICE)

UNC School of Medicine

OBJECTIVES

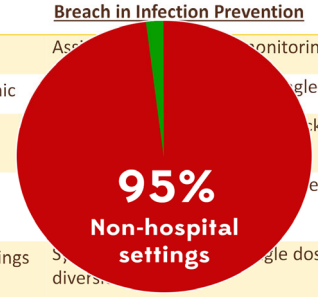
1. Discuss the consequences of unsafe injection practices
2. Describe outbreaks
3. Discuss safe injection best practices
4. Describe One and Only Campaign

UNSAFE INJECTION PRACTICES CONSEQUENCES

VIRAL HEPATITIS OUTBREAKS

REPORTED TO CDC 2008-2017

Healthcare Setting	Breach in Infection Prevention
Long Term Care	Ass… …onitoring (ABGM)
Pain Management Clinic	…gle-dose vials
Outpatient Oncology	…k of asepsis while
Hemodialysis	…ental cleaning/
Other Outpatient Settings	S… …gle dose vial; Drug diversi…



NC VIRAL HEPATITIS OUTBREAKS

REPORTED TO CDC 2001-2012

Healthcare Setting	Breach in Infection Prevention
Long Term Care	Assisted blood glucose monitoring (ABGM)
	Exposed - 504 Infections - 31 Deaths - 6
Cardiology Clinic	Syringe reuse and contaminating multi-dose vials
	Exposed - 1200 Infections - 5

DENTAL OUTBREAKS 2002-2013

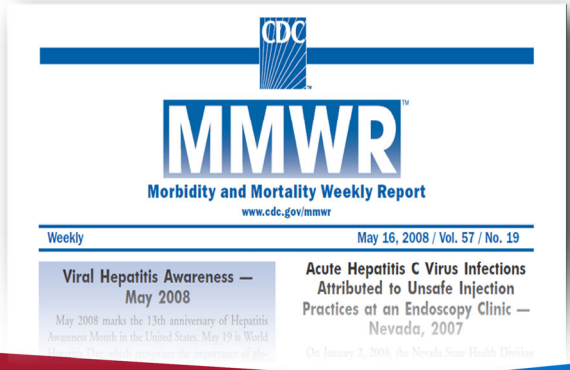
Study	Year Reported Practice Setting	Pathogen (# infected)	People Notified for Screening	Dental Treatment Provided	Known or Suspected Mode of Transmission
Redd and Colleagues 2007	2002 Oral surgeon's practice	HBV (1)	27	Extractions with IV Sedation	Environmental contamination with blood due to lack of adequate cleaning
Radcliffe and Colleagues 2013	2009 Free dental clinic conducted in school gymnasium	HBV (5)	>1,500	Extraction and restorations	Multiple infection breaches including inadequate preparation and sterilization of instruments
Bradley 2015	2013 Oral surgeon's practice	HCV (1)	5,810	Extraction, bone graft, implant with IV sedation	Multiple infection breaches including unsafe injection practices; improperly sterilized dental equipment and environmental contamination

KNOWLEDGE CHECK

Which of the following statements is correct?

1. CDC reports that most outbreaks occur in the hospital
2. Outbreaks of HIV are the most common type of outbreak
3. Outbreaks due to unsafe injection practices have been reported in dental settings.

WHY DO OUTBREAKS HAPPEN


CDC
MMWR
Morbidity and Mortality Weekly Report
www.cdc.gov/mmwr
Weekly May 16, 2008 / Vol. 57 / No. 19
Viral Hepatitis Awareness — May 2008
Acute Hepatitis C Virus Infections Attributed to Unsafe Injection Practices at an Endoscopy Clinic — Nevada, 2007

THE BIG FOUR

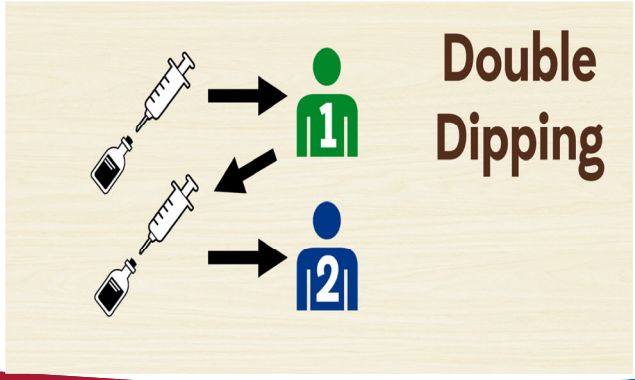
1. Syringe re-use, directly or indirectly
2. Inappropriate use of single dose or single use vials
3. Failure to use aseptic technique (contamination of injection equipment from the non-sterile environment)
4. Unsafe diabetes care/ assisted blood glucose monitoring (ABGM)

SYRINGE RE-USE

- Most common cause of outbreaks in the outpatient setting is inappropriate use of syringes:
  - Direct reuse:
    - Using the same syringe to administer medication to more than one patient, even if the needle is changed or the injection was administered through an intervening length of tubing
  - Indirect reuse or "double dipping":
    - Accessing a medication vial or bag with a syringe that has already been used to administer medication to a patient, then reusing the contents from the vial or bag for another patient

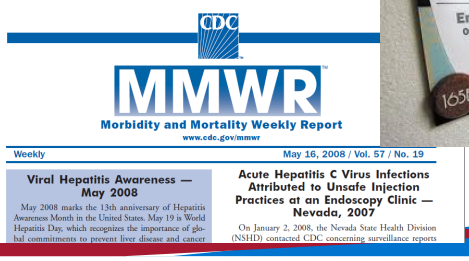
SYRINGE RE-USE

Video Clip: Start the video by clicking on the image below.



ENDOSCOPY CENTER, NEVADA (2008)

- 9 clinic-associated hepatitis C virus cases
- 106 possible clinic-associated cases
- 63,000 potential exposures
- $16–21 million total cost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DANGEROUS MISPERCEPTIONS

1. Changing the needle makes a syringe safe for reuse.
2. Syringes can be reused as long as an injection is administered through an intervening length of IV tubing.
3. If you don't see blood in the IV tubing or syringe, it means that those supplies are safe for reuse.

Once they are used, both the needle and syringe are contaminated and must be discarded!

INAPPROPRIATE USE OF SINGLE-DOSE/SINGLE-USE VIALS

- Vials labeled as single use:
  - NO PRESERVATIVE
  - Can be accessed one time only and for one patient only and remaining contents must be discarded
- CDC is aware of at least 19 outbreaks involving single dose vial use
  - All occurred in outpatient setting with almost half in pain remediation clinics

SINGLE DOSE VIALS: CDC POSITION STATEMENT, 2012

- Vials labeled by the manufacturer as "single dose" or "single use" should only be used for a single patient.
- Ongoing outbreaks provide ample evidence that inappropriate use of single-dose/single-use vials causes patient harm.
- Leftover parenteral medications should never be pooled for later administration
  - In times of critical need, contents from unopened single dose vials can be repackaged for multiple patients in accordance with standards in United States Pharmacopeia General Chapter ‹797›

= 1 patient 1 time

www.cdc.gov/injectionsafety/CDCposition-SingleUseVial.html

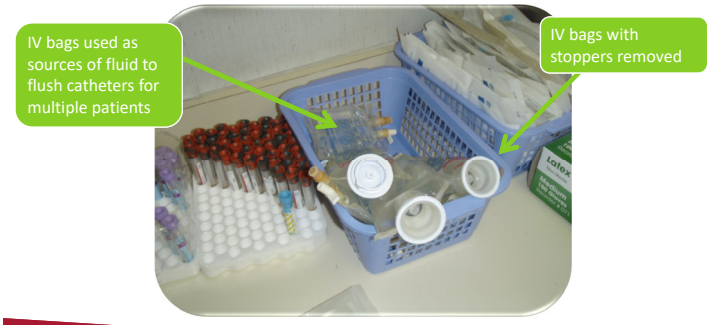
FAILURE TO USE ASEPTIC TECHNIQUE

- Medications should be:
  - Handled
  - Stored and
  - Prepared in a manner that reduces the risk of contamination
- Disinfect rubber septum of medication vials:
  - Alcohol

WHEN FAILURE TO USE ASEPTIC TECHNIQUE HAPPENS!

- Two women diagnosed with HBV infection, receiving chemotherapy at the same physician practice
- Multidisciplinary team investigation
- Office closed, physician license suspended
- 2,700 patients notified
- 29 outbreak-associated cases of HBV

NEW JERSEY – ONCOLOGY OFFICE



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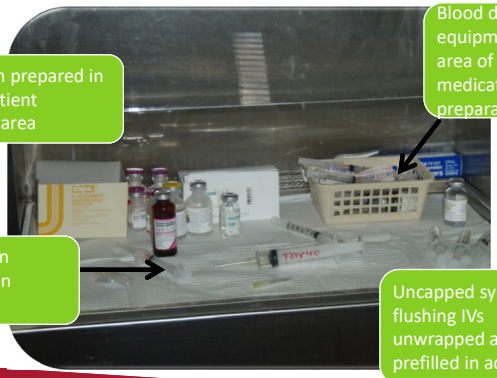

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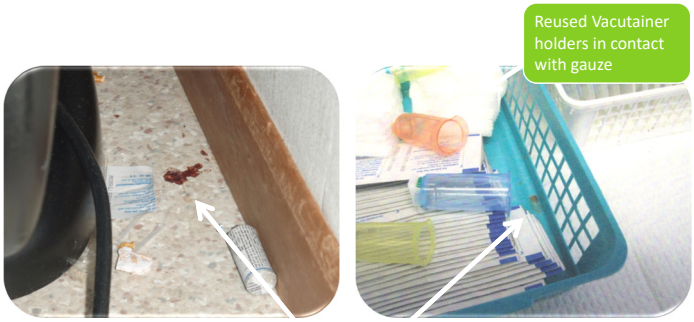
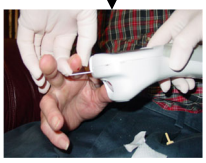


UNSAFE DIABETES CARE

Sharing of blood glucose meters without cleaning and disinfection between uses

Use of fingerstick devices or insulin pens on multiple persons



Failure to perform hand hygiene or change gloves between procedures

Patel et al. ICHE 2009; 30:209-14, Thompson et al. JAGS 2010, MMWR 2005; 54:220-3

SAFE INJECTIONS: BEST PRACTICES

Syringe reuse (direct and indirect)

- Never administer medications from the same syringe to multiple patients
- Do not reuse a syringe to enter a medication vial or solution
- Limit the use of multi-dose vials and dedicate them to a single patient whenever possible

Misuse of single-dose/single-use vials

- Do not administer medications from a single dose vial or IV solution bag to more than one patient, more than one time

SAFE INJECTIONS: BEST PRACTICES

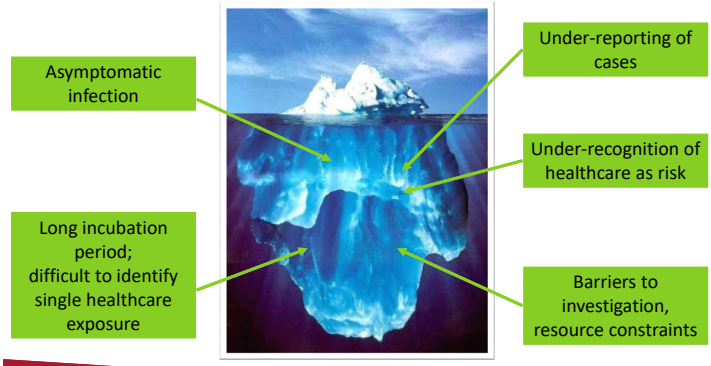
Failure to use aseptic technique

- Use aseptic technique when preparing or administering medications

Unsafe diabetes care

- Use insulin pens and lancing devices for only one patient
- Dedicate glucometers to a single patient. If they MUST be shared, clean and disinfect after each use

MOST OUTBREAKS ARE NEVER DETECTED



SURVEY OF PHYSICIAN AND NURSE PRACTICES AROUND INJECTION SAFETY

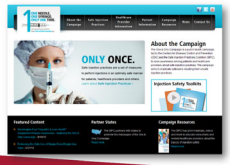
- 370 Physicians
- 320 Nurses
- Eight States Included
  - NC, NY, NJ, Nevada, Colorado, Tennessee, Wisconsin, Montana
- Types of healthcare settings:
  - Acute care, long term care, outpatient settings

SURVEY FINDINGS

Topic Is Acceptable Practice	Physician Response	Nurse Response
Reuse of syringe for > one patient	12.4%	3.4%
Reentering a vial with a used needle/syringe	12.7%	6.7%
Using SDVs for multiple patients	34%	16.9%
Using source bags as diluent for multiple patients	28.9%	13.1%

BEST PRACTICE

- Designate someone to provide ongoing oversight
- Develop written infection control policies
- Provide training
- Conduct quality assurance assessments



KNOWLEDGE CHECK

- Which of the following statements is false?

1. Syringes can be used on more than one patient if the needle is changed.
2. Single dose vials can be used more than one time if it has not been contaminated
3. Blood glucose meters do not have contact with patients and do not need to be cleaned
4. If there is no visible blood the syringe is safe to reuse.

All of the above

KNOWLEDGE CHECK

True or False

Because there have been so many outbreaks, ALL healthcare providers do the right thing every time with safe injection practices.

True

False

ONE AND ONLY CAMPAIGN

CAMPAIGN RESOURCES

- Print Materials
- Audio & Visual
- Social Media
- Toolkits

North Carolina

WWW.ONEANDOHTTP://WWW.ONEANDONLYCAMPAIGN.ORG/PARTNER/NORTH-CAROLINALYCAMPAIGN.ORG

QUESTIONS?